

7013AAD - CW2 - DESIGN MANAGEMENT SPECIALISM 1

ONLINE GROCERY SHOPPING FOR THE AGEING POPULATION

PHOEBE DAO - NGHIEM THIEN PHUOC DAO



CONTENTS

A.	INTRODUCTION _____	01	IV.	DELIVER _____	19
B.	DESIGN PROCESS - THE DOUBLE DIAMOND METHODOLOGY _____	04	1.	COSTUMER JOURNEY MAP _____	20
I.	DISCOVER _____	06	a.	Frist Time Consumer _____	21
II.	DEFINE _____	07	b.	Returning Consumer _____	23
1.	USER PERSONA _____	07	2.	SWOT ANALYSIS _____	25
2.	SCENARIO MAP _____	09	3.	COST BENEFIT ANALYSIS _____	27
III.	DEVELOP _____	11	C.	CONCLUSION & LIMITATION _____	28
1.	DESIGN SOLUTION 1 _____	13	D.	REFERENCES _____	29
2.	DESIGN SOLUTION 2 _____	15			
3.	DESIGN SOLUTION 3 _____	17			

A. INTRODUCTION

British online purchasing has seen exponential growth between 2008 and 2020. In 2008, just over half of British consumers claimed that they had made a purchase online. However, by 2020, 87 percent of British consumers utilized online channels to make purchases. This demonstrates that e-commerce in the UK shows no signs of abating in the immediate future (Statista, 2021).

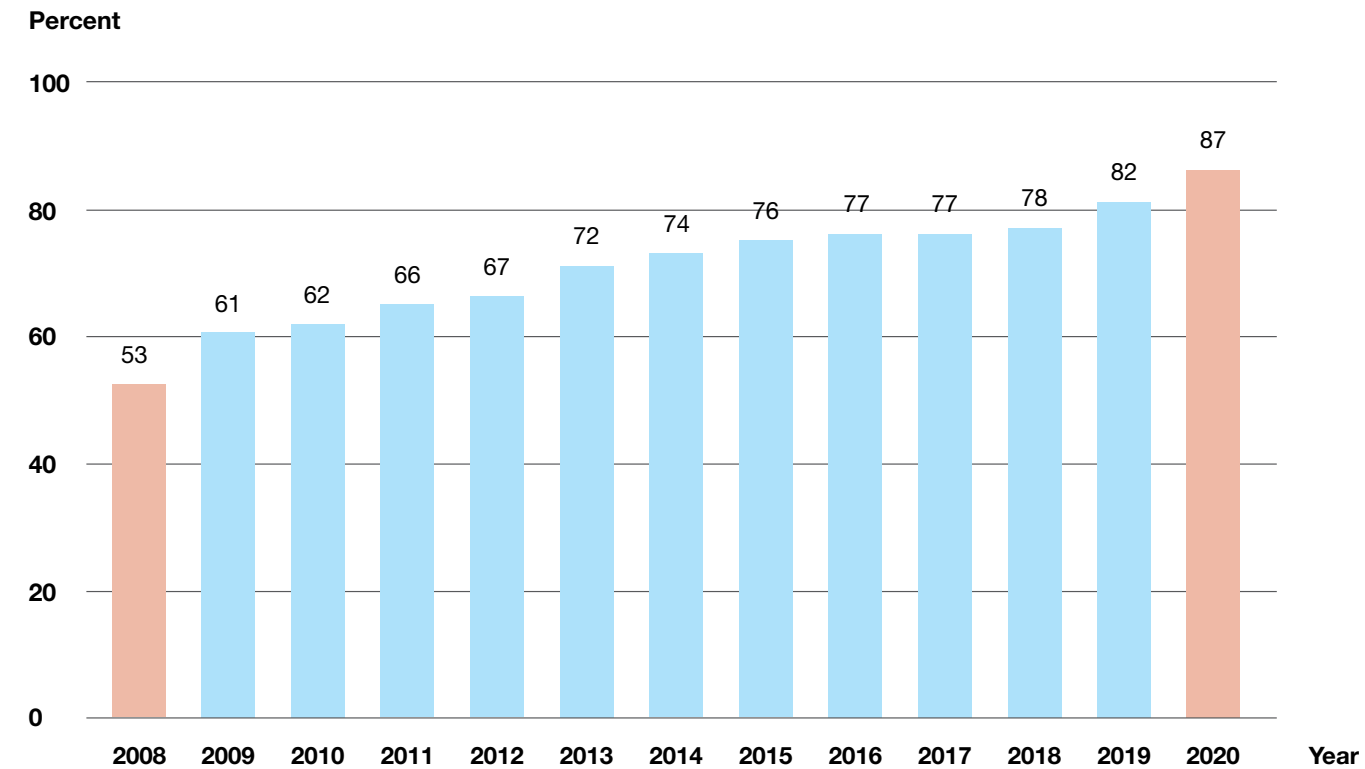


Figure 1: Online purchasing penetration in the UK from 2008 to 2020

Source: Statista, 2021

The population of the United Kingdom is ageing; between 2016 and 2036, the number of people aged 65 and over will increase by over 30% and over 80s by about 70% (Ageing better, 2019).

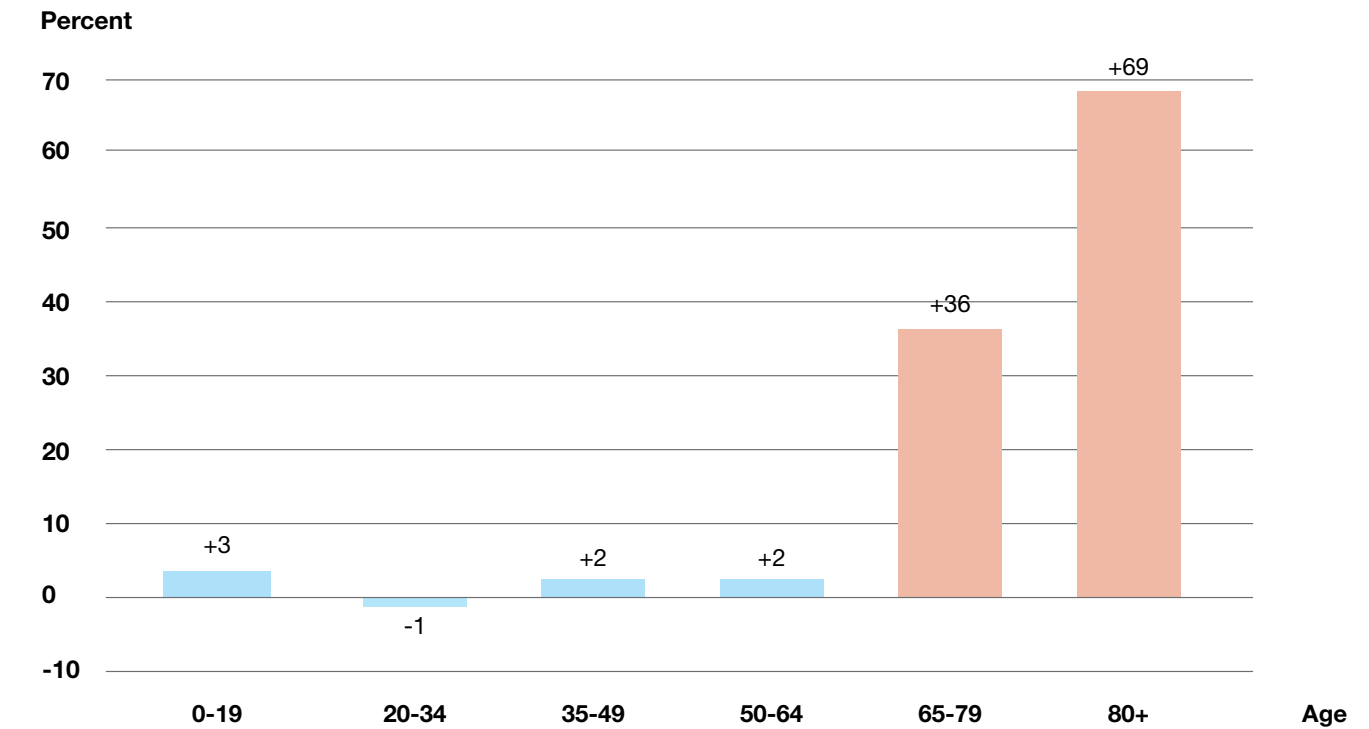


Figure 2: Projected population change from 2016 to 2036

Source: Ageing better, 2019

According to AGE UK, elderly people have 6 strong needs (Age UK, 2019):

- Good health
- Care and support
- Social interaction
- Prosperity
- Company
- Quality housing

Among the 6 needs, the avoidance of loneliness and social isolation are social needs that are one of the most important human needs (Bruggencate et al., 2018).

Loneliness and social isolation among older people can be detrimental to their well-being, quality of life and can lead to cognitive decline (Zamir et al., 2018).

Fulfilled social needs protect against physical illnesses and depression and were also found to be a major influence on self-esteem and the general fulfilment of life goals.

For older people, the pleasure gained from social interaction is especially important for their general wellbeing (Bruggencate et al., 2018).

Research gaps in 'active and healthy ageing' have been identified (Mak and Caldeira, 2014). Therefore, over 65-year-olds represent a market with potential to develop.

Through careful exploration of the issues using double diamond design methodology which was developed by the UK Design Council to describe the design process in order to analyse the problems.

This report focusses on exploring ways that companies can exploit the over 65's market for online grocery shopping. Among some major pain points of online shopping for elderly people such as: navigation, login/ registration, find/ selecting products and payment/ checkout.

The report will look at some solutions to solve the issue from Product finding and selecting. These solutions also cover some of other pain points alongside the major one. A user persona and a scenario map will be used to understand user pain points and needs. SWOT analysis and cost analysis will be used to evaluate the final solution.

B. DESIGN PROCESS - THE DOUBLE DIAMOND METHODOLOGY

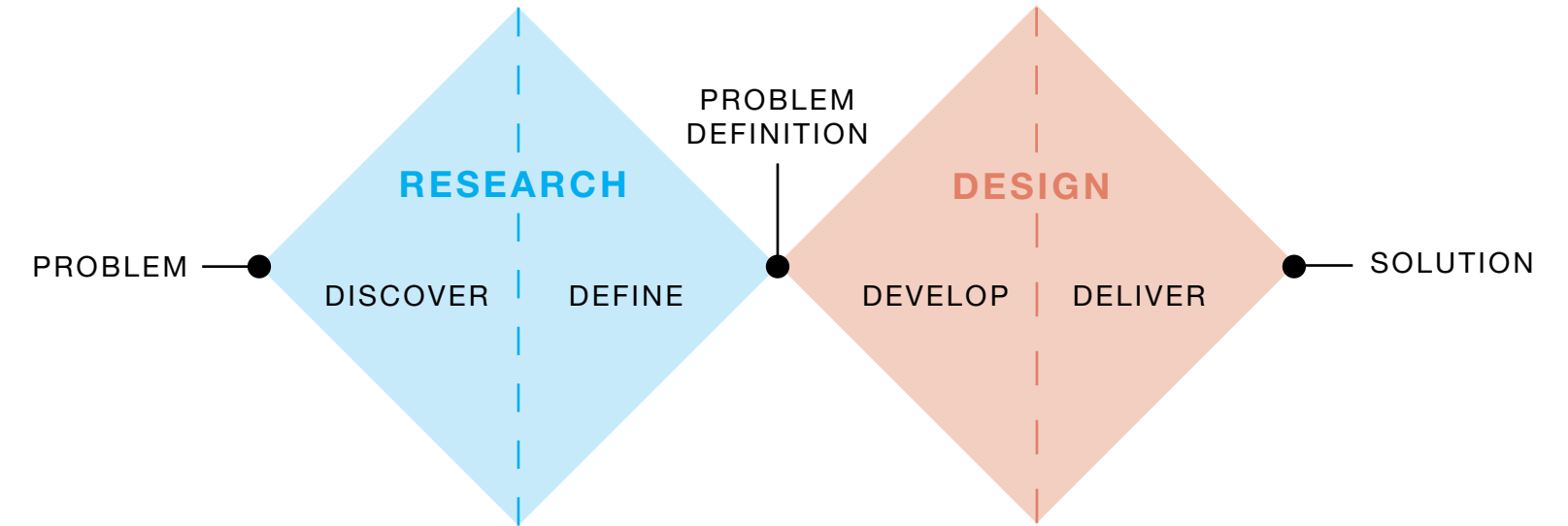


Figure 3: Illustration of the double diamond diagram

Source: Wikipedia, 2021

In 2005, the UK Design Council created a means of analysis called the 'double diamond model'. This is a simple, graphical way to describe the whole design process (Design Council, 2007).

The model has four parts across two touching diamond shapes. They are 'Discover, Define, Develop and Deliver'. The first diamond is about the understanding of the specific problem. Each of the four stages is a means of using interconnected or divergent thinking (Irbite and Strode, 2016).

RESEARCH

DISCOVER

Finds the needs of elderly people through groceries shopping and especially online groceries shopping.

Additionally, problems which effects elderly people when they do online shopping. In this case, the information will be around pain points of finding and searching items.

DEFINE

Observation and analysis of a user persona and scenario map in order to define major needs and problems. This also will help to orient the solutions to meet all the needs of the user persona.

DESIGN

DELIVER

Evaluate all three solutions and choose one that fits the user persona the most. Customer journey maps will be used to understand how seniors use the solution.

SWOT and cost analysis will also be used to evaluate the final solution.

DEVELOP

Create 3 idea solutions in order to solve the major pain point of finding and searching items. Graphic ideas will be used to explain for the three solutions.

I. DISCOVER

Over 25% of people aged 60 and over, and nearly 50% of everybody aged 75 and over live alone (Lesakovaa, 2016). Retired people who live at home often struggle with in-store shopping (Nation, 2021) due to physical constraints such as driving difficulties and an inability to lift heavy loads, online grocery shopping has the potential to overcome most of these issues around food shopping (Osman and Hwang, 2016).

It is also important for older people to experience the social element and experience of food shopping more than the simple transaction. The social aspect of food shopping is very important to this age group with continuous social interaction being a key element in maintaining both mental and physical health as these people age (Lesakovaa, 2016).

Although online grocery shopping can offer different opportunities for consumers, including older adults. There are some pain points for groceries shopping by seniors in store and online. For example: The quantity of food packaged was reported as being too large for older people who usually have smaller appetite than younger adults. This is particularly noticeable when the food is bought for one person (Lesakovaa, 2016).

Additionally, sight loss affects 35% of people over 75 in the UK and reduced vision can affect food access as they are often unable to read information on products (Whitelock and Ensaff, 2018). These problems are clear pain points for finding and selecting items that elderly people want and need.

To find product information and select from existing online grocery shopping sites, two main strategies can be used, that is, search and navigation. However, using the search facility may present challenges especially to older adults since search requires a higher cognitive load compared to simple navigation. This is because users are required to enter a precise search term, which forces users to recall that information later (Osman and Hwang, 2016).

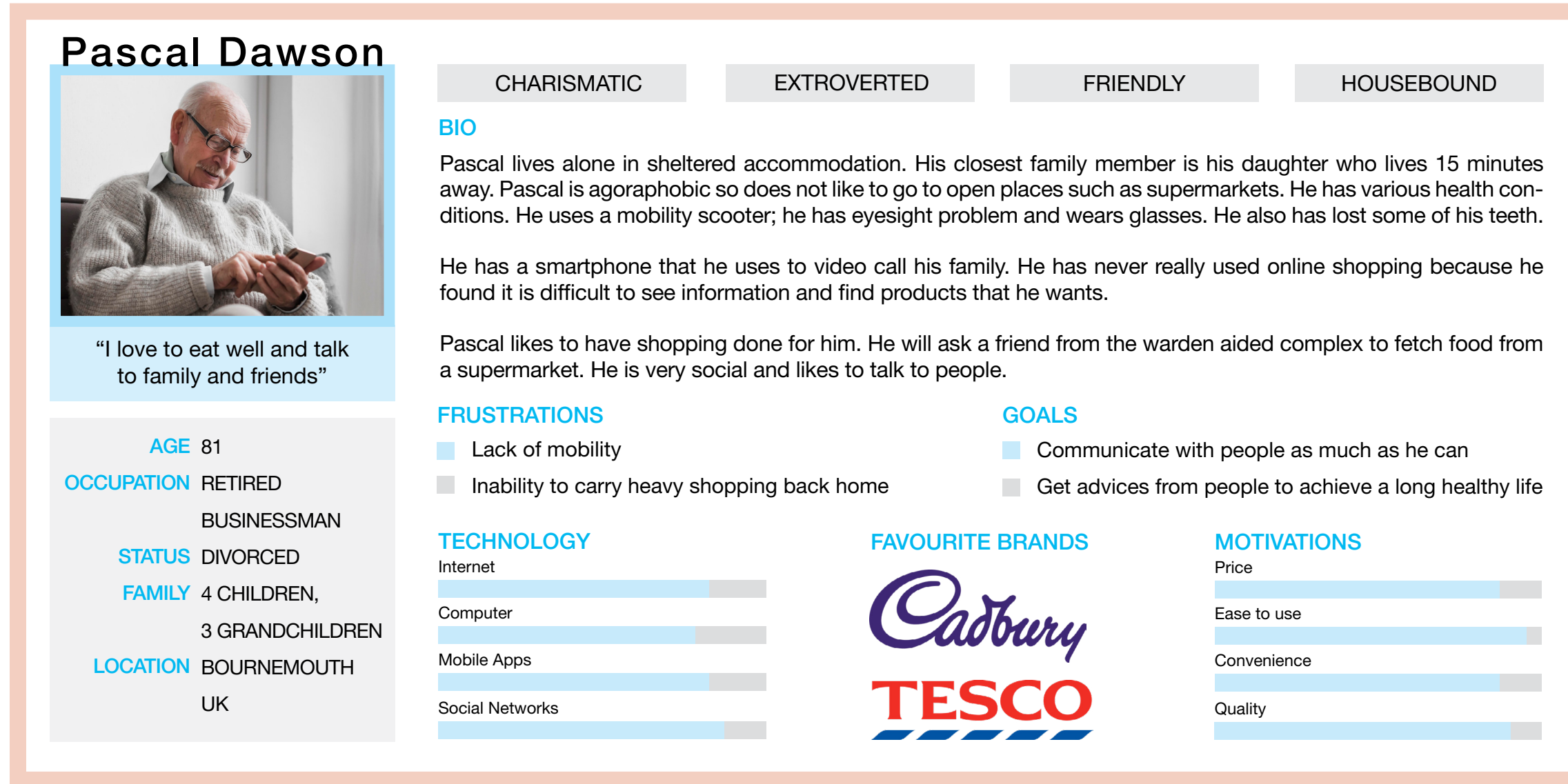
II. DEFINE

1. USER PERSONA

User personas are the creation of a fictitious typical user. Their characteristics represent the needs of a far bigger group of users. The aim is for an organisation to identify its potential users. It is important as it helps to give a clear understanding of the target market and is thus an important way for a designer to create products that suit the needs of customers. By understanding the expectations, worries, and motivations of targeted users, it's possible for a designer to make a product that will satisfy users' needs and hopefully be successful (Faller, 2019).

However, creating personas can be time consuming and can potentially distract from other types that can be used can thus hinder an audience reach. Additionally, personas not being based on real data can potentially conflict with market research outputs; they can be based on inaccurate assumptions (Salminen, 2020).

To create a persona requires an understanding of how a model can be modified and use experience of actual behaviour of the person being modeled to test the model against. However, there are some populations that many people have little experience working with. Specifically, disabled and elderly users are likely to be under observed as personas (Bagnall et al., 2005).



Using the persona of Pascal, the design team can look at his individual needs and explore ways to encourage him to do online shopping and improve his online shopping experience.

■ **Agoraphobia:**
We can use this as a means for Pascal to do his online shopping. As he fears visits out of his home it is actually a huge advance for his independence to do his shopping at home.

■ **Socialisation:**
He likes to socialise and it is important to maintain his mental health.

■ **Special diet:**
With a loss of teeth and deteriorating health, there are certain foods that it is important for him to avoid and foods that he should eat regularly.

Figure 4: User Persona

2. SCENARIO MAP

Scenario mapping is the process of outlining all the steps a user will take to complete a task. It will include notes and information about what users are thinking and feeling during each step. It can also include comments or information that is perceived to be important for each step, questions or assumptions that one has, and any good ideas or suggestions that come up during this process (Miro, 2021).

They are written as short narratives; they are more memorable than just a simple user task and a set of requirements. However, there is a danger in over complicating the scenario and adding too much detail: this can lead to solutions that may meet the specific scenario, but ignores a range of possible real-life situations (Salazar, 2021).

STEPS	OPEN FRIDGE TO SEE WHAT FOOD IS THERE	SOME FOOD ITEMS ARE NEEDED	USES MOBILITY SCOOTER TO VISIT NEAREST SHOP	SHOP	CHECKOUT	COME BACK HOME
DOINGS	<ul style="list-style-type: none"> Opening door and looking 	<ul style="list-style-type: none"> Writing a mental note 	<ul style="list-style-type: none"> Traveling on all weathers to the shops 	<ul style="list-style-type: none"> Find the items Find staff if can not find needed products 	<ul style="list-style-type: none"> Paying Put items to bags 	<ul style="list-style-type: none"> Traveling back home on all weathers
THINKINGS	<ul style="list-style-type: none"> The fridge is pretty empty, I need to buy some food What food do I need? 	<ul style="list-style-type: none"> Have I remembered everything? How long the food will last for me? 	<ul style="list-style-type: none"> What is the weather today? Will it rain? If it rains, I will go to the shop later Do I bring enough bags? 	<ul style="list-style-type: none"> Where is the food that I want? Why the store is so crowded? I can't find the food that I want, I need to ask staff Where can I find the staff? 	<ul style="list-style-type: none"> The queue is so long Did I bring my wallet with me? Do I buy under the contactless limit? Do I remember my PIN number if I buy over £45? 	<ul style="list-style-type: none"> Will I be able to take all of them back home? How is the weather now?
FEELINGS	<ul style="list-style-type: none"> Worried that I might go hungry 	<ul style="list-style-type: none"> Forgetfulness 	<ul style="list-style-type: none"> Anxious as I don't like being away from my familiar places 	<ul style="list-style-type: none"> Annoyed because I can't find the food Exhausted because I need to go around the shop to find staff 	<ul style="list-style-type: none"> Stressed 	<ul style="list-style-type: none"> Worried and wxhausted because I struggle to take much food as limited mobility Satisfied and glad because of be back home.

Figure 5: Pascal's scenario map

-> Here we see a graphic showing how Pascal deals with anxiety in-store shopping. Clearly, the anxiety and stress of the outdoor environment and the general shopping experience is painful for him. A switch to online will alleviate his stress and make his life far less stressful as he will have much of the work and problems taken away from him.

III. DEVELOP

Research shows that there has been a major increase in smartphone use by people aged over 65 from 3% in 2012 to 65% in 2020 (Statista, 2021). This growth represents a clear opportunity to create apps for online grocery shopping for seniors

Additionally, continued mobility should be encouraged, and it remains important for older people to have a positive relationship with food without barriers to access a healthy, safe and nutritious diet that they find appetising (University of Hertfordshire, 2021).

Moreover, the highest recorded spend in mobile e-commerce in the United Kingdom was in 2020 with consumers spending an astonishing 82 billion hours on shopping apps (30% more than 2019). Among the strong growth companies was Tesco groceries with a year-on-year growth rate of 150% (Williams, 2021).

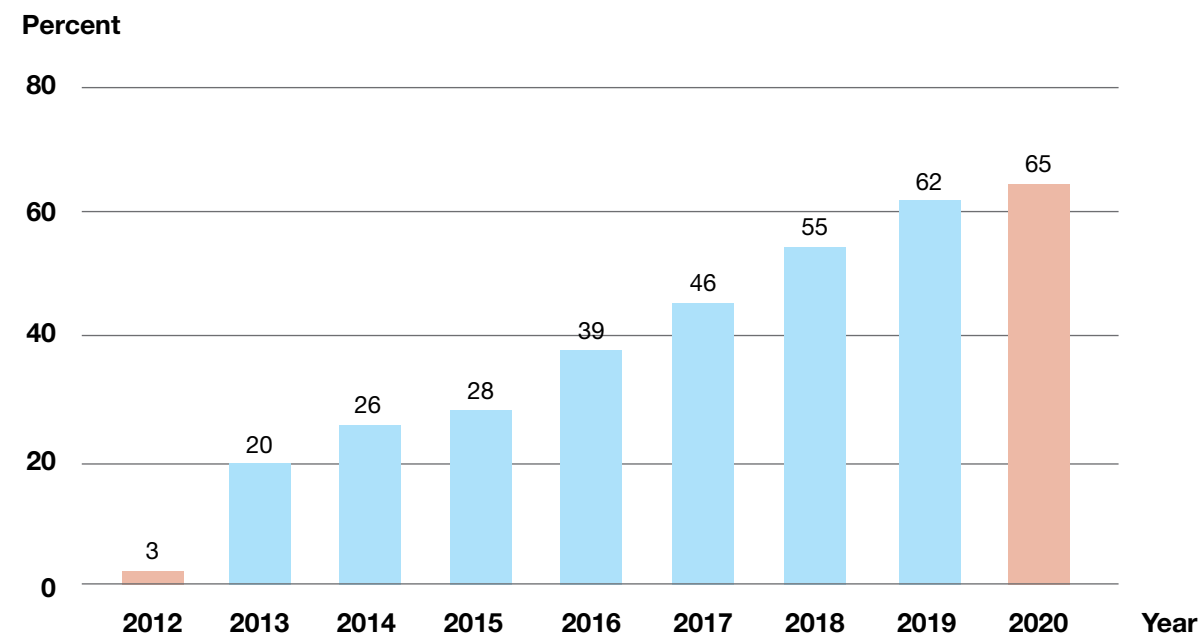


Figure 6: Smartphones usage from 2012 to 2020 by people aged 65+

Source: Statista, 2021

To create an online platform for the user persona, in this report there are 3 solution ideas that have been considered in relation to solutions for the issues raised by Pascal. The first major pain point about selecting and finding items that support his individual needs.

All three solutions are different and all of them share similarities of the interface of an app called BIG Launcher which has big visible icons which are simple to understand and uncomplicated to press. Oversized text and bright colourful icons that have been designed to be easily recognisable and easy to find (Hill, 2012).



Figure 7: BIG Launcher Logo and Interface

Source: BIG Launcher, 2021



The app therefore can solve the eyesight problem of Pascal. Because of big texts and icons, it also will reduce a press wrong area problem.

The groceries online shopping app proposed is going to be branded **SENIORS-MARKET**.

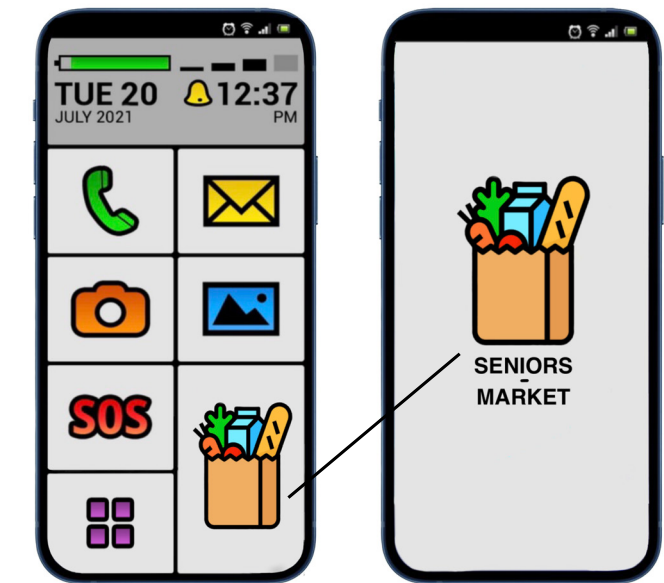


Figure 8: Seniors-Market App within BIG Launcher Interface

1. DESIGN SOLUTION 1 - TELE SALES

Some studies have shown that face-to-face contact through video-calling can be more useful for older people than traditional telephone calls or written correspondence in reducing loneliness. They can get more information and take more from this personal contact (Zamir et al., 2018).

Advanced tele sales operations allow the customer can talk face-to-face by video-calling with an operator. Just using a phone button such as a Zoom call with the ability to showcase products information, offers or promotions.



Figure 9: Tele Sales Interface

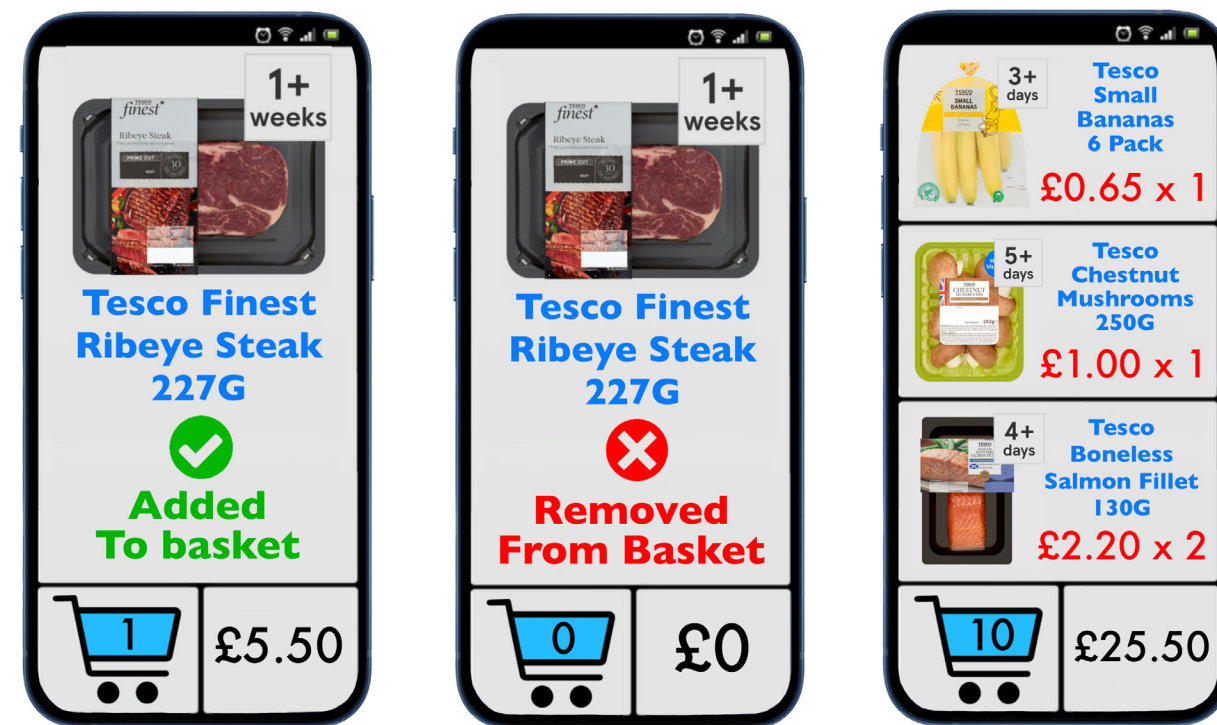


Figure 10: Tele Sales Interface for adding, removing and viewing basket

Items can be added or removed from the basket easily through the trained tele sales operator.

The app will show how many products have been put into the basket and the total spend. Seniors will be shown the list of what they have put into their baskets when they request it.

The trained tele sales operator can show the customer pictures and talk to them and develop a personal relationship with the client.

They can ask what the customers like to eat or ask about health conditions they have and then suggest food or meals for the seniors. This close customer connection can be vital to older people.

-> This solution can improve socialisation for the seniors, especially Pascal who likes to socialise with people and will help to maintain his mental health through talking with the tele sales operators. It is also easier for him because the tele sales operators will do all the searching and finding, and more than that they can also book a delivery slot and complete the checkout.

2. DESIGN SOLUTION 2 - MENU ACTIVATION

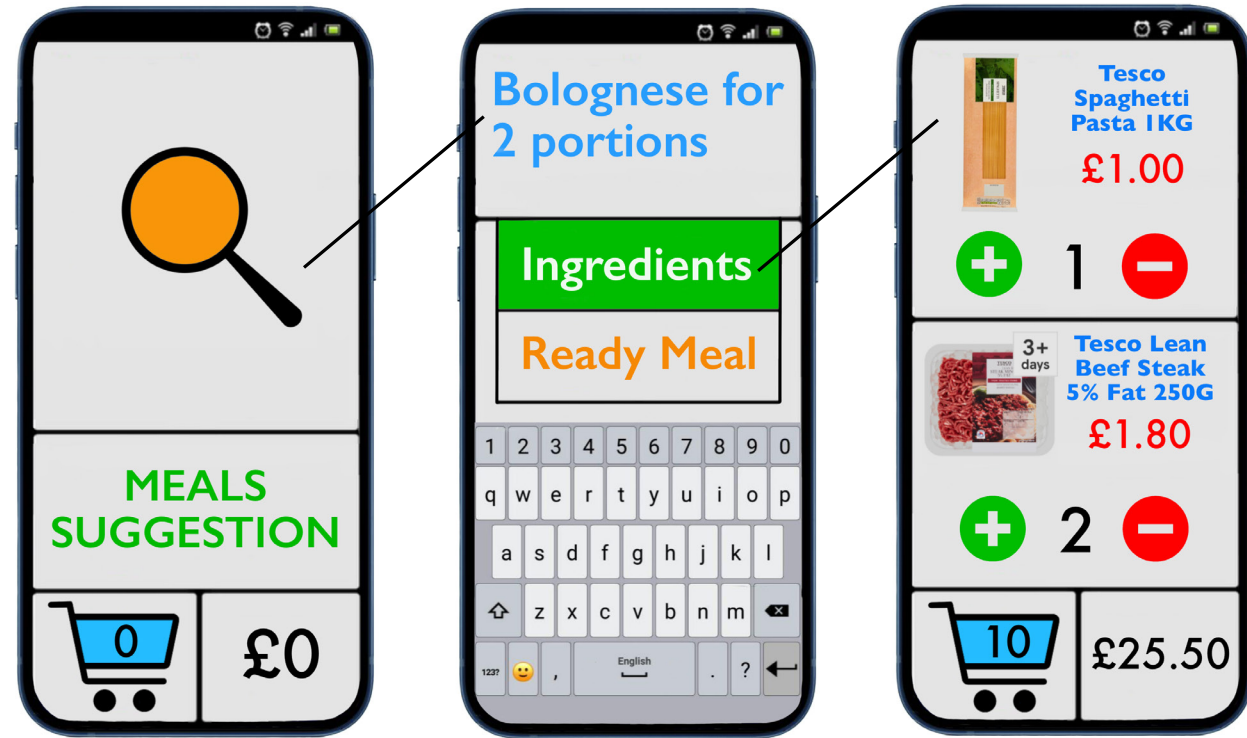


Figure 11: Menu Activation Interface for searching items by names of food

This solution uses a different type of search, rather than individual food items, seniors type names of food that they want to eat. The application will then show all the ingredients needed for one meal or more. The user then can click (+) to add to basket or (-) to remove from basket if they already have the items. Seniors can also choose a "Ready Meal" option if they do not want to cook.

There is also a Meals Suggestion option that can allow seniors to find food when they do not know what they want to eat. They then can choose how many portions and Ingredient options if they wish to cook or if not, they can again select the Ready Meal option. These meals are special meals designed for elderly people such as smaller portions or different ingredients based on elderly health conditions.

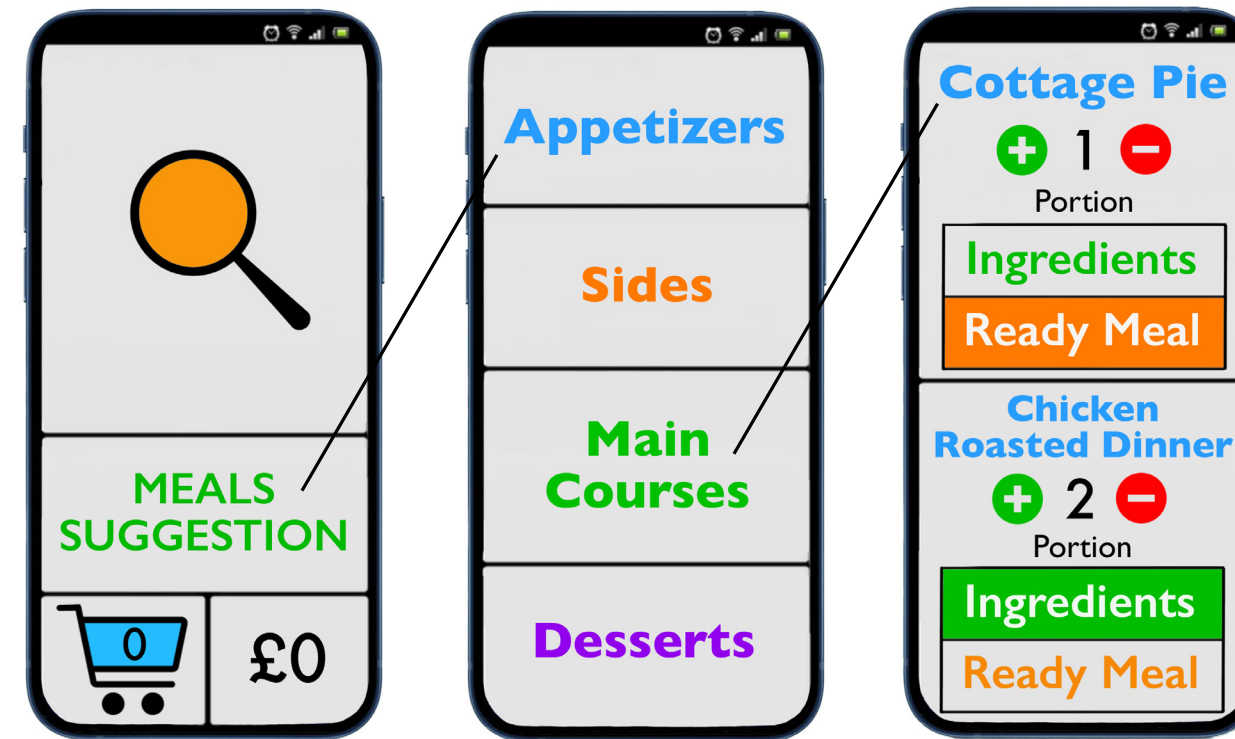


Figure 12: Menu Activation Interface for Meals Suggestion

-> This solution not only can help improve Pascal's diet, but it also reduces the time needed to find all the different ingredients he needs for his meals.

3. DESIGN SOLUTION 3 - HANDWRITING READER

The users will write down what they want to buy on paper. After that, seniors use the app to take a picture of the list. The app will then read the handwritten notes and will generate the list of items in the order that customers wrote their original notes. This function is inspired from an app named Pen to Print which converts scanned handwritten notes such as food shopping lists or recipes into digital text available for edits or search in other digital platforms (Serendi LTD, 2021).



Figure 13: Pen to Print logo
Source: Pen to Print, 2021



Figure 14: Handwriting Reader Interface for finding items

After adding all the items that they want into the basket. Seniors can use a meal suggestion option which will provide some recipes based on the ingredients in the list. This feature is inspired by an app called Super Cook which suggests various recipes from ingredients that users already have at home (Escoffier, 2019). This option will help seniors have more health appropriate meals and could also reduce food waste through recipe suggestions based on what they want to buy.



Figure 15: SuperCook logo
Source: Supercook, 2021



Figure 16: Handwriting Reader Interface for Meals Suggestion

-> Through finding and selecting all the items for Pascal from a handwritten note picture, this solution will save a lot of his time. When compared to the previous solution, this solution has the advantage of being able to search for other household items such as cleaning materials and other non-food products.

IV. DELIVER

All three of the models presented here have strong merits. All of them are targeted at a core demographic of elderly consumers. However, after careful analysis it is the telesales solution that has the most appeal and represents the best opportunity for development.

Because the menu activation and the handwriting reader solutions still require Pascal do many steps to order the products that he wants, whereas for the telesales solution, the operators will help Pascal to do everything to finish his order.

They even can suggest food, meals or recipes based on his health condition in order to help him achieve healthy diets. Talking to the operators is also an important element to maintain his mental health.



Figure 17: Tele Sales Interface

1. CUSTOMER JOURNEY MAPS

A customer journey map is a diagram that shows the stages customers go through when interacting with a company be it buying or using products to accessing customer service to raising grievances (TechTarget, 2021). It is a way to understand what motivates customers - what their needs are, their resistances, hesitations, and concerns (Visual Paradigm, 2021).

Customer journey mapping is important, as it is a method to better understand customer expectations. It is a crucial way to optimising the customer experience (Salesforce UK, 2021).

However, the data-gathering process can be complex, and aggregating this data from a myriad of sources can be somewhat of a challenge (Stanley, 2017). There are some drawbacks in relying on journey maps, which can result in failing to fully understand and analyse the quality of the customer experience (Regalix, 2021):

- It does not take external factors into consideration.
- It is not appropriate for early-stage ideas.
- There is potential for journey biases.

Applied for Seniors-Market app with the Tele sales solution

a. FRIST TIME CONSUMER

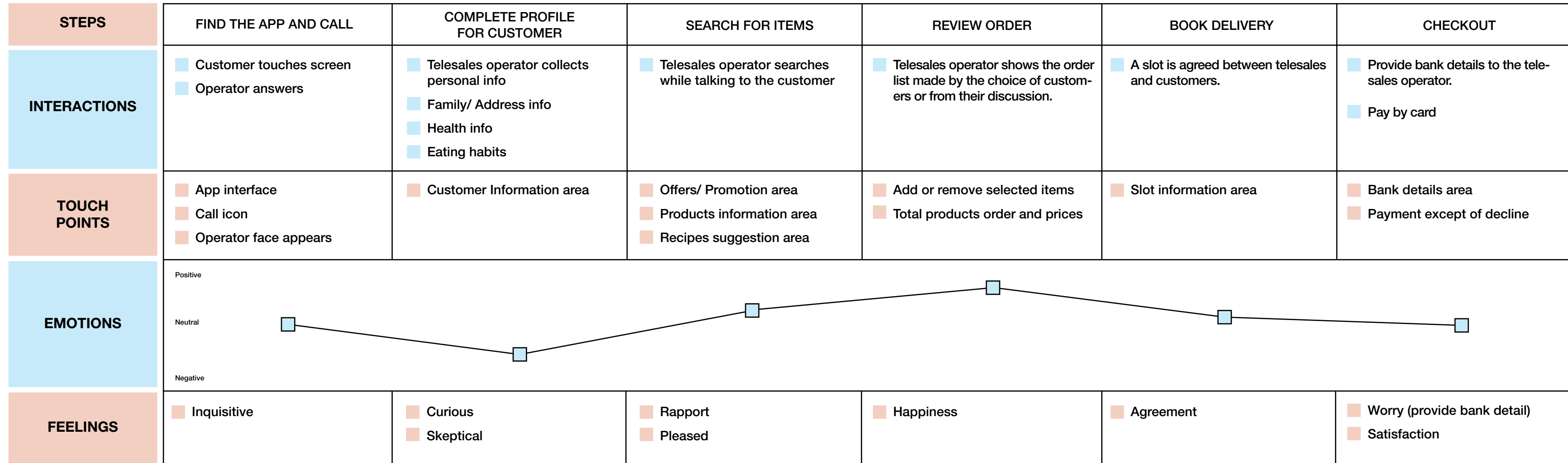


Figure 18: Frist time consumer journey map

b. RETURNING CONSUMER

STEPS	FIND THE APP AND CALL	SMALL TALK BEFORE SEARCHING ITEMS	SEARCH FOR ITEMS	REVIEW ORDER	BOOK DELIVERY	CHECKOUT
INTERACTIONS	<ul style="list-style-type: none"> Customer touches screen Operator answers 	<ul style="list-style-type: none"> Telesales operator will create some conversations based on customers previous information 	<ul style="list-style-type: none"> Telesales operator searches while talking to the customer Continue small talk to maintain rapport 	<ul style="list-style-type: none"> Telesales operator shows the order list made by the choice of customers or from their discussion 	<ul style="list-style-type: none"> A slot is agreed between telesales and customers 	<ul style="list-style-type: none"> Pay by card with the bank information used before
TOUCH POINTS	<ul style="list-style-type: none"> App interface Call icon Operator face appears 	<ul style="list-style-type: none"> Operator face 	<ul style="list-style-type: none"> Offers/ Promotion area Products information area Recipes suggestion area 	<ul style="list-style-type: none"> Add or remove selected items Total products order and prices 	<ul style="list-style-type: none"> Slot information area 	<ul style="list-style-type: none"> Bank details area Payment except of decline
EMOTIONS						
FEELINGS	<ul style="list-style-type: none"> Excited 	<ul style="list-style-type: none"> Strong bond 	<ul style="list-style-type: none"> Affinity Contented 	<ul style="list-style-type: none"> Anticipation 	<ul style="list-style-type: none"> Agreement 	<ul style="list-style-type: none"> Satisfaction

Figure 19: Returning consumer journey map

-> In comparison to first time users, the returning elderly consumers experience could be considered more positive because they already know how to use the app to order groceries.

Moreover, when the tele sales operator has some small talk with the returning customer based around previously supplied information, this could make the senior feel cared for, more comfortable and could build rapport.

2. SWOT ANALYSIS

This is the breaking down of positive and negative factors around a product. It considers the internal strengths and weaknesses of a product or project against the external opportunities and threats that a company is likely to face.

SWOT Analysis is a significant tool for strategic decision making that helps identify organisational and environmental factors that firms need when looking at launching new products (Gürel, 2017). SWOT will allow for a company to understand key issues facing it but it, but it will not offer solutions (Queensland Government, 2017).

A big benefit to SWOT is its simplicity. It does not require complicated technical skills to design and deploy. It is very inexpensive to use. SWOT analysis provides a simple guide to reflective and critical thinking needed to examine the situation of an organisation (Staff, 2019).

Although there are benefits that come from this analytic tool it also has limitations. As mentioned, before it does not provide solutions. It also does not provide a to do list, a company will have various things that it will need to address. It can provide too many ideas, therefore can be distracting (Queensland Government, 2017).

STRENGTH <ul style="list-style-type: none">Personal approach reflects traditional shop keeper customer role.Customer loyalty can be strengthened with all the personal contact.Greater sales are possible due to the trained sales people having knowledge of each customer's needs.	OPPORTUNITY <ul style="list-style-type: none">Growth potential as the company can expand sales beyond food as they have a lot of information about the customer.
WEAKNESS <ul style="list-style-type: none">Costs of time taking to customers. A telesales operator will have to have a sales target like in any sales situation.Some pensioners fear online payments. The proposal here is to include a fraud guarantee scheme to help customers with this problem.	THREAD <ul style="list-style-type: none">New entrants can copy. Very important to push the brand.

Figure 20: SWOT analysis for Seniors-Market app with the Tele sales solution

3. COST BENEFIT ANALYSIS

A cost benefit analysis is a systematic process that businesses use to analyse the financial implications of projects. The cost benefit analyst sums the total potential returns expected from a situation or action and then subtracts the costs associated that action (Hayes, 2021).

Performing a cost benefit analysis gives companies the opportunity to look at specifics about what they need to launch a product or how much is reasonable to invest in an advertising campaign. It also helps to make more rational decisions (Gartenstein, 2019).

There are some disadvantages of cost-benefit analysis (Bright Hub PM, 2009):

- Potential inaccuracies in calculating costs and benefits.
- Increased subjectivity for difficult to identify costs and benefits.
- Inaccurate calculations of present values which can cause misleading results.
- A cost benefit analysis can turn in to a full complex budget project.

For the tele sales solution, one operator works 8 hours per day. They will get sales from around 100 customers per day. An average spend is around £25 (minimum order) with an average normal margin of £3. So, the tele sales operator will generate sales of £2500 per day and go of £300. If located in the UK, the cost of this would be at least £100-£150. If located in India or Manilla this cost could be halved. Additionally, the tele sales operators can be rewarded by sales volumes. Keeping costs down.

Wherever the tele sales are located they must be target motivated to maximise sales.

From an ethical point of view, it is important that the tele sales people are highly paid relative to their domestic labour markets. This will encourage the brightest and best to work for the company.

C. CONCLUSION & LIMITATION

For the elderly, human contact is an important way for them fulfill social needs. They often live alone and have few regular contacts. Online applications represent a challenge and the key to a successful application is the bringing human interaction into the app. The face-to-face approach with relationship building that has been demonstrated by the analysis shown can lead to sales growth and aery strong customer loyalty.

Older customers need time to become relaxed and accepting of new means of doing business, however once they have lost their fear, they can become very trusting and loyal to a brand.

There are some limitations regarding numbers, if the company wants to have 2 million UK customers, they will need at around 4000 telesales staff. The problem is what does the company do when capacity is reached? The answer will probably be overtime and increasing sales volumes for the existing sales staff giving the opportunity for the company to get more staff.

This application is a human centered online application. Its human element will be its appeal. The annoying pain points that customers often fear can be eliminated as they develop rapport and a good relationship with their dedicated sales contact. They will become happy loyal customers to Seniors-Market.

D. REFERENCES

- Ageing better, 2019. *The State of Ageing in 2019*. <https://www.ageing-better.org.uk/sites/default/files/2019-03/The-state-of-ageing.pdf>
- Age UK, 2019. *Estimating need in older people, Findings for England*. <https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/active-communities/id204303-estimating-needs-report.pdf>
- Bagnall et al., 2005. *The Limits of Personas*. https://www.researchgate.net/publication/255621349_The_Limits_of_Personas
- Big Launcher, 2021. *BIG Launcher website*. <http://biglauncher.com/>
- Bright Hub PM, 2009. *Disadvantages of Using a Cost Benefit Analysis*. <https://www.brighthubpm.com/project-planning/58627-arguments-against-the-cost-benefit-analysis/>
- Bruggencate et al., 2018. *Social needs of older people: A systematic literature review*. *Ageing and Society*, 38(9), 1745-1770. <https://doi.org/10.1017/S0144686X17000150>
- Design Council, 2007. *Eleven lessons: managing design in eleven global brands A study of the design process*. [https://www.design-council.org.uk/sites/default/files/asset/document/ElevenLessons_Design_Council%20\(2\).pdf](https://www.design-council.org.uk/sites/default/files/asset/document/ElevenLessons_Design_Council%20(2).pdf)
- Escoffier, 2019. *Top Apps For Finding Recipes For Ingredients You Already Have*. <https://www.escoffieronline.com/top-apps-for-finding-recipes-for-ingredients-you-already-have/>
- Faller, 2019. *Putting Personas to Work in UX Design: What They Are and Why They're Important*. <https://xd.adobe.com/ideas/process/user-research/putting-personas-to-work-in-ux-design/>
- Gartenstein, 2019. *Advantages & Disadvantages of Cost Benefit Analysis*. <https://smallbusiness.chron.com/projects-linked-strategic-plans-38577.html>
- Gürel, 2017. *SWOT ANALYSIS: A THEORETICAL REVIEW*. *Journal of International Social Research*. <http://dx.doi.org/10.17719/jisr.2017.1832>
- Hayes, 2021. *Cost-Benefit Analysis*. <https://www.investopedia.com/terms/c/cost-benefitanalysis.asp>
- Hill, 2012. *Get a simple Android interface with Big Launcher*. <https://www.androidauthority.com/big-launcher-109231/>
- Irbite and Strode, 2016. *Design Thinking Models In Design Research And Education*. <https://doi.org/10.17770/sie2016vol4.1584>
- Lesakovaa, 2016. *Seniors and their food shopping behavior: an empirical analysis*. <https://doi.org/10.1016/j.sbspro.2016.05.496>
- Miro, 2021. *Scenario Mapping Template*. <https://miro.com/templates/scenario-mapping/>
- Mak and Caldeira, 2014. *The Role of Nutrition in Active and Healthy Ageing*. <https://publications.jrc.ec.europa.eu/repository/bitstream/JRC90454/lbna26666enn.pdf>
- Nation, 2021. *Why Seniors Should Start Using a Grocery Delivery Service*. <https://www.nation.com/why-seniors-should-start-using-a-grocery-delivery-service/>
- Pen to Print, 2021. *Pen to Print website*. <https://www.pen-to-print.com/>
- Queensland Government, 2017. *Benefits and limitations of SWOT analysis*. https://www.business.qld.gov.au/starting-business/planning/market-customer-research/swot-analysis/benefits-limitations?fbclid=IwAR1M8uM1u1IbV_TRrKuiLIg7M5Z5H9T8vBSXMBXX-AO8sPhnPY68LV3Y5RZQ
- Salazar, 2021. *Scenario Mapping: Design Ideation Using Personas*. <https://www.nngroup.com/articles/scenario-mapping-personas/>

- Salesforce UK, 2021. *What is Customer Journey Mapping & Why is it Important?*. <https://www.salesforce.com/uk/blog/2016/03/customer-journey-mapping-explained.html>
- Salminen, 2020. *Risks and Disadvantages of Using Personas*. <https://persona.qcri.org/blog/risks-and-disadvantages-of-using-personas/>
- Serendi LTD, 2021. *Pen to Print - Scan handwriting to text*. https://play.google.com/store/apps/details?id=p2p.serendi.me.p2p&hl=en_US&gl=US
- Staff, 2019. *SWOT Analysis: Benefits and Applications*. <https://www.konsyse.com/articles/swot-analysis-benefits-and-applications/>
- Stanley, 2017. *What is Customer Journey Mapping? How It Works, Challenges, Benefits, and More*. <https://callminer.com/blog/customer-journey-mapping>
- Statista, 2021. *Share of individuals who made purchases online in Great Britain from 2008 to 2020*. <https://www.statista.com/statistics/275968/online-purchasing-penetration-in-great-britain/>
- Statista, 2021. *Smartphone usage in the United Kingdom (UK) 2012-2020, by age*. <https://www.statista.com/statistics/300402/smartphone-usage-in-the-uk-by-age/>
- Supercook, 2021. *SuperCook website*. <https://www.supercook.com/search/>
- TechTarget, 2021. *Customer Journey Map*. <https://searchcustomerexperience.techtarget.com/definition/customer-journey-map>
- University of Hertfordshire, 2021. *Improving food shopping for older people*. https://www.herts.ac.uk/__data/assets/pdf_file/0008/174194/improving-food-shopping-for-older-people-uh-research-briefing.pdf

- Visual Paradigm, 2021. *What is Customer Journey Map?*. <https://www.visual-paradigm.com/guide/customer-experience/what-is-customer-journey-mapping/>
- Wikipedia, 2021. *Illustration of the double diamond diagram*. [https://en.wikipedia.org/wiki/Double_Diamond_\(design_process_model\)#/media/File:Double_diamond.png](https://en.wikipedia.org/wiki/Double_Diamond_(design_process_model)#/media/File:Double_diamond.png)
- Williams, 2021. *Online Shopping Statistics UK*. <https://hostingdata.co.uk/online-shopping-statistics-uk/>
- Whitelock and Ensaff, 2018. *On Your Own: Older Adults' Food Choice and Dietary Habits*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5946198/pdf/nutrients-10-00413.pdf>
- Zamir et al., 2018. *Video-calls to reduce loneliness and social isolation within care environments for older people: an implementation study using collaborative action research*. <https://doi.org/10.1186/s12877-018-0746-y>