

BRIDGING THE_GAP

USING DESIGN THINKING TO MOVE FMCG NPD
FROM INCREMENTAL TO RADICAL INNOVATION

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BRIDGING THE _ GAP

Foreword

With over 30 years' experience within the food industry across multiple roles from development chef, food technologist, buyer, seller, business consultant, head of product development and technology, I have seen first-hand how consumers' interact with multiple product offerings within retail foods whatever stage those products are within their product life cycle, within fresh, frozen and ambient categories. I have also witnessed and been accountable for the ongoing factors associated with new product development (NPD) stage-gate models applied in FMCG.

In April 2015 whilst working for Sealord Fisheries (UK) I was attending a meeting in Nelson (NZ) and during discussions on the challenges and opportunities on certain fish, fishing quotas, customer dynamics, brand, weather, sustainability and creating consumer value, I was amazed about the similarities regarding the physical and emotional connections people involved with seafood had. At that moment I realized I wanted to learn more, set new professional challenges in another country, literally start again and add value to the New Zealand market and develop my knowledge and skills the other side of the world. I remember stating to the Chief Executive Officer, "I will be in New Zealand by Christmas, I'd love it be to with you, but if not, no worries". I suddenly realised the intent behind the spoken word, and thought I need a plan to make this happen.

I believe there is an urgent need for radical change globally in how some retailers create and deliver consumer value within seafood and how shoppers' interactions may be enhanced by the application of human-centred design principles.

My main motivations for coming to New Zealand were to continue my professional learning journey, by pushing myself outside of my comfort zone and learning about market dynamics in Australasia, many miles from my European homeland.

At that time, unbeknown to me, within 12 months I would be instrumental in making design and packaging changes on behalf of one of New Zealand's biggest retailers, New Zealand's biggest employer, by using customer insight and prior tacit knowledge.

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And lastly, to Michelle for believing in our future in New Zealand and to my daughter Mollie for supplying an endless amount of tea whilst researching.

This work is dedicated to the memory of my hard-working parents who devoted their entire lives to serving people great food and great experiences across restaurants, hotels, canteens and bakeries in East Anglia.



Executive Summary

This document outlines the resulting outputs of my engagement with the Master of Design Enterprise degree at the Otago Polytechnic. While this master's degree is applied in its nature, the audiences of this document will be mainly within the seafood processing, food manufacturing and retail industries. Its submission serves as partial completion of this degree.

The document is divided into nine sections, each of which relates to key areas of both the seafood industry and the postgraduate degree within which it is based.

This paper explores three distinct layers of impact: a transformation in professional practice, a resolved product and implementation plan and a new design-led FMCG framework that can be applied across the FMCG sector.

Within these three layers of impact are five key recommendations:

- Transformation in professional practice
 - Personal and professional reflection and limitations of relying on tacit knowledge alone
- A resolved product and implementation plan
 - Rejecting the established methods of new product development
 - The value of effective communication across multiple stakeholders of non-linear and iterative design processes
 - The social and environmental value of seafood serve-over counters within retail
- New design-led FMCG framework
 - Trademarked new development model including its application within FMCG

Through personal and professional reflection, I will explore my intertwined relationships with the environment, personal values and a sense of place within fishing communities. These elements of working, class survival and protecting our planet are what drive my conscious and unconscious bias within my design practice. In addition, it is about what my career has meant, not only to me but the wider community in which I operate. Within this, and more critically, are the limitations of relying on tacit knowledge and other traditional development models from FMCG industries, such as stage-gate models. An identified area of weakness in the existing development model is that it is predominantly linear; therefore, a rejection of these established methods is critical for the evolution of novel products and services.

This notion of rejecting the established methods of new product development will be explored through the application of design thinking, and more especially Human-Centred Design (HCD). Further explored will be how design thinking and HCD can be used to facilitate and explore users' needs and pain points, thereby creating desirability and integrating design thinking into new products. This incorporation of design thinking over traditional methods results in a new development model, one that is able to communicate the value of non-linear and iterative design processes across multiple stakeholders.

This development and application of the new model is explained through multiple sections of this document. The application will be applied to fisheries resource management and value creation within seafood, exploring consumer health, environmental considerations and social connectivity.

The rationale for this approach in relation to focusing on seafood and fisheries is the declining human connection associated with the purchasing of seafood, on a global scale. Seafood counters are facing extinction, unless a radical approach is adopted. I wish to ensure seafood counters become more relevant to providing solutions to shoppers' everyday problems, whilst understanding and highlighting the notion of value beyond purely financial metrics.

The switching of seafood sales from traditional serve-over counters to single-use packaged seafood are noted, and whilst advancements in packaging is explored from the viewpoint of environmental considerations, such as replacing unrecyclable foam trays destined for landfill with packaging made from recycled material, suitable to be recycled, this is still not addressing the root cause of the problem.

Whilst using recyclable packaging is significantly kinder to the planet from a reduced carbon emissions viewpoint, it is not the long-term solution. We must stop the problem in the first place, adopting a new model of environmentally sound reusable packaging with HCD at its core. A paradigm shift is needed through the awareness of the failures and continued destruction of a body of accepted behaviours and patterns embodied in mass packaged fresh foods, and from this destruction a new model emerges.



ACTION PLAN

Section _ I

I.0 Methodology and how to read this document

This section seeks to unravel my intertwined relationships with environment, people and time, and how these interwoven relationships is the coming together of over 30 years' experience within FMCG, NPD and seafood, leading to tacit knowledge and know-how and the discovery of new learnings relating to design thinking, through the exploration of new established and explicit frameworks of practice. To this end, this document aims to communicate to different audiences though three distinct voices:

- A business and academic voice that aims to speak to the reader about the explicit theoretical and prescriptive knowledge; this is expressed within the paper in black text.
- A more personalised voice that provides insights into my personal and professional development within the field of NPD within FMCG, and how this has informed my professional practice. This practical knowledge, know-how or tacit knowledge is presented in blue italic text, to this point. These explicit insights from my past and thoughts on the MDE project shares my emotional reactions to things, but more than this. These insights hold within them, the tacit knowledge and skill that I have developed over time, and by its nature, the tacit knowledge that lies in the subconscious and therefore cannot be communicated as explicit moments. As such these insights implicitly contain a multitude of tacit knowledge and skills. This is experience that allows me to:

- See things in a certain way
- Make judgement calls
- Develop ideas and processes quickly
- Finding opportunities and problems
- See bigger picture when others may not
- Link what is happening in wider society to what is happening in FMCG and seafood

Therefore, it is implicit in these insights that is important, not just the insights themselves.

- Visual communication which shares ideas and images that acts as quick-reference elements, as a way of adding richness to the document and for communicating process.

To help facilitate this process and to bring structure to my writing I have chosen the cycle of reflection of Rolfe, Freshwater, and Jasper (2001) as an overarching methodology.

I.1 Objectives

This project set out to explore how design-thinking can be applied to Fast Moving Consumer Goods (FMCG) new product development (NPD) in the hope that a new design framework can be developed that improves existing NPD design practice. This will be explored in the context of supermarket seafood departments and is applied to the development of a value-added service (with associated product) at the serve-over seafood counter.

In so doing, this project is particularly focussed on how value might be derived from FMCG across differing customer profiles and how this might be used in NPD processes.

This project uses a view of value that moves beyond financial value. To this end, it is underpinned by Woo's (1992) four elements of value: first, value can mean "what is of true worth to people in the broad context of the well-being and survival of individuals, and by extension, of the species as a whole", according to Woo (1992, p. 85). Second, it can mean "what a society collectively sees as important, regardless of whether or not such highly valued objects of consumption, really contribute to his or her wellbeing". Third, value "refers to what the individual holds to be worthwhile to possess, to strive or exchange for". Finally, Woo suggests value "refers to the amount of utility that consumers see as residing in a particular object and that they aim to maximize out of a particular act of buying or consuming".

I.2 Outcomes

- Consolidating my tacit knowledge to date optimising opportunities aligned to my core values
- Further research in human-centred design for the broader seafood industry
- Development of a novel new product development (NPD) design model which allows for blue sky product development
- Exploration of design thinking as a competitive advantage for NPD

I.3 Main areas of investigation

Of the main areas to be investigated as part of this postgraduate degree, the first is geographical, the United Kingdom, or more specifically a small town called Lowestoft which lies on the east coast of England. This is my hometown and forms my first exposure to both commercial and recreational fishing and, of course, my family and their commercial enterprises.

The history and those early influences will be described as part of this postgraduate qualification forms one of the other areas of investigation – myself, and the development of tacit knowledge.

The second geographical area to be investigated is New Zealand, my adopted homeland. The similarities between these two island nations is striking and is an area I will cover in further depth as I discuss the role of 'place' and its importance. Another area of investigation is the retail context for seafood within both of those countries; this investigation will serve to fulfil the industry-led collaboration component of my Master of Design Enterprise degree.

The final area of investigation will be the interface of design thinking, NPD and tacit knowledge and how that may be used to create competitive advantage.

WITNESSING



Section _ 2

2.0 Historic observations of the east coast of England and New Zealand sea defences

Section 2 provides context to my chosen subject area, my love and respect for our oceans and the people that survive by its defences and outputs, and the need to create greater consumer value extraction from this natural resource. Section 2 has two distinct parts, the first part reflecting my personal connections to the sea and the industries I've worked in, which are personal and not just professional. Outlayed from section 2.4 onwards are my formative years within FMCG and the seafood industry and my professional connections to the sea.

After a tranquil night dive, on a warm sleepy humid night in Egypt, I looked down at my bare feet over the bow of a boat, caressing the foamy white water of the Red Sea as we gently cruised under the blanket of the night sky, which was lit by the moon and distant stars. All around me were the endless boundaries of the ocean, within that moment I realised I was at one with the sea. The sea that I had just dived in, the beauty and the mysteries that the ocean holds, the way it connects me to my past, present and my future is what provides my soul with energy and peace, and will continue do so.

I was raised in a small fishing town called Lowestoft, a civil parish in the county of Suffolk on the North Sea coast. It is the most easterly point, and possibly earliest settlement in the United Kingdom where early man crossed the Alps from what is now called continental Europe, some 200,000 years earlier to live at Pakefield (Amos, 2006). As a settlement it has been a haven for Viking and Roman fishermen seeking not only the resources the sea offered but also the refuge from it. This continued quest for resources in the environment was not unique to just the Romans, and as the civilisations seeking them became more sophisticated so too did the conflicts. The history and importance of defending the English coastline forms part of my personal and professional development.

"On 3 June 1665 a fleet of more than 150 English ships, manned by 25,000 men mounting 5,000 guns, met the Dutch in equal strength off Lowestoft, and a long fierce battle was fought in which many leaders on both sides perished" (Churchill, 1956).

I remember my father had an ornament of Winston Churchill on his mantel piece, which developed my interest on who he was, and what he stood for. I realised his direct approach and forceful nature had influenced my father, in later years I was aware that some of these behaviours had influenced my personal and professional development; to lead from the front, sometimes too direct and not afraid to ask for help when required.

On 10 May 1940, Germany invaded France, pushing the British Expeditionary Force (BEF), along with French and Belgian troops, back to the French port of Dunkirk. A huge rescue took place, 'Operation Dynamo', organised by the Royal Navy to rescue the troops off the beaches and bring them to Britain (IWM, 2018).

The gently shelving beaches meant that large warships could only pick up soldiers from the town's East Mole, a sea wall which extended into deep water, or send their boats on the beaches to collect them. To speed up the rescue, the British Admiralty appealed to the owners of small boats for help. These boats became known as the 'little ships'. Churchill and his advisers had expected that it would be possible to rescue only 20,000 to 30,000 men, but 338,000 troops in all, a third of them French, were rescued (IWM, 2018).



FIGURE 1: Boarding ships at Dunkirk (DUNKIRK 26 - 29 MAY 1940)

Whilst most discussion about the Great War at sea tends to centre on the large war ships, far less has been written about the critical role played by fishermen, fishing vessels and their coastal communities (Robinson, 2017). Yet armed fishing vessels and their fishermen crews were continually on the North Sea's front line. They formed the backbone of the Auxiliary Patrol, working mainly on anti-U boat patrols or minesweeping.

According to Robinson (2017), around 3,000 fishing vessels were requisitioned whilst more than 39,000 fishermen joined the Trawler Section of the Royal Naval Reserve. The cultural, social and attitudinal gulf between working fishermen and many Royal Naval RN officers was enormous.

The vessels left for fishing also played a vital role in maintaining the food supplies; many were sunk, around 672 fishing vessels lost through enemy action whilst either fishing or on Admiralty service. After the war, their substantial role was gradually forgotten, now hardly recognised (Robinson, 2017).

Whilst Spitfire pilots and the like are seen as the heroes of WWII, I consider the fishermen who without glory helped feed a nation and protect communities on the front line of our defences.

According to Pye (2010), "Along the shoreline of Britain's east coast, defences were required by the imminent invasion by Nazi Germany (Operation Sealion), a vast number of emplacements were hastily constructed in 1940". Out of the estimated 28,000 built, only just over 6,000 survived (Pye, 2010). The few that stand today act as a reminder to the testament of the resilience and bravery of the British people when as a nation it stood alone and isolated against the tyranny of the Nazi regime (Pye, 2010).

Playing war as a child in the crumbled relics of Lowestoft's emplacements, which overlooked the sand dunes and the North Sea. Armed with sticks for machine guns and mud bombs for grenades, defending our position against the tyranny of my mates, now classed as my sworn enemy, charging and climbing up the cliffs making their attack, such happy childhood memories.

In New Zealand, gun emplacements were constructed in a period of heightened tension in the Pacific during World War II following the bombing of Cairns in the north of Australia. Alongside other defences constructed in the area, barbed wire was set up along beaches at Cockle Bay, Howick and Mellons Bay. It is believed a Japanese submarine I-21 had been seen off the coast of Howick and Maraetai in March 1942, with its reconnaissance plane taking a flight over Auckland skies (Williamson, 2016).

Stumbling across an old gun emplacement in Cockle Bay reminded me as a child playing in a derelict WW II emplacement in Lowestoft, thinking of my connection between my two homes as being at the front line of defence, protecting the English coast communities'.

At each stage the sea has played an inseparable role in people's survival and existence. The value of the sea is constant in the face of continual change, its presence and power informing everything from the weather, conversation and legislation. The community of Lowestoft are unified by their location in memories of the seafront, irrespective of class, age, or affluence, and inseparable links to a sense of place. Over the centuries the oceans have not only created international conflict over their natural resources such as seafood, oil and gas but also safe passage for trade routes. The United Kingdom (UK) is a very proud island nation and defends its natural resources and people with courage.



FIGURE 2: Gun emplacement in Cockle Bay (Willows)

2.1 Historic seafood processing in Lowestoft

The fishing, landing and processing of seafood in Lowestoft is part of my heritage and makeup, therefore it is an important part of my personal and professional practice within FMCG.

According to Robb (2010), the gathering of resources from the sea in Lowestoft has not always been as part of an international conflict; “It is said that by the early 20th century that Lowestoft harbour was so packed with fishing vessels that it was possible to cross the harbour without getting wet feet”. In the record-breaking year of 1913, upwards of 380,000 tons of herring were landed at the ports of Great Yarmouth and Lowestoft between September and December (figure 3, fishermen of Lowestoft). From the mid-1800s each September for 100 years, an army of Scotswomen, known as ‘The Herring- Lassies’, descended on the fishing communities of East Anglia for around 12 weeks at a time (figure 4, Scotch girls filleting herring along the east coast).

The largest markets for herring were Russia, Germany and America; however, the turmoil of the Russian revolution hit exports hard as did the state of Germany after the First World War. The demise in the USA herring market was a result of prohibition; whilst bowls of herrings used to be available pre-prohibition, when prohibition was imposed the speakeasies just wanted people to drink as quickly as possible (Gibb, 2016).

The herring industry finally collapsed in the 1960s because of overfishing, government red tape and soaring fuel prices. (Stone, 2014). “This marked the end for the herring girls and their great migration; however, they are still fondly remembered by many living in the region and their story has now firmly passed into local fishing legend” (Stone, 2014).

There is still plentiful supply of herring shoals, and several countries still consider the fish as part of their diet (Gibb, 2016).



FIGURE 3: Fishermen of Lowestoft (H. Jenkins, 1938 or 39)



FIGURE 4: Scotch girls gutting Herring (Taylor, About 1910)

My step dad's mum was an original herring girl that finally settled in Lowestoft. When I first ranged Prepacked Herrings in New Zealand, it reminded me of the Herring-lassies who followed the fish up and down the East coast, moving from place to place to survive and thrive, I reflected on the similarities of the Herring-lassies and myself of following the fish from place to place.

2.2 A memoir of business in Lowestoft outside of seafood

When I think about survival and the need to move from place to place, I think of my mother who worked three jobs to feed her three sons, and her early morning job was a breakfast cook in a hotel owned by her ex-husband (my father), her afternoon job was as a staff cook in supermarket and her night job was working in a food factory producing Birds Eye branded goods, making various frozen items on the production line. I saw first-hand the physical and emotional impact of survival. This awareness in my formative years allowed a window into job opportunities within a small coastal town.

From the mid-1970s to the early 1980s, frozen foods became popular. The likes of Findus Crispy Pancakes and Birds Eye Potato Waffles were being served up in homes across the UK. According to Winterman (2013), “New frozen desserts also became popular, such as Black Forest Gateau, Wall’s Viennetta and Birds Eye Arctic Roll”. But it wasn’t only technology that firms were capitalising on, the rise in divorce rates was also considered an opportunity. More men were having to cook for themselves and ready-meal producers were on hand to make it as easy for them as possible (Winterman, 2013). With 3.5 billion Birds Eye potato waffles made at the Lowestoft factory since their introduction in 1981, they remain one of the UK’s most iconic teatime staples created (Boggis, 2019).

I have no idea how my mum managed to provide for three boys for so many years on her own, a freezer full of goodies from the staff shop always meant we had cheap processed food on the table, the convenience and speed in which it provided busy parents is something that has remained with me all my life. Whilst I have many friends around the globe that are noteworthy chefs, I am proud of my working-class roots and how my formative years captured the value in convenience foods.

2.3 Value creation in the UK seafood industry

After formative years as a user of convenience foods on the English coast I would be presented with a marketing brief that would start to fuse my personal and professional worlds. This would start my journey into product design to meet shoppers' solutions to everyday problems.

I was working for a company called Youngs Seafoods, I was employed as a new product development chef and the brief had no reference to a brand, and it stated the sensory requirements, critical path and the product cost parameters, not a creative brief but a clearly defined brief nonetheless. The brand as I later found out was to take a traditional restaurant brand into retail supermarkets.

According to Colrick (2011), "Harry Ramsden's started from humble origins in 1928 selling fish and chips from a small wooden shed in Guiseley, West Yorkshire. When first opened, Harry Ramsden's target market was working-class day trippers and, sure enough, hungry customers were visiting the restaurant in coach loads from far and wide. Within three years, Harry Ramsden had opened what he called a 'palace' next door to his wooden shed, an oak-panelled restaurant with chandeliers, an interior which was said to have been based on the Ritz Hotel in London" (Colrick, 2011).

"From then on, the restaurant's place remained in the hearts of the working class, not only of the locals in Guiseley but of people much further afield. At one time the branch even held the Guinness world record for being the largest fish and chip shop in the world, seating 250 people and serving nearly one million customers a year" (Colrick, 2011).

The products developed were the Harry Ramsden's-branded battered fish and chips. The challenge was how to make mass-produced processed fish and chips taste as they had been freshly prepared and fried in tallow; this was the unique value proposition. The solution remains a trade secret, but I had eventually cracked it, adding incremental value in the frozen fish categories for many years.

'The nose prickling sensation of the malt vinegar hitting the piping hot golden crispy battered fish is part of the traditional fish and chip shop experience'



FIGURE 5: Harry Ramsden serving fish and chips (Gildea, 2018)

Integral to the project was building empathy and the understanding of experiences of the consumers through field visits to understand and observe different people at different times of the day and in different weather. This was the role human-centred design played, in that it allowed me to view the experience holistically. According to Kumar (2013), the definition of field visit is to bring researchers into direct contact with people, places, and things they are studying. The field visit is the most direct means of building empathy with people. “Spending time with people engaged in real-world activities helps innovation researchers understand relevant behaviours first-hand.”

Until I had received the Harry Ramsden brief, I had not really considered people from West Yorkshire knew anything about fish, let alone about decent fish and chips, how could they? they live miles from the coast. Unlike people from Lowestoft who had a decent fish and chip shop on every street corner, and also the home of mass-produced fish fingers.

Lowestoft remains home to a large food manufacturer called Birds Eye Walls, the birthplace of the humble Fish Finger. The first advertising campaign read: ‘No bones, no waste, no smell, no fuss’. The fish finger was designed to help find a market for large hauls of cod. According to Pells (2015), these days around 99 per cent of fish used is imported from Iceland, Norway and Russia.



FIGURE 6: Fish Fingers (Pixabay, 2019)

According to Seafish UK, from a haul of 851,984 tonnes of fish and shellfish, they estimate that only 43% ends up on our tables. For cod and haddock, for example, fillets make up just 50% of their whole weight; the rest – head, organs, bones – is discarded or ground into fishmeal (Finney, 2019). According to Sun (2010), cod fillets have four key parts: the loin, belly flap, centre cut and tail (Sun, 2010). The loin (considered to be the most premium cut) once cooked provides pure white large flakes; tail and neck are used for less premium recipes such as coating fillets in factories; and belly flaps (typically minced) are plate frozen and cut into uniform shapes such as fingers.



FIGURE 7: Atlantic Cod (Encyclopaedia Britannica, 2020)

I thrive on working with specialists such as production, buying, quality, development, sales and marketing in order to extract maximum value for shoppers from natural, sustainable food source to make shoppers lives easier. Shoppers, just like my busy mum all those years back, are the very reason I love my job.

My personal connection to the sea, its defences and people is an intrinsic part of my wider UK heritage; it has relevance as it frames my professional practice and tacit knowledge which is so important to this project.

2.4 Methods of resource management on the English coast

In sections 2.0 to 2.3 my reflections explored my personal connections and its relevance to this project, and sections 2.4 to 2.8 explore my professional connections to the sea and my life within the seafood industry and its communities through my formative years, and my career in the UK, and as such my deeply rooted connection to the sea and the importance in resource management, whilst exploring the consumer value in sustainability.

The management of seafood stocks to ensure sustainable supply for future generations is of critical importance to me both personally and professionally; however, it is important to note the landscape is constantly changing. The last part of section 2 explains some recent changes, why it is important, how it is managed and the consumers’ perception regarding value in resource management.

One of the biggest developments is shortly after we left the UK a referendum was held on 23 June 2016 to decide whether the UK should leave the EU or remain. The leave vote won by 52% to 48% and the turnout of eligible voters was high at 72%, with more than 17.4 million of 30 million voters opting for Brexit (BBC, 2020). This was a clear signal that UK independence from the EU could no longer be ignored, and this would change the way fishing quotas would be managed moving forward. As the British voters dramatically demonstrated in June 2016, “European integration is not incapable of being unmade” (Leustean, 2014). During my professional career it was the Common Fisheries Policy (CFP) that established quotas for each member state in respect of types of fish caught (Arlanda, 2019).

This was in response to increasing pressures on fish stocks of which I will now outline its resulting impact.

Grimsby on England’s East Coast was well situated for the rich fishing grounds in the North Sea. Once it was the principal centre for fishing in England, but direct landings have greatly diminished in the last half-century. At its peak in the 1950s, Grimsby was the largest and busiest fishing port in the world. However, as a result of the ‘Cod Wars’ with Iceland, the industry has been in decline for many years.

The first 'cod war' took place in 1958 when Iceland extended its coastal fishing limit from 4 to 12 miles. The second cod war started in 1972 when Iceland extended its coastal non-fishing limit to 50 miles. It ended with an agreement between the two countries that limited British fishing to restricted areas, within the 50-mile limit. Direct landings into Grimsby have been in decline as a result of the cod wars, and with more whitefish quota restrictions in the North Sea, the old fish docks have become derelict as a result of EU restrictions. Most fish are now brought overland from other ports or overseas via containerisation, and seventy per cent of the fish sold at the town's market is now imported from outside the United Kingdom, particularly Iceland (European Commission, 2010).

According to Russell (2011), following nearly two decades of intensive trawling, by the early 1980s it was clear that North Sea fish of all types were on borrowed time". "From the 1970s, the EEC 'common pond' policy also meant that more vessels were fishing for an ever-decreasing stock" (Russell, 2011). Despite later governmental dictates and restrictions, fish stocks continued to dwindle. With the EU introduction of continental boats vacuuming the majority of fish from the seafloor, the quotas enforced on the North Sea fishermen were effectively crushed, and this included the longshoreman's livelihood as well (Russell, 2011).

April 1995, when the European plaice quota earmarked for the east coast went instead to the Dutch, 14 Lowestoft boats were decommissioned (Robb, 2010).

According to Robb (2010), by the 1980s, Rossfish was the largest employer in the fish market at Lowestoft with its processing, freezing plants and sales office. It was also the first major business to tumble. No surprise then that in late 1981 office employees were informed the Ross sales office would be closing. The factory itself followed, with the remaining 100 men and women being made redundant the following year.

I've witnessed first-hand the changing landscape of traditional fishing vessels docked in Grimsby and Lowestoft harbours, local fish fried in the fish and chip shops, and traditional fishmongers on our high streets. Now turned into derelict harbours, imported fish and vacant shops where fishmongers once proudly prepared the days catch.

Having worked in Iceland, developing ranges for UK retailers, using seafood from Iceland, I sometimes ask myself if I am complicit in this near extinction, or simply adapting to survive?

Robb (2010) discusses that over the last 20 years of the 20th century, the decline of prime and whitefish stocks went hand in hand with changes in eating habits. The traditional experienced high-street fishmongers have all but disappeared, with some retail chains offering a fresh seafood counter. The popularity of traditional chip shops shifted, also. "Fish now has to compete with pies, sausages, mushy peas, drinks, chicken, spring rolls, beef cutlets and more" (Robb, 2010).

2.5 Methods of resource management of UK species

The CFP establishes quotas for each member state in respect of types of fish caught. This requires specific management of the core volume lines caught in the North Sea. The following species are noted as the core white fish preferred in the UK domestic market; these are the equivalent in popularity to the New Zealand's Snapper, Tarakihi, Blue Cod and Yellow Belly Flounders.

Cod

The most recent spawning stock biomass (SSB) assessment for North Sea cod was carried out in 2008 and has resulted in the stock being classified as suffering reduced reproductive capacity. Cod abundance remains unchanged, with a historical low in 2006. SSB has shown an increase since then but remains below the biomass limit (at which reproductive capacity of the stock may be impaired) (Blim). Fishing mortality has shown a decline since 2000 with ICES reporting the cod stock is now being harvested in a sustainable manner, albeit at greatly reduced fishing mortality levels (European Commission, 2010).

Haddock

The most recent assessment of SSB of North Sea haddock was carried out in 2008 and ICES has classified the stock as having full reproductive capacity. SSB in 2008 is estimated to be above a precautionary biomass reference point Bpa. Fishing mortality in 2007 is estimated to be below a precautionary fishing mortality reference point (Fpa). This is above the targets specified in the EU-Norway management plan, and haddock is being harvested sustainably (European Commission, 2010).

Whiting

Data for North Sea whiting stocks are relatively poor and so the longest time series for this stock exists only back until 1990. The most recent assessment suggests that whiting SSB is the lowest it has been (on record). Fishing mortality has decreased through the time series but has increased in recent years. The number of fish surviving has been very low since 2001. There are no management objectives for the North Sea Whiting stock. ICES has recommended a total catch of < 11,000 tonnes for 2010 (European Commission, 2010).

Plaice

The ICES assessment for the North Sea plaice stock indicates that the stock is being sustainably harvested and has full reproductive capacity. The plaice SSB is estimated above 230,000 tonnes and fishing mortality for this stock is decreasing. Whilst recruitment of this stock has been generally poor, 2007 recruitment was average. The management plans for the North Sea plaice stock are aiming at annual reduction of fishing mortality by 10% (in relation to the preceding years) and a maximum change in Total Allowable Catches of 15% (European Commission, 2010).

One of my professional insights and part of my design process is collating and consolidating qualitative research via focus groups, in order to understand what information is important to put on packaged seafood. One question was exploring shopper propensity to purchase seafood and the relevance of buying from well managed fisheries. The general view is shoppers trust retailers and vendor brands that they will procure from sustainable sources.

Cod, haddock, whiting and plaice are all wild caught, some brands and manufacturers use farmed white fish from Asia such as basa, to create added value seafood products and focus the marketing on shopper benefits around convenience, such as quick to cook and interesting flavours.

2.6 The relevance of fisheries management and consumer value perception

Fisheries have been managed within the same frameworks within the EU and New Zealand under the QMS (quota management system), looking at total biomass and total allowable catching governing allowable quotas by species ensuring sustainability.

However, UK and NZ consumers place sustainability low on the agenda when compared with price, which draws concerning parallels between Britain and New Zealand, and it jeopardises the future of seafood counters offering fresh, sustainable, local and seasonal seafood offering wider intrinsic value, which is separate from financial value.

Unless a more HCD approach is adopted within FMCG seafood counters, numbers will decline creating fewer personal consumer interactions, less emphasis on seasonality and regionality, which in turn will reduce overall fresh perception and consumption. Retailers will be forced to provide an offer which leverages more imported, pre-frozen and pre-packed seafood reducing the notion of a sense of place and national pride and ultimately requiring greater carbon emissions through greater need for more single-use packaging.

2.7 The value of sustainable seafood

The value in sustainable seafood should be noted, but sustainability does not always translate to aligning with shoppers' needs, wants or values. This subsection explores the notion that sustainability is by its very nature a complex issue, and shoppers' knowledge and desires for sustainable seafood varies greatly.

Zander and Feucht (2017) argues that sustainability is a complex issue not only from the technical perspective and consumers' perception, but the understanding of what sustainability is may widely vary from expert definitions, primarily for two reasons: first, the term 'sustainability' is frequently used in many different contexts, and consumers associate it with a multitude of issues; and second, because of their limited knowledge with regard to technical issues of seafood harvest. When attempting to improve the communication with consumers on sustainability, it is essential to know what consumers think and expect (Zander & Feucht, 2017).

During the last decade, sustainability has become an important issue in the seafood sector. "Many consumers are increasingly interested in additional product attributes such as eco friendliness, organic production, and domestic origin, given that general expectations with respect to price and quality being met" (Zander & Feucht, 2017).

Birch (2015) suggests that, the sustainable seafood movement has the potential of reversing the current trends of declining seafood consumption through a series of initiatives created to cultivate interest in consumption of sustainable seafood. Research, however, indicates that consumers' intention to purchase sustainable seafood does not always translate into actual purchase behaviour.

Motivations of consumers and their knowledge of seafood sustainability in relation to seafood purchasing behaviours was conducted through investigation by an Australian online survey investigating consumer knowledge of seafood sustainability and the drivers of purchase decisions. Objective knowledge categories were developed through the qualitative analysis of unprompted, open-ended responses and compared with other

surveyed measures of objective knowledge. The relationship between these knowledge categories and the importance of sustainability in the purchase decision was tested (Lawley, Craig, Dean & Birch, 2019). A significant group of consumers either had no knowledge of seafood sustainability (17.8 per cent) or gave an incorrect response (15.5 per cent), while 25.1 per cent demonstrated simple and 41.6 per cent complex knowledge (Lawley et al., 2019). Further, the knowledge was positively related to importance of sustainability when making purchase decisions. Sustainability moved from the lowest-ranked attribute for the 'no knowledge' group to the highest-ranked attribute for the 'complex knowledge' group (Lawley et al., 2019).

This result shows that consumer knowledge about sustainable seafood cannot be assumed and that the level of sustainability knowledge influences the importance of sustainability in purchase decisions. This aligns with my prior experiences from the UK with focus groups conducted in Manchester and London.

A recent report from the Ministry for Primary Industries (MPI) found New Zealanders ranked sustainability as the least-important area when purchasing seafood, especially when weighed against quality, price and ease of preparation (Neilson, 2020). "This finding comes as stocks of our favourite fish, tarakihi, have plummeted to 15 per cent of historical levels, prompting calls for consumers to seek alternatives and start a movement demanding sustainable seafood akin to that for free-range eggs" (Neilson, 2020).

MPI surveyed more than 1,000 consumers and 16 chefs and restaurateurs across the country to rate 13 factors when purchasing seafood. Quality came on top, closely followed by flavour and look/smell, all rated as "very important". But sustainability factors, such as whether it was ethical, wild/farmed or the capture method, were three of the four least important factors. Fishing that involved using a line with hooks, such as longline, or pots, were among the most preferred as they were used to target specific species, compared with more indiscriminate methods such as purse seine or trawling. MPI also found New Zealanders were unlikely to choose outside popular varieties, which included tarakihi, snapper and red gurnard, and

John Dory in the north, and blue cod, monkfish and rig in the south. MPI's director of fisheries management, Stuart Anderson, said "public faith in the QMS was why Kiwis opted for "best value" when purchasing seafood. But the QMS has come under fire in recent years with critics saying it focuses too much on individual species and not the wider ecosystem" (Neilson, 2020). Forest & Bird sustainable fisheries expert Kat Goddard said for that reason people needed to continue to be informed and ask questions about their seafood (Neilson, 2020). "We are not saying don't eat seafood, nor that there are not commercial operators out there going above and beyond, but that consumers need to be asking questions, and retailers providing answers and greater transparency" (Neilson, 2020).

The QMS is not overtly branded or marketed as providing sustainable seafood, providing reassurances of the Marine Stewardship Council MSC branding. As such, most shoppers in New Zealand remain unaware about how to make an informed purchase decision.

I recall attending a meeting with senior members of the UK seafood industry with the government and the National media all in attendance at Billingsgate fish market in London's East End. The objective was how to address discards (untargeted bycatch of fishing), the EU rule was any discards landed had to be thrown back at sea and potentially die. Our objective was to work on a plan to create a more environmentally and logical solution to take back to the EU.

Whilst reviewing the array of discarded species beautifully laid out in front of us, we had to find the right balance in our proposal, between finding the right sales channels for discards without actually creating a demand. For example, promoting baby monk fish on a menu in a fine dining restaurant could create wider market desire and actually defeat the objective.

It is noted in New Zealand that sustainable seafood to the general public is actually less important than price, flavour and quality, therefore the question is how might we strengthen the value in the resource management in the desires of target shoppers.

In the UK, I recall conducting a focus group where the facilitator asked the question what equated to value when buying seafood. No one within the focus groups discussed sustainability; rather, the key value indicators were price, freshness and convenience.



FIGURE 8: Manchester focus group 'seafood shoppers' (Willows)

2.8 A case study in the ethics associated with seafood harvesting

When procuring seafood domestically and globally it is not solely about sustainability, which as discussed has ever-changing multiple layers, and it is not simply a notion such as ecological or financial; rather, it is also about getting past the moral ambiguity associated with ethical sourcing to create clarity for the consumers when making their purchasing decisions. There are currently several audit bodies that assess harvesting and human welfare, an exercise that allows transparency for those shoppers who wish to align their values with retailers, and in doing so creating trust and loyalty.

I recall from my days in the UK when 19 illegal workers tragically died whilst harvesting cockles in Morecambe Bay in 2004. The workers died when they were trapped by rising tides as they picked cockles on the notoriously dangerous mudflats. They were part of a group of more than 30 cockle pickers who had apparently been working in the dark (Oliver, 2004). This raises questions about ethical work practices within the seafood industry, another critical consideration regarding seafood harvesting.

Ethical sourcing and supply are critical factors closely aligned to my personal and professional values, and therefore represents another concept in which value creation to shoppers may be explored. Not all seafood has accredited ethical sourcing by a globally recognised body; however, it is one area I believe is important to actively promote.

2.9 Summary

Through personal and professional reflections there are undeniable parallels that should be drawn from the physical and emotional sense of place within seafood communities, industries and FMCG sector across both hemispheres. Delivering consumer value through using its quality, sustainability and provenance to reinforce the values of harvesting of the oceans resources and strengthening the communities' association creates a narrative of enhancing value.

The identification of value within fresh seafood beyond the transactional financial values within retail presents an opportunity to create holistic value for customers by the adoption of HCD. The nature of this exchange has changed through the passage of time and now comes under the umbrella of global retailers.

Retail is defined as the business that sells directly to final consumers. El-Amir and Burt (2010) point out, that shopping in a traditional store format is inherently a socio-cultural activity, a setting in which retailers aid customers in their pursuit of social identification. This extension of sense of place within retail through empathetic design models will be explored in section 7 of this document.

While on the one hand earlier personalised reflections may be easy to simply view as a form of retrospective nostalgia (which for some it may be), my personal reflection is also the first, most basic form of value extraction. Harvesting of the sea's natural resources, its environments and people all provoke a strong connection and identity amongst those who are involved with it. What this means to me is a continued quest for relevance through the invested contribution to the New Zealand seafood industry by sharing knowledge, passion, experience and insights from my homeland within the context of creating greater consumer value.

DESCRIPTION



Section _ 3

3.0 My tacit knowledge

The need of creating greater shopper value in seafood was discussed in section 2. The role of design thinking is important to making radical innovation and enhanced environmental contributions.

This section explores my tacit and explicit knowledge and discusses the current design methodologies, and its limitations of these within the context of human-centred design (HCD). This will be explored through the exploration of seafood processing, manufacturing and large-scale retail, and the overlaying of social and environmental considerations, combined with the notion of value. This section also seeks to identify any opportunities or problems within this area.

Until starting the Masters of Design Enterprise in early 2019, I had no idea what the word 'tacit' meant, or appreciated its value.

Understanding the meaning and value of my tacit and explicit knowledge, along with personal and professional reflections, provides context of my limitations, and strengths, and, in doing so, presents further opportunities for professional and personal growth. With this growth it provides evidence to become improved as a designer, with the ability to implement better outcomes for society and the environment.

I had never heard of the phrase 'tacit knowledge' used in my professional career, as an established FMCG professional, managing large teams, covering thousands of products, under multiple brands with a value of over \$6 billion, how could this be? I thought knowledge is knowledge at the end of the day, and I soon realised there are different types of knowledge.

I had never stopped and reflected how a chef from Lowestoft ended up working with some of the nation's top chefs, signing off multi multimillion-pound new product ranges. All I ever considered was getting the job done, giving 100%, keep working, moving from place to place, learning new ways to do things, mostly on my feet.

Agbim, Owutuamor, and Oriarewo (2013) indicates that "tacit knowledge is personal and hard to formalize, and, therefore, difficult to communicate to others. Tacit knowledge is rooted in action, procedures, commitment, values and emotions, participation and observation" Agbim et al. (2013).

Tacit knowledge is hidden and therefore evolves through the interactions of skills and practice. Some of the properties of tacit knowledge are the ability to adapt, to deal with novel and exceptional situations, to show expertise and know-how, know-why and care-why, to collaborate, to share a vision, and to transmit a culture. Also important are the skills of coaching and mentoring, and the ability to transfer experiential knowledge on a one-to-one, face-to-face basis.



FIGURE 9: Sainsburys supplier update at the Troxy theatre in London's East End

Throughout my career, on occasions I have used sketches, pictures or diagrams to assist in articulating a plan, process, product, coaching, customer or framework. This not only helps the receiver of the message understand but allows me to slow down and clearly map out how to support and execute the objective.

From a qualified practising chef with a real passion for the food industry, to industry leader, I have considered myself an active observer throughout my career, watching what 'good' looks like from the many professionals across many disciplines across the globe. This is a viewpoint that reflects Bandura's (1986) observations of learning where individuals learn by watching others, breaking it down into four key elements:

- Attention - Watching what is going on in your environment;
- Retention - Retaining what has been observed;
- Reproduction - Repeating and copying what was identified; and
- Motivation - Willing and to repeat again and in the right environment.

Holding his hands to stop them shaking, how did a chef from Lowestoft get here? Sainsbury's has fantastic values and I felt honoured to make a difference on such a large scale.



FIGURE 10: After a night dive in Bonarie (Willows)

As a PADI divemaster of 20 years teaching students basic skills, we are taught to break each step into distinct sections, ensuring students are watching carefully, ensuring they retain knowledge by watching them repeat the skills and then taking them on their first underwater dive to apply new-found skills. Whether learning or teaching, I like to understand its relevance to me, then break things into bite-sized chunks and test its application.

Through my reflection and exploring my tacit knowledge, I identified limitations in my professional design practice and explored opportunities to apply theoretical knowledge that would produce a paradigm shift in learning and its application within FMCG. However, it was important to acknowledge that the tacit knowledge and drive I had, had indeed ensured commercial successes, and therefore the value in this tacit knowledge was not to be overlooked. Selden and Fletcher (2019) noted an important challenge facing entrepreneurship researchers is the “three-body” knowledge problem of how to use “theoretical knowledge” to produce “prescriptive knowledge” that communicates the “practical knowledge” of situated practice to students and practitioners of entrepreneurship.

Selden et al. (2019) suggests, to exploit the connections between practical knowledge and prescriptive knowledge, we need to overcome the problem that “know-how” is largely tacit in the moment of real-time forward-looking practice. In other words, the practitioner is not directly aware of their tacit “know-how”, or “tacit knowledge” as noted in figure 11, at the time of practice Selden et al. (2019).

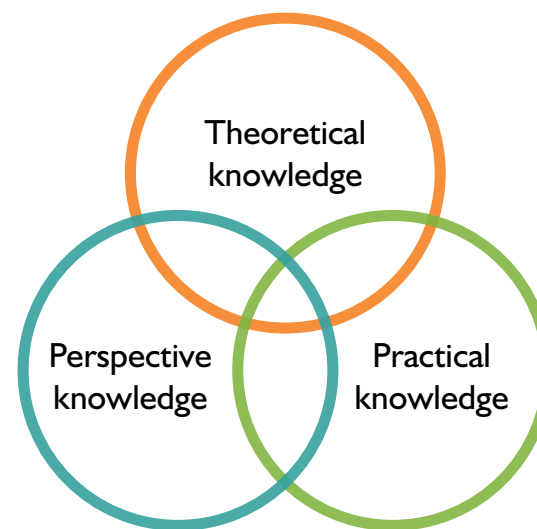


FIGURE 11: Three-bodied knowledge

I consider myself as an intrapreneur, always seeking ways to improve processors, products or market opportunities, keeping ahead of a changing market, this 'know how' had helped me have a successful career in FMCG.

Having professionally survived two global financial recessions, worked in three countries, switched jobs from supplier to buyer, back to supplier and buyer to supplier again, survived working in small family owned companies to global branded companies, the 2020 pandemic of COVID-19 introduced new challenges. The FMCG industry faced unprecedented times, with those in the food supply industry classed as key workers. According to the New Zealand Government (2020), we were classed as ‘essential for maintaining the well-being of people’. Food, according to Maslow (1943), is one of the basic physiological needs figure 12. Suddenly, my career took new meaning.

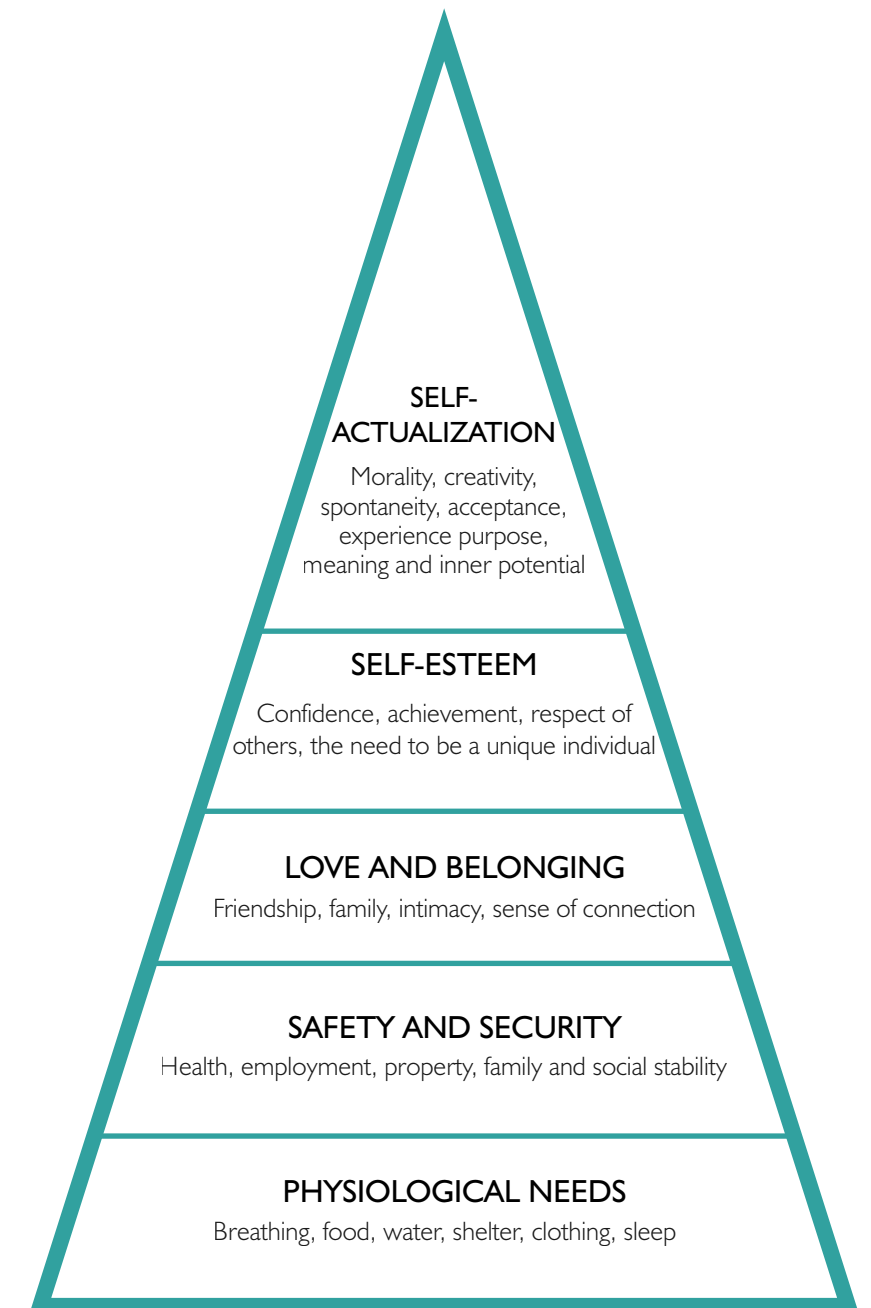


FIGURE 12: Maslow's model of hierarchy of needs (Maslow, 1943)

During COVID-19, I felt legitimised and validated, my focus was optimising forecasting, communications, service and on shelf availability of our seafood.

My ability as a practitioner is to optimise prior experiences and is one that considers the contextual landscape around the role of social, environmental and technology advancements are critical to sustaining the most basic needs. The shifting purchase patterns due to the spread of COVID-19 pandemic resulted in domestic shoppers noticing key changes such as reduced opening hours, Perspex screens at checkouts, stores controlling where customers stand, with floor stickers to ensure safe distance shopping, limiting the number of customers in stores, and selected stores being used as 'dark' stores for online picking only. New entrants moved into the online shopping delivery market, including increased sales in meal-kit, meat bakery and seafood deliveries. Furthermore, there was greater consumer awareness and relative value associated with where products are produced. According to Voice (2020), more trust will be shown to locally produced goods and avoiding imported well-travelled products.

3.1 UK and NZ retail consumer trends in FMCG

Having grown up in the UK and spent most of my adult life working in FMCG, I have noticed incredible advancements, from seasonal items like fresh strawberries and asparagus becoming available throughout the year. I have also noticed huge product ranges in our supermarkets, and food products aligned to the growth in technology with more microwaveable meals, desserts and snacks, and the growth of retailers own branded products. The UK grocery sector is one of the most sophisticated in the world; this is due to the highly dense population and good supply chain networks and the fiercely competitive leading supermarkets.

Over the last 20 years more convenience stores have opened; these tend to be much smaller stores formats with reduced ranges with high foot traffic to accommodate the needs of inner-city workers, commuters and communities in built-up areas. Woolworths New Zealand opened its first convenience format in Albert Street late 2019 in Auckland's CBD. As part of determining the product range, sales data was compared to similar stores formats in Australia, shopper empathy mapping was researched for the differing shoppers (trades people, city workers, tourists and people that live within the city).

Whilst working for Sainsbury's we launched a hybrid store on London's Fleet Street. It was a mix of a mini convenience store and a premium deli, selling freshly baked French baguettes, homemade brunch items like fresh summer berry compotes topped with thick Greek yogurt topped with inhouse-made granola. Whilst technically this was a convenience store, it was also a way to test the market and push boundaries.

Vasquez-Nicholson (2019) notes that in the UK it is the "convenience stores, discounters and online grocery retailers which are the formats seeing the strongest expansion, with major chains opening smaller stores in city and town centres, while limiting the expansions of large-format outlets in out-of-town locations". According to Vasquez-Nicholson (2019), by 2023, the total value of the UK grocery sector is projected to grow 14.8 per cent to \$273 billion (213 billion USD). The food and drink sector is the largest employer in the UK manufacturing sector, employing around 450,000 people across the UK. Food retail in the UK is noting tremendous growth in online valued at 12.3 billion GBP in 2018, with expected increases of 52 per cent over the next five years. In the last few years the nation has noticed big shifts in how and where consumers buy their food, with discount stores and online seeing most of this growth (Vasquez-Nicholson, 2019).

According to Vasquez-Nicholson (2019), these are key market drivers and consumption trends:

- Aging population and increased health consciousness of consumers is creating increased demand for health and wellness products, as well as functional food products.
- Increasingly high-paced society and the rising number of single households are driving the demand for convenient ready-to-eat meals, desserts, and baking mixes.
- Ethnic foods, health and super foods, "free from" products (e.g. gluten or lactose free), and locally grown are further trends that attract more and more UK consumers.
- Increasing share of consumers are viewing their purchasing decision as a political or lifestyle statement (no GMO, only free-range eggs, vegetarian or vegan diet).
- Consumers increasingly require traceability and information about production methods.
- Fair trade and organic products are becoming increasingly popular.

Cody (2019) states New Zealand is a well-developed market and like the UK has a rapidly aging society; by 2026, more than 22 per cent of the population is expected to be over 65. Consumption patterns are changing to reflect modifications in family structures such as increasing numbers of women working, childless couples increasing demand for more people in restaurants, growing popularity of convenience foods, and seeking healthier foods as a result of higher disposable income (Cody, 2019).

According to Howe (2018), millennials are focussed on social responsibility and do not see value in established brands, they are least likely to buy named brands. This increases opportunities for retailers with an own label brand strategy who aim to develop their own identity. Some brands are now reaching millennials through social media and emerging technologies. When brands think about creating digital experiences, they must think about how every aspect of the experience works together, including the influence of great design.

Friedman (2017) noted great design is part of the overall experience and a positive digital interaction is incomplete without it (Friedman, 2017). Targeted marketing through social media, compared with mass marketing campaigns, needs to be more personalised, to navigate purchase behaviour, especially if consumers are uncertain of what they want. Talented marketers can develop lifestyle brands that are aspirational to millennials; they can manipulate what their brands unique selling propositions are to attract greater interest in their products.

Woo (1992) indicates that societies where social values are diverse or are in a stage of transition or flux, we can expect that the individual's wants become more obscure and dissipated. The latter condition makes him or her susceptible to manipulation because the more he or she is uncertain of his or her wants, the more he or she needs an authority to tell them what he or she sees as important (Woo, 1992).

It should be noted, therefore, that responsibly sourced, healthy and convenient seafood, provides key consumer benefits that aligns to a wider notion of value, should be more actively promoted to improve social, health and environmental concerns, and HCD is a critical consideration to aid the desirability, functionality and feasibility. Marketers, product and packaging designers have a responsibility to ensure products or services offered deliver against the brand promise, and thereby develop brand loyalty. Product designers within FMCG must continue to evolve and keep up with the latest trends in consumer behaviours, technology and supply chains to stay relevant and ensure sustained growth. New Zealand's FMCG sector will continue to face disruption, post COVID-19.

To manage evolving trends, according to Miller (2019), manufacturers are under pressure to manage complex environments and address challenges such as bringing growth to categories, managing the in-store experience, and understanding what to do with e-commerce all while managing the financials (Miller, 2019). FMCG must also be able to respond to any interruptions to supply chains such as natural climatic disaster such as droughts, floods or fires, strikes, terrorism, adulterations, blackmailers and global pandemics,

such as COVID-19 (Miller, 2019). Some industries will become affected more than others, and foodservice will be most affected. According to Pruett (2020), a recent research in the evolving landscape, more than half (52%) of shoppers in the US say they will switch to online as a direct result of COVID-19 (Pruett, 2020). To adapt and respond to this disruption to supply chains due to the virus, Woolworths Australia developed a 'Basics box', with delivery within five days, the box consists of meals and snacks (Scanlan, 2020).

Dealing with economic downturn, FMCG operators need to understand, plan and prepare for the eventual recovery; Quelch and Jocz (2009) discuss the key steps are to cluster what the emerging shopper segments will be. This is less likely to be around demographics. The four key elements are the following:

- 'Slam on the brakes' – this segment feels vulnerable and hardest hit, reducing all types of spending.
- 'Pained but patient' – this segment tends to be more resilient and optimistic about the long term, they economise in all areas; as news gets worse, pained-but-patient consumers increasingly migrate into 'slam on the brakes' segment.
- 'Comfortably well off' – these shoppers fit in the top-five per cent income bracket; they continue to ride out any bumps in the economy and they feel comfortable to consume at normal levels.
- 'Live for today' – these shoppers tend to be urban and younger, they most likely rent, and they are unlikely to change consumption behaviour unless they become unemployed.

Through economic downturn, suppliers and retailers must explore the revised shopper clusters wants and needs by overlaying the products and services that are deemed as critical. This is done by reviewing ranges and optimisation of short- and medium-term plans, revised sales forecasts based

on assumed consumer trends, adjusting inbound stocks, production plans, sales patterns, current NPD pipeline, marketing campaigns, current packaging designs and promotional programmes to mitigate risk and optimise product and service offerings to customers (Quelch & Jocz, 2009). Regardless of which group consumers belong to, they prioritize consumption by sorting products and services into four categories:

- Essentials are necessary for survival or perceived as central to well-being.
- Treats are indulgences whose immediate purchase is considered justifiable.
- Postponables are needed or desired items whose purchase can be reasonably put off.
- Expendables are perceived as unnecessary or unjustifiable.

According to Hartanto (2020), the dramatic shift in global purchase behaviour through the Covid-19 virus will mean much higher growth of online shopping, and the gradual decline of traditional retail. During the Covid-19 pandemic, it was essential to cluster our portfolio of products against rapidly changing shoppers needs. This was in order to revisit demand forecasting to optimise customer service and shopper experience. 'Out of stock' impacts availability which is a key performance indicator for retailers and a pain point for shoppers. I assumed anything fully packaged, with a fixed weight and fixed price would see dramatic demand increases, especially if not too expensive, targeting the price conscious shopper looking for essential items. Anything we sold within seafood cases, I assumed dramatic reduction in demand. Through past experiences of financial recessions, I was able to quickly adapt and optimise supply. Hartanto (2020) indicates these dramatic shifts in global purchase behaviours highlights the necessity for the FMCG sector to adjust and respond to these changing environments. Recovering customer categories will require a new skill set, this with design and entrepreneurship playing an important part to that (Hartanto, 2020).

3.2 UK and NZ product design process in FMCG

The majority of manufacturers and retailers in the UK and New Zealand manage the new product development process using a traditional stage-gate model, and this subsection explores its value and limitations.

Traditional stage-gate models which, whilst capturing key stages of the development process and expected financial outcomes, do not cover the human-centred design approach that aims to optimise the evolving consumer trend patterns.

As seen in figure 13, the traditional stage-gate model is linear, according to Cooper (1979), and such models are heavily dependent on documentation across a number of key stages within the process. Most stage-gate models start at the idea generation stage, as noted on the Harry Ramsden’s project discussed in section 2.3, through to the implementation phase with a review post launch or the evaluation stage to cross-reference outcomes against initial objectives. Ettlie (2007) indicates that most businesses across the globe are heavily reliant upon some version of a stage-gate process.

Sommer, Hedegaard, Dukovaka-Popovska, and Steger-Jensen, (2015) argued that the limitations of the linear stage-gate process are that it cannot support the iterative design elements needed to gain stakeholder collaboration required to produce a highly effective process. Iterations in the classic stage-gate model are normally required, and in some cases are critical for successful outcomes. According to Leon, Farris, and Letens, (2013), iterations will not and should not be avoided; however, we should seek ways to understand them earlier in the process.

Another limitation of stage-gate model within FMCG is it can focus more on the internal business process rather than the end user and, as such, can miss the opportunity to design new products in an agile and empathetic way. It can also be disconnected, with individuals or groups operating within silos of task and associated administration. This duplication leads to inefficiencies and generating less output for more money and time.

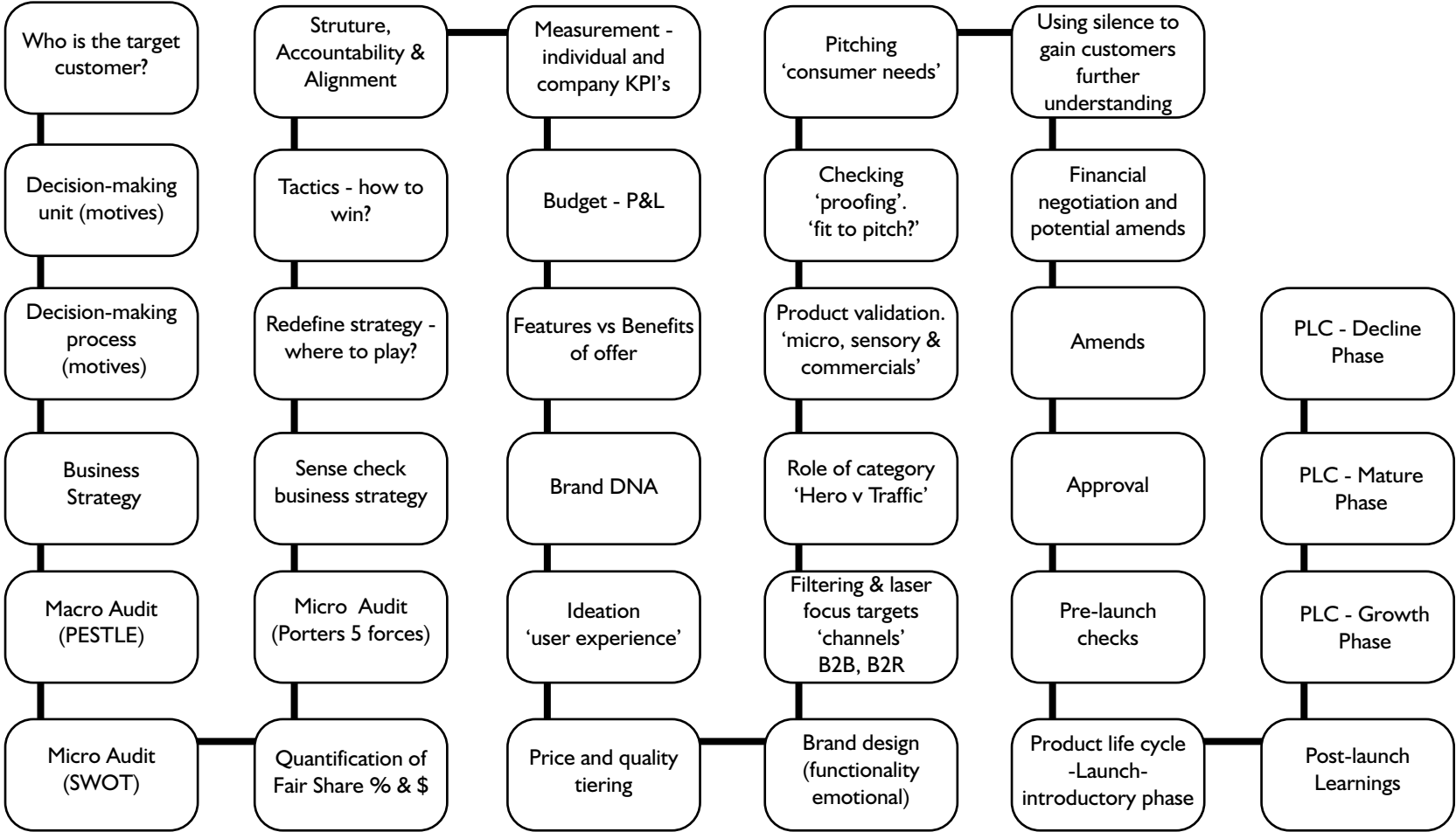


FIGURE 13: My stage-gate model prior to learning about HCD

Sommer et al. (2015) conducted a study looking for improvements they could make to a stage-gate NPD process. They found sales managers described the stage-gate process as leading into “a black hole”, with no feedback for months, to then finally appear in its finished form. The sales managers discussed that a more collaborative process at the front end of development with greater information flow between sales and head office provided improved alignment to strategy and better visibility across the process. Sommer et al. (2015) also discovered that these changes alone yielded little in the way of measurable performance improvements. However, Cooper (2014) has argued hybridised models would outperform current stage-gate processes.

According to Gill (2016), getting innovation right delivers real incremental growth to mature categories. “Innovations succeed because they solve consumers’ toughest day to day challenges and unmet aspirations” (Gill, 2016). Begel and Nagappan (2007) noted that hybridised models incorporating agile ways of working to classic stage-gate models improved communication, coordination and greater flexibility. They did note established managers are comfortable with stage-gate systems and therefore needed greater staff adoption to established processes. Abrahamsson (2003) noted “Agile methods are lightweight, with faster, nimbler processes than those invoked by more-traditional development methods”.

3.3 Summary

Through evaluation and research into current design methodologies and their suitability within FMCG and seafood within the context of HCD we must reject stage-gate models used in isolation, as they do not collaborate with stakeholders and do not employ HCD methodologies.

Therefore, due to these limitations, developing a hybridised design model for FMCG is required by adopting an HCD principles by overlaying Kumar and IDEO frameworks to the classic stage-gate model, and in doing so will provide three key benefits:

- Classic stage-gate model is culturally entrenched in some businesses, through an intertwined hybridised design model will support wider business acceptance and adoption.
- The shopper or user is brought to the centre of decision-making for manufactures, which in turn brings them closer to the buyer within retail. According to Gill (2016), “Understanding consumer pain points sparks great innovation. Breakthrough leaders put consumer demand at the centre of all innovation efforts” (Gill, 2016).
- More efficiency and effective processes within NPD, doing more for less.



CONTROL

TECHNOLOGICAL ADVANCES AND PROFESSIONAL CONTROL OF FEEDING FARMED SALMON
WILLOWS

Section _4

4.0 Further Seafood Issues

As noted, consumer awareness around seafood sustainability is limited across the UK and NZ.

This section explores further seafood industry issues, such as the importance of seafood within shoppers' diets, it looks at the importance of the societal value of a connected service experience within traditional retail shopping environments, to the communities that retailers aim to serve. In addition, it introduces considerations regarding packaging alternatives used in retail and the increasing risks to the environment through the lack of shopper awareness.

It is discussed to demonstrate a concerning trend of poor global nutrition, lack of consumer value through limited knowledge of the resource management of seafood, and of the environmental considerations regarding packaging. These, when overlaying the failings and limiting factors of traditional established stage-gate models, highlight that if we continue with the status quo, the seafood industry is at crisis point. Therefore, how might we consolidate the issues facing seafood within retail, within my limitations of tacit knowledge, and the limitations of stage-gate models to implement a radical new design?

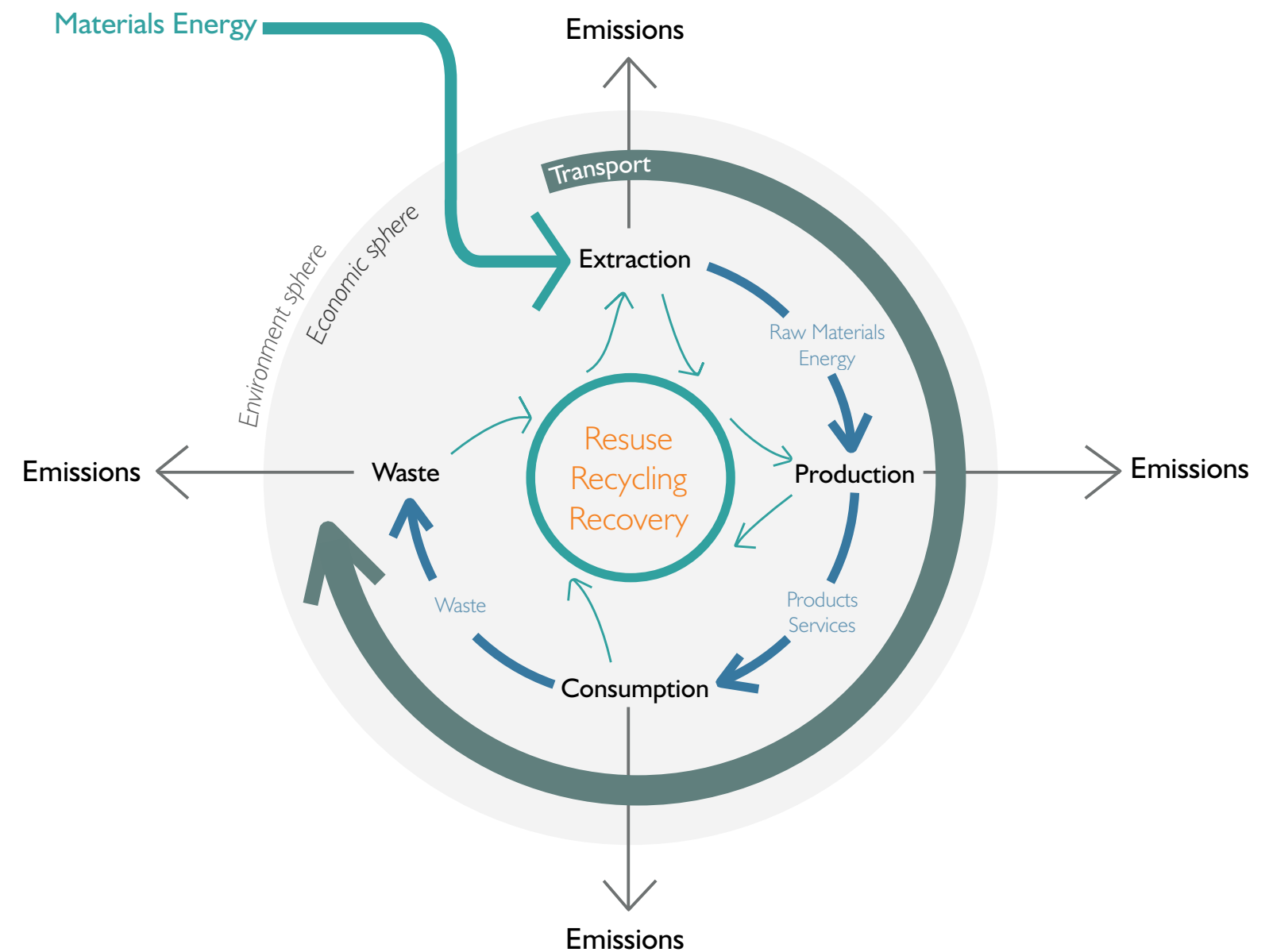


FIGURE 14: Life-cycle chain: extraction – production – consumption – waste (European Environment Agency, 2016)

4.1 Environment

The impact of food farming, manufacturing and retail operations have a direct impact on the oceans, these in turn directly impacting the marine resources. The European Science Foundation (2009) states that since the beginning of the industrial revolution the release of carbon dioxide CO₂ from our industrial and agricultural activities has resulted in atmospheric CO₂ concentrations that have increased from approximately 280 to 387 parts per million (ppm). The atmospheric concentration of CO₂ is now higher than experienced on Earth for at least the last 25 million years and is expected to continue to rise at an increasing rate. This will have impacts on several economically important marine resources, including fish stocks, shellfish, and coral reefs and it will impact on communities involved in fishing wild or farmed species, and these societies will require resilience and adaption to survive (ESF, 2009).

The oceans already take up around a third of the CO₂ produced by humankind. "Evidence indicates that ocean acidification is likely to become a significant change to the ocean chemistry and have negative implications to ecosystems" (EEA, 2016), as noted in figure 13.

Global consumption and its associated industrial expansion has delivered significant economic growth; however, there are concerns about the sustainability of these growth patterns. Resources used create waste generation which has a distinct environmental impact. This model of economic growth has a direct impact on the environment and shares many of the same motives related to how, and where, we produce and consume goods (EEA, 2016).

Wild-seafood harvesting and continued supply is dependent on the ecological balances of the environment in which it grows.

The consumption of meat, at least when viewed from the global perspective, is one of the most environmentally damaging day-to-day behaviours that humans perform. This is due to the vast range and severity of impacts tied to the raising of animals for food, including land and water degradation; habitat and biodiversity loss; and contribution to pollution, ocean dead zones, and climate change (Lentz, 2018).

4.2 Global fish stocks

Wild-caught seafood requires perfect ecosystems to ensure survival. With sustainability of farmed seafood such as salmon, basa and prawns often only assessed at the national level, and generally focuses on whether it is sustainable in the long term, taking into account biological, ecological, social and economic factors. With wild-caught seafood overfished globally, there is therefore an opportunity to promote sustainably caught seafood, creating greater consumer value.

Food and Agriculture Organization (2016) states that 31% of the world's wild fish stocks are estimated to be overfished with 58% fully exploited and only 11% as underfished (FOA, 2016b). Wild seafood is very different from managing farmed fish or farmed livestock which may be controlled, supported and enhanced through modern farming practices.

According to Carr (2020), farmed fish, or aquaculture, has seen large growth, whilst wild-fish growth is relatively flat and not growing, as noted in figure 15. Farmed fish growth has overtaken that of beef.

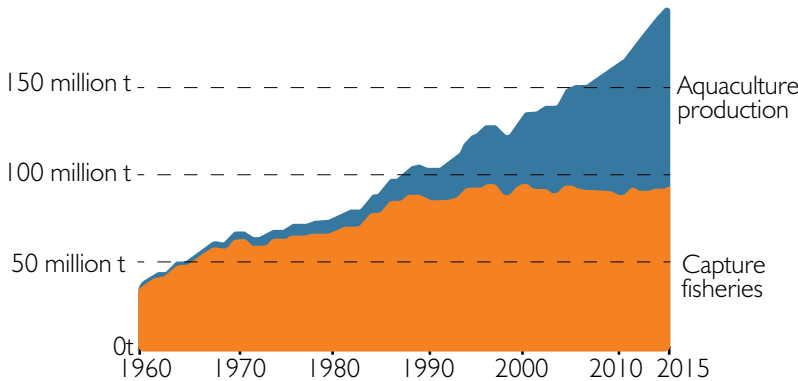


FIGURE 15: World Seafood Production (Food and Agriculture Organization, 2008)

Guillen (2018) remarks many countries rely on seafood imports to meet national demands. Hence, seafood sustainability assessments are needed to take account of domestic production and net imports which are driven by national consumption demands. It is therefore important to know whether imported seafood originates from sustainable sources (Guillen, 2018).

4.3 Seafood and its importance to nutrition

The World Health Organization (WHO) recommends adults eat two portions of fish a week, one of which should be oily, such as salmon (WHO, 2018). Whilst UK and NZ governments promote healthy food campaigns encouraging shoppers to 'eat five a day' fruit and vegetable portions, little is promoted in the industry about consuming at least two portions of seafood a week. This presents an opportunity to create wider shopper value within retail.

According to Valdimarsson and James (2001), fish aids good health, and fish is seen more as an important source of micro-nutrients, minerals and essential fatty acids than other proteins. Per capita consumption of fish has risen on a global basis to 15 kg/head/year, but projected population growth and mismanaged resources will make this difficult to sustain. Fish consumption, even in limited quantities, has been shown to protect against coronary heart disease.

Monsivais, Aggarwal, and Drewnowski (2014) indicates that better personal nutrition through habits and skills are associated with healthier lifestyles. More money is spent on eating out of home for those who cook for less than an hour a day. Spending more time on food preparation at home is essential to better and healthier nutrition amongst adults.

A study was conducted on 28 infrequent consumers of seafood who participated in three semi-structured two-hour focus group discussions in Denmark, Norway, and Iceland. The results were then linked to the Stage-Gate model for consumer-based new product development (NPD). It was demonstrated in a study by Altintzoglou et al 2010 that participants thought of seafood as either healthy or convenient, although there were concerns about the amount of effort required to prepare it.

These concerns resulted in an expression of seafood shoppers' needs for products that are attractive, healthy, palatable, and convenient. In particular, the newly developed products should be accompanied by clear advice on preparation methods and materials. An increase in seafood availability coupled with lower prices would encourage these consumers to add seafood to their diet more often Altintzoglou et al. (2010). Customer insights on ease of preparation for seafood has ensured I capture within concept development, packaging design or recipe suggestions in recipe magazines the ease, skill level and preparation time to engage shoppers.

Food-price increases for primary items such as meat, poultry, and fish are 4.7%, higher than those of restaurants and ready-to-eat food, at +3.3% (Stats NZ, 2019). This poses a risk to the lower-affluent shoppers if restaurant price inflation is not as high as on items that encourage a healthier lifestyle, especially if there is a trend for customers showing a need for greater convenience.

Reducing meat consumption has a positive effect for health and the environment, highlighting a need to educate consumers, and according to a recent study by Stubbs, Scott, and Duarte (2018), there appears to be a lack of awareness amongst consumers as to how meat consumption affects health and climate change, which is likely to undermine intention to change.

According to a recent study by Kim, Keogh, and Clifton (2015), red and processed meat consumption is related to an increased risk of type 2 diabetes. In 2014, 8.5% of adults aged 18 years and older had diabetes, in 2016, diabetes was the direct cause of 1.6 million deaths and in 2012 high blood glucose was the cause of another 2.2 million deaths of the 56.9 million deaths worldwide in 2016, more than half (54%) were due to the top ten causes. Ischaemic heart disease and stroke are the world's biggest killers, accounting for a combined 15.2 million deaths in 2016 (WHO, 2018). These diseases have remained the leading causes of death globally in the last 15 years (WHO, 2018).

A study conducted by Mackay et al (2012), established Māori females are nearly twice as likely to have diabetes (diagnosed and undiagnosed) as non-Māori females, after adjusting for age.

Therefore, seafood should be considered to be a low-calorie protein source and a natural source of vitamins and minerals and represents an excellent natural alternative to red meat.

I feel strongly that access to healthier products should be actively promoted by socially responsible governments and retailers.

4.4 Plastic, single-use bags and emerging alternatives

This section will focus on the specific shopper proposition relating to the primary food packaging, single-use plastic bags and alternatives such as paper and bring you own food containers. This section will not explore the supply chain network of the seafood processing industry.

In a recent report it was identified by Briggs (2019), that after the Bronze Age and the Iron Age, the age of plastic is being entered and that “decades from now, plastic will be used most likely as the geological marker of what we’ve left behind”. Fragile ecosystems are being littered with chemically laced oils. Unknown yet is the effect of microplastics, a term referring to small pieces of plastic <5 mm that are now in our marine ecosystems (Briggs, 2019).

Plastic is used across the FMCG industry, protecting food from bacteria and viruses and helping to improve its shelf life and, in some cases, reducing food waste; however, it is critical to the planet and our ecosystems to keep plastic out of the oceans. According to Hancock (2019), the problem of plastic in nature, particularly in our oceans, is a global crisis. Every minute, about a dump-truck load of plastic goes into the oceans, sully beaches, hurting wildlife, and contaminating our food supply (Morton, 2018). That rate of dumping equates to eight million metric tonnes of plastic, equivalent to the Eden Park stadium stacked with plastic more than a kilometre high (Morton, 2018).



FIGURE 16: Tragic image illustrating the problem of plastics in our oceans (nevodka, n.d.)

We must avoid single-use plastics entering our ecosystems, this can be achieved through better education. In addition, we should find suitable alternatives that offer environmentally sound solutions that provides functionality and desirability based on HCD principles.

Whilst working for Woolworths New Zealand in 2016 a number of people were discussing and debating ways to remove single-use plastic bags from our store environments. The focus was very much on the why we should do it, and the true environmental benefits, and how we were going to do it given we had hundreds of stores with check outs specifically designed for single use plastic bags, what would be the best alternatives and their respective carbon footprint would be, and what the customer and media’s view would look like during transition.

Prime Minister Jacinda Ardern said that plastic was the biggest subject schoolchildren wrote to her about. “We’re taking meaningful steps to reduce plastic pollution, so we don’t pass this problem to future generations” (Klein, 2018), as noted in figure 17. Countdown was first in removing single-use plastic bags at the checkouts in New Zealand.

In 2018 retailers were given six months to phase out the single-use plastic bags or face fines of up to NZ\$100,000.

In 2019 to help reduce the need for plastic bags within seafood, deli and meat counters, Countdown rolled out nationwide the project of Bring Your Own (BYO) containers. Announcing the move, they stated the containers will be cleaned, dried and weighed by staff before filling (NZ Herald, 2019). Clearly, plastics should not find their way into the oceans and they should be managed better through greater customer awareness of the slogan ‘reduce, reuse and recycle’.

It is the misuse and improper disposal of plastic bags that is causing harm to the environment, not the product itself. A total ban on plastic bags will only gloss over the lack of an effective environmental management policy in a given country. It will not save the environment from the ill-effects of a ‘throw-away’ mentality (Casanova, 2012).



FIGURE 17: New Zealand's Prime Minister Jacinda Ardern leads a beach clean-up (BURNELL, 2019)

4.5 Market disruptors to FMCG

As described by Ackerman (2017), the biggest disruptors to FMCG are supply chains to help reduce costs, improve traceability and food safety, with big data or artificial intelligence causing a shift from mass marketing to mass customisation. Two recent example of data collection is Cambridge Analytica that gathered between 4,000 and 5,000 data points on each individual in the US, and voice search such as Amazon's Alexa. In 2020, the COVID-19 pandemic became a major social disruptor to FMCG. The virus led to product limits being imposed for stores and online, additional incentive bonuses paid to staff, weekly mailers and instore promotions ceasing, sanitisers being placed in-store, and increased store cleaning. New Zealand retailers decided to shut some of the seafood serve-over counters at the beginning of the lockdown, choosing to overwrap products and sell in the pre-packed space instead. This action causing more packaging into the environment, but helping customers maintain social distancing. Countdown decided to temporarily stop accepting BYO containers (Countdown, 2020). Foodstuffs switched supply off on all non-essential items to focus and prioritise on the immediate needs of the nation.



FIGURE 18: Countdown starts BYO trial (NZHerald, 2019)

As people involved in food supply were considered essential workers in New Zealand, the role of personal protective equipment (PPE) was critical, and controls for supermarket workers included regular handwashing, maintaining more than 1-metre contact distance from people with potential COVID-19 symptoms, and as they worked in environments where they were touching surfaces, they should wear gloves (MOH, 2020). In the early stages of COVID-19, supply issues had arisen through global shortages of disposable gloves, for example, with suppliers prioritising supply of specific types of PPE to emergency services and healthcare providers, and supply problems were predicted to continue for the foreseeable future (MOH, 2020). With the majority of New Zealanders needing food, the potential flow-on effects of the COVID-19 pandemic were considered high. New Zealand retailers reviewed protecting workers, merchandisers and suppliers, and assessed management controls (Worksafe, 2020). For example, New World implemented contactless delivery where deliveries were left at the doorstep for all customers, and has requested all customers self-isolating, vulnerable, and unwell to inform Foodstuffs prior to delivery (Foodstuffs, 2020).

The risks of contact with the virus within a retail environment is plastic found on packaging, reusable containers, returnable large outer trays found in produce, meat and seafood and shopping trolley handles. The virus can survive on these surfaces for up to 72 days.

On cardboard the virus may last for up to 24 hours, which poses a risk to online shoppers who believe limited human contact has no risk. Subject to temperature the virus may last for up to four days on glass used on packaging and within store chillers for dairy, freezers (Petrus, Padilla, & Zaiets, 2020).

All of the factors associated with COVID-19 are affecting consumers' perceptions of FMCG, how and where they shop and, more importantly, what they shop as the recent trends clearly show greater demand for more basic items such as dried pasta, dried rice and tinned meat. Of note will also be the long-term consumer perceptions associated with these changes. At the time of writing these were yet to be known.

4.6 The decline of UK 'serve over' seafood cases

In 4.5 recent market disruptors were identified which is impacting the gradual decline of high street fishmongers and 'serve over' seafood cases in retail globally. Holland (2014), observed the gradual closure of traditional independent high street fishmongers. In the late 1940s there were between 7,000 and 8,000 fishmongers; these days there are about 950 operating in the UK (Holland, 2014). Traditional fishmongers have wider product ranges, expertise and great hygiene standards. One of the benefits of wider product ranges is it provides shoppers with greater range choice and in doing so makes the offering look more desirable, noted in figure 19 demonstrates the alignment between independent fishmongers and consumers. In having professional fishmongers who are passionate about seafood they are a subject-matter experts with a wealth of knowledge of seasonality, butchery and cooking knowledge.

The decline of fishmongers in the UK is not only noted in small independents but is now observed in the larger retail chains across the globe. Customers see greater value in large range choices, good product knowledge and hygienic environments.

However, some retailers adopt a generic and formulaic approach to seafood counters whose very existence is dependent on seasonality, limited shelf life and ever-changing availability depending on the days catch. Those retailers tend not to employ product specialists, choosing to employ generalists that have a lower paid hourly rate. Also, this eventually poses greater financial risks for retailer whose generalists are accountable for managing the ordering, displaying and selling large and relatively complicated seasonal ranges. It is noted many UK seafood counters are closing. Blake (2019), explains Tesco (UK) closed 90 seafood counters out of their 790 stores, with the remaining stores only offering seafood counters at peak days; they reported they can deliver a "simpler and leaner structure".

What do independent retailers see as their USP?

1. Quality
2. Personal service
3. Price
4. Product range
5. Reputation
6. Fresh fish
7. Experience/Expertise
8. Hygiene
9. Accessibility

Consumers' key requirements from a fish retailer

1. Quality/taste
2. Choice
3. Expertise
4. Price
5. Environment (Hygiene)
6. Accessibility
7. Reputation
8. Relationship

IMPORTANCE

FIGURE 19: Alignment between independent fish mongers and key consumer requirements (Seafish, 2005)

Asda, part of Walmart group, announced in early 2020 they are closing all seafood counters, and replacing with "food to go, including sushi" (Seaman, 2020). Wood (2020), writes this cost-cutting at Asda supermarket chain puts 2,832 jobs at risk as the Asda begins a consultation process with staff facing threat of redundancy" (Wood, 2020). This provides evidence that closing or reducing seafood 'serve over' counters reduces merchandising space for healthier and more environmentally friendly sources of protein that seafood provides.

The CEO of Sainsburys, Mike Coupe, announced Sainsburys would close fish counters to free up space for essential items as the COVID-19 spreads across the UK (News, 2020). Countdown supermarkets have closed seafood counters during COVID-19, as have some of the New Worlds and Pac N Saves; this short-term focus during this global pandemic makes sound business sense in a redeployment of staff to more essential items.

However, with two of the largest UK retailers closing seafood counters, thereby necessitating the need for more packaging when moving to prepacked seafood, less community engagement makes it easier to switch customers from cooking from scratch to calorific convenience ready-made meals or restaurants. This goes against the WHO recommendations as outlined earlier in this section. As a global industry, HCD must be adopted by seafood counters for shopper experience as part of their very survival by improving education around meal preparation, environment, convenience and nutrition.

4.7 Summary – The problem with seafood counters extinction

In order for seafood counters to survive and thrive, they must become more relevant by aligning with shopper trends and provide solutions to shoppers' everyday problems.

Simon Sinek discusses 'My Why?' in his 'Golden Circle' Model (Sinek, 2014), where he explains companies know what they do and how they do, but some do not know 'Why' they do. My why is based on the alarming evidence of the decline of the independent fishmongers and seafood counters in retail, many facing extinction as noted in figures 20 and 21, a change that reminds me of the gradual decline of the fishing industry on the East Coast of England; their very survival is dependent on creating the wider notion of value and this presents a key opportunity by utilising HCD principles.

My exploration is to ensure seafood and its consumption is considered pivotal by retailers, thereby enabling customers to make healthier food choices. Also important is adopting key trends of delivering more interesting and convenient products. If we address the decline of traditional seafood retailing and improve accessibility to better nutrition and enjoyment, this will stimulate sustained growth and value in our domestic market and prevent its extinction.

Environmentally and socially, it is critical to source sustainably, reduce packaging, control food waste, develop food preparation skills in our communities and encourage seafood consumption for physical well-being, and maintain a human exchange element as part of social and mental well-being by providing a level of shopper value beyond the notion of purely financial measures.

Some small seafood independents flourish financially, enhancing a localised experience within communities, in doing so providing a sense of place. This serves as an opportunity for larger retailers to replicate and adopt principles of value to drive repeat purchase to create shopper loyalty. The next two sections explore design frameworks, my tacit knowledge overlaid with the HCD framework and the generation of a design model that explores creating value beyond just the notion of financial value.



FIGURE 20: The human element for stakeholders (McKeating, 2019)

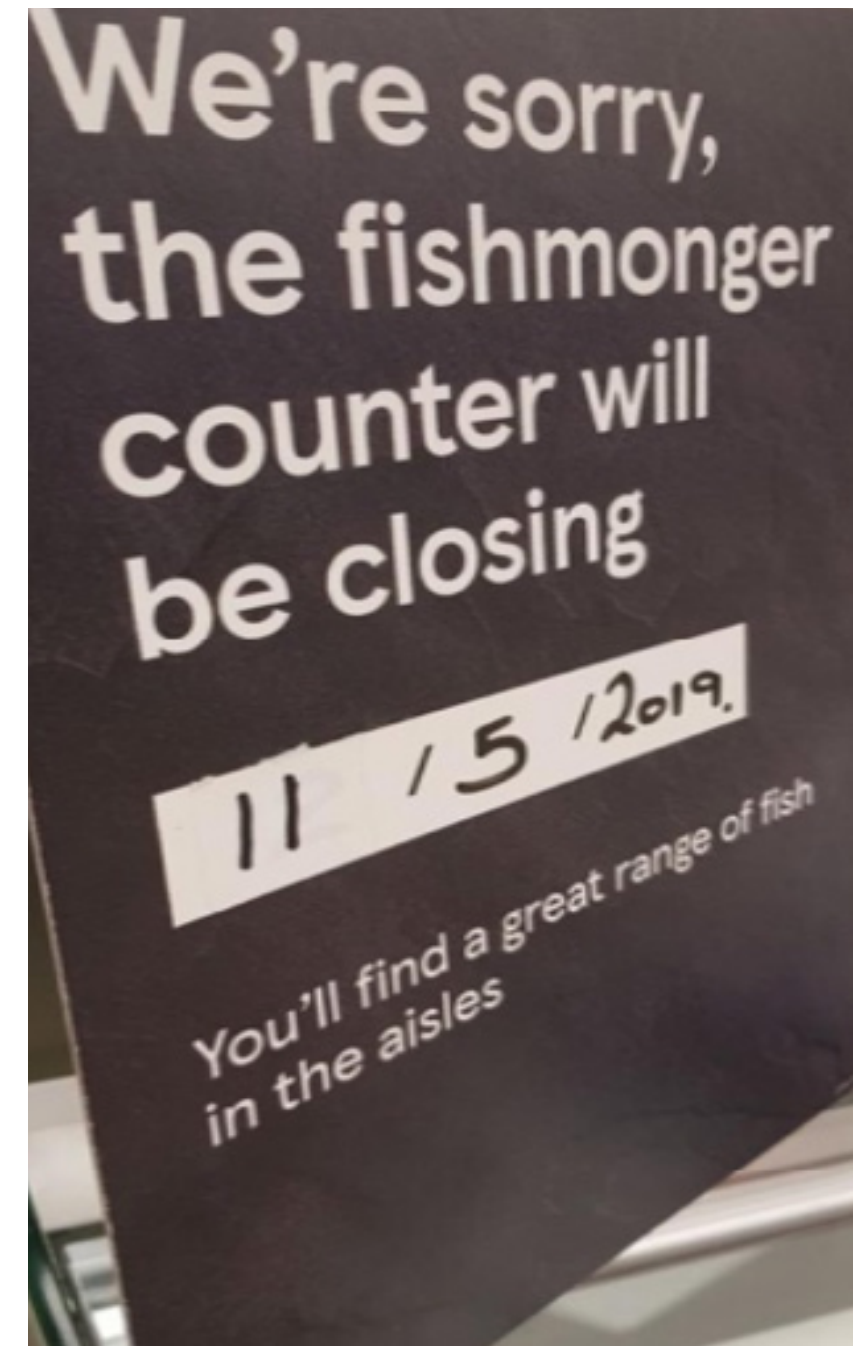


FIGURE 21: The human element for stakeholders (McKeating, 2019)



EVALUATION

Section _5

5.0 Key insights and learnings from established design model evaluation

My prior engagement with development tools within FMCG was using the established stage-gate model. It was utilised primarily in fresh added-value foods such as chilled pizzas, ready meals, prepared leaf salads, coated seafood, soups, deserts and dressed salads. As the industry standard, the majority of FMCG retailers and manufacturers use the stage-gate process as a tool for NPD they will sell under a retailer's own brand or a vendor or supplier brand. The more advanced and successful businesses use trend research, scan data and qualitative research. This section explores established design models and evaluates these models against industry FMCG practice, my prior experiences within manufacturing and retail, and identifies how might we develop new learnings through explicit knowledge gained through research to an established practice. Some tools and models will be considered in the adoption of a refined design process within the context of FMCG.

Ottenbacher, Shaw, and Ermen (2006), advocates the use of a development model in the innovation process does not guarantee success.

Bakkavor had a great deal of focus on the stage-gate development model, and is a global manufacturer of chilled value added products for retailers and foodservice with a revenue of 1.8 billion GBP. Having spent ten years in multiple commercial and development roles, most of my tacit knowledge may be attributed to my co-workers and customers. Booz, Allen, and Hamilton (1982) demonstrated a connection between the use of innovation process models and an increase in the likelihood of success in a variety of settings.

There are a number of models of the stage-gate process that typically would include between six and eight key stage gates:

- Idea generation
- Screening and evaluating ideas
- Concept development and testing
- Marketing strategy
- Business analysis
- Product development
- Test marketing
- Commercialisation

(Gurbuz, 2018)

The traditional stage-gate model has a blind spot within the context of FMCG, as it does not review the wider emotional connection of product and service. It tends to look at products in isolation and not consider the customer shopping experience from within stores, or include touch points such as packaging, unpacking and preparation at home. This is where HCD has a distinct advantage over the stage-gate model.

In one business our qualitative customer feedback was we were poor at NPD, this was confusing as we had fantastic impartial sensory results in product benchmarking and a compelling pricing strategy, which was well implemented.

On further investigation we found we were actually poor at our in-store execution, delivering minimal positive impact for our customers. We shifted our efforts from launching a few random products in each category, to launching NPD for entire categories, including new packaging. With fewer, more meaningful product launches, this improved our NPD perception.

Whilst the concept of HCD is not a new one, it is in the context of chilled foods within FMCG. Through exploring established design frameworks, I was able to overlay opportunities to my tacit knowledge to isolate gaps within the traditional stage-gate model and add key elements from other design models which I will discuss later.

There are many different design models to help communicate and facilitate the design process, but to add value within the FMCG context they need to be centred around finding an answer, solution or opportunity. With this consideration I explored many models, some had limited alignment with FMCG, an example of this being the engineering design model from Next Generation Science Standards (NGSS). It has three core elements, as noted in figure 22:

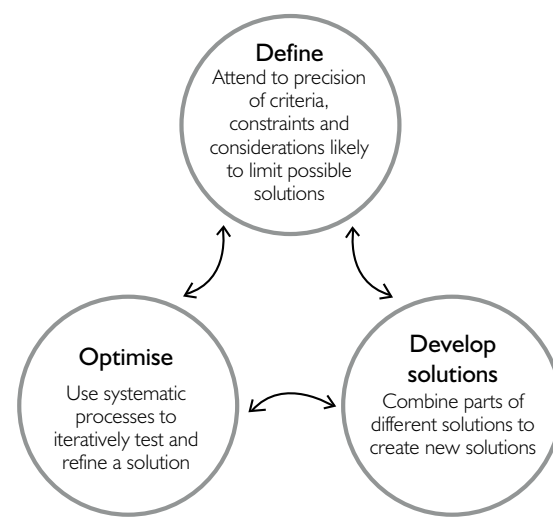


FIGURE 22: Engineering design tool (NRC, 2012)

- Defining problems involves stating the problem to be solved as clearly as possible in terms of criteria for success, and constraints or limits.
- Designing solutions to problems begins with generating a number of different possible solutions, then evaluating potential solutions to see which ones best meet the criteria and constraints of the problem.
- Optimising the design solution involves a process in which solutions are systematically tested and refined and the final design is improved by trading off less important features for those that are more important. (NRC, 2012)

In the NGSS model, like many models points out, the stages do not always follow in order. At any stage, a problem-solver can redefine the problem or generate new solutions to replace an idea that just isn't working out. "While creativity in solving problems is valued, emphasis is on identifying the best solution to a problem, which often involves researching how others have solved it before" (NRC, 2012).

A flaw of the stage-gate model typically found in FMCG is that the process requires closure of a 'stage' or 'gate' before proceeding to the next. Established design models demonstrate alternatives to the classic knowledge historically used in FMCG, alternative considerations around the non-linear approach to the design approach, and most importantly the notion of design around customers' wider needs within the context of their life, and not within the context of the supermarket.

Whilst the engineering design tool simplicity is useful, it is not suitable for my objectives within FMCG as my model critically requires a more adaptive HCD process, by having a greater level of customer empathy as to how they use products or services and what real problems they have. However, it is beneficial to explore alternative design approaches used in other industries.

5.1 Kumar design model evaluation

Vijay Kumar has over 30 years' experience in the field of design, having consulted to global companies such as Procter & Gamble and Kraft Foods. He is the author of the book 101 Design Methods in which his design model adopts a user-centric framework overlaid with organising modes of thinking, orientated around initial primary and secondary research. Vijay Kumar indicates seven key modes within his process, as noted in figure 23. Kumar identifies additional and distinct perspectives that he refers to as mindsets, which ensures each mode is looked at as part of a greater whole. The iterative and non-linear nature of Kumar's innovation process is within the scope of own-label fresh FMCG. The tools used in Kumar's design framework cover critical areas required within FMCG.

He discusses the importance of understanding the latest changes happening in the world today such as the importance of pace of change in political, economic, social, cultural, scientific, or technological areas. He also points out the importance of seeing overviews, foreseeing trends, reframing problems and forming intents (Kumar, 2013). This is much more suitable to FMCG than the engineering model explored previously.

Kumar breaks his design model into four defined stages: research, analysis, synthesis and realization. Within this structure he overlays seven key modes of the innovation process:

- Mode 1: Sense Intent
- Mode 2: Know Context
- Mode 3: Know People
- Mode 4: Frame Insights
- Mode 5: Explore Concepts
- Mode 6: Frame Solutions
- Mode 7: Realize Offerings (Kumar, 2013)

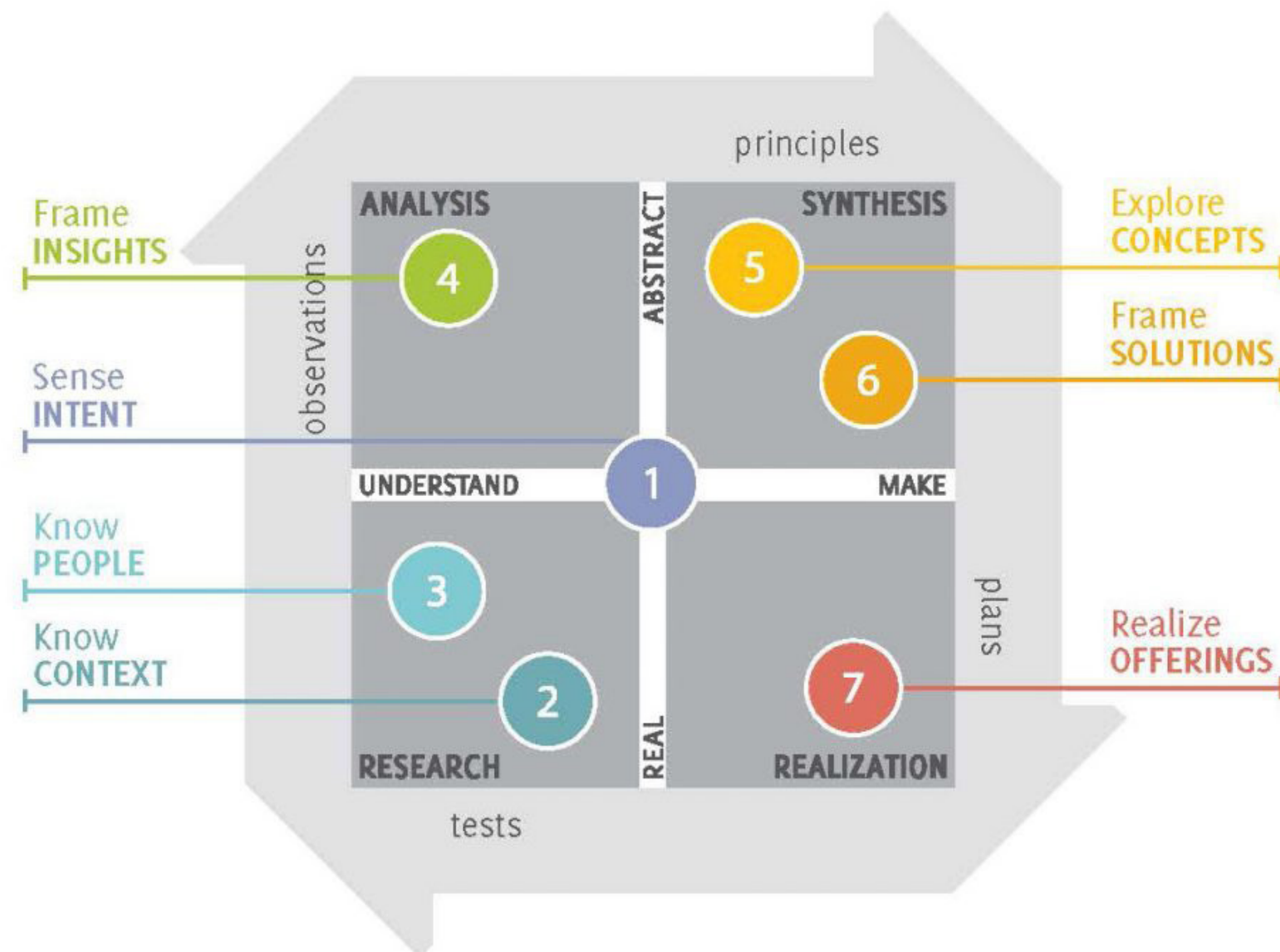
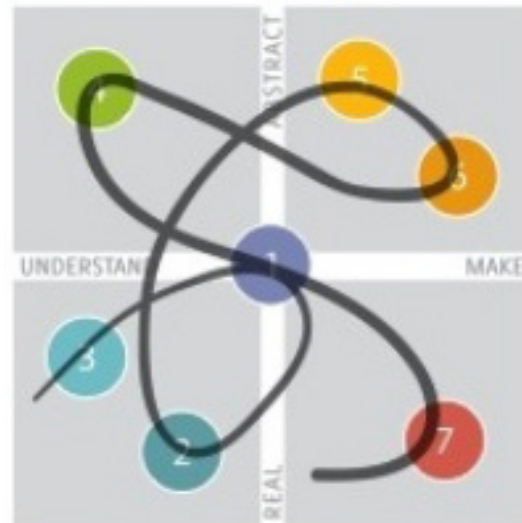


FIGURE 23: The design innovation process (Kumar, 2013)



In reality within FMCG, many projects are nonlinear; for example, a project may start with a brainstorm session (exploring concepts), and then proceed backwards to research and analysis to validate and improve the idea. A process may also be iterative, requiring many circles through the process, and often through one or more modes as noted in figure 24.

Whilst conducting a focus group session on new chilled soup flavours, it transpired shoppers had a problem with the current packaging not standing up consistently in the fridge, due to the packaging being a bell-bottomed bag; had we applied HCD originally we would have shopper empathy to know how they used our products in everyday life.

According to Kumar (2013), these are the four core principles of successful innovation:

- Build innovations around experiences
- Think innovations as systems
- Cultivate an innovative culture
- Adopt a disciplined innovation process

Kumar's model allows a simple approach to research through to analysis and synthesis, the tools identified within Kumar's work are detailed and relevant to FMCG, and whilst it provides simplicity, the model in the way it overlays the design framework, it is not suitable for my objectives within FMCG. I need a model which identifies a level of structured flow around the design thinking.



FIGURE 24: Nonlinear and Iterative processes (Kumar, 2013)

5.2 IDEO design model evaluation

IDEO is a global design consulting firm employing over 700 people worldwide across nine locations, and led by CEO Sandy Speicher. The firm is renowned for being the early leaders of HCD.

The simplicity of the IDEO model and its high-level process flow is aligned with established stage-gate processes used currently in FMCG, and the framework of diverging and converging reflects FMCG more than Kumar's model, as it enables clarity and visual communication of project workstreams. However, it lacks some of the valuable tools within Kumar's design modes. The IDEO framework is my preferred approach to answering the evolving design practice.

In our Auckland office, we have a giant white board with an HCD template that is used as a visual management board on which co-workers and I place Post-it notes on; it provides clarity of the challenges and opportunities we face.

By its very nature, mind-mapping concepts or identifying problems stimulates many ideas or scenarios to review. I have worked for some businesses where the openness and notion of sharing and listening to each other is limited, this having a material effect on morale. In one company we had poor team results; this reflected how people were feeling, and as a management team we realised whilst we were listening at our morning team meetings we were not actively listening. And, therefore, it may be considered we did not show any real empathy. We collectively took on board this observation, drove ownership and accountability and through active listening we improved our team feedback results.

According to Schwab (2018), Michael Hendrix, a partner and leader of IDEO, warned that some businesses may use design-thinking methodology in superficial ways. He suggests one needs a strategy to track progress and impact to truly deliver a culture of design thinking. Critically, a culture is also needed where co-workers trust each other to share openly share new ideas; some cultures are highly critical and will crush new ideas.

IDEO's Michael Hendrix encourages the notion of "playfulness and joy to create the right conditions to allow people to be more creative". In some highly task-based, highly efficient cultures, they may push joy aside, whilst celebrating intellectualism can create threats to an innovative culture (Schwab, 2018).

The most successful businesses I have worked for have had a high degree of personal trust among all co-workers, across all departments. Ideas and concepts shared across multidisciplinary teams where everyone acted as a

designer yielded the most innovative, engaged and valuable outcomes. The IDEO process of HCD optimises learning from other people, being open to developing big and broad, in the ideation phase, then to focus on what is desirable, feasible and viable for the target market.

The framework of the IDEO model and the HCD approach is user friendly within the context of FMCG, as noted in figure 25, but lacks the robustness of Kumar's tools.

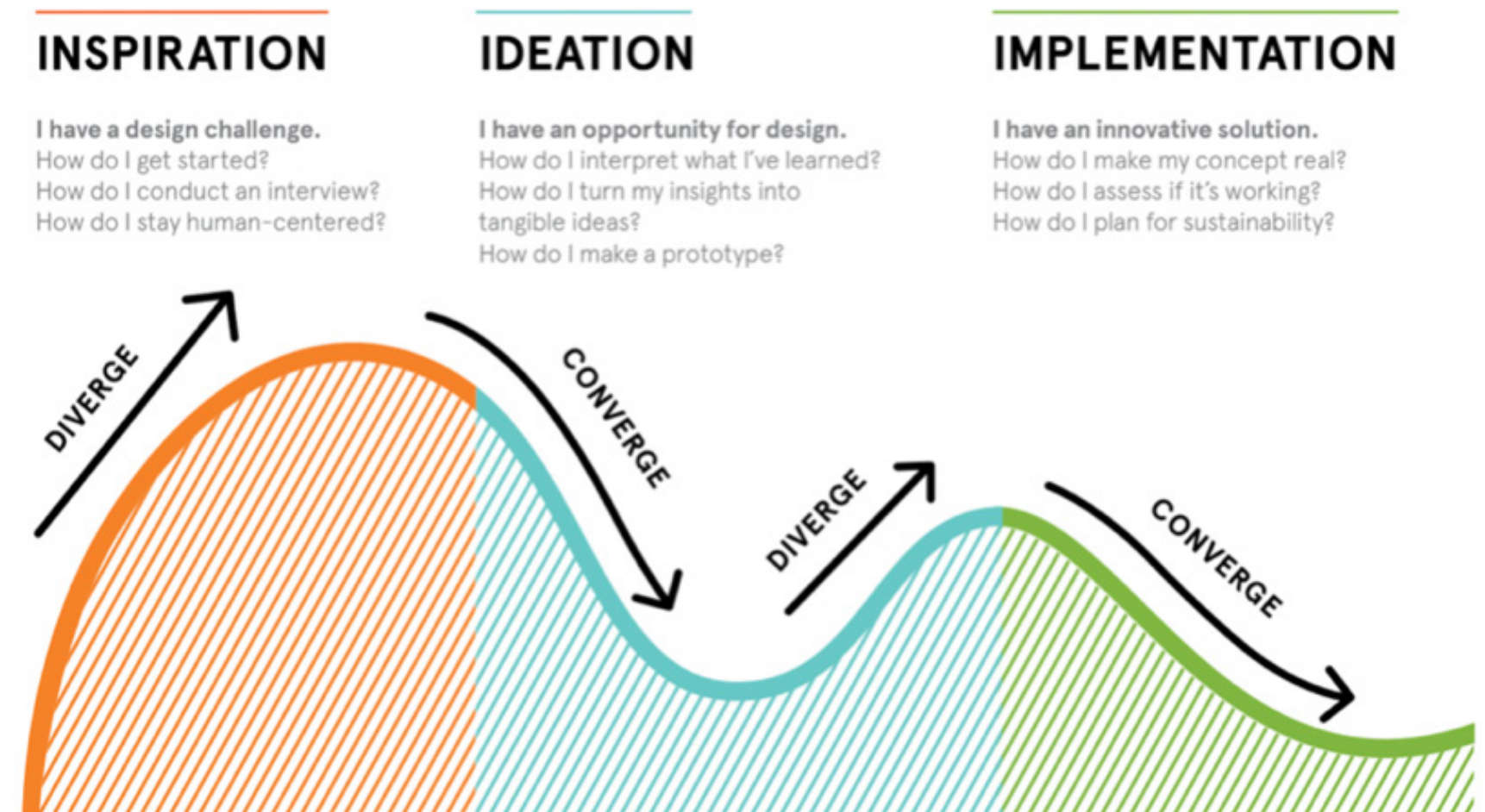


FIGURE 25: The IDEO HCD process (IDEO, 2015)

5.3 Summary

Exploring established design frameworks such as Kumar's and IDEO's, overlaid with my prior tacit knowledge within FMCG, allowed me to review and critique the stage-gate process which I have used throughout my career. From research, a number of gaps were identified in my own design practice. It was also observed that neither Kumar, IDEO or the stage-gate processes individually provided the ultimate design model for me, or potentially others operating in a development practice within FMCG.

Kumar's model is clear and concise and the tools available are much more aligned to FMCG. IDEO's framework provides the simplicity of three clear stages of ideation, inspiration and implementation. IDEO's field guide provides strong tools similar to Kumar's but it misses overlaying the tools and modes onto a structured visual framework when compared with Kumar's.

The problem that needs addressing within FMCG to address the declining seafood counters needs radical innovation by adopting HCD frameworks, therefore my aim is to create a hybridised design model suitable for value-added design-driven product. The objective of this new model is to include consideration for the established stage-gate processes, while using the design methods of Kumar and IDEO as design-driven explorative tools. This will then be overlaid with my own tacit knowledge. The initial scope for this newly developed tool will be within FMCG but with a focus on improving experiences for seafood service counter shoppers.

My design model will evolve through application of my tacit knowledge, adoption of Kumar's tools, overlaid with an IDEO framework which shows design thinking at its core. This model will result in a hybridised design tool suitable within FMCG frameworks and processes, and the next section explores its methodology and application.

ANALYSIS



Section _ 6

6.0 Methodology of designing a hybridised design model applying an HCD approach

In the previous section I explored established design models of Kumar, IDEO, engineering design and stage gate, but none of these in isolation met the requirements of an end-to-end design model suitable within FMCG. The need for a hybridised design model which applies my tacit knowledge and HCD which is suitable for FMCG is required to stop the decline of seafood counters. In stopping the decline of seafood counters provides shoppers with healthier, socially and environmentally better solutions as 'serve over' seafood uses less packaging if using a bring your own container. In addition, opportunities exist to create more convenience and experience within the seafood 'serve over' counters, whilst enhancing the wider notion of shopper value. How might we utilise the hybridised design model in application will be explored in section 7.

Stage gate, whilst established within food manufacturing and in retail environments, lacked the critical element of design thinking which is a critical element as it focuses on consumers' problems and looks at requirements of feasibility, desirability and viability. It provides application value to retail buyers and product specialists, in addition to manufacturing and retail co-workers. Design thinking with its three-pronged approach can be applied to multiple applications and real-life business challenges.

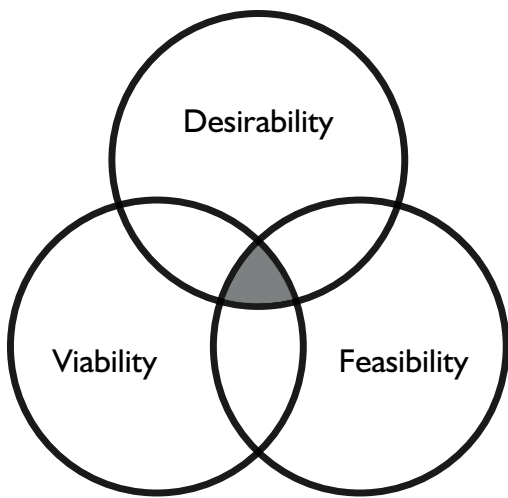


FIGURE 26: IDEO's Design thinking model (Brown, n.d.)

Figure 26 shows how design thinking brings what is desirable from a human point of view together with what is technologically feasible and economically viable. Design thinking allows people who are not trained as designers to use creative tools to address a vast range of challenges.

Design thinking is whole-brain thinking using facts, data and logic, with imagination, intuition, and systematic reasoning, to explore possibilities of what could be and should be to create desired outcomes for the customer.

IDEO (2020), maintains design thinking has a human-centred core: it helps designers understand the unmet needs of customers, reduces issues with product launches and enables iterations to move quick in the design process. When using design thinking, desirability is always started first.

The IDEO framework as shown in figure 27 is a simple model to follow, breaking down into four core elements of could be, should be, will be and alpha/beta (A/B) build. For my hybridised design model, I aim to break down a framework to three core phases of could be, should be and the Alfa build, and I believe the addition of some of Kumar's tools to these three core phases will be suitable for my HCD within FMCG.

- Could be
Contextual landscape
Conceptual landscape
- Should be
Solution landscape
Evaluation landscape
- Alpha build Implementation
Post Implementation

Breaking down the overall design process into two core sections of getting the right idea, and getting the idea right, as shown in figure 27, is a critical process within my design practice. I have spent many years ensuring we have the right product to take to market; it is also critically important to ensure getting the idea right in terms of production, retail display and brand marketing. It also demonstrates the importance of diverging and converging of concepts.

In business, I always refer to this as taking the plane off safely and landing the plane safely.

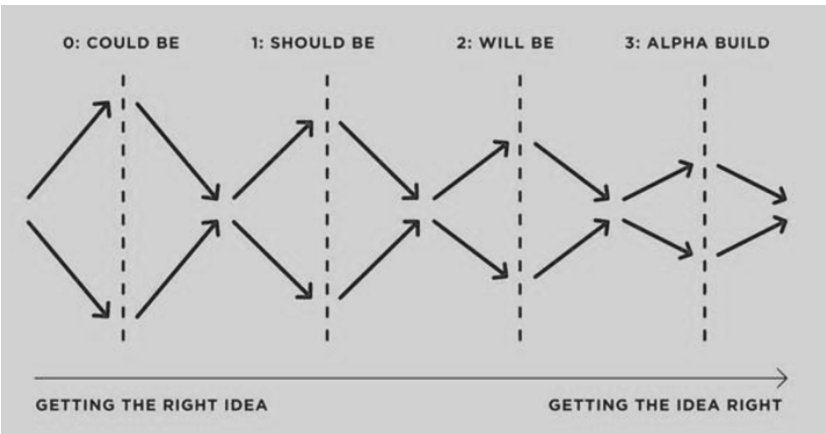


FIGURE 27: The IDEO framework has two modes of creative collaboration: getting the right idea and getting the idea right (Peng M. , n.d.).

“PEOPLE IGNORE DESIGNS THAT IGNORE PEOPLE”

Frank Chimero - Designer

As discussed, I will use some tools from Kumar to help generate my own design template; this development template will be applied in a practical, industrial and commercial context. I will include the use of 'learning first product design' as a pragmatic and pivotal component, which will be the centre of my design model. I have selected key tools from Kumar, framed with the IDEO structure of could be, should be and A/B. My tacit knowledge will also be applied to my design model, on which develops new fields of enquiry on which to build further argument.

There is value in the application of my tacit knowledge to my design framework as I have practical know-how. As part of this thesis I hope to encourage tacit specialists to build explicit knowledge, as it opens up many opportunities for schools, universities, governments, industries, and the specialists.

A large design project I led a few years ago was designing seafood primary and secondary packaging, label design and product development whilst I was the buyer; I wanted to capture elements I believed desirable to the shopper – on reflection, this has elements of design thinking. This has relevance to the formalisation of my hybridised design model as I was able to start with a level of tacit knowledge. The label design covered the following elements:

- How to cook – past experience from seafood focus groups in London and Manchester confirmed consumers needing help to prepare. Therefore, within the packaging design we added small cookery icons with either an oven or a pan denoting the method of cooking, and how long the product takes to cook, indicated by the icon.
- Sourced from New Zealand – from my Sainsbury's experience I knew customers like products from their own country; it created a sense of value, a sense of place and trust.
- Attractive design with bigger and bolder food images – from being a qualified chef I know people eat with their eyes. We needed stronger contrasting colours which are visually more stunning; for all food photography I wanted different colours and textures of complementary ingredients, as cooked white seafood on its own looks very uninspiring.

- Different background colours within the label design denoting different quality tiers – light-blue Pantone colours for mid-tier, black for top tier, copied from a retailer I had worked with in the past; this makes it easier for customers at a subconscious level to have clear navigation between quality and pricing tiers.

I was knee-deep in factory trials on new products, validating shelf life and sensory results. Sourcing new raw materials from fresh pesto's to sweet chilli sauces, completing packaging tenders and sorting out the most environmentally sound solutions for packaging. I attended photo shoots for every single product, sometimes these went on late into the night, but it had to be perfect. All of these tasks pulling me across multiple disciplines, of all the roles I've held within the industry, from commercial, buying, shopper insight, food technologist, packaging specialist, NPd chef and marketing – I loved every minute of it.

Though using elements from my prior tacit knowledge to create the new packaging and rebranding working with quality specialists and project managers, we had little time to get something on shelf that would do the job. I was single-minded and of the view I knew what needed to be done and was stubborn and driven. With less than six months to change structural packaging from environmentally unfriendly foam trays, introduce new trays made from recycled material, introduce new packaging technology whilst a co-worker project managed building a new factory, this truly is where the 'fast' is put into FMCG. This mammoth project was delivered in six months; back in the UK a project of this magnitude would have taken 18 months and a much larger project team.

I have been an active practitioner of design, to get the job done within the time frames available. It could be argued I did not adopt the HCD approach and relied too heavily on my tacit knowledge, and, therefore, once the packaging and rebranding was complete, I adopted a push strategy to launch products in our stores. My ideal design preference is to engage teams, listen to customers and adopt a shopper-pull strategy wherever time, resource, culture and budget permits.



FIGURE 28: Artefacts of a previous design process (Brandhub)

According to Robertson (2019), the primary difference between push and pull marketing lies in how consumers are approached. In push marketing, the idea is to promote products by pushing them onto people.

I felt 100% accountable for the successful delivery of this project, my first real test in New Zealand rewarded by my first Christmas break camping, where I slept through to emotionally recover, much to my family's frustration.

On the other hand, in pull marketing, the idea is to establish a loyal following and draw consumers to the products. Differing business cultures have different outlooks on design, some perhaps not even knowing they are in the business of design. Within the context of FMCG, either in sales or buying, there is a strong focus on the financial narrative of sales and profits, which can miss the greater opportunities of HCD, and it is HCD that leads to sustained customer experience and repeat purchase which follows on from IDEO getting the right idea and getting the idea right.

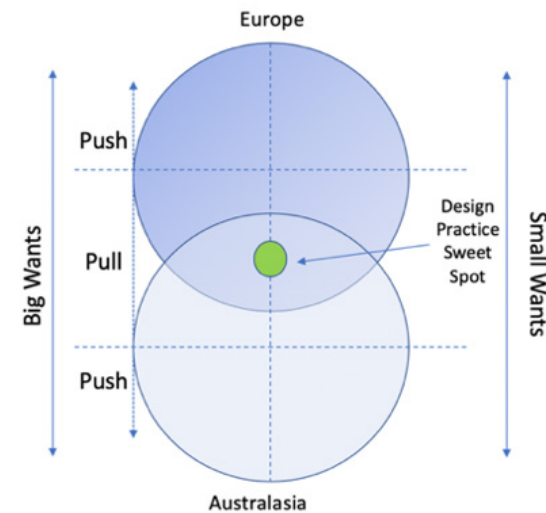


FIGURE 29: Preference design model showing tension between push and pull strategies which balances business and personal needs, intertwined with global tacit knowledge (Willows, 2019).

IDEO's Paul Bennett (Bennett, 2005) refers to design as the notion of 'big' is the company's want's, and 'small' are the wants of the individual. Figure 29 aims to reflect agreement with Bennett's design philosophy; it overlays my global tacit knowledge of the seafood industry. Where it intertwines, a design practice 'sweet spot' demonstrates the dynamic tension between my values-based small wants, that of being an environmentally values-based designer, which overlaps with the big wants of larger organisations (Bennett, 2005). The overlap of Europe and Australasia shows my tacit global experience and my preference for shopper led pull strategies as explained by Robertson (2019).

The process of conceptualising design ideas suited to FMCG looked a complete mess most of the time, as noted by the Post-it notes on the white board in figure 30.

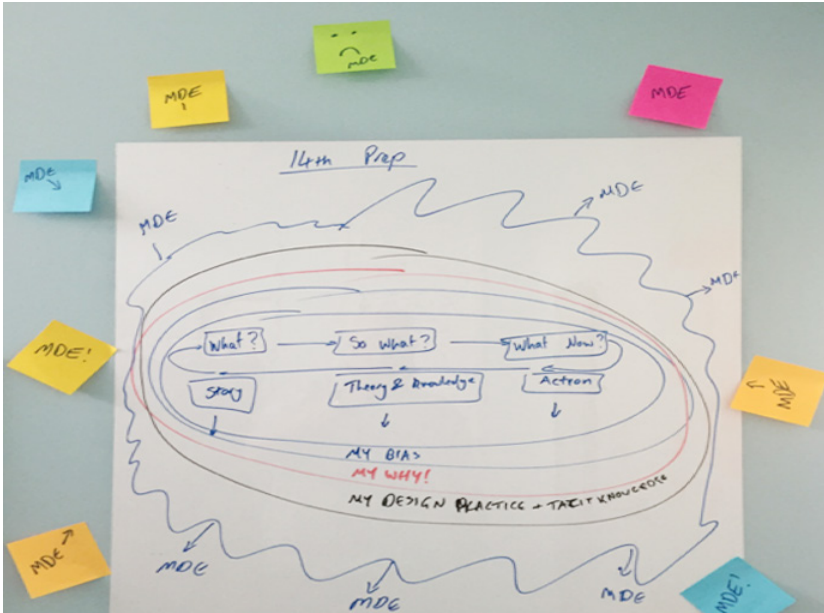


FIGURE 30: Visual design model version one, with my critical reflection at its core

Designing a visual model with numerous iterations and prototyping was an important part of the process.

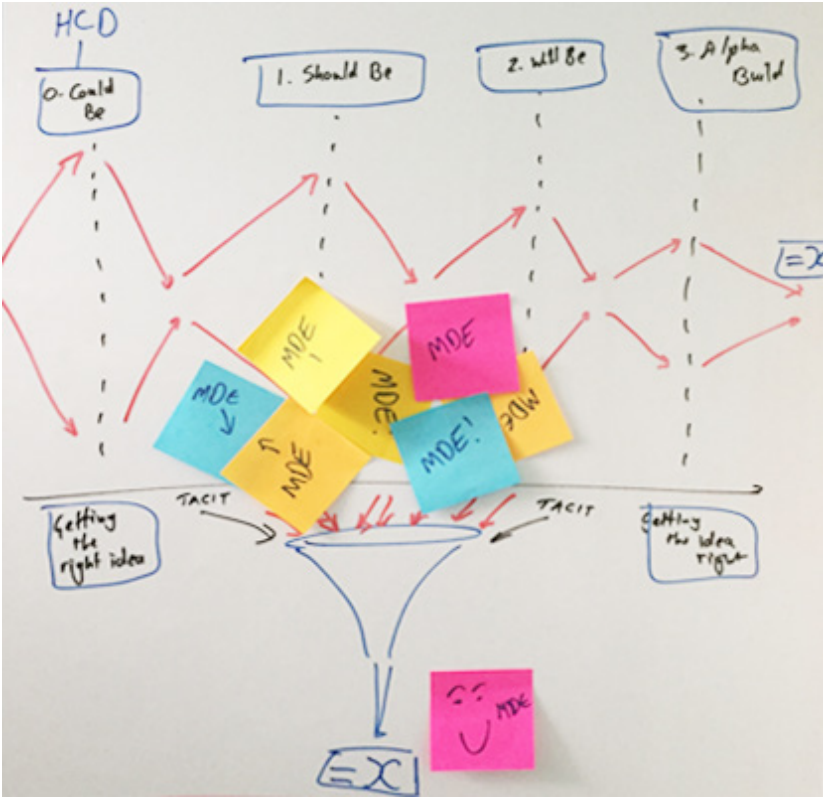


FIGURE 31: Application of diverging and converging concepts of my MDE learning journey

At times the process has felt like a giant jigsaw puzzle with no picture to help, or a frame of reference. Any moment of clarity suddenly felt like someone added another jigsaw puzzle to the mix.

The focus remained on what critical elements were required to solve the problem, ensuring capture of the HCD approach whilst overlaying my tacit knowledge. Also, arising from my reflection is what I thought and felt strongly about applying design thinking to me as the designer; therefore, at its core is my critical reflection of what, so what and what now.

By using the established IDEO framework, I was able to start to cluster key thoughts. The visualisation starts to provide clarity because it shows the narrowing of the problem. Figure 31 shows explicit knowledge indicated by the MDE Post-it note filters into the funnel, along with the tacit knowledge. Overlaying tacit knowledge and stage gate to the IDEO framework starts to explore potential applications of Kumar tools, and in figure 32 it highlights with the aid of a red warning triangle the limitations of stage gate by excluding HCD. I played with many established design tools, built my own versions of models and tried and tested their application within FMCG. I wanted to ensure my design model was relevant, valuable and user friendly, especially after so many failed attempts.

Kumar's tools demonstrate good detail, relevant application, familiarity and good case studies on which to gain further knowledge outside of FMCG. Therefore, I will adopt the use of the following tools, and with my design these will sit over the HCD Venn diagram of desirability, feasibility and viability, but under the IDEO structure of could be, should be and A/B build. The Kumar tools will be built into the following areas:

- Sense Intent
- Know Context
- Know People
- Frame Insights
- Explore Concepts
- Frame Solutions
- Realise Offerings

Some of Kumar's tools I have previously applied within FMCG: mapping trends, planning research, finding clusters, organising concepts, prototyping, generating options, building prototypes and defining strategies. In some cases, they have different names, but the methodology and desired outputs are the same.

I remember standing with packaging mock-ups in a busy Marks & Spencer (UK) store in the centre of London, in front of the prepared produce fixture, asking customers what packaging design they preferred for new stir-fry mixes. This was a way to test prototypes within the tool of exploring concepts.

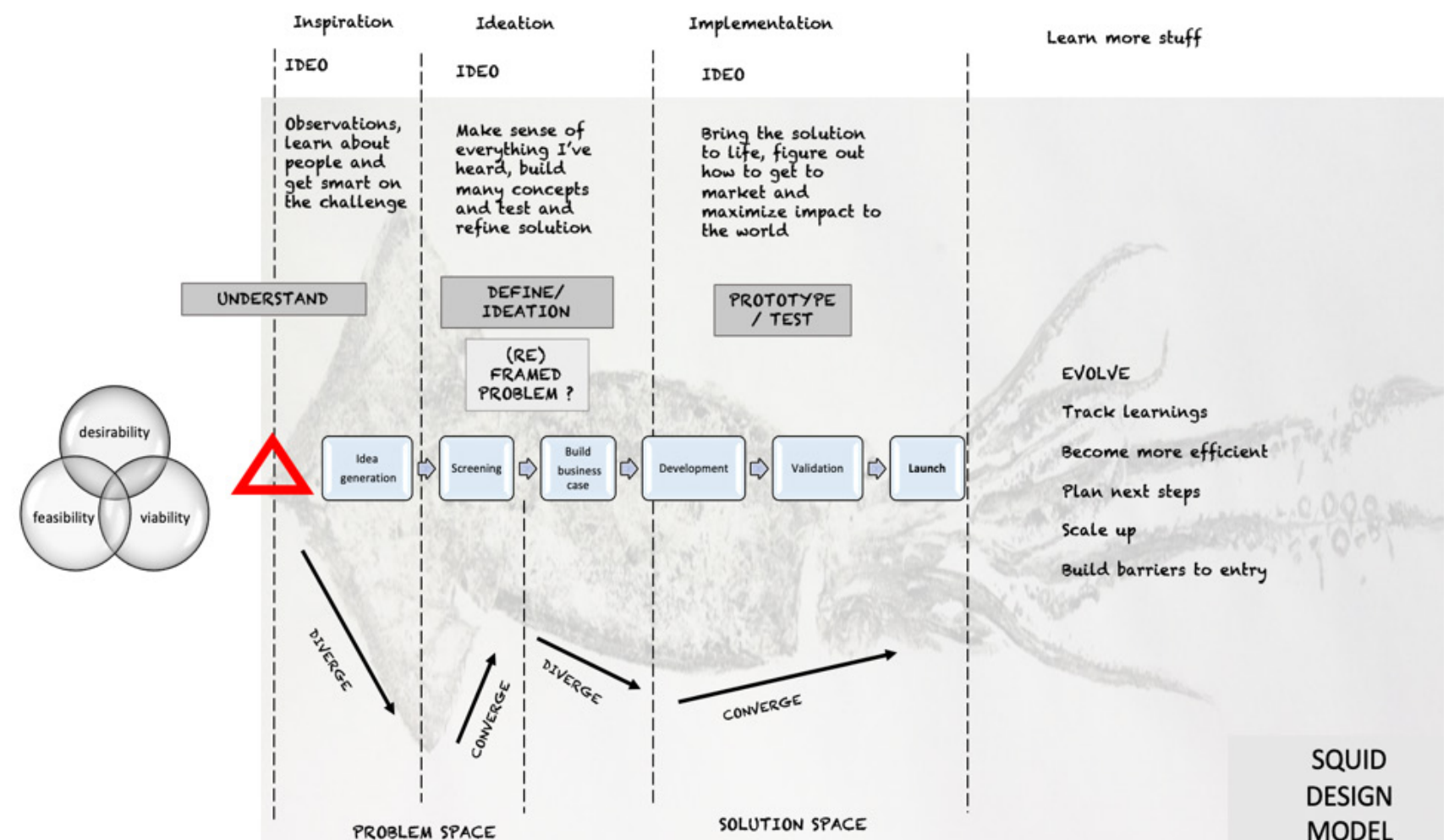


FIGURE 32: Evolution of design tool taking shape, highlighting the lack of HCD prior to stage-gate ideation session starting.

When designing snack salads and prepared fruit salads for Marks & Spencer (UK), my focus was targeted at customers' experiences, by knowing people within the contextual landscape. I recall developing products for the 'food on the move' category. Products needed to include a small plastic spork for convenience. This was about the ergonomics of how the packaging felt in one's hands, how easy the film of the small pot was to peel off, the recyclability of the packaging, label design, how the products looked on shelf and the sensory requirements. All these considerations applied design thinking and our business was rewarded by significant sales and market share increases.

Whilst working for a chilled ready-meal business we developed premium chilled pet food, using Angus slow-cooked beef. Each meal was packed in a tray shaped like a large recyclable dog bowl. Through observing challenges for large dogs when eating, we noticed the bowls slid across the floor; we then refined our packaging to put a simple peelable sticker on the underside of the packaging with enough stickiness to prevent the bowl from sliding across the floor. By exploring concepts, we were able to frame solutions for happier dog owners, a nonlinear process arises when there is more time to design.

Mind mapping visual design models, whilst overlaying my values as a designer, and exploring traditional and new frameworks, and considering real life examples, allowed me to understand how we might apply key elements required to build a hybridised HCD design model, whilst considering its suitability within FMCG.

“ENTREPRENEURSHIP IS NEITHER A SCIENCE NOR AN ART, IT IS A PRACTICE”

Peter Drucker – Management Consultant

“FAIL SO OFTEN SO YOU CAN SUCCEED SOONER”

Tom Kelly – General Manager IDEO

6.1 Benefits of tacit knowledge to my design practice overlaying Kumar tools and IDEO frameworks

The benefits of my tacit knowledge in the designing of the hybridised design model is it applies real life experiences, know-how and relevance within its application, across a multitude of product categories and technical functions. Overlaying these with established HCD design frameworks from Kumar and IDEO allows a paradigm shift in personal and professional development, as noted in figure 33.

With the alignment of my global practical experience with academic knowledge to established design frameworks, allows further contributions to design within FMCG from an environmental perspective, whilst centred around my personal values.

I left my job from Sealord (UK) on the Friday, and started work for Woolworths NZ on the following Tuesday.

According to Nada, Kouzmin, and Kakabadse (2001), to obtain information that one needs and to assess the value of information, one has, or needs to acquire, both explicit (or theoretical) knowledge and implicit (or practical knowledge).

Kakadadse and Myers (1995a) indicates that managers should have knowledge and empathy for its customers, suppliers, employees and other users, and have the ability to manage given knowledge in any context. Managing knowledge effectively within any organisation provides the ability to maximise opportunities. Managers should develop a culture that leverages specialist individual knowledge and skills within with other disciplines, creating an environment to engage and develop deeper collective knowledge (Kakadadse & Myers, 1995a).

Having worked in kitchens from a young age, I had an appreciation of the importance of food hygiene, and this knowledge helped me greatly when I trained to be a food technologist studying food microbiology. It allowed me to understand the connections between kitchen hygiene standards, food safety and specific microorganisms and their control within a professional kitchen, in turn I could share my knowledge with co-workers.

According to Honoré (2019), our social skills usually improve with age, better at seeing the bigger picture, juggling multiple view points and spotting those patterns and details that allow us to unlock solutions to different problems. Through my professional career I have developed greater empathy for co-workers which allows a deeper level of trust, teamwork and friendship. Also, having had multiple roles within the food industry, from supplier to buyer, from junior to senior, provides greater knowledge, respect and empathy for subject matter experts.

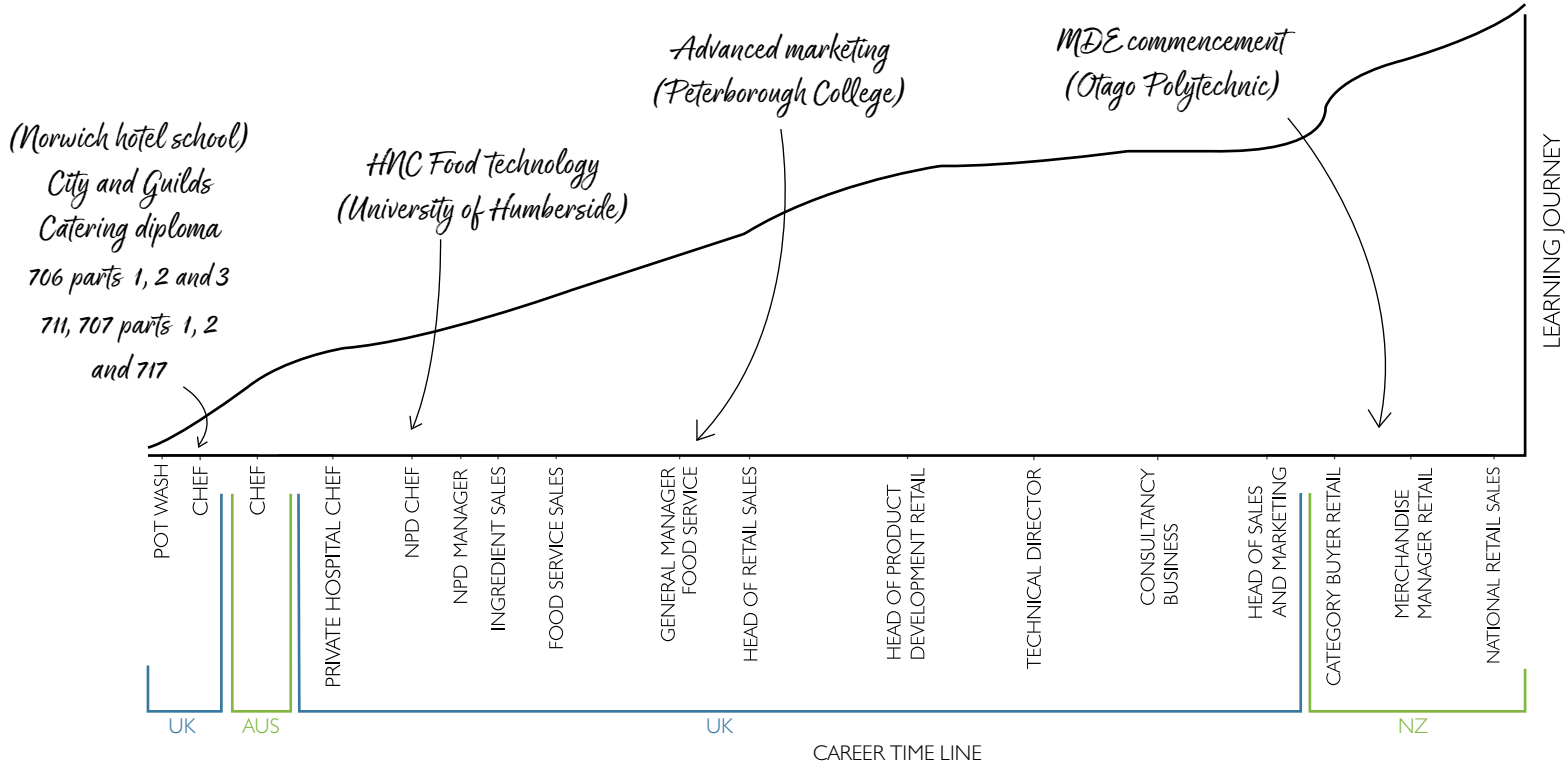


FIGURE 33: Tacit and explicit knowledge evolvement

I recall joining a business that was constantly developing expensive premium products in a recessionary market with limited customer interest, and the business was facing falling sales. The development chef was either uninterested or unexcited about developing products targeted at low/mid-demographic customers, whilst our competitors could not keep up with demand. It was important to the business I reframed the problem in a way that would be well received. I showed the development chef a clip of the movie Big Night in which a brilliant Italian chef who is a complete perfectionist refuses to give a customer in his restaurant a side of spaghetti with her risotto, and they were facing a failing business (Kirkpatrick & Filley, 1996).

He laughed and said, 'Now I get what you've been on about, I get it!' Having worked in his role some years earlier sometimes you don't see the bigger picture and the importance of aligning with the markets needs.

6.2 Design model application and its benefits

The importance of a hybridised design model as shown in figure 34 uses established frameworks and prior tacit knowledge, thereby creating a robust framework to apply radical HCD solutions to create wider consumer value within seafood counters, and wider FMCG applications. This hybridised design tool was registered in 2020 as HCD_FMCG™.

In my current job I utilise the IDEO framework to capture and populate ideas, also using some of Kumar's tools to encourage collective thinking with co-workers to come up with solutions to customers' problems. This structured adoption of design thinking avoids moving from problem space to solution space too quickly, and therefore avoids costly errors in the design process.

According to IDEO's Peng (2018), enabling teams to come up with wild new ideas takes intention and planning. There are two main modes of thinking in the creative collaboration process: divergence and convergence. In divergence, teams go wide with ideas. In convergence, teams narrow in on what is most important. A common misconception is to think of these modes as linear, that the start is broad and the focus increasingly narrows. But it is not so much a funnel as it is a dance of going out, coming in, going out, coming in, until the best solution is found (Peng, 2018).

Peng (2018) states whilst divergent moments are designed to generate as many ideas as possible, structure is required to ensure creativity may thrive. Most see value in gathering a group to come up with ideas, but convergence is a creative activity as well. Narrowing in on the best ideas is often an exercise of combining the best elements of existing concepts into a completely new option, a process that benefits from multiple perspectives and discussion (Peng, 2018). In current and past work contexts, I have been able to work with teams and customers to isolate key opportunities and priorities, before moving into the solution space. This builds collaboration and better business outcomes when all considerations are taken. When considering the wider strategic needs within retail, the application of the design model is required within the seafood and FMCG industry, and this is important as NZ retailers may follow the UK and look to remove seafood

counters as an expensive labour-hungry overhead taking up valuable retail space. Alternatively, the adoption of the model seafood cases can act not only as sales channel to address key mega trends around health, sustainability, supporting localised and convenience by adopting the wider opportunity of HCD, but in doing so create wider ranges with a focus on fresh perception, building greater shopper loyalty.

If seafood counters close there is a risk all seafood will be sold in prepacked packaging such as modified atmospheric packaging (MAP), increasing CO₂ emissions into the environment, which feeds back into our oceans. Prepacked seafood distances human connections with serve-over staff, and seafood counters as we know them may become extinct.

The core benefits of the HCD_FMCG™ framework is putting consumers' problems at the heart of the opportunity. With a design-thinking approach at its core, detailed phases of activity are overlaid, capturing within them specific tools from Kumar. The IDEO structured framework of could be, should be and A/B build overwraps the key phases of activity of landscapes, evaluation and implementation phases.

The model also takes account of the notion that HCD must also be applied to the role of the designer, which is aligned to the designer's personal values and to a sense of place to ensure positive and motivated outcomes. The model has multiple applications beyond FMCG, and it will help to engage and educate the tacit specialists in explicit knowledge of HCD, specialists who are more accustomed to established stage-gate processes. Applying the model will help to create the notion that everyone is a designer.

Kumar summarises this notion well:

Just as a master carpenter will expertly select a different set of tools depending whether he is building a house or a chair, the master innovator needs to be familiar with a variety of methods in order to choose them effectively for a given project (2013).

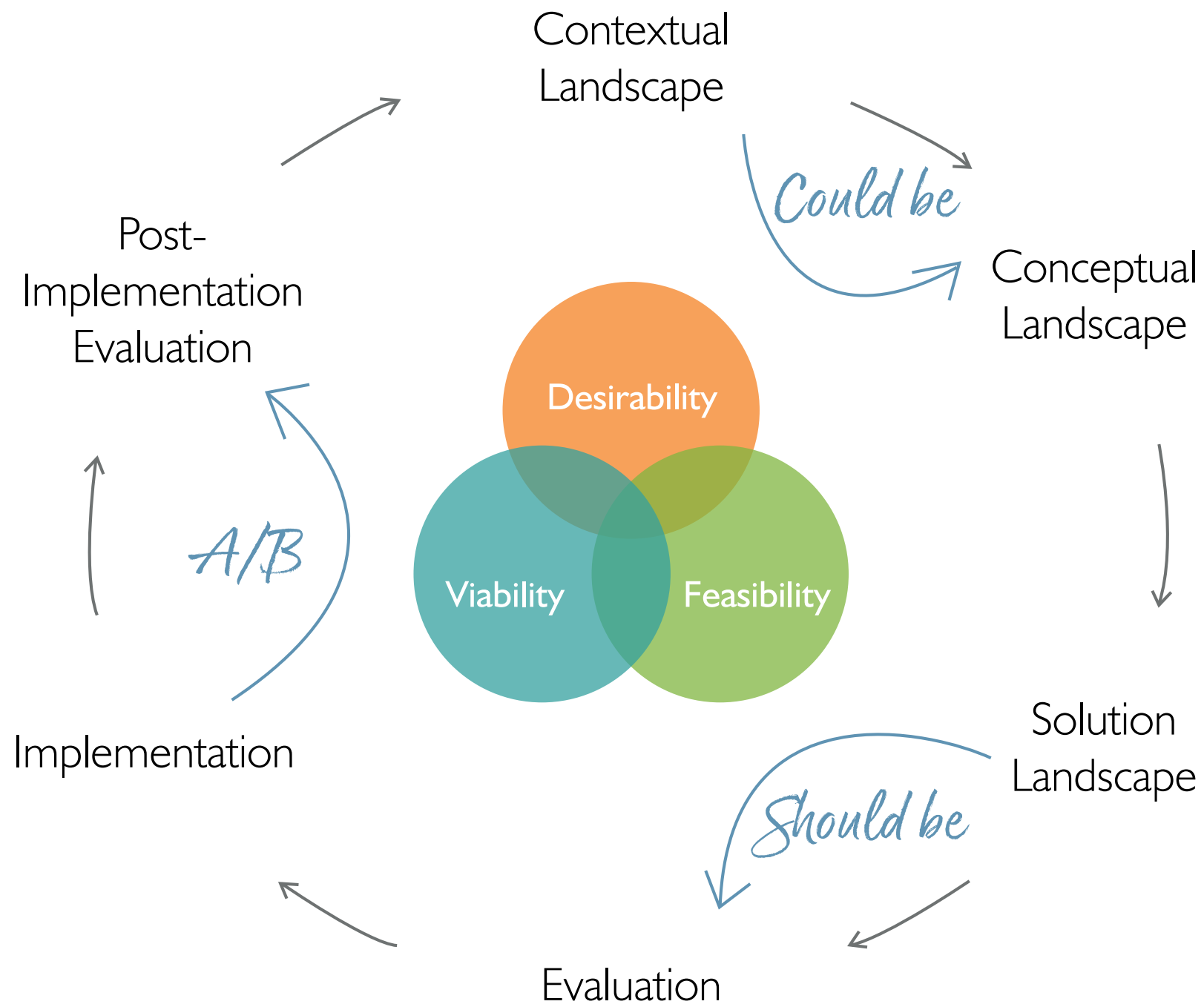


FIGURE 34: HCD_FMCG™ design framework (Willows)

6.3 Summary – ‘yeah but!’

My values and my ‘why’ were explored through my reflection and sense of place, which underpins why I want to stop the seafood serve-over counters in global retail disappearing like Lowestoft’s fishing industry.

The need to ensure seafood counters responds and stays relevant and aligns with shoppers’ needs so the adoption and application of HCD_FMCG™ is critical to ensure its very survival. Loose seafood sold in counters provides an environmentally low-carbon offer which provides better world outcomes. As a food source seafood is generally low in fat and high in protein; the service itself can aid recipe guidance, seasonality knowledge, enhanced social interactions which provides the identification and establishing a sense of place. Tuan (1979), advocates a sense of place provides greater rootedness, security and grounding.

Seafood serve-over counters that provide traditional service must adapt and evolve; if not they may well disappear from our high streets, and with the speed of change due to the global pandemic of COVID-19, this may be accelerated due to the need for social distancing. It was noted in New Zealand some serve-over counters were closed in stores, with social barriers erected in others (figure 35).

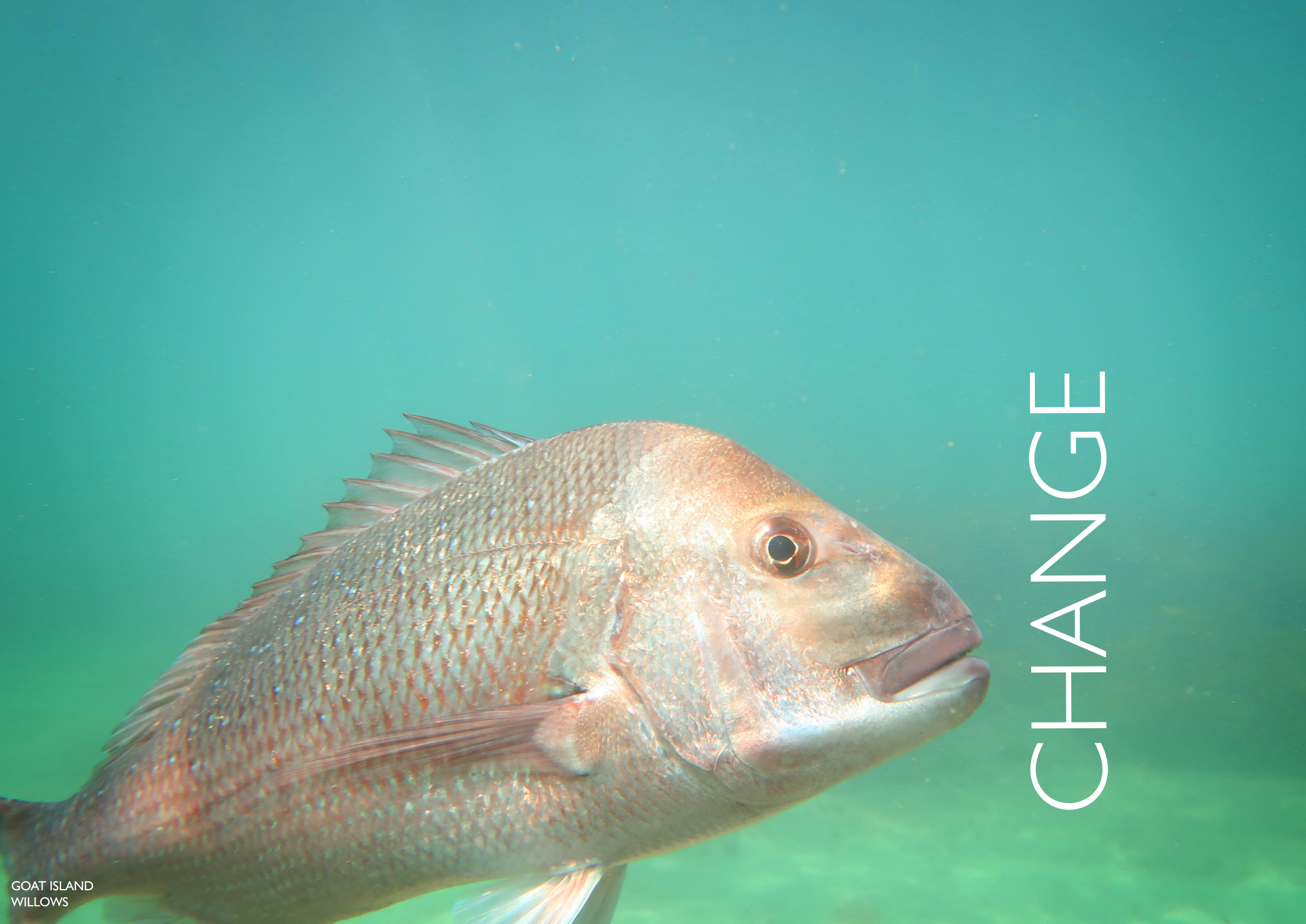
Whilst we see value in personal social interactions, we continue to see accelerated acceptance of online shopping, and use of social media platforms such as Zoom, Google Hangouts and Skype.

Therefore, how do we address the global decline of seafood counters?

The next section explores application of the hybridised design tool ‘HCD_FMCG™’, and its application within the context of retail, and how we engage stakeholders to explore the wider notion of value in the design of a reusable and microwaveable tub, thus removing single-use plastic from seafood counters, and providing wider user benefits, whilst recognising and addressing accelerated purchase behavioural changes.



FIGURE 35: Two images of the changing face of seafood counters with social distancing during COVID-19 (Willows)



CHANGE

Section _7

7.0 Introduction

This section also explores how we may address users' problems in large-scale retail, within the context of seafood 'serve over' counters, including service, packing, transportation and cooking.

By rejecting the classic stage-gate model due to its limitations within FMCG, and through researching established academic design tools and frameworks, with evaluation of my personal and professional reflections, including the understanding and acceptance of tacit knowledge, this section applies the hybridised 'HCD_FMCG™' model in the design of a reusable and microwavable tub. The primary environmental objective is to reduce the use of single-use plastic bags and create wider consumer value.

The tub is applied as an anchored reference point to demonstrate and illustrate the design model functionality, validity and desirability within application at key touch points within the design and user process. The HCD_FMCG™ model has three key phases of 'could be, should be and Alfa build'.

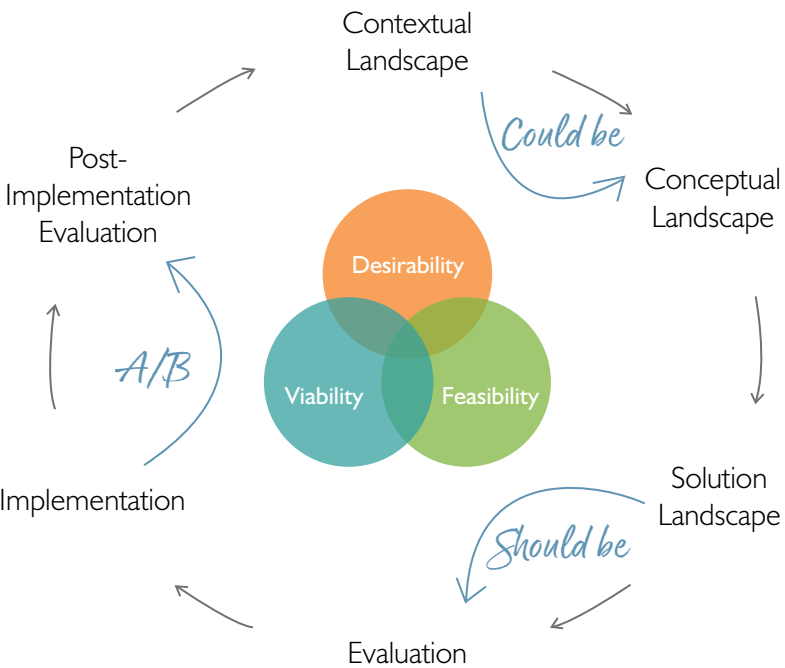


FIGURE 36: HCD_FMCG™ design model

7.1 Could be

Within the HCD_FMCG™ design model the first stage is understanding where changes are happening such as technological, societal, cultural and environmental policy. This includes but is not limited to technological, societal, cultural, policy and business.

At Bakkavor, at the start of every annual strategy day, we would review political, economic, social/cultural, technological, environmental and legal factors (PESTEL).

Harris and Botten (2008), asserts the PESTEL model provides a framework for reviewing and analysing major influences on the market place, for example, an interruption such as a pandemic, COVID-19.

Whilst coaching a Foodservice sales and marketing team in the UK, I'd introduce PESTEL as a 'helicopter view' concept, providing a clear picture of the horizon, without getting into the detail on the ground (or the day to day job).

If I would have started to use fancy marketing acronyms, I may have lost their attention, and more importantly their valued input.

Kumar maps trends within the market place, and along with an outlined hypothesis, this allows organisations to take advantage of opportunities identified. A review against sense intent to revisit and reframe the initial problem is required, as this allows designers to pause and consider how the world and shoppers are changing at this critical information gathering phase. Through this phase, ideas, knowledge and concepts would be increasing and diverging, as mentioned in the IDEO model.

Experience has taught me that the best outcomes in design are done with collaboration with the buyer or supplier, with the ultimate users' needs considered within the current market context. Users' needs are not static, they constantly change, through life cycles, seasonality, affluence and social and environmental awareness.

A critical stage at the end of contextual landscape is to frame key insights into clear bite-sized chunks or converging information into key insights. This stage is critical before moving into the conceptual phase where it opens up to the diverging phase once more, remembering of course that design thinking to be of real value is non-linear. For the reusable tub project key insights are identified in the next section.

7.1.1 Could be - initial opportunity map

After all insights have been framed, trends should be overlapped on a 2 x 2 matrix; this can be a “quick and dirty” visual map as shown in figure 37. The map demonstrates plotted insights, reveals where opportunities exist, and explores the fundamental question of strategy: Where to Play?

Its purpose is enhanced communication by being visual, easy to understand and aids navigation into key next steps of action within business.

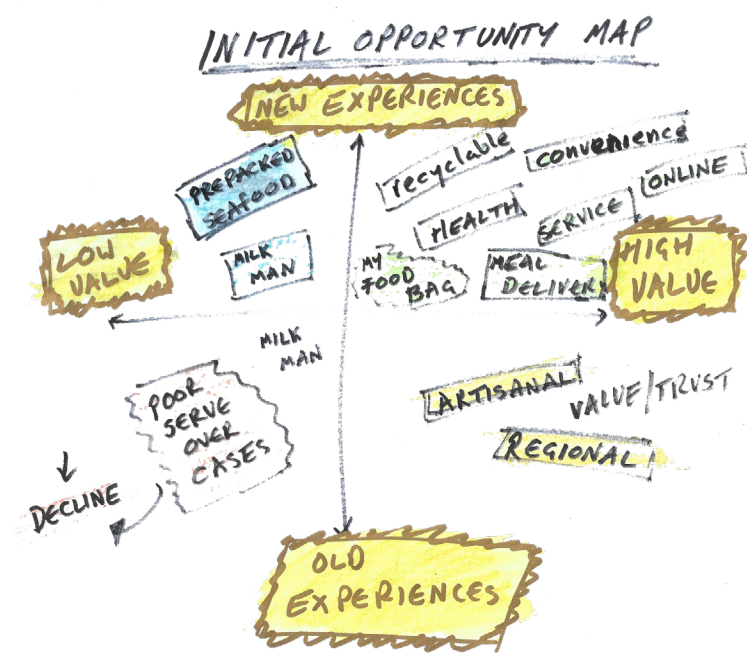


FIGURE 37: Initial opportunity matrix for seafood 'serve over' counters

7.1.2 Could be - popular-media scan

A popular-media scan acts as a cultural barometer that influences intent for a product or service available through popular methods of media such as Facebook, You Tube, online news, broadcast news and magazines. Within this scanning, it is important to look for specific patterns and emerging trends, and to look slightly wider at adjacent areas as well. For example, 'nude' shopping is the next big trend in produce, and this may lead into greater adoption of no packaging in seafood; if that is the case, then a shopper's consideration is, I have a problem here and what is the solution?

NZ Herald (2019), points out within the context of the 'nude' trial where Foodstuffs completed reducing food packaging in produce department as the reported facts are that of the 300 million tonnes of plastic produced worldwide every year, with only nine per cent is recycled. Foodstuffs continue to trial paper alternatives to foil seafood bags and fibre-based deli trays media scanning can help to build a richer picture of emerging trends.

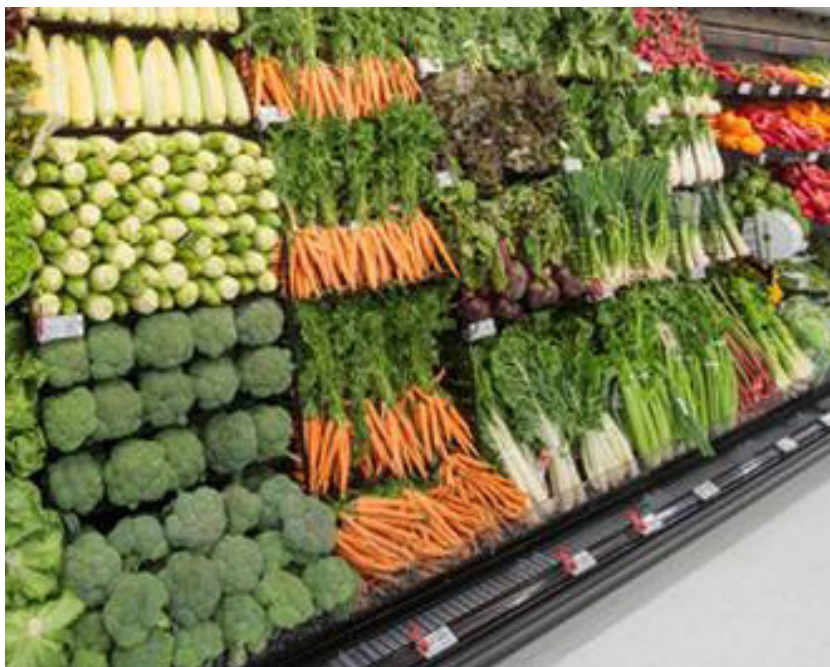


FIGURE 38: Media scanning of New World's trial to remove packaging in produce also opens up work underway in seafood (Supplied to NZHerald for sponsored article, 2019).

According to NZ Herald (2019), Foodstuffs along with Countdown have signed the NZ Plastic Packaging Declaration which commits to making all stores and private label packaging 100 per cent reusable, recyclable or compostable by 2025.

However, Chakori and Aziz (2019) argued that recycling plastic is not the solution; in Australia less than 12 per cent of the 3.5 million tonnes of plastics consumed were actually recycled in 2016–2017. The alternative option is the zero-waste stores, which allow customers to bring and refill their own containers. Examples are GoodFor Wholefoods Refillery in Ponsonby (NZ) and The Refillery in Edinburgh (UK).

My greatest professional achievement within NZ retail that was aligned to my personal values, was as the project lead in the removal of foam trays used for prepacked meat and seafood lines, and replacing with 100 per cent recycled material, within my first 12 months of landing in New Zealand. As a small team, I was very hands-on; the role included the material selection, technical validation through our process plants, optimising sizing of packaging and the commercialisation of the project.

At the same time, I created a range of added-value seafood lines, providing shoppers with greater convenience by the addition of fresh pesto, sachets of chilli sauces along with marinades to seafood, to create some innovation and excitement to the category. Seafood with the addition of sauces or marinades should not be confused with highly processed products with low nutrient value which Chakori and Aziz (2019) claims can cause obesity.



FIGURE 39: Häagen-Dazs in reusable and returnable tubs (Nestlé)

It is identified by Martinko (2019) that there are current examples of where consumers have been open to radical environmental packaging solutions, one such example being TerraCycle who have committed to improving their environmental credibility by designing and developing reusable packaging, which was launched in May 2019 in New York and Paris, and it will expand to London, Tokyo, Toronto and San Francisco in 2020. It works by shoppers paying a refundable deposit for the reusable packaging, with products being delivered in a reusable tote; once products are consumed, containers are collected, with no need to clean (Martinko, 2019).

In the days before retail dominance in the UK, and for those growing up in the 1970s and 1980s, the milkman will be remembered, with early morning deliveries in electric-driven vans, providing milk and juices in recyclable bottles along with bread, milk and eggs, direct to the door before everyone awoke; parallels must be drawn with the trend of recyclability. With 89 per cent of milk sales via doorstep deliveries in the 1980s, the decline started when retailers started selling milk at a loss. By 2014 this had declined to three per cent. The few remaining milkmen avoided extinction by offering a level of personal service and being considered a part of the community. Duggins (2017) remarks that Steve Hayden, a milkman from the UK based at Parker Dairies in South Woodford said, 'The hipsters love the glass bottles and the electric floats,' (Duggins, 2017). Note figure 40 showing traditional milkman on his rounds.



FIGURE 40: Traditional milkman utilising reusable packaging (George, 2019)

Media scanning trends within the food industry both in NZ and the UK are also influenced by cookery programmes, social media, food bloggers and celebrity chefs. A co-worker was telling me about a fish pie recipe he had seen Jamie Oliver prepare on TV; he was so excited about preparing it, he must have told at least a dozen people. Danesi (2012) claims the way food is promoted and marketed can drive cultural shifts, and just like pop music celebrities, famous chefs are pop icons too.



FIGURE 41: Images taken through observing what shoppers see with emerging trends (Willows)

During a UK food exploration tour with Jamie, I realized just how incredibly knowledgeable he was of political, economic, social and environmental factors.

In an airport over a beer, I listened intently and learnt so much. Jamie is a driven individual with strong ethical values, and his breakthrough came when he demystified fancy cooking to encourage people to get in the kitchen. His 'have a go' approach, delivered with passion in an informal style using common phrases such as 'pukka' and 'wicked' (BBC, 2003), changed a Nations cooking habits. He had transitioned the world of gastronomy from terrifying, into one more approachable and fun.

When we walked through an airport, Jamie was literally bombarded with fans wanting selfies or just wanting to say hi, truly a pop icon.



FIGURE 42: Jamie Oliver in Scotland visiting salmon pens

**“THE BEST WAY TO
PREDICT THE FUTURE IS
TO CREATE IT”**

Alan Kay - 2003 Turner Prize Winner

7.1.3 Could be - trends matrix

The purpose of building insights is creating a more targeted framework before commencing any conceptual work, and in doing so improves the performance of the design process. A trends matrix provides an overview of how trends can happen in one area. It is a high-level view and should be compared with trends in other marketplaces to evaluate patterns.

Table 1 sets out to show trends within seafood and FMCG, and an important part of the trends' matrix overview is to speculate on future directions and review how certain trends will affect the project.

When reviewing sales data I look at the detail of sales by product line over 52, 13 and 4 week periods, and overlay this information with what is happening within key trends that I have identified, this allows me to understand where products are on a product life cycle, which can either be in the introductory, growth, mature or decline phase. In business enterprise the key is being ahead of the curve, not behind it, and this analysis acts as my 'early warning radar'.

Any product lines in the growth phase, aligned to key trends is suitable for product range and merchandise space increases.

Table 1: Trend matrix built around the scope of seafood, packaging and 'serve over' counters

Service Engagement in Retail	Formally	August 2019	Emerging
Technology	Online shopping not popular until mid-90's Bricks and mortar format stores are the main way to shop	Online shopping grows at +40% in New Zealand Every 15 seconds a transaction takes place on WOW NZ Website, AI is increasing the way retailers operate	Retail companies divest from slow growing and lower profitable serve-over categories, as online and convenience meals continues to drive growth 5G technology launches in NZ in Dec 19 which could enable holograms to'- soon start to bring the farmer or chef to all Countdown stores and speak direct to shoppers
Business	Traditional retail stores drive growth in serve-over counters, and skilled workforce plentiful High-street butchers, bakers and fishmongers are plentiful	Foodstuffs & Countdown introduces bring-your-own containers for serve-over counters from the 10 th June Reusable bags established in NZ from 2018	Companies seek greater EBIT Fewer skilled workforce and higher price reduction categories such as meat, seafood and bakery are no longer as commercially attractive
People	People unaware of the environmental impact of single-use plastic bags within supermarkets Greater connected service experience with knowledgeable and skilled staff within counters. More customers know and want to cook from scratch	People increasingly aware of damage that plastic is having on the environment (landfill and waterways) Some segments of the shopper base are changing purchase decisions based on values such as ethical, social and environmental reasons	Customers are wanting more unpackaged food in retail stores 'Ola' actively promotes and pays its drivers more demonstrating a great shift towards Social Capital
Legislation/Policy	New Zealand uses over 750 million single-use plastic bags per year, legally	Single-use plastic shopping bags under 70 microns in thickness will illegal from 1 July 2019 in New Zealand	Using 100 percent reusable, recyclable or compostable packaging in New Zealand operations by 2025 or earlier New minimum wage increased +\$1.20/hour to \$17.70 from 1 April
Sustainability/Ethical Sourcing	Little awareness of where seafood caught or methods used to catch or harvest	Increasing awareness of ethical and environmental impacts of sourcing seafood	Full traceability now a requirement and the ability to share how, where and who caught and processed seafood, through the emerging technologies such as Block Chain Tune
Culture	Lack of knowledge on environmental impact of single-use plastic bags More sales sold in serve-over counters with more knowledgeable staff, people know and want to prepare meals from scratch	Customers and businesses more environmental and socially responsible; however, area very complex for businesses Need for greater customer convenience meals due to lack of culinary repertoire and 'perceived' time to prepare	Growth in reusable containers for grocery items in retailers Shopper experience 'pre and post purchase' will become critical elements in food retail within the next 3 years and domestic markets catching up with retailers in Western cultures

7.1.4 Could be - know people

Watching how shoppers interact with products in retail is one of my favourite pastimes.

I was once taught in a marketing lesson about the AIDA model, the acronym breaks down into ‘attention, interest, desire and action to purchase, in that order’. It’s a bit like fishing: ‘attention’ - know the best spot (ranging), ‘interest’ - select the right bait (the right product, service and price), ‘desire’ - use the right hook (ensure what you offer, meets shoppers needs), ‘action’- land the fish (commercial transaction). Over the years I have learnt so much by observing interactions, behaviours change so much between categories, store formats and product types.

Kumar suggests that the importance of observational and ethnographic research and building customer insight is at the very heart of HCD. He discusses the need for structure in planning the research, and he refers to the insight as ‘interesting revelation’. He stresses the importance of understanding why the non-users or non-participants are missing, and why are they missing? (Kumar, 2013).

In the early nineties Pret a Manger (A London-based premium UK sandwich chain) was one of my key accounts, whilst conducting a focus group one customer said, “I love the printed brown bags, with the Burgundy Pret star logo on the side of the packaging, it makes me feel as if I’ve made it’. This insight made me realise the notion of value and brand association, and I remember trying to replicate that star in bread loaves, using sundried tomato paste within the dough structure. I failed to achieve the desired effect as the irregularities of dough proving yielded something that resembled a squashed tomato.



FIGURE 43: Personas built for exploring service within seafood service cases

Kumar also explains that when making observations, it is important to establish persona definitions, which is defining user personalities for exploring concepts, and analysing types of potential users and clustering them according to sets of shared attributes.

The creation of a number of customer personas including a list of user attributes across gender, age, number of people living in the home, and income was prepared. This was overlaid into user journey mapping, which follows seafood shopper personas through the key stages of the shopping journey; this helps to identify problems and opportunities. The maps provide visualisation over time, with the aim to identify key insights and share findings.

Clustering key stages of experience through the user journey mapping exercise identified a number of problems or pain points within the service exchange, noted in figure 44, with red highlighting importance as it frames problems. This evaluation is an important stage prior to coming up with solutions.

In this example, one of the problems for shoppers is the washing and clearing up after cooking seafood at home; this is an insight as it is a problem not uncovered before. Areas of freshness and availability have been discussed in earlier sections.

Shopper journey mapping



FIGURE 44: User journey mapping



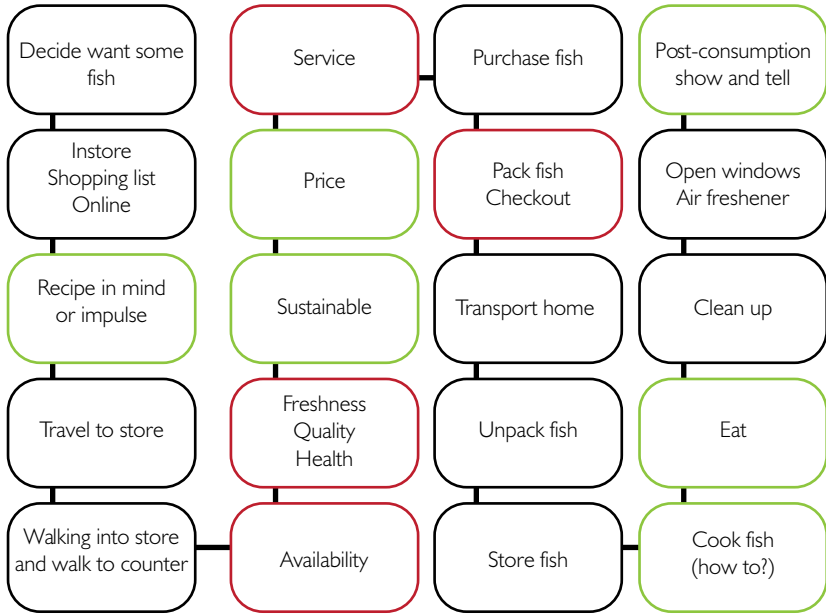
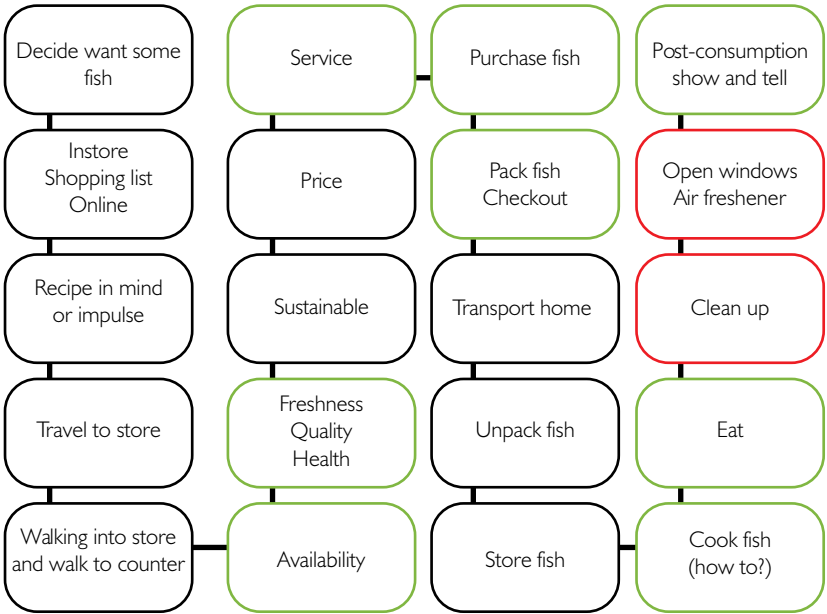
David
Works full-time
Single
26 years old
mid affluent

"I do not eat meat but have fresh salmon at least once a week, I like that they always have fresh salmon (normally on a special). I just wish it was easier to clear up the chopping boards and knives etc when I cook. My mates down the gym are impressed I know how to cook (as are the ladies)"



Angela
Works full time
No children
Married
50 years old
High affluent

"There is poor availability, but prices are really good given what I pay at work. I love trying out new things for my work on my days off. I do not understand why the service is so bad - staff do not seem to know much about where the fish comes from"





Ken
 Works full-time
 4 young daughters
 Married
 44 years old
 Low-mid affluent

"I love cooking and eating seafood with my family, it is very healthy. I feel guilty buying it as I find it quite expensive considering it is free and super fresh when we go fishing"



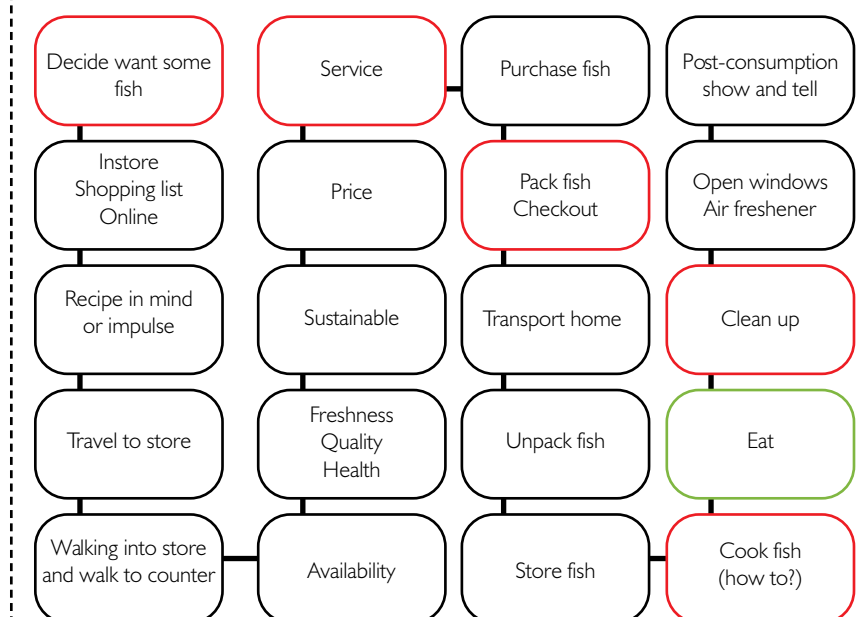
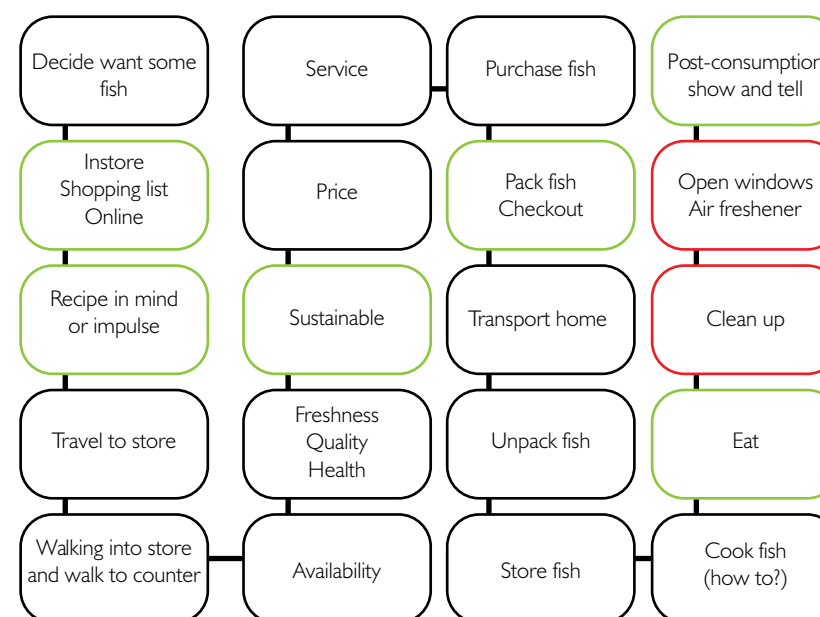
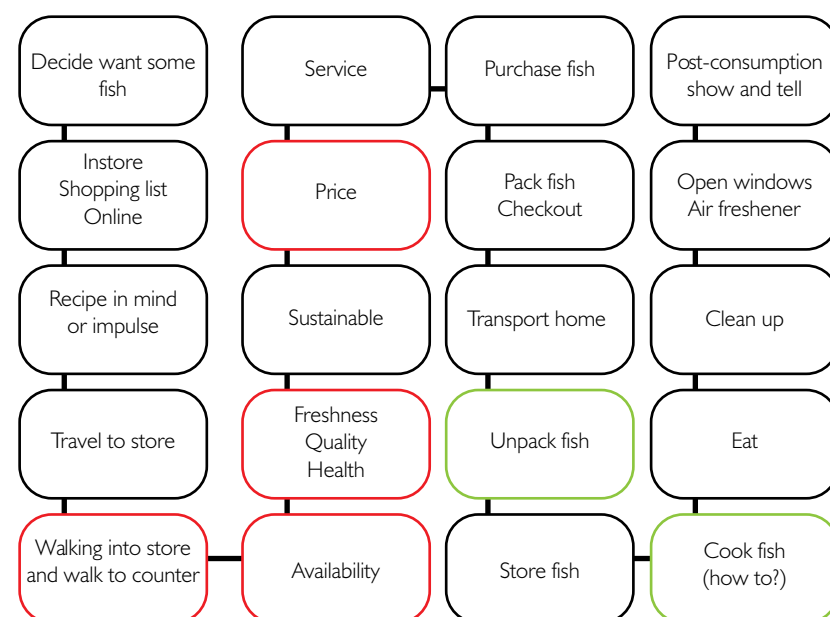
Emily
 Works part-time
 Cat lover
 Long-term partner
 34 years old
 High affluent

"I love looking at recipes in books, I consider myself a real foodie, all the best chefs cook fish. Only 'down side' is seafood makes our beautiful home smell, and I am not a fan of washing up!"



Tom and Kerry
 Retired
 13-year-old granddaughter
 Age: "Mind your own business"
 Mid affluent

"I get stressed how to cook and what to purchase, but I know eating seafood is important and I am trying to be healthy. I love eating it and it makes a great change from chicken"



							DELIGHT	PAIN
		DAVID	ANGELA	KEN	EMILY	TOM AND KERRY		
STEP	PROCESS STEPS							
1	Decide want some fish							
2	Instore, shopping list, online						1	
3	Recipe in mind or impulse						2	
4	Travel to store							
5	Walking into store to counter							1
6	Availability						1	2
7	Freshness, quality, perceived health						1	2
8	Sustainable						2	
9	Price						1	1
10	Service						1	2
11	Purchase fish						1	
12	Pack fish						2	1
13	Transport home							
14	Unpack fish						1	
15	Store fish							
16	Cook fish						3	1
17	Eat						4	
18	Clean up							3
19	Open windows, air freshener							2
20	Post consumption show and tell (variety)						3	

FIGURE 45: Framing insights from shopper persona mapping

Shopper empathy is required to understand shoppers' problems and needs; note figure 46 showing a generic shopper empathy map. In the context of buying in a 'seafood counters' retail environment, having a shopper empathy map means understanding emotional, cognitive, physical, cultural and social behaviours and building solutions to these problems.

Over the last 25 years I have spent hundreds of hours observing how customers approach retail categories and engaging with products – reading the labels, looking at photography, gauging the heaviness and weight of the pack, reading the nutritional or cooking guidelines. Most of the products I have developed have created interest at the point of purchase, and have been commercially successful, yet it still breaks my heart when they put your pride and joy back on shelf, and not in their basket.

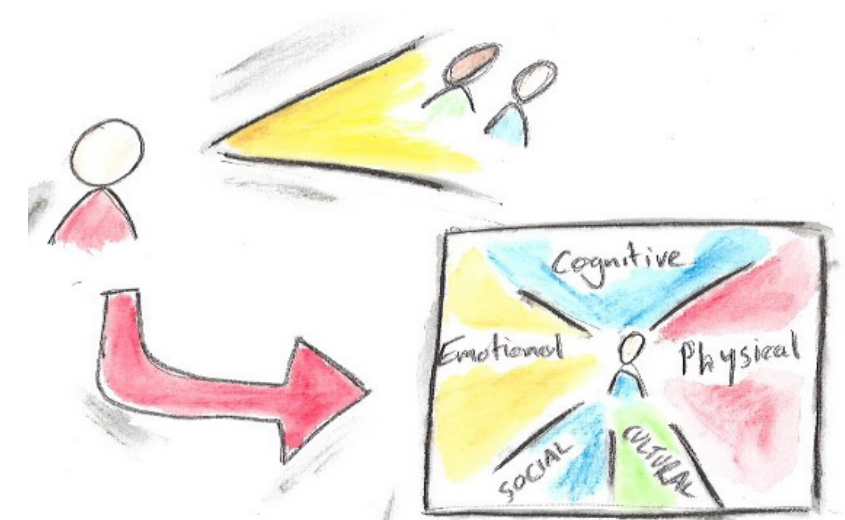


FIGURE 46: Generic shopper empathy mapping

After all observations have been undertaken with shoppers instore interactions with product, packaging and service, the framing and synthesising of information is important step as it identifies shoppers problems. These problems are several, as noted in figure 47, and include poor service experience regarding availability of a broad range of species and availability of highly engaged and knowledgeable staff, concern around freshness, quality, and lack of innovation (not desirable), and that seafood is not as convenient to prepare at home when compared with alternative products such as ready meals.

Kumar discusses observing everything, and whilst working for Sainsbury's we launched Italian burrata in select high-affluent stores. This traditional delicacy is produced from the fresh buffalo milk, carefully made by artisans delivering a soft pouch of torn creamy strings of mozzarella with cream, the burrata was specially flown in from Italy three times a week. We provided stores with simple product information sheets, yet sales were poor. One day, I assumed the role of a shopper to buy some, the salesperson said, "don't know, what you call it? and it's like mozzarella, expensive if you ask me". I was crushed on so many levels.

Whilst the product was beautiful and the pricing was right, classic retail is about the last five yards of service.

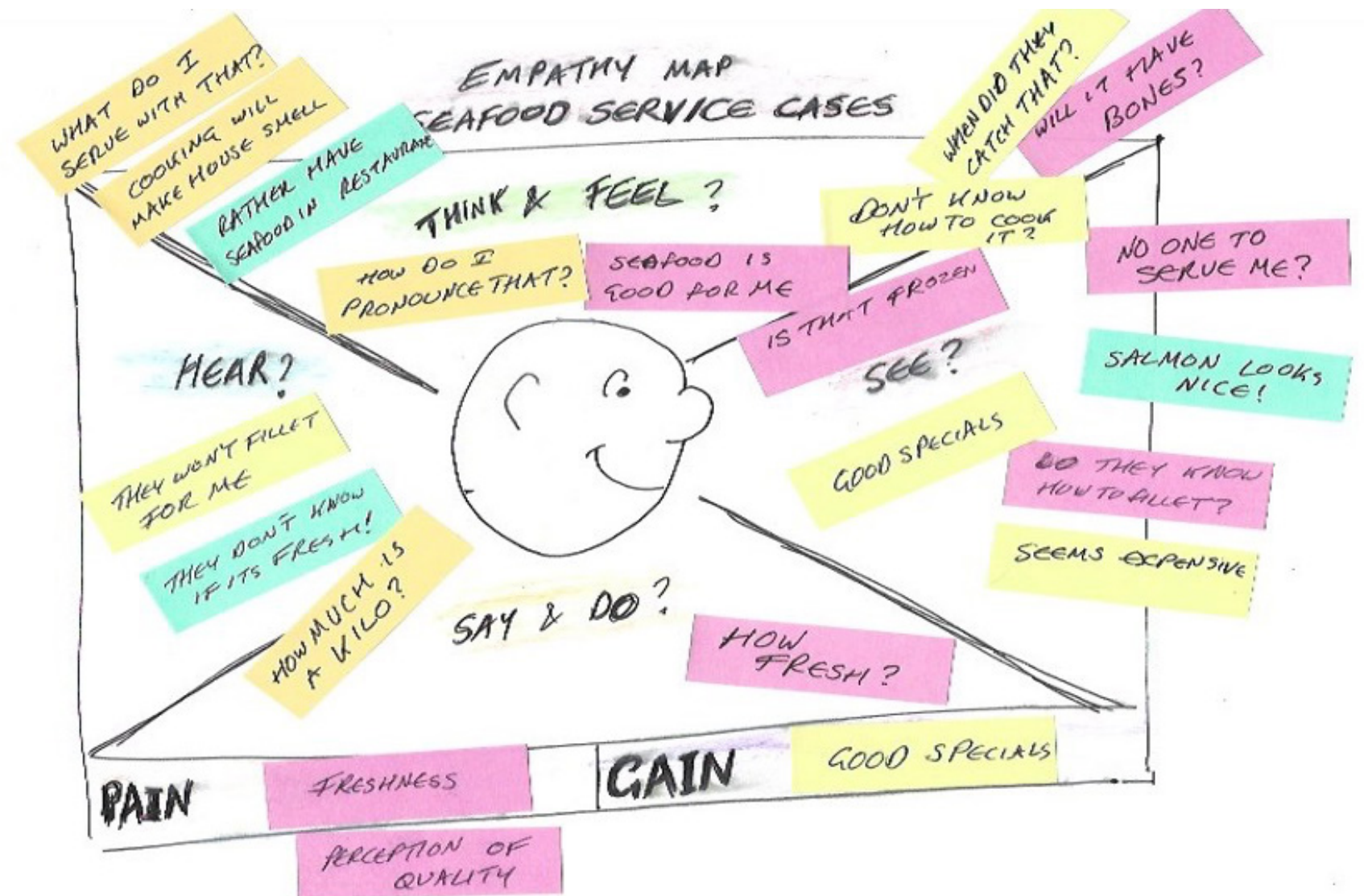


FIGURE 47: Empathy map framework built up with Post-it notes of a seafood service case experience (Willows)

7.2 Could be - conceptual landscape

After a contextual or macro review of the market has been undertaken, it is important to frame insights before any ideation or brainstorming session. It is critically important to have detailed understanding of what products and services are currently available, and also consider what products and services are not available that could address users' needs.

Before commencing any new development work, I always experience the shopping journey, including observations of store workers and shoppers, reviewing the price relativity, how many facings products have on shelves, availability, any point of sale, shelf life, where they feature on online shopping pages and also review alternative products and services. In addition, I check the home usability, sensory evaluation and how viable products and services add value to everyday life. I call this 'shopper emersion', which is key activity prior to the conceptual landscaping.

As noted earlier, customers are increasingly aware of environmental considerations such as reduction or removal of plastic bags that are used for wrapping seafood. Danziger (2018), explains shoppers have greater access to convenience foods from the wide selection of added-value lines which makes everyday life easier for time-poor shoppers, some of whom lack culinary repertoires for the evolving changing demographics of households.

Within the HCD_FMCG™ model of the 'could be' phase contains the contextual and conceptual stages. These two key stages identify trends and customers problems through empathy mapping and user engagement journeys. Once the contextual landscape has been evaluated and framed, the insights should be narrowed and reviewed against the original project intent, to check alignment before proceeding to the next stage within the 'could be' phase which is the ideation or brainstorming session.

Globally, retailers want to develop customer loyalty which leads to repeat purchase and market share gains and, thus, share price rises and improved dividend returns, whilst shoppers simply seek solutions to everyday problems.

7.2.1 Could be - brainstorming

Too often, innovation is reduced to a series of brainstorming sessions, where facilitators might proclaim, for example, "Hey, there's no such thing as a bad idea!". Keeley, Walters, Pikkell, and Quinn (2013) argue there is such a thing as an indisputably bad idea. Whilst this statement may seem provocative, the intent behind it is genuine, in so much as conceptualising ideas is not an isolated activity saved for ad hoc sessions. Brainstorming when done methodically with shopper focussed intent is an invaluable business and team building tool.

The brainstorming session, at its very worst in FMCG, is a game of career poker with the risk of sharing ideas at the risk of senior management annihilation, and at its best, it's a way to really share ideas to solve customers' everyday problems. Therefore, trusting teams without fear and a shopper focussed culture delivers the best brainstorming outcomes.

According to Keeley et al. (2013), innovation should be part of a systematic approach, moving from mysterious art to a more disciplined science. Brainstorming is a creative approach in which groups share ideas without criticism or judgement in order to promote uninhibited thinking; it is important to keep focus, deliver as many ideas as possible and use language like 'and' as opposed to 'but' to keep the fluidity going (IDEO, 2020). Shoppers' 'joy points' are indicated at the top of figure 48. These were extracted from the user journey maps covered earlier. They highlight trust, quality, innovation, value and service and should be considered when brainstorming ideas, with any ideas potentially delivering across a number of points highlighted.

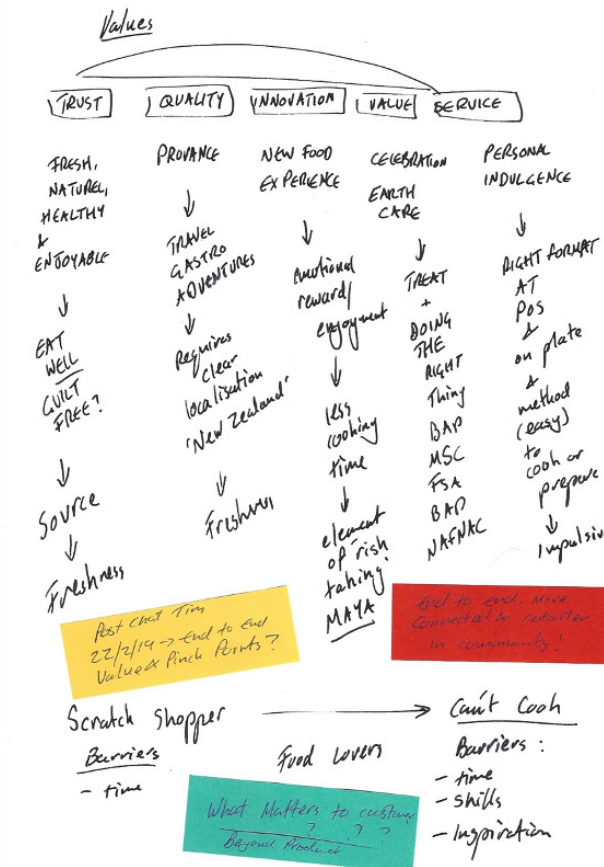


FIGURE 48: Framed shopper joy points, and what matters to customers beyond product

Through the project involvement and brainstorming exercise, further questions were raised regarding the notion of value and problems of barriers, or inhibitors, to purchase. This exploration guided me to review a much deeper level of shopper and store operator empathy. Gill (2016) states “Understanding consumer pain points sparks great innovation. Breakthrough leaders put consumer demand at the centre of all innovation efforts”.

As noted in figure 49, mind maps are built around problems and opportunities, and the exercise was to dump as many thoughts and ideas under previously identified framed insights. Kumar (2013) discusses the ideation session, one which is different from traditional free-form brainstorming where concepts are generated from core insights. Whilst I used core insights to frame my brainstorm session, I view them as similar in their approach and facilitation and desired outcomes, notably a bank of ideas to be evaluated at a later stage, in order to address a shopper’s problem.

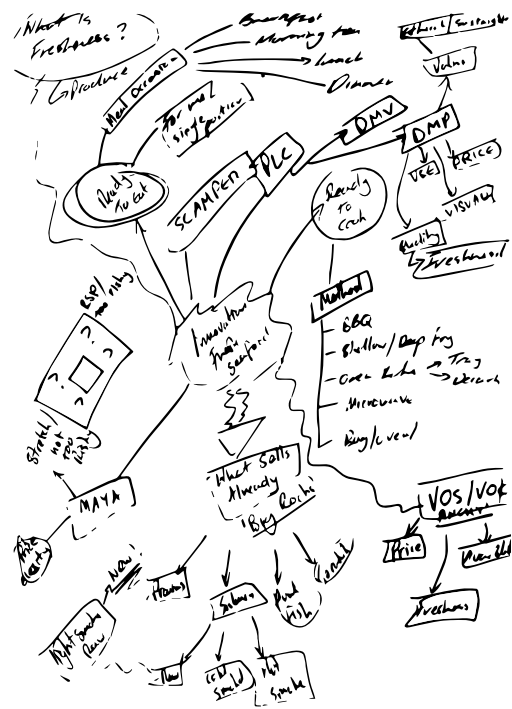


FIGURE 49: Dumping initial thoughts onto a mind map

One insight to an identified problem is, according to Moskowitz, Saguy, and Straus (2009), that two-thirds of shoppers’ decisions on what they are having for dinner are made on the same day. During the week, almost half of all dinner meals are prepared in less than 30 minutes, and these meals are becoming more basic Moskowitz et al. (2009). Note figures 50 and 51 stimulating inspiration with clear price points. The number of ingredients used is at an all-time low and fewer dishes are served Therefore, the reliance on inspiration and desirability becomes even more important within a store environment, especially as it concerns raw seafood.



FIGURE 50: Fresh quality, clear price points and country of origin can drive inspiration

A way to help stimulate concept and service ideas in order to solve shoppers’ problems is to use the SCAMPER model that was first introduced by Bob Eberle. The name SCAMPER is an acronym for seven techniques: (S) substitute, (C) combine, (A) adapt, (M) modify, (P) put to another use, (E) eliminate and (R) reverse. These keywords represent the necessary questions addressed during the creative thinking session (Elmansy, 2015).

- Substitute – bring a meal solution to the service case
- Combine – add freshness elements such as super-fresh vegetables
- Adapt – make seafood easier to cook, and more inspirational
- Modify – add a marinade and good to have a seafood product suitable for BBQ
- Put to another use – something suitable for the BBQ or microwave so it’s fun to cook
- Eliminate – Get plastic bags out of the service case, use a recyclable tray
- Reverse – Get the plastic out of the oceans and our seafood

I always thought brainstorm sessions were about coming up with lots of product or packaging ideas; now I realise it’s about coming up with solutions to real-life problems.



FIGURE 51: Inspiration can come from a highly engaged traditional fishmonger, as noted from this store in Hackney, East London (UK) that provides knowledge and recipe tips.

An example of combining solutions to problems is, according to Hogan (2020), Woolworths Australia working with Uber to create more delivery windows for grocery items as demand for home delivery has grows at unprecedented rates, in part because of major disruptors, for example, the pandemic COVID-19 (Hogan, 2020). There are several areas that need to be addressed to resolve customer pain points such as poor service and quality perception (note figure 52).



FIGURE 52: Demonstrates a pain point for users, one that should be considered within the context of brainstorming.

7.2.2 Could be - concept sorting

Once all concept ideas have been captured, it is critical to distil ideas that look to solve customers' problems by clustering and synthesizing concepts and evaluating them against the scope of the project. One project that applied design thinking to address customers' problems, because it was desirable, feasible and viable to do so, was to make in-house seafood kebabs, with salmon, firm white monk fish, cherry tomatoes and capsicum.

A tool I use to help teams prioritise captured concepts is a simple cruciform, with y-axis showing market growth from low to high, intersecting against the x-axis showing a concepts ability to implement from hard to easy.

Once all concepts have been overlaid on the cruciform, evaluation with teams may take place; it is worth noting some of the best ideas may be hard to do, as they may never have been done before, and some markets may not be established already, or very established dominant businesses appear to have the market covered. For example, WOOP online delivery would have noted the success of My Food Bag, and whilst hard to gain entry to an established market they have carved their niche as being more premium and more desirable than My Food Bag.

7.2.3 Could be - concept sketch

Throughout my career I have utilised the specialist skills of designers as they can sketch ideas as quickly as any group I've worked with. I used these designers for Tesco, Bakkavor, Marks & Spencer, Waitrose and Sainsbury's. To have someone with the ability to sketch in an ideation or brainstorm session is invaluable as sketches convert ideas into concrete form, that according to Kumar are easier to understand. The true value in these visual ideas is to frame concepts to address the problem or to simply map out the best ideas.

Both in NZ and the UK, as a facilitator and I have handed out small coloured stickers to teams and asked them to put stickers on their favourite concepts, the more stickers on a concept sketch the more the team values its desirability and design to solving users problems; this exercise narrows down a short list or framing concept sketches; figures 53 and 54 show the value of concepting sketches and developing ideas further. In this example the idea was developed by adding sachet sauces with ready-to-eat seafood in a stir-through pot.



FIGURE 53: Uses the 'Adapt' from the SCAMPER model to incorporate fresh lettuce, with cooked prawns and a sachet of creamy cocktail sauce

After visualising how I thought the kebabs should look, I prepared a rough sketch. It should be noted I considered the colour and textural contrast of the finished product from a desirability perspective. Also, from a feasibility viewpoint I considered the type of white fish firm enough to withstand a skewer and BBQ method of cooking (see figure 55).

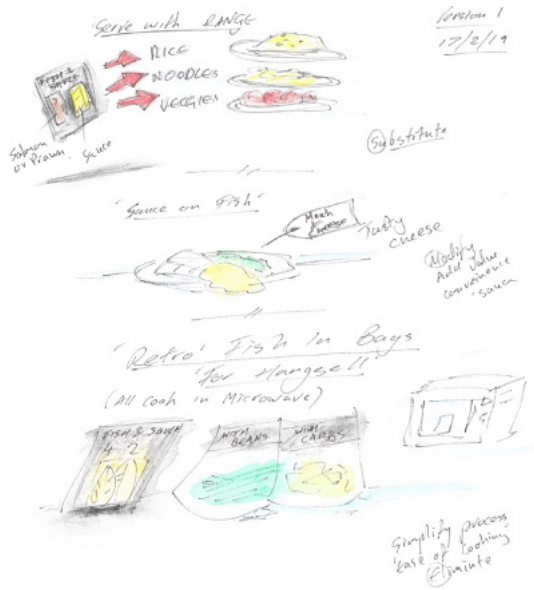


FIGURE 54: An earlier sketch of mind-mapping solutions to shoppers' problems which addresses key observations

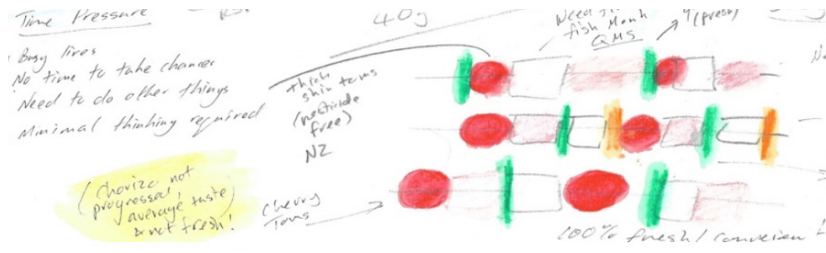


FIGURE 55: A rough sketch of how the seafood skewers could look

7.2.4 Could be - concept prototype

According to Kumar (2013), concept prototypes are “building to learn”, providing something tangible with the ability to seek feedback from stakeholders.

I arranged a prototype session with some co-workers (note figure 56); I had a rough idea of the desired output of providing our customers with something desirable, structurally suitable for grilling or BBQ, looked home-made and looked good value. I prepared the ingredients for the seafood kebabs consisting of succulent salmon, sourced from the Marlborough Sounds, firm monk fish fillet, crisp green capsicum and sweet cherry tomatoes. We attentively assembled our skewered masterpieces, we reviewed each other's, and unanimously agreed the right product to progress through this team prototype exercise, ready for the next phase of wider stakeholder concept evaluation.



FIGURE 56: Co-workers and I building prototypes of the seafood skewers (Willows)

7.2.5 Could be - concept evaluation

Kumar (2013) states that concept evaluation is a method for evaluating concepts according to how much value they bring to the users. In my career, either in developing, selling or buying roles, the importance on focusing on the consumers' needs, and not personal preferences have delivered better designed outcomes.

I have presented to some of the most professional, kind and considerate product selectors in retail, through to the not-so-professional. This has provided me with empathy for suppliers who used to present to me when I've held senior selector and buying roles. The empathy I hold is due, in part, to having been a supplier, investing in hours of preparation, kitchen samples made up that have been prepared till midnight the night before. The all-important concept evaluation session with customers may result in failure, due to unforeseen circumstances that can undermine or delay the evaluation session.

Over the last 30 years I have experienced a number of unforeseen circumstances in presenting products for evaluation, from the more mundane of missed trains to London, motorway accidents, traffic, no car park spaces at the customers offices and staff sickness, through to personal family deaths, bomb threats and terrorist attacks in London.

Some of my fondest memories of concept evaluation sessions are with customer-focused retailers and suppliers, where there is trust, no power play and with the common task of providing solutions to consumers.

We reviewed the differing formats of skewers raw and cooked, as noted in figure 57, and the skewers were well received by the wider stakeholders within the context of shopper problems. I also asked what people would pay for the skewers to understand the price perception, and the good news is they were acceptable, as the product costs versus the relative price people would pay meant we had a commercially viable option.



FIGURE 57: Seafood skewer evaluation does not address environmental issues (Willows)

However, I realised the seafood skewers would not deal with the wider environmental issues, such as the reduction of single-use plastic bags and shopper convenience regarding speed of cooking and avoiding an identified pain point of washing pots and pans. As the design process is not linear, I revisited some concepts from the brainstorming session and designed something that would deliver against more of the shoppers' pain points.

7.3 Should be – solution landscape

After reviewing the highly desirable seafood skewers, which although innovative, it only addressed a number of shopper pain points. I wanted to drive something much more radical, within my HCD_FMCG™ design model.

I went back to the core pain points, to design a reusable and microwavable tub. Something I felt passionately about as my role as a designer was removing single-use packaging from our environment, encouraging seafood consumption as a healthier source of protein and offering ultimate convenience (no mess). Through my personal reflections I wanted to see seafood serve-over cases flourish, greater social interactions within retail stores. However, as noted in the contextual landscape, customers' needs are changing and serve-over cases are not; the tub can apply HCD to the seafood counters to address the decline.



FIGURE 58: Showing a plastic bag in a reusable tub, not labour saving or as convenient for shoppers as still utilising single-use plastic bags (Willows)

I considered the idea of using a tub as an end-to-end supply, as noted in figure 58, with transportation and method of cooking through a vented reusable solution. Some shoppers would like simple sauces or flavoured butters (as noted in figure 59 brainstorming sketches), providing inspiration with fresh fish fillets to provide more convenience and inspiration. The tub negates the need for plastic bags in serve-over; customers could transport tubs easily and never have to touch raw seafood again, and microwaving is a fast and convenient way to cook seafood.

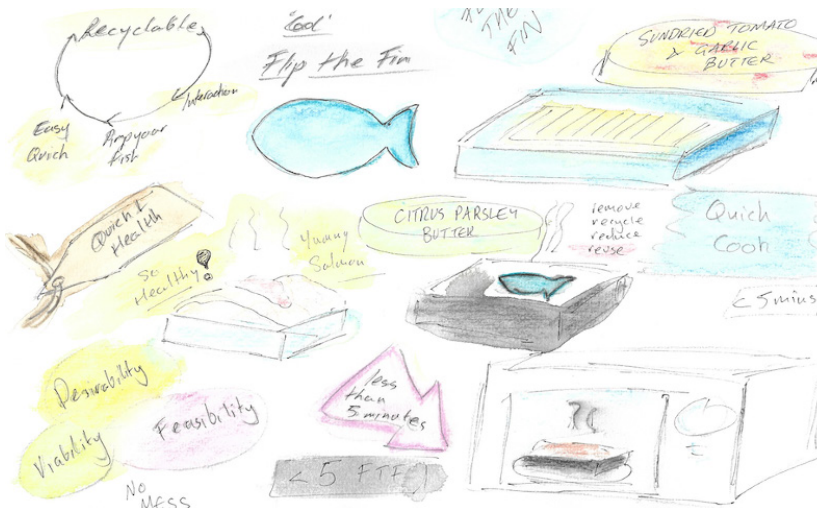


Figure 59: Building on solutions to shoppers' problems

7.3.1 Should be - solution prototype

By sketching initial elements for the tub, such as the vent in the middle and the clips to seal the lid at the side, the design doubled up as the fins of the fish. I was in the process of iterative designing, according to IDEO (2020). This is the act of testing and refining an output with the aim of delivering the end goal. The interactive shape and personality of the design differentiates the packaging.

The nose of the fish would double as a pouring nozzle, as noted in figure 60, to aid pouring the sauce on the shoppers' plate, when the shopper pours the sauce on their plate. I even gave it a name, 'flip the fin'. I designed the tub to hold a specific volume that would reflect the average weight of fish we sold within the serve-over cases, as I did not want to introduce two sizes which would increase investment costs and make the project commercially unviable. According to Kumar (2013), proposing solutions allows exploration around concepts and how people engage with them. Internal feedback from core stakeholders was good; I then I engaged a packaging manufacturing to build up theoretical costs and requested a design a little more polished than my sketches.

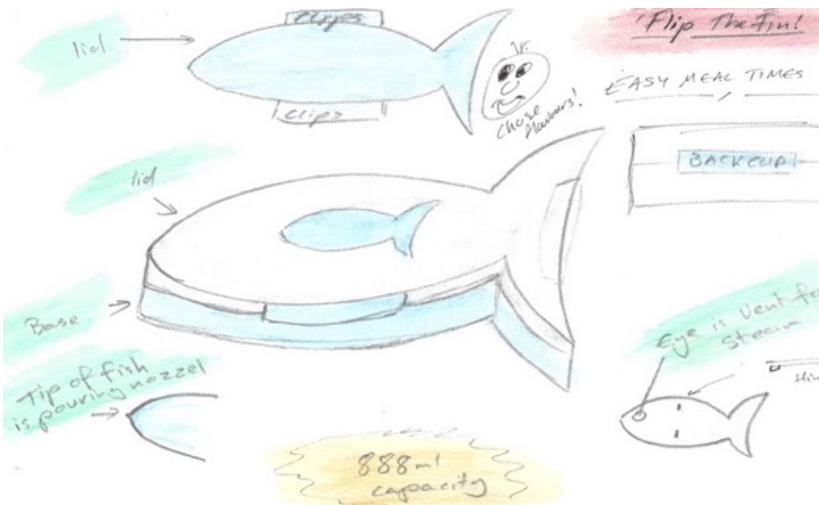


FIGURE 60: Initial tub design takes shape

7.3.2 Should be - evaluation

By the framing of insights gathered through the use of the tools discussed earlier, it was identified customers are looking for greater convenience within the retail environment. This combined with engaging, knowledgeable and friendly staff can provide a level of value beyond financial. These customers are also increasingly aware of the environmental considerations associated with retail products, such as the need for the reduction or removal of single-use plastic bags. This has significance in the seafood category as plastic is often used for wrapping seafood.

Through design iterations I realised I had missed some core design elements, such as the label application for stores, and removal by the users. A label is a legal and food safety requirement which allows the stores to print the price, species and use-by date or shelf-life date. An important design element to consider is how hard would it be for users to remove the sticker without any residual glue, this design oversight leads to a user pain point. Kumar (2013) states any solutions to an observed pain points needs addressing against user's needs, solutions should be evaluated in a tangible form. Whilst the pain point of the sticker or label residual adhesion was not observed, through my prior knowledge and experience I knew a solution would be required.

I therefore sourced a label supplier who had developed easy-peel labels, buy using low levels of glue, ideal as through simple washing of the tubs, removes any residual glue, without aggressive scrubbing. During the evaluation of the new easy-peel labels, I had to consider the investment costs. Given that I wanted to test and trial the concept, I did not want any bespoke label cutter sizes as this would increase investment. So, it was important that the sizes the supplier already had were of a suitable size for our instore printing machines. After verification the standard label dimensions were suitable for our instore printing machines, this is part of getting the idea right, and fit for trial. I also investigated how many stores had access to suitably sized dishwashers and considered what the standard operating procedure (SOP) would look like for store team members.

Given the service interactions between seafood counter and customers, I had to consider the ease of engagement.

Three considerations were the tare off weight of the packaging for legal reasons, cleanliness of the tub for hygiene and food safety purposes, and from a user experience, speed of service for customers, figure 61 indicates user friendly design elements, or the touchpoints of the service or user interaction. A touchpoint is any point of contact between the retailer and the shopper, representing an opportunity to create positive interactions and deliver better experiences – but get it wrong and pain points can arise through making customers wait a long time, not providing an engaging service, or getting things wrong such as not knowing how to fillet fish. And therefore, touchpoints are critical regarding the service exchange on seafood counters (IDEO, 2020). Of all these internal solutions of label application, the SOP of service interactions would prove highly useful later on within the retail business.

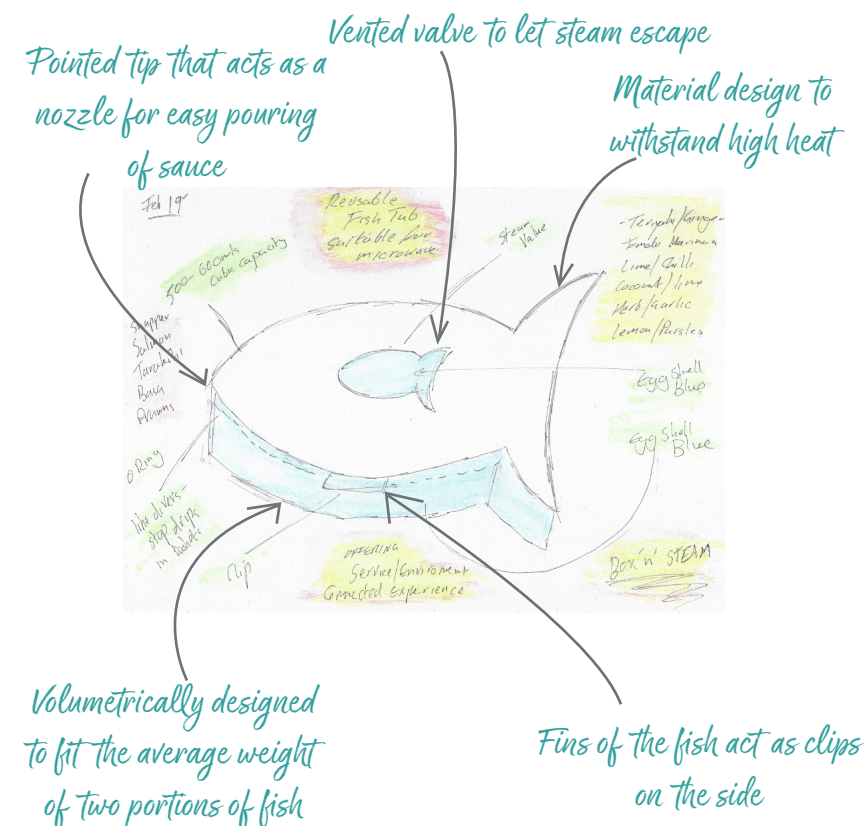


FIGURE 61: 'Flip the fin' concept design with key user-friendly design elements

I worked with a packaging supplier to evolve my design and I requested permission from the general manager of sales to use a high resolution picture of the design for this project; however, the feedback was 'Unfortunately, he prefers the high resolution picture is not used due to commercial sensitivity, sorry I couldn't get this across the line for you' (Willows J., personal communication, 2020).

Whilst the designer at the packaging company evolved my design with a few additional elements, the design was referenced directly to my initial sketch, and he refers to this in his prototype. My original sketch evolved through observing interesting design ideas, some novel, and some traditional. These included a microwavable tub, USB sticks shaped like a fish, as noted in figure 62, and a traditional method of cooking seafood called En Papillote, which translates to bake in paper. This overlaid with the need to create shopper convenience within seafood counters, inspired me to sketch the tub to provide a user-friendly solution.



Figure 62: The inspirational cues to the tub design

7.3.3 Should be - wider stakeholder engagement

The internal proposition was to deliver consumer value through the introduction of a bespoke multifunctional returnable microwavable dish. Designed with an integrated hinge in the shape of a fish, it allows steam to escape whilst the seafood cooks within a microwave in less than five minutes. The benefits from the prototype are the following:

- Negating the need for plastic bags;
- Packaging that is hygienic and retailer takes ownership of cleaning and sanitizing and managing the returns policy;
- Seafood container that is suitable for transit and provides effective product integrity;
- Drives solutions to shopper problems by—
 - Quick-to-cook centre-of-plate meal solutions;
 - Less smell at home during cooking;
 - Reduced washing up with no need for chopping boards, filleting knives, frying pans, oven trays at home; and
 - Guilt-free packaging.

The target was to convert 30% of our seafood customers in the seafood serve-over counters into recyclable, microwavable packaging providing environmental, inspirational and convenient solutions to mealtimes. To create wider engagement and project buy-in, I prepared a stakeholder map; these maps are used to share with many different stakeholders through visual representation to demonstrate and reveal complex interactions and user behaviours (UX, 2020).

An example of wider stakeholder engagement, as noted in figure 63, shows where the commercial value intersects with key stakeholders, from quota owner to consumer.

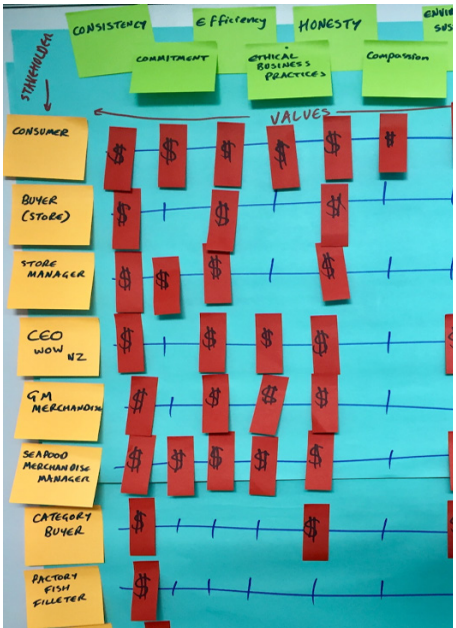


FIGURE 63: Shows where the commercial value intersects with values from quota owner to consumer.

A key stage was the presenting and listening to stakeholders, to build a wider appreciation of the design, its limitations and opportunities, and areas to address prior to implementation within the context of retail serve-over counters.

The objectives of feedback and evaluation are as follows:

- To create a methodology of seeking feedback and further evaluation;
- To explore with internal stakeholders the customers' barriers to purchase and 'delighting factors' associated with seafood purchase end to end.

This feedback exercise proved insightful and invaluable, as the amount of detail from their respective areas of technical expertise defined areas which had not been considered, and also developed a level of project engagement, adoption and enthusiasm. As noted in table 2, opportunities and limitations were highlighted giving the commercial sensitivities a level of censorship is required.

Table 2: Internal Stakeholders' feedback

TITLE	FEEDBACK	ACTIONS
████████████████████	Great idea, ahead of your time, make sure costs stack up – 100% support	████████████████████ ████████████████████
████████████████████	We must own and control cleaning of tubs, makes a lot of sense. Can I help out in the Deli area?	████████████████████ ████████████████████
████████████████████	Great idea, save all that plastic, can we use elsewhere & do our dishwashers fit the concept?	████████████████████ ████████████████████ ████████████████████
████████████████████	Sounds like a great idea, we should copyright it, let me know if I can help?	████████████████████ ████████████████████
████████████████████	Great idea, if we can reuse then that helps me, keep me updated – can we use in meat?	████████████████████ ████████████████████
████████████████████	Sounds really interesting, let me know how the trial goes?	████████████████████ ████████████████████
████████████████████	Would Australia be interested as well, like the design – we will get to work	████████████████████ ████████████████████
████████████████████	How would you merchandise them, we can build some mock-up	████████████████████ ████████████████████
████████████████████	It would really work, how have you got this through?	████████████████████ ████████████████████
████████████████████	Things are heading that way, better to be on the front foot, just must cost the labour hours per tub	████████████████████ ████████████████████
████████████████████	Bit like the 'Bag and Bake' concept but better as you don't have to throw the bags away	████████████████████ ████████████████████ ████████████████████

Tom Wujec suggests within design 'it's the conversations that are the most important aspects of design' (Wujec, 2013). Through conversations on the tub design with co-workers, I was introduced to many valuable and new considerations.

Results of the opportunities and its limitations:

- 1. More connected engagement of service staff at point of purchase;
- 2. Recipe suggestions;
- 3. Convenience with quick to cook;
- 4. Healthier options;
- 5. Environmental considerations about removing non-re-usable plastics; and
- 6. How would we clean?

7.4 A/B (Alfa build) – implementation

Turning concepts and solutions such as the microwavable seafood tray requires iterations of prototyping and constant evaluation to address users' problems. In the implementation phase it requires a strategic and practical approach by turning concept ideas into reality.

Given the level of investment to produce the trays and to seek approval from operations, I wanted to arrange some physical prototypes and test and trial, to gain further insights from stores and from shoppers. Kumar refers to this as pilot development and testing which allows learnings from users in their proposed environments. I had planned a trial in a number of stores across the country based on differing demographics with a view to building some qualitative and quantitative data.

I had built a list of internal and external questions to gather in-depth feedback and analyse findings:

- Will customers return 'reusable trays, or forget and leave them at home?
- Price customers prepared to pay, or do they expect for free?
- How would customers use in the context of meal occasions?
- What are the motivational factors of product – quick, easy, no fuss, or mess?
- How will we address potential demotivational factors – forgot my box, service takes longer?
- Ascertain target price point, if to charge at all?
- What is the profitability through increased sales?
- What is the commercial investment for national roll out?
- Is the online team engaged, and what steps must be in place?
- How will I gather customers' expectations for service interactions?
- What is the best way to drive awareness in store and adoption?

Figure 64 is an example of shopper-facing point of sale driving awareness in store to seafood species in Woolworths Australia. It highlights how seafood is ideal for entertaining and provides stimulus through recipe ideas. I would need the marketing teams help to drive instore awareness, which is why the research and stakeholder engagement detail would prove invaluable.

When one considers customers' interactions discussed in the customer journey of seafood serve-over cases, they note important opportunities to make more meaningful connections with the local community and create wider shopper value.

Payne (2000) identifies having well-trained and empowered staff in the service industry is critical; they must have the ability to communicate and present themselves as an engaging specialist in order to gain trust and develop loyalty. "As service businesses consider empowerment", they can look at high-involvement manufacturing organisations as 'laboratories' in which the various empowerment approaches have been tested and developed. According to Payne (2000), new approaches to managing production lines can serve as role models for many service businesses. Schmidt (2009) claims new product integration involves a list of questions, active listening and observing, all of which allow a gathering of information from responses to the following questions:

- Who is my consumer beyond her/his physical presence?
- What are his/her attitudes, beliefs, and values that guide decisions?
- What is the importance of role of my category, brand, or product in his/her life?
- Which categories, brands, and products does he/she consider to be the competitive set?
- What are the influences that cause her to consider, buy, use, reject, or buy again?
- What product gaps exist in her life?
- Are there compensating behaviours that fill the product voids now? (Schmidt, 2009).



FIGURE 64: Example of building awareness in stores

7.4.1 A/B (Alfa build) Implementation Plan

An implementation plan (note figure 65) identifies issues, and states actions with desired and measurable outcomes; together these aim to solve users' problems.

Kumar (2013) proposes a matrix to outlay a strategy roadmap. In the case of the tub, the matrix maps out the key challenges such as speed of service, customer awareness and operating costs overlapped with alignment to strategy, financial investment and further training. The output of the mapping is a plan that clearly lays out actions, timeframes and resources required for delivery against expected challenges and issues. It is important to discuss and include stakeholder feedback and after which to create a master implementation plan.

Whilst waiting for packaging prototypes to test in store, I heard on the radio that Foodstuffs would accept returnable tubs within its stores. Figure 66 highlights the acknowledgement that I was onto something with my predictions. This was a bitter-sweet moment for me as this represented great inroads to reducing plastic for our planet. Whilst the announcement would not address user convenience at home for flavour additions or quick to cook, it made great inroads in publicly announcing another way to reduce plastic.

Timeline of events:

3/5/19 'Foodstuffs supermarkets to accept BYO containers' (Woolf, 2019). Foodstuffs was the first New Zealand retailer to offer all customers the opportunity to bring reusable containers for use in staffed areas like seafood, bakery, delicatessen, and butchery.

Foodstuffs communicated to customers advising how it works:

- Check your containers are leak-proof then clean and dry them;
- Hand your containers to staff at the counter who will weigh the container before adding food;
- Store members will label and seal your containers with a barcode for scanning at the checkout.

4/5/19 I shared my insights and my SOP to key team members.

7/7/19 Countdown announces trial will commence offering customers a 'bring your own container' service (Flaws, 2019).



FIGURE 66: Censored email from senior leader.

CHALLENGES	INITIATIVES		
	UPSKILL	MARKETING PLAN	SALES GROWTH PLAN
SERVICE	BUILD SOP FOR TRIAL STORES		
AWARENESS		BUILD SHOPPER LED AWARENESS incl. ONLINE	
COST	QUANTIFY COST	DIGITAL	
OPERATIONAL COSTS	SPEED OF SERVICE TIME/ACTION		ADDITIONAL SALES QUANTIFIED + AUOP

FIGURE 65: Implementation plan to address issues and create a plan to realise solution

7.4.2 A/B (Alfa build)–post-implementation plan

Post implementation is making sure what has been delivered actually works against the initial intent and the additional learnings along the design process. In the retail stage-gate model, this is typically reviewed after a product has been launched for 12 weeks. Did the product deliver the number of units per store per week UPSPW? Are quality complaints in line with expectations? Did the supply service and sales and profit financial metrics get delivered? What lessons can be learnt, what went well and what could have gone better? It's a good idea to record everything within the post- implementation evaluation as it serves as a good starting point for the next design project.

I never held a post-implementation evaluation of my tub as across the industry the market had moved with the national roll-out of BYO containers, which became the business priority. Whilst I never had the ability to test the validity with shoppers of the microwavable tub, a lot of my initial work was adopted, and we reacted faster through the prior stakeholder engagement sessions. The SOP was picked up and utilised, but the ultimate user solution was placed on hold. Whilst a tangible design, it was not a business priority and therefore not progressed after I left Countdown in 2019. It acts as a reference point to explore the role of my tacit knowledge in the implementation of HCD within FMCG. After four years at Countdown I feel incredibly privileged to have been part of a fantastic retail environment, and to have contributed to removing foam trays from going to landfill, developing packaging technology and improving product design. I am proud to be an active designer within FMCG.

7.5 Summary

The benefits of being at the centre of this design whilst researching HCD as part of my MDE were twofold: first, an appreciation and acceptance of my tacit knowledge and its relevance to professional practice; and, second, the knowledge gained through theoretical research into established design frameworks of Kumar and IDEO and their application beyond FMCG.

The validity of this tacit knowledge proved an important stepping stone to my learning journey. According to Paul D. Selden (2019), to exploit the connection between practical knowledge and prescriptive knowledge, we first need to overcome the problem that “know-how” is largely tacit in the moment of real-time forward-looking practice. In other words, the practitioner is not directly aware of their tacit “know-how”, or “tacit knowledge”, at the time of practice (Selden, 2019).

I have been described many times as an intrapreneur, actively seeking innovation within and beyond company limits, a self-starter, someone you can leave alone to get the job done. My friends and peers in NZ and back in the UK ask me, “What are you, development, quality, manufacturer, designer, marketer, buyer or seller?” I am in fact all of these. On reflection this is testament to my upbringing within my family’s businesses, where you had to wear many hats.

Whilst I continue to be a practitioner of design and intrapreneurship within FMCG with my prescriptive knowledge, Paul D. Selden (2019) explains that an important challenge facing entrepreneurship researchers is the “three-body” knowledge problem of how to use “theoretical knowledge” to produce “prescriptive knowledge” that communicates the “practical knowledge” of situated practice to students and practitioners of entrepreneurship. Some of my frustrations as the designer at the start of the reusable tub project related to the fact I did not have the theoretical knowledge to drive wider internal stakeholder engagement; however, I am excited by the fact I feel as if I’ve only just started with this newfound knowledge. At a time when the importance of HCD is actively promoted within reusable packaging within FMCG within some of the world’s biggest brands.

On reflection, I would have positioned myself into a role where people would expect to see this type of innovation; the role in which I was employed made it somewhat challenging for the wider stakeholders. I am proud of being a product and commercial hybrid, I am energised about being a designer trying to find solutions to users’ everyday problems. By overlaying my tacit knowledge, with personal and professional reflections, and conducting academic research of established design practices, I can demonstrate greater flexibility to my design approach, and by having greater awareness of my own bias and cognitive behaviours I can deliver a more considered approach to design.

Whilst dropping off some NPD chilled dip samples 25 years ago to a sleepy artwork studio near Silverstone (UK), the designer who was doing the job for the retailer Waitrose (UK), asked rhetorically, “Manufacturers and retailers have such power to ‘do the right thing’, I hope you do the right thing?”. That one line, softly spoken, remains with me, and has ensured my environmental and social compass is part of my everyday approach to my professional practice.

Doing the right thing for our planet, shoppers and team culture means I can continue to make a positive contribution to an industry I am passionate about. I was reminded of this through my reflection, which at times was painful to record due to the deep and personal nature, which sometimes has resulted in me changing jobs by me sticking to my moral values. According to Boud, Keogh and Walker (1985), we are encouraged to pay attention to our feelings, often referred to in literature as the affective dimension.

Bassot (2015) advocates that it is the conscious process of reflection that enables us to learn and to develop our practice through analysis and evaluation rather than some kind of ad hoc thinking about things. Such reflection can be prompted by positive and negative experiences and involves intellectual and affective aspects. The outcomes of reflection can include the following.

- Synthesis – a mixing of different ideas to bring about a different whole
- Integration – combining two or more things to become more effective
- Appropriation – taking something forward that you want to use in the future
- Validation – growing confidence in knowing your actions were justifiable
- A new affective state – a change in the way you feel about the experience
- A decision to engage in some further activity and a commitment to action (Bassot, 2015).

This document also explored the notion of my tacit knowledge by overlaying existing established academic design frameworks derived from IDEO and Vijay Kumar in the implementation of HCD within FMCG. The resulting design methodology enabled the development of a reusable microwavable tub providing an end-to-end solution for stakeholders. The design’s objective is to remove single-use plastic bags in the retail environment from seafood serve-over counters.

The outputs of the methodology lie in the applied intangible and tangible elements. Intangible areas include four key recommendations for the FMCG industry and the included awareness, acceptance and value of my prior tacit knowledge. The importance of reflection was explored through Rolfe’s model of what?, so what? and what now? to address the conscious and unconscious bias within my design practice. This reflection was on my childhood memories of Lowestoft, and the links were established between New Zealand and the fragility of the fishing industries and the importance of resource management.

This reflection underpins my deep-rooted motives and passion to protect our oceans, environment, fishing communities, businesses and people involved in the seafood industry. All this galvanises ‘my why’ to actively promote the survival and growth of seafood counters by creating greater consumer value aligned to the changing contextual landscapes of online growth, convenience foods and health. The relevance of my tacit knowledge was key to identifying these changing global consumer trends within the field of FMCG, and how to create user value within retail.

Nonetheless, I identified the limitations of the FMCG industry and my own design practice, which until early 2019 had utilised the traditional stage-gate model. With the problem identified as the changing contextual landscape of shoppers' evolving requirements, declining global seafood counters and my own limited design knowledge, I needed to explore and assess established design frameworks and their relevance within FMCG.

It was identified that a hybridised design tool would be required utilising elements of established design frameworks and tools noted. Fundamental to the hybridised model was adopting design thinking at its core and understanding the approach. According to Dam & Siang, (2019) design serves to provide solutions to users' everyday problems.

My recommendations are as follows:

Recommendation 1

Tacit knowledge or practical know-how industry specialists will greatly enhance professional outcomes with the benefit of explicit knowledge.

For the purposes of this thesis, the design model was achieved through the exploration of consumer empathy, and immersion in shoppers' everyday lives through persona and shopper journey mapping, which were all key to identifying real-life problems. This provided clarity of consumer insights such as qualification of pain points during the user journey mapping. According to Gagmon and Chu (2005), these insights act as the critical interface between businesses and end user, which provides a catalyst to enable businesses to transition from “push” to “pull” marketing strategies.

Recommendation 2

Rejection of the established stage-gate models as the status quo within FMCG product design, as it does not consider the users' everyday problems; rather, its limited linear formulaic approach assumes one gate cannot be opened until the last gate is shut. This is in contrast to the HCD_FMCG™ model, which aligns specifically to address users' everyday problems.

The HCD_FMCG™ model is now fully adopted within a number of multimillion-dollar businesses across Europe, Asia and Australasia, serving international and domestic interests in product design by improving the efficiency and effectiveness of HCD within FMCG. The hybridised design tool was first registered in June 2020 as HCD_FMCG™.

Recommendation 3

The HCD_FMCG™ tool should be rolled out industry wide and adopted within retail, manufacturing and foodservice. The tool targets the consideration of users' needs, including the designers as users of the tool, and provides a framework to deliver greater user convenience and desirability, whilst using more familiar elements of the traditional stage gate to aid the education, adoption and acceptance of HCD principles. The design tool values different thinking styles, experiences and expertise and encourages collaboration. According to Dam and Siang (2019), understanding the importance within the design process of creating better world outputs is important.

Design is non-linear, allowing nimble interfaces which can be deployed in industries beyond FMCG, whilst having the ability to respond to changing contextual landscapes. In doing so, businesses will have specific insights and identify the customer pain points; and framing these insights provides solutions identified using the HCD_FMCG™ approach. As discussed by Sinek (2020), it is important to understand the language of cultural change, in order to deliver better outcomes for the global good.

Recommendation 4

It is recommended that global retailers accelerate the adoption of multifunctional and reusable packaging for serve-over counters and for online purchases. The tangible design of the seafood tub, with its key design elements, whilst not launched nationally, did required concept stakeholder feedback. This provided valuable user insights to enable the launch of BYO tubs to seafood and deli counters across NZ.

However, it should be noted, a basic BYO tub misses the fundamentals of the HCD approach, as it does not address the key main pain points. These were identified as convenience and speed of cooking seafood, serving suggestions and the shopper clearing up at home, all identified through shopper journey maps.

The proposed tub removes the need for single-use plastic bags, reduces CO2 omissions and therefore creates social and environmental value through the protection of jobs, improved human interactions, a sense of place and community, and the provision of sustainable business models. It also creates value by promoting consumption of sustainable, healthy seafood through the medium of reusable packaging which applies HCD provides a long-term solution, not a quasi-option of brown paper bags which uses 40% more CO2 than single-use plastic bags. Seafood sold in pre-packed recyclable trays is not the final answer as 85% never gets recycled by shoppers. Education by the retailers and government on the importance of recycling is critical, as too is the ability and capacity for New Zealand to process and recycle material domestically.

Global retailers who close seafood counters and utilise space for less healthy alternatives such as ready meals, sandwiches and sushi in the name of shopper demand, must accept their societal responsibilities and impact on community health, as the growth of convenience meals is linked to increased obesity. WHO encourages seafood consumption and discourages eating convenient food.

The viability and the value of seafood counters as a vehicle to personally engage shoppers, to help educate simple recipes, reduce CO2 omissions, to support local fishermen and their communities, and to improve shoppers mental and physical well-being cannot and should not be ignored; seafood counters must adapt or die.

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Conclusion

This document explored the notion of my tacit knowledge by overlaying existing established academic design frameworks derived from IDEO and Vijay Kumar in the implementation of HCD within FMCG. The resulting design methodology enabled the development of a reusable microwavable tub providing an end-to-end solution for stakeholders. The design's objective is to remove single-use plastic bags in the retail environment from seafood serve-over counters.

The outputs of the methodology lie in the applied intangible and tangible elements. Intangible areas include four key recommendations for the FMCG industry and the tangible elements of the HCD_FMCG™ model and the design of a reusable microwaveable tub for use within seafood serve-over counters. The importance of reflection was explored through Rolfe's model of what?, so what? and what now? to address the conscious and unconscious bias within my design practice. This reflection was on my childhood memories of Lowestoft, and the links were established between New Zealand and the fragility of the fishing industries.

This reflection underpins my deep-rooted motives and passion to protect our oceans, environment, fishing communities, businesses and people involved in the seafood industry. All this galvanises 'my why' to actively promote the survival and growth of seafood counters by creating greater consumer value aligned to the changing contextual landscapes of online growth, convenience meals and health. The relevance of my tacit knowledge was key to identifying these changing global consumer trends within the field of FMCG, and how to create user value within retail.

Nonetheless, I identified the limitations of the FMCG industry and my own design practice, which until early 2019 had utilised the traditional stage-gate model. With the problem identified as the changing contextual landscape of shoppers' evolving requirements, declining global seafood counters and my own limited design knowledge, I needed to explore and assess established design frameworks and their relevance within FMCG.

It was identified that a hybridised design tool would be required utilising elements of established design frameworks and tools noted.

Fundamental to the hybridised model was adopting design thinking at its core and understanding the approach is that design serves to provide solutions to users' everyday problems (Dam & Siang, 2019). My first recommendation is that tacit knowledge or practical know-how industry specialists will greatly enhance professional outcomes with the benefit of explicit knowledge.

For the purposes of this thesis, the design model was achieved through the exploration of consumer empathy, and immersion in shoppers' everyday lives through persona and shopper journey mapping, which were all key to identifying real-life problems. This provided clarity of consumer insights such as qualification of pain points during the user journey mapping; these insights act as the critical interface between businesses and end user, which provides a catalyst to enable businesses to transition from "push" to "pull" sales strategies (Gagmon & Chu, 2005).

The second recommendation is the rejection of the established stage-gate model as the status quo within FMCG product design as it does not consider the users' everyday problems; rather, its limited linear formulaic approach assumes one gate cannot be opened until the last gate is shut. This is in contrast to the HCD_FMCG™, which aligns specifically to address users' everyday problems.

The HCD_FMCG™ is now adopted within a number of multimillion-dollar businesses in New Zealand, Europe and Asia, servicing international and domestic interests in product design. The hybridised design tool was registered in June 2020 as HCD_FMCG™, therefore my third recommendation is the tool should be rolled out industry wide and adopted within retail and manufacturing. The tool targets the consideration of users' needs, including the designers as users of the tool, and provides a framework to deliver greater shopper convenience and desirability, whilst using more familiar elements of the traditional stage gate to aid the education, adoption and acceptance of HCD principles. The design tool values different thinking styles, experiences and expertise and encourages collaboration. It understands the importance within the design process of creating better world outputs (Dam & Siang, 2019). It is non-linear, allowing nimble interfaces which can be deployed in industries beyond FMCG, whilst having the ability to respond to changing contextual landscapes.

In doing so, businesses will have specific insights and identify the customer pain points; and framing these insights to provides solutions identified using the HCD_FMCG™ approach, and as discussed by Sinek (2020), it is important to understand the language of cultural change and drive better outcomes for the global good.

The fourth recommendation is that retailers adopt the use of multifunctional and reusable packaging with for serve-over counters and for online purchases. The tangible design of the seafood tub, with its key design elements, whilst not launched nationally required concept stakeholder feedback, this provided insights, provided key valuable user insights to enable the launch of BYO tubs to seafood and deli counters across NZ. However, it must be noted, a basic BYO tub misses the fundamentals of the HCD approach, as it does not address key main pain points, these identified as convenience and speed of cooking seafood, serving suggestions and the shopper clearing up at home, all identified through shopper journey maps. The tub negates the need for single-use plastic, reduces CO₂ omissions and therefore creates social and environmental value through the protection of jobs, improved human interactions, a sense of place and community, and provision of sustainable business models.

By promoting consumption of sustainable, healthy seafood through the medium of reusable packaging which applies HCD, provides a long-term solution, not a quasi-option of brown paper bags which uses 40% more CO₂ than single-use plastic bags. Seafood sold in pre-packed recyclable trays are also not the answer as 85% never gets recycled by shoppers.

Globally retailers who close seafood counters and utilise space for ready meals, sandwiches and sushi in the name of shopper demand, must accept their responsibilities and impact on community health, as the growth of convenience meals is linked to increased obesity, in contrast to WHO recommendations to increase seafood consumption.

The viability and the value of seafood counters as a vehicle to engage users, reduce CO₂ omissions, to educate, to support local fishermen and their communities, and to improve mental and physical well-being cannot and should not be ignored; seafood counters must adapt or die.

PROS-TOS-T



Glossary

As with all industries there is specific language that comes with the territory. Whilst every effort is made to avoid excessive industry jargon and acronyms, at times this is unavoidable. The definitions given here relate specifically to this project so may differ from their everyday usage.

AGILE: Agile working is a way of working in which employee empowerment is key, to work with maximum flexibility within teams to maximise outputs.

AWOP: Average weight of purchase.

BAP: Best aquaculture practice.

BASKET PENETRATION: This relates to what percentage of shopper baskets your category or product is in.

B2B: Business-to-business transactions, for example selling whole fish to a fish processor who fillets and packages for retail shoppers.

B2C: Business-to-customer transactions, for example selling product that ends up on a retail shelf with no further processing such as packaged seafood.

BEF: British Expeditionary Force is the home-based British army.

Blim: Limit reference point for spawning stock biomass (SSB).

BLOCKCHAIN: Originally block chain, it is a continuously growing list of records, called blocks, which are linked and secured using cryptography.

BLUE SKY: Creative thinking unconstrained by practicalities.

Bpa: Precautionary reference point for spawning stock biomass (SSB).

BYCATCH: Untargeted fish species, caught whilst fishing.

CFP: Common Fisheries Policy.

CO-CREATION: The development of products in collaboration with the eventual users.

CONCEPT: An abstract idea conceived but unrealized. In the concept of this project it also refers to a broad enterprise framework within which product and service innovations can operate.

CO₂: Is a colourless gas which is of primary concern to the atmosphere and has contributed more to climate change than any other gas. It is generated as we burn fossil fuels like coal, oil and gas.

CRYPTOGRAPHY: The study and practice of secret communication.

DESIGN: The process of creating solutions in response to new or existing problems and needs. Within this project these emerge in the form of either tangible products or services embedded in an overall strategy to effect change through innovative business model generation.

DESIGN THINKING: The creative human-centred process of incorporating contextual empathy and the needs of the people into a design-related solution.

EBITDA: Earnings before interest, tax, depreciation and amortizations is a measure of a company's operating performance.

ENTERPRISE: An endeavour that may evolve into a business or company.

EU: The European Union is a group of 27 countries in Europe that formed after World War II to work together to improve free movement and trade relations. From 31 Jan 2020 the UK is no longer part of the EU.

FAO: Food Agriculture Organization of the United Nations.

FMCG: Fast moving consumer goods are products that are sold quickly such as packaged and loose fresh, frozen and ambient foods.

FOP: Frequency of purchase is the average number of purchases made by a customer over a defined period.

Fpa: Precautionary reference point for fishing mortality (mean over defined age range).

GLOBAL GAP: Good Agricultural Practices.

HUMAN-CENTRED DESIGN (HCD): A design approach that places end-users at the centre of the development process.

ICES: International Council for Exploration of the Sea which is a scientific body responsible for co-ordinating and carry out stock assessments in the Northeast Atlantic.

INNOVATE: A new method or approach to successfully address existing needs, problems or opportunities through the introduction and social acceptance of new products or services.

INSIGHTS: Ideas or anecdotes that serve to interpret patterns; insights offer a new perspective.

JIT: Just-in-time manufacturing is based on preventing waste by producing only the amount of goods needed at a particular time, and not paying to produce and store more goods than are needed.

MARKET FAIR SHARE GAP: Market fair share gap is what is the retailers market share is relative to their overall market share, and if a category is performing ahead or below its relative performance using quantified scan data, it may be expressed in value of in percentage.

MDE: Master of Design Enterprise.

MILLENNIALS: People born between 1981 and 1996.

MINDSET: A specific perspective with which individuals or groups frame a situation or opportunity.

MINIMUM VAIBLE PRODUCT (MVP): A minimum viable product is a simple version of a product or service that has only the basic features necessary to satisfy early adopters.

MPI: Ministry for Primary Industries is a public service department of New Zealand charged with overseeing, managing and regulating the farming, fishing, food, animal welfare, biosecurity, and forestry sectors of New Zealand's primary industries.

MSC: Marine Stewardship Council is a company that receives royalties for licensing seafood that aligns to a fishery certification programme regarding sustainable fishing practices.

NGSS: Next generation science standards is a science standard developed in the USA that sets out what students should know and be able to do. The standard provides educators the flexibility to design experiences that stimulates students interest in science.

NPD: New Product Development.

OEE: Overall Equipment Effectiveness is the gold standard for measuring manufacturing productivity. Simply put, it identifies the percentage of manufacturing time that is truly productive. An OEE score of 100% means 100% quality, with 100% performance and 100% availability.

PANTONE: Pantone colours are an industry-standard colour reference enabling designers, marketers and brands a way to work together; the Pantone institute promotes that colour not only affects design but also consumerism.

POS: Point of Sale (POS) refers to the area of a store where customers choose or pay for their purchases.

PPE: Personal safety equipment is anything used or worn by a person to ensure risk is minimised.

PPM: Parts per million, usually applied to quality defects or complaints.

PRODUCT LIFE CYCLE: Is the course of a product's sales and profits over its lifetime. It involves five distinct stages: product development, introduction, growth, maturity and decline.

PULL STRATEGY: A promotional strategy that calls for investing in advertising and consumer promotion to build up consumer demand. If the strategy is successful, consumers will ask retailers for products.

PUSH STRATEGY: A promotional strategy that calls for using a sales force to push the product through channels. The producer promotes the product to retailers, and the retailers promote to the consumers.

QMS: Quota Management System.

QR CODE: "Quick Response Code" is a digital representation key that is easy to scan by digital phones. QR codes are similar to barcodes found on physical products in that they are a machine-friendly way to embody a piece of data.

QUALITATIVE RESEARCH: Exploration research used to understand consumers' motivations, attitudes and behaviour.

QUANTITATIVE RESEARCH: Research which involves scan data collection from a sufficient number of customers to allow statistical analysis.

R&D: Research and development.

SCRUM MEETING: Scrum meeting is an iterative and incremental way to work methodology for managing projects within the agile framework.

SEDEX: Supplier Ethical Data Exchange is a not-for-profit membership organization for businesses committed to the continuous improvement of ethical performance within their supply chains.

SOP: Standard Operating Procedure is a set of step-by-step instructions compiled by an organization to help workers carry out complex routine operations.

SRT: Shelf Ready Trays help strengthen brand visibility and improve the customer self-selection experience by keeping shelves neat and tidy.

STAKEHOLDERS: Refers to anyone who has an interest in a project and can influence its success.

SSB: Spawning stock biomass. The lower the number the greater the risk of overfishing. It is an estimate of the total weight of fish in stock that is old enough to spawn.

TAC: The total allowable catch (TAC) is a catch limit set for a particular fishery, generally for a year or a fishing season. TACs are usually expressed in tonnes of live weight equivalent but are sometimes in terms of numbers of fish.

TACC: The total allowable commercial catch (TACC) which limits the amount of fish that can be caught by commercial fisheries.

TALLOW: Rendered animal fat (typically beef) used for traditional method of deep-frying fish and chips.

USP: Unique selling proposition is the unique product or service benefit that is promoted to its target market.

WWF: Worldwide Fund for Nature is an international non-governmental organization, working in the field of wilderness preservation, and the reduction of human impact on the environment.

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