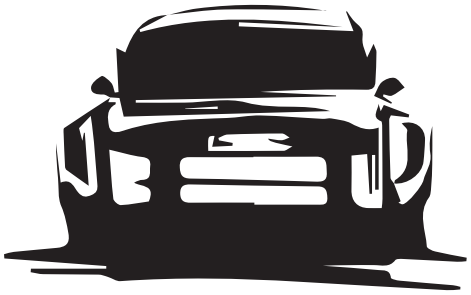
Portfolio
Management



Joëlle Jacobs | Ketaki Raut | Samuel Godwin

Interdisciplinary Project with Prof. Oliver Sasz, Hochschule Macromedia, Sandstraße 9, 80335 Munich, Germany

Abstract

With the introduction of GDPR, many companies have been forced to look into the way they handle data that has been collected and that is actively being collected from its customers. This not only compels companies to look into the aspect of data but also into the way their existing business model works and how it could be made more efficient while adhering to the laws of GDPR.

BMW - our client approached us to find out effective ways of online marketing that would help enhance their current portfolios which are new cars, used cars, mobility, servicing and lifestyle. The question that was put in from of us was, How should the level of data required and the method of online marketing used differ per element?

In order for us as a team to answer this question we first had to conduct primary research which looked into aspects such as data privacy, data collected by BMW, types of portfolios and the marketing methods that are currently being used. Once this was done our secondary research involved in getting a better understanding of the current trends in the automobile industry, the way customers behavious have changed in regards to purchasing an automobile. And with the rise in trends such as connected cars, telematics and autonomous cars we as a team decided to answer the question using a new marketing strategy which is In-Car marketing.

Once we had decided on In-Car marketing our team conducted a survey to get a better understanding of how our target group that enabled us to create personas, user flows and user journeys that give us a comprehensive understanding of the customer. We also looked into the experience loop that helps us see how BMW as a brand can add value to its customer experience and add value to its products and services.

The final step involved in creating wireframes and prototypes based on all the information that we had collected so far to simplify the existing user journey and make it more personal and precise which brings about the enhancement of the different portfolios.

01.

Introduction

The aim of this project was to find out how we could tackle the situation of data privacy due the introduction of GDPR and enhance the online marketing experience of BMW - our client. In order to do so, our team had to look deep into the data privacy laws and what kind of information BMW as a company collects from its customers. Having done our primary research we had to look into the different types of porfolios that need to be enhanced, which were new cars, used cars, mobility, servicing and lifestyle.

With the results from our primary research we as a team had to look at the possible ways of answering the question that was given to us - How do we enhance the online marketing of the different portfolios? Our secondary research gave us insights into the current trends in the automobile industry and as connected vehicles, telematics and autonomous cars are on the rise, we as a team decided to address this question using In-Car marketing.

In-Car marketing is a new trend that involves companies to advertise not only their own products and services directly into the customers vehicle, but of other third party businesses as well. With In-Car marketing as our primary focus, we looked into what kind of existing data that has been acquired by BMW about its customers and how can they be used to enhance the different portfolios.

The results from our primary and secondary research provided us insights that enabled us in the ideation phase where prototypes were created that can be further tested and developed by BMW to enhance their online marketing which in turn compliments and promotes the existing portfolios.

02.

Core Idea

Our team had to concentrate on the project question four, which was about different portfolio strategies : Having in mind that the portfolio of BMW is not just new cars but also used cars, accessories, services, mobility and lifestyle, how should the level of data required and the method of online marketing used differ per element?

To get familiar with this topic, our team was looking into different actual online marketing trends and strategies. Furthermore, we conducted an online survey, which was launched on Facebook. The goal was to find out about people's interests and preferences in the automotive industry. Based on this quantitative research, our team developed three personas and the corresponding user journeys.

As two teams were working on the same project question, to avoid similar results and to make the project more interesting and challenging, our group decided to deviate from the initial path and find a new way to respond to the project question. Our first thought was then to enhance the mobile customer experience. The goal was to search for a way to optimize this experience so that leads can be converted into sales regarding the different portfolios. However, after several conversations with BMW, we found out that this strategy was too marketing related as a design approach would be set up to enhance the user interface and the related user experience.

After doing further research, our team then came up with a whole new concept. The idea was to focus on the already existing data, gathered by BMW in the past, to push the different portfolios. To put this into practice, it turned out that in-car marketing would be a suitable solution. Furthermore, in-car marketing is a not yet established strategy, only a few companies from the automotive and business field are experimenting with it. This explains why in-car marketing can be defined as a groundbreaking strategy and considered as the new era of automotive marketing.

Our core idea answers the following question:

How do we use the existing data of the users to enhance the portfolios using in-car marketing?


03.

Research

The following chapter deals with the underlying research, which was conducted in order to achieve a better understanding of the market and its customers. After analyzing the trends, the market and the competitors, a customer segmentation was conducted. Building on that, different use cases were formulated. Conclusive a Subject Matter Expert Interview was conducted to obtain insights from experts of the field.

3.1 Connected Cars

The trend analysis was conducted in order to get a better understanding of the underlying trends. As a result the subordinated trend of connected cars and Autonomous cars were identified.

3.1.1 General information

''Just as phones got smart, so will cars. They won't quite think, but they will respondand remind'' (McKinsey&Company, n.d., p.14). In recent years, there have been an important increase in technologically advanced vehicles. Connected car capabilities have increased thanks to the Internet of Things. According to a study of McKinsey & Company, there will be an increase of 30 percent of networked cars per year in the next years. ''By 2020, one in five cars will be connected to the Internet'' (McKinsey&Company, n.d., p.14). They estimate that in 2020, 22% of the cars are cars with network solutions, compared to three percent in 2012.

Modern cars are already equipped with integrated navigation tools, traffic information services, danger-warning applications, and diverse infotainment features and advanced driver-assistance systems. Those features will be supplemented with smartphone capabilities in the near future (McKinsey&Company, n.d., p.14). Such capabilities are a source for differentiation and future profits. In the chapter ''In-car marketing'', this statement will be further explained.

3.1.2 Difference in the interest of car shoppers

In the past, people were interested in the brand, equipment, or mileage, when it was question of a used vehicle, when shopping for cars. However, in the present, vehicle software and the associated technology features are more important as the brand or style of the car (Ilunin, 2018). According to a recent study, technology and infotainment features are seen as an essential part of a car by 70% of younger millennials. Even older consumers seem to enjoy integrated infotainment systems (AutoTrader.com, n.d.). More and more consumers seek applications that make driving more convenient and a seamless element of their daily routines and lifestyles'' (McKinsey & Company, n.d., p.14).

3.1.3 Smart in-car assistants

Popular already existing car interfaces and smart in-car assistants are ''Apple CarPlay'', ''Android Auto'' and ''Mercedes MBUX''.

Apple CarPlay: ''Apple CarPlay'' has been launched in 2014 by Apple, the California-based tech giant. It is a software which allows the driver to connect his phone with the car, ''Motorists can use the software to get turn-by-turn directions, make calls, send and receive text messages, and listen to music or podcasts'' (Glon&Branman, 2018, para. 3). ''Apple CarPlay'' functions almost the same way as an iPhone, as the features and data which can be accessed from the phone can also be accessed from the dashboard of the car. ''(...) CarPlay software overlays itself on top if a car's factory-loaded infotainment system'' (Glon&Branman, 2018, para. 1).

There are two ways to access the features: either the driver can give voice orders which are understood by the vehicle thanks to voice-recognition technology, such as Apple's digital assistant ''Siri'', or he can use the touchscreen dashboard. Apple claims that the software is not endangering the driving as ''the iPhone's screen is locked when CarPlay is active'' (Glon&Branman, 2018). Motorists are so no longer distracted as they are not playing which their mobile phones while driving.The software can be found in several car models of different brands. It is either included as standard equip-

ment or is seen as extra tech. However, ''Apple CarPlay'' is rare in used cars (Glon&Branman, 2018).

Android Auto: ''Android Auto'' is a car interface created by Google in 2015 and can be described as smart co-driver. ''Stay focused, connected, and entertained with the perfect driving companion'' (Android, n.d., para. 1). Thanks to a Google Assistant, the driver can concentrate on the road and stay connected whithout getting distracted by the infotainment system. While driving, the motorist can easily use the apps from his smartphone via voice technology. The driver can order ''Android Auto'' to call a phone number, or read his messages aloud and respond.

Furthermore, the interface can play the motorist's favorite songs and sends real-time traffic alerts to the driver. Those actions enables the driver to keep his hands on the wheel, which is considered as safety measure. The interface ''Android'' can be used in compatible cars while connecting the smartphone to the car via a USB cable or thanks to aftermarket stereos (Android, n.d.).

MBUX: ''MBUX'', the Mercedes-Benz User Experience, is the new smart multimedia system integrated in the new 2019 A-Class. The system can be seen as a smartphone, built in the car, due to a high-resolution dashboard with touchscreen operation (Puscher, 2018).

''MBUX'' is characterized by meaningful innovations. Artificial intelligence, augmented reality and natural speech recognition are part of the system. Artificial intelligence is used to learn about the driver's preferences as well as to respond to the spoken queries, augmented reality allows the driver to overlay navigation data on the road, while natural speak recognition enables him to speak informally. Those features are accompanied by graphics and different control options, such as steering-wheel controls, conversational queries, touchscreen or track-pad.

The above mentioned features lift ''MBUX'' off from competitors' actual infotainment systems (Adams, 2018 ; Mercedes, n.d.). The goal of ''MBUX'' is to advance the user experience and to foster the interactivity between the car and its driver (Mercedes, n.d.).

3.2 Autonomous Cars

Autonomous cars contribute to the next mobile revolution and will be an essential part of the modern road traffic in the near future. An autonomous car is a car, which doesn't need the presence of the motorist to drive. It is able to drive by itself thanks to installed cameras and sensors, which scan the environment to collect data, particularly about the environment, road and traffic situation. Within seconds, the collected data is processed in real time by a computer.

Furthermore, there is a permanent information exchange between autonomous cars on the road, called V2V technology, and the road infrastructure, called V2I technology (Gerdes, Lenz, Maurer & Winner, 2016 ; Gora & Rüb, 2016). The goal is to ''relieve the driver of individual tasks'' (Gerdes et al., 2016, p.V). Since 1925, human beings have experimented with self-driving and connected cars. According to the article ''Science : Radio Auto'' (1925), the first driverless car was tested on the streets of Milwaukee, in the U.S., in 1925. During this test, it was question of V2V communication. This explains why the car can't be seen as a fully autonomous car.

In 1980, the first truly autonomous cars, able to drive on the road without any human intervention, made their appearance (Gora & Rüb, 2016). One example of such an autonomous car was a Mercedes-Benz van equipped with cameras, sensors and computer vision strategies created thanks to the research work of Ernst Dieter Dickmann's team (Dickmanns& Zapp, 1988). E. Dickmann is a German pioneer of autonomous cars (Schellschmidt, 2018). Nowadays, more and more car companies such as Tesla or Audi, as well as IT companies like Google or Apple, and research institutes such as VisLab or Oxford University are experiencing with driverless car technology.

3.2.1 Classification of Autonomous Driving

National Highway Traffic Safety Administration (NHTSA), an organization within the U.S. department of Transportation, has elaborated a classification of automation (NHTSA, 2013).

There are six levels: No automation, driver assistance, partial automation, conditional automation, high automation and full automation. While level one and two are already integrated into today's cars, level three, four and five are still in the testing phase.

Level one, the assisted driving, supports the driver, but the motorist has the control over the car. Such systems help to protect the driver and to prevent car accidents. An example is BMW's Personal CoPilot driver assistance system. Level two, the partly automated driving makes driving more convenient. The car can steer, brake and accelerate by his own. However, the control is still overtaken by the driver. An example of semi-autonomous driving assistance systems is the Steering and Lane Control Assistant including Traffic Jam Assistant. Level three, the highly automated driving, allows the driver to give the control to the car in specific moments, such as on highways. However, the driver must be able to regain control immediately when something unusual is happening on the road. Such systems have been tested on public roads and will be integrated into cars in the near future. Level four, fully automated driving, A cockpit can be found in the car, which allows the driver to take over the control whenever he wants to or whenever human control is needed. The difference between level three and level four is that the driver doesn't have to interfere when something unusual is happening on the road. An example is that the vehicle can react independently when construction sites appear on the road, which is not possible in level three. ''In level 4, the car can handle the majority of driving situations independently'' (BMW, n.d., para. 7). However, the presence of a driver is needed in the car. This feature differentiates level four from level five, in which no driver is required at all. It is question of true autonomous driving. No cockpit can be found in the car. Every person present in the car is considered as a passenger. Such vehicles will be allowed to drive at low speeds in defined regions (BMW, n.d.).

3.2.2 Benefits of Autonomous Vehicles

Driverless vehicles present various benefits such as reduced stress, reduced tedium, improved productivity and mobility. It is question of internal benefits as they directly affect the motorists. In level

four, high automation, and especially in level five, full automation, the driver is allowed to do whatever he wants to. He can rest, sleep, read, work, watch movies, play with his phone, everything which was forbidden while driving in a non-autonomous car. In a self-driving car, the driver doesn't need to change gears or to pay attention to the road. He can relax while travelling (Litman, 2018). Seats than turn into beds and mobile offices.

3.2.3 The Present

In the U.S., self-driving vehicles have been permitted by 33 states (NCSL, 2015). In Europe however, the government is more skeptical about the use of autonomous cars. Many questions, concerning the use of truly autonomous cars in an ethical, social, legal, psychological, transport-related or city-related aspect, arise. Especially the ethical, legal and safety aspects are standing in the forefront. In the ethical aspect, it is questionable if a driving robot is able to make the right decision in dilemma situations, in which it has to choose a certain behavior to cause the less damage. In the legal aspect, laws, concerning traffic regulation, have to be set up as the use autonomous cars on public road will entail some road changes. When it comes to the safety aspect, producers have to make sure that the driving robots are a safe transportation medium. The above mentioned questions need to be further analyzed and the associated consequences and aftereffects need to be anticipated, before autonomous cars are authorized on European roads (Gerdes et al., 2016).

3.2.4 The Future

According to the Toyota Research Institute and to the Uber self-driving vehicle lab, it is possible that self-driving cars in a small number could be found in specific areas in the near future (Ackerman 2017 ; Marowits 2017). Experience with previous vehicle technologies can help predict autonomous vehicle implementation (Cathers 2014; Grush 2016). It can be predicted ''(...) that Level 4-5 autonomous vehicles become commercially available in the 2020s but are initially limited in performance and expensive'' (Litman, 2018, p.18). In the 2040s, approximately half of vehicles sold could be autono-

mous according to the Victoria Transport Policy Institute (Litman, 2018). However, as reported by the Michigan Mobility Transformation Center, “it may be decades before a vehicle can drive itself safely at any speed on any road in any weather” (Litman, 2018, p.15). Research institutes predict that more technical research and progress have to be done to allow the use of autonomous vehicles in every region and on every road. Optimistic predictors, such as people with financial interests, however, claim that automation will be entirely set up around the 2030s. They compare this automotive revolution ‘’(...) with other disruptive technologies such as personal computers, digital cameras and smart phones’’ (Litman, 2018, p.30). Autonomous vehicle technologies are currently in development, testing and approval stages. It still takes time until they are commercially available and become reliable and affordable. This explains why it is so difficult to give an estimated number of active autonomous cars, which will drive on the roads in the future (Litman 2018). Partially automated cars, belonging to Level 1 or 2, can already be found on public roads (Gora & Rüb, 2016).

3.3 Connectivity

Connect: “Bring together or into” (“English Oxford Living Dictionaries”, 2019). Connectivity: “The state of being connected or interconnected.” (“English Oxford Living Dictionaries”, 2019)

In this digital age, man is becoming more dependent on internet and digital devices for daily activities, due to convenience and a better experience. Connectivity is the medium through which information is exchanged between humans and machines and helps to enhance the human-machine interaction. Machines gather information of humans and analyze it and offer services, which satisfy the needs and requirements of the humans. Through this process, humans are connected to each other and to their machines and this connectivity is now essential in all walks of life from lifestyle to safety reasons (Huawei, “Connectivity Makes Anything Possible”). No matter where we are in the world, our main purpose is to stay connected to others and to our devices. In this age, which is changing so rapidly, it is crucial to receive and have access to required

information instantly. Connectivity has the power to transform our world and can be applicable to a wide range of fields from connected cars to smart homes (Gurnani , 2014).

Many people today, use their devices such as smart phone, laptop, etc. for constant access to information or for communication. Most of the car companies nowadays have made these features available in the car for the driver, so that people can legally perform these activities for convenience and safety reasons. Further, the cars are a part of a connected network like cloud, which helps in offering services to the driver through communication. It helps in maintaining a connection between the car and the environment or surroundings even when the car is mobile. (Wee, et al., 2015).

Connectivity will also transform the way cars interact with humans and cities. This concept will soon be used to solve traffic problems, parking issues, car sharing, smart home connections, etc. it will change the whole interaction between man and his vehicle. The platforms of connectivity will keep expanding and newer technological advancements will be constantly made in this field (EY, 2013).

3.4 Telematics

In order to get insights into the concept of telematics, we studied the history of telematics, system, devices used, applications, current trends, demand in market and some user research.

“It is the science of sending, receiving and storing information via telecommunication devices.” (“Telematics Past, Present and Future”, 2008, p. 5)

“It is a wireless communications system designed for the collection and dissemination of information that particularly refers to vehicle-based electronic systems; vehicle tracking and positioning; online vehicle navigation; and information systems and emergency assistance.” (“Telematics Past, Present and Future”, 2008, p. 5)
“Telematics is the transmission of useful information to and from a

vehicle.“ (“Telematics Past, Present and Future”, 2008, p. 5)

“Telematics is a set of interdisciplinary technologies that are providing the automotive industry the tools, methodologies and systems to transform driving into an engaging and interactive connected vehicle user experience.” (“Telematics: Transforming the Automotive Industry”, 2017, p. 2)

History of Telematics

Telematics was began in the 1990s when the consumer’s felt the need to link GPS, cell-phone technology and the Internet with the vehicle. People started relying more on Internet and computer for their daily activities. With the increasing use and dependency of cell-phone and Internet the users felt even more need to involve these features in their cars. This made the car experience richer by adding features such as safety and connectivity. (“Telematics Past, Present and Future”, 2008).

System

For telematics, an electronic devise is usually inserted in the car. This modem is connected to external servers and these two will be connected to each other by using telecommunications. Usually a SIM card is inserted into the device and the device sends real time information to the server (Sundeep & Vardhan, 2013).

Devices

Some of the devices used for telematics are as follows:

Smartphones: The smart phones act as a device that gathers and transmits the data collected in the car. A telematics app on the phone helps in turning the phone into a device that transmits data. This is useful in getting information about the driver’s habits and behavior and the trip details (“What is a Telematics Device?”, n.d.) (Dharani, Isherwood, Mattone, & Moretti, 2018).

Bluetooth assist: Bluetooth enabled devices, which can be easily

connected to a smartphone through an app are installed in the vehicle to collect and transmit data (“What is a Telematics Device?”, n.d.).

On-board diagnostics (OBD): These devices are plugged in the car and transmit data through wireless networks directly. They are mainly used to collect driving data and are more focused on the vehicle performance and mileage-based programs (“What is a Telematics Device?”, n.d.).

Cigarette lighter plug: The device is plugged into the cigarette lighter slot. It collects and transmits data using a SIM card. These devices are small and compact and can be easily charged and backed up. They possess a microprocessor and Bluetooth module and come with emergency button and loudspeaker. Hence, it is useful in roadside assistance and safety.

Smart tag: This device is mounted on the dashboard using an adhesive and it collects and transmits data, which is averagely useful for road safety, usage insurance and driving score tracking (Dharani, Isherwood, Mattone, & Moretti, 2018).

Battery line: A battery line connects the car’s battery to an off board systems using onboard device using a SIM card to collect and transmit data. This device is precise and extremely good for tracking the driving score, car maintenance, road safety and assistance (Dharani, Isherwood, Mattone, & Moretti, 2018).

Windshield-mounted device: This device is mounted on the windshield of the vehicle and is used to collect additional data using features such as camera, microphone and emergency button (Dharani, Isherwood, Mattone, & Moretti, 2018)..

Black box: The black box is installed in the car cabin and is useful in taking precise measurements, which are useful for emergency, road-assistance, driving score and maintenance. The measurements taken using this device are the most accurate and the black box works well even under hot conditions or tampering (Dharani, Isherwood, Mattone, & Moretti, 2018).

Applications

There could be multiple systems connected wirelessly to the vehicle. Telematics is used for a wide range of applications such as:

Vehicle tracking: This feature monitors the location, movement and behavior of the vehicle through GPS and an electronic device inserted in the vehicle.

Satellite tracking: This technology uses GPS and an electronic mapping tool to track the location of the vehicle for navigation purposes.

Mobile data: This feature uses the smartphone to send and receive data to enable wireless communications.

Intelligent transportation data: In order to make the transport convenient this feature provides public and private transportation and tolling technology for bridges, highways and urban areas.

Dedicated short-range communications: These wireless systems are used to communicate over a range less than 300 meters for vehicle-to-roadside or vehicle-to-vehicle applications ("Telematics Past, Present and Future", 2008).

Trends

Telematics trends constantly keep changing with newer technologies. Some of the current trends used in Telematics are as follows:

Focus on the driver: This trend focuses more on the driver as compared to vehicle location and routing. Telematics is used to track the driving behavior and this prevents collisions and speeding tickets, provides safety and meets the driver's needs. This trend is seeing a lot of importance in 2018 and will do so in the future too. It is used to make the driving experience personalized and better ("Top Telematics Trends In 2018", 2018).

Superior Safety Training: This trend uses telematics technology to

track the bad driving habits of the driver and prevent car accidents or speeding. This provides better training to the driver to target those specific habits, which are not good for the safety of the driver. Habits such as harsh braking, speeding or distracted driving are monitored and targeted for further training. This is personalized to the specific driver and hence, the car experience is becoming more individualized and personalized ("Top Telematics Trends In 2018", 2018).

Data mining and security: The data generated using telematics can be stored in a single data and this data can be used by telematics providers and third parties to offer better services and customize the car experience to make it better. Mining telematics data can be used to monitor the car performance to make sure it is reaching it speak efficiency and further reports or statistics can be made ("10 Telematics Trends in 2018 and Beyond", 2017).

Data integration: This enables the fleet management systems to communicated with each other. This enables the fleet managers to monitor and analyze the fleet's performance ("10 Telematics Trends in 2018 and Beyond", 2017).

Predictive Analytics: The data collected from telematics can be used to not only observe the performance of the vehicle in the past but also to predict the future of the vehicle using this data. The fleet managers work on a variety of risk assessments and prevent collisions or car breakdowns in the future to ensure safety to the driver and passengers in the vehicle ("Top Telematics Trends In 2018", 2018).

Utilization Analysis: In depth information about each vehicle's performance helps in utilizing each resource and optimizes the performance of the vehicle ("Top Telematics Trends In 2018", 2018).

Connected Cars: Cars are connected, using wireless networks, to a bigger complex system. Autonomous age is coming and soon there will be driverless cars on the road. This makes telematics technology even more important for the future. Communicating and staying connected with other cars then becomes crucial in order to guarantee safety and to help the autonomous cars perform

safely. With driverless cars, it becomes crucial to track and connect with other cars for driving safety, parking issues, etc.("10 Telematics Trends in 2018 and Beyond", 2017).

Maintenance: The data collected from the vehicle is used for the maintenance of the vehicle to make sure the vehicle is performing to its best capacity. There would be regular maintenance schedule for each vehicle depending on its usage and wear and tear. It is also easier to track stolen cars and provide better security ("10 Telematics Trends in 2018 and Beyond", 2017).

Market

Some of the factors that affect the telematics market are:

Fuel prices: Due to high fuel prices, people tend to find the fastest route possible using the navigation system to avoid traffic.

Environmental health: Carbon monoxide has bad effects on the environment and hence, telematics plays an important role in monitoring vehicle health and reduce fuel consumption.

Crime prevention: In order to prevent crime, the safety features provided by telematics become important.

Smartphones and tablets: Technologically advanced smartphones are tablets are used in car infotainment systems thereby reducing system costs. ("Designing Next-Generation Telematics Solutions", 2015)

User Research

The demand for car connectivity has increased in the past few years. People prefer to opt for companies that offer better customer experience through connectivity. In the year 2014, there was a rise of 20 % or people choosing car companies offering connectivity services and this almost doubled to 37% in the year 2015. More people are willing to pay for subscription fees for connectivity related services (Wee, et al., 2015).

The number of connected cars sold each year is increasing. This increase is mainly governed by factors such as increased safety and better customer experience (Hegedus, 2018).

Cars would be used to handle everything that can be done in home, office and in between. It would be a carrier of data and information, which would aide in handling many things to make life easier like managing emails, calls, news, directions, reservations or bookings and more ("Telematics Past, Present and Future", 2008).

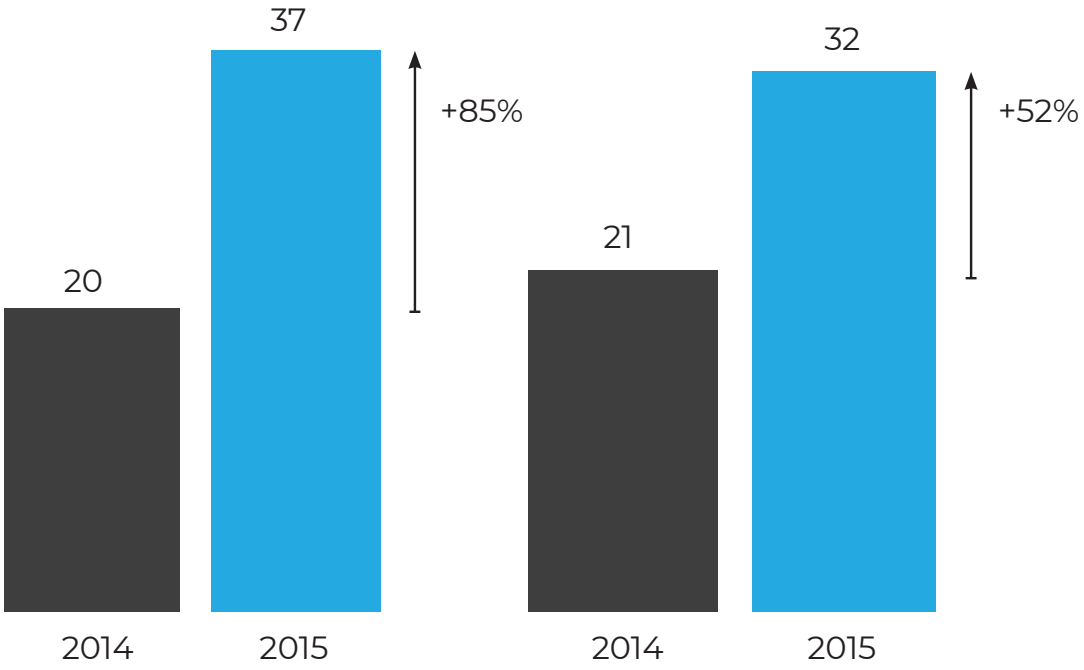


Fig 1: *Willingness to switch manufacturers and to pay a subscription fee for connected car services (Wee, et al., 2015).*

Customers are willing to switch car companies that offer services related to connected car. They are also willing to pay for subscription-based model for connected car services (Wee, et al., 2015).

According to the survey of Mckinsey, 88 percent of the customers are aware that their data is being used by apps and this personal data is also shared with third parties. This data includes name, address, contacts, browser history etc. and 71 percent of the people willingly change the app settings to make this data available in case it is inaccessible to the apps. This proves that sharing data

with apps and retrieving customer data will not be a problem in term of telematics (Wee, et al., 2015).

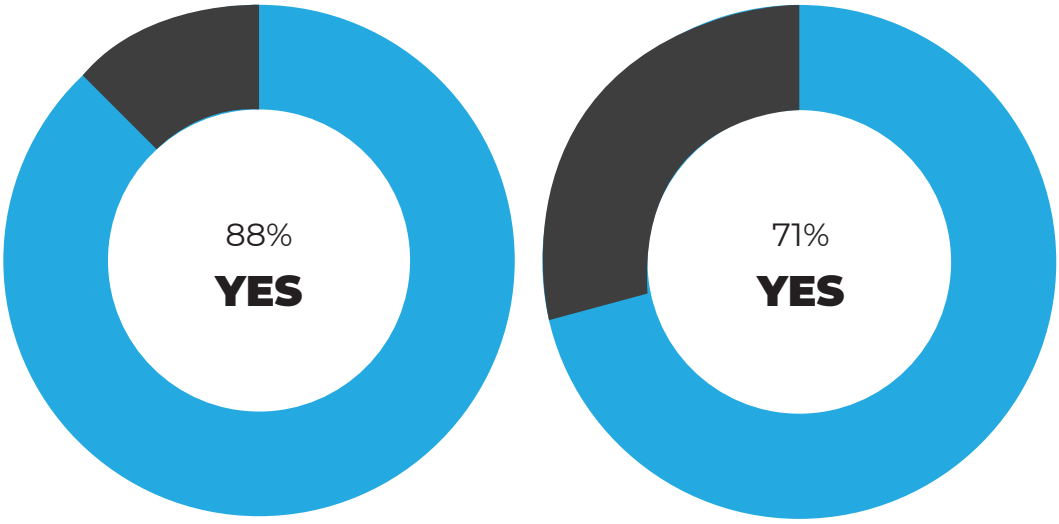


Fig 2: *Consumers are well informed on the topic of data privacy and are willing to share thier personal data with some applications according to McKinsey Connectivity & Autonomous driving consuemer survey 2014 & 2015 (Wee, et al., 2015).*

Fig 3: *Consumers are interested in driving related car features than they are in driving unrelated features according to McKinsey Connectivity & Autonomous driving consumer survey 2014 & 2015 (Wee, et al., 2015).*

"For consumers, driving-related applications (e.g., connected navigation, networked parking) exhibit higher purchase relevance than driving-unrelated ones (e.g., e-mail, music streaming)." (Wee, et al., 2015, p.6)

When asked about the willingness to share data based on the functionality of the apps, 82 percent of the people voted for navigation

and mobility based apps followed by messenger services, social media, health and fitness, email and other work related apps, media streaming and games. 76 percent of the customers are willing to let their cars send the personal data to the car manufacturers in order to improve the car services for the future. However, 21 percent of them want some sense of assurance or guarantee that the data will not be sold to third parties and will only be used for the improvement of their cars (Wee, et al., 2015).

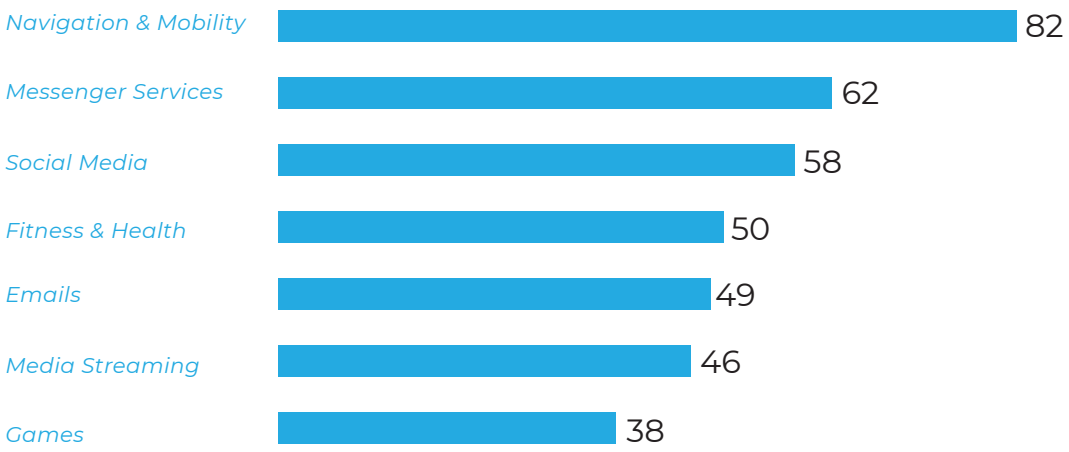


Fig 4: *Consumers are most willing to grant access to applications that are directly realted to driving servics such as navigation according to McKinsey Connectivity & Autonomous driving consuemer survey 2014 & 2015 (Wee, et al., 2015).*

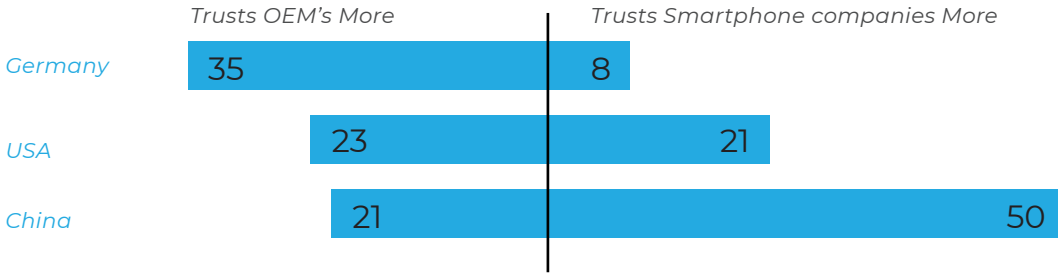


Fig 5: *OEM'S are more trusted in Germany than in the USA and in China regarding data privacy and protection according to McKinsey Connectivity & Autonomous driving consuemer survey 2014 & 2015 (Wee, et al., 2015).*

The customers were further asked whether they would be willing to share this data with their smartphone network company like Google, apple, etc. as compared to OEMs or car manufacturers. In

Germany majority of the people felt safe sharing their data with car manufacturers as against phone companies, which was the opposite case with the customers in the China, where majority of them felt safe with sharing their data with phone companies (Wee, et al., 2015).

3.5 In-Car Marketing

As already mentioned in the chapter ''Automotive Trends'', there will be some changes in the automotive industry in the future, due to the rise of connected and autonomous cars. According to Shel Kimen, cars will be equipped with more and more screens, which can be efficiently used for entertainment and advertising. Connected cars, offering new marketing opportunities, are on the rise (Warc, 2017). According to a study of Koupon Media, 75% of new cars will be connected to the Internet in 2020 (KLICK, 2018). ''The connected car enables brands and retailers to reach drivers in their vehicles with highly targeted messaging, creating a captive, high-intent audience'' (Koupon Media, n.d., para. 2). The integration of digital tech and screens create new methods to communicate with the driver and passengers. This explains why companies want to use the time spent in a car by the motorist, which is about 72 minutes a day, in the most efficient way (KLICK, 2018). The goal is to ''generate additional, highly profitable revenue streams'' (McKinsey & Company, n.d., p.14). ''The auto industry's move into e-commerce is still in early stages, but auto makers see it as part of a broader bid to monetize connected-car data and services, which McKinsey & Co. forecasts could generate global revenue of $750 billion by 2030'' (Rogers, 2018).

All of this leads to the new trend: in-car marketing. In-car marketing is marketing launched in the car, via the integrated dashboard. The in-car built-in technology and Internet connections make retailing services possible. The technology built in the car is hooked up with the driver's smartphone. Apps displayed on the dashboard ''run through the car but aren't based in it'' (Tertel, n.d.). Those apps are based in the driver's smartphone. According to Christina Rogers, app-based services are coming to cars en masse over the coming

years (Rogers, 2018). This explain the statement of the Senior digital Marketing Consultant Joe Tertel ''(...) a car is acting as a portal to mobile devices'' (Tertel, n.d., para. 5). Furthermore, the advance in driverless technologies frees vehicle owners from the driving tasks and allow them to relax or work in the car. (Rogers, 2018)

Goals

The main goal of in-car marketing is to advertise and afterwards sell products and services. To enhance the user experience in the car, personalized digital experiences and advertisements will be delivered via the screen. Globally, it is predicted that in-car marketing should advance the-in car experience and enhance the driving experience. This is possible thanks to the fact that ''cars become more connected, more technology-focused, and more autonomous (...)'' (Hawkins, 2018, para. 24) in the near future.

Third Party Marketing

The trend ''In-car Marketing'' is not really established yet. However, first attempts have been made by launching third-party marketing in the car. In the context of in-car marketing, third-party marketing can be seen as a digital marketing strategy, used to market products or services of restaurants, bars, shops or cultural spots to the driver through the in-car screen. ''The future of marketing a business may not only be in the hands of the customers, it may be in their driver's seat'' (Tertel, n.d., para. 6). To make in-car marketing possible, car brands collaborate with restaurants, bars or shops. Both car brands and shops profit from third-party marketing as new revenue streams can be generated. Car companies get new revenue streams when they allow shops or restaurants to advertise their products or services in the car. Shops , in return, make money when the driver stops at their location and buys a product or service. Existing examples of third-party marketing are partnerships with fuel stations or restaurants. The fuel station chain Total is working on an app, which will make free payment at the gasoline pump possible. A QR code can be scanned from the pump and the driver can pay thanks to a digital wallet, called ''eWallet'', which allows drivers to pay digitally. This system should help to

gain customer's loyalty. As it is known that fuel stations get most of their revenue streams out of selling side products such as candy, Total want to convince the driver to get out of his vehicle at the station by sending push notifications to him via the screen. The app will be launched in 2019 (Shell, n.d.). Another partnership is the partnership between the car brand Ford and the restaurant chain Domino's. However, this project is only in the test-phase. To do so, they use the test-and-learn approach The main goal is to find out the benefits for the user and to uncover the user experience in the process (Warc, 2017).

In 2016, a new service called Marketplace was launched by General Motors. This marketplace allows drivers to ''(...) pre-purchase coffee and gas or make restaurant reservations, all from the infotainment screen'' (Hawkins, 2018, para. 21). According to GM, it is "a platform for on-demand reservations and purchases of goods and services'' (Hawkins, 2018, para. 21). In 2017, General Motor has elaborated a radio-tracking program to find out the listening habits of motorists in Los Angeles and Chicago. Several features, such as the station selection, volume level, and ZIP codes of the drivers, were collected within three months. The Wi-Fi signal, build in the car, was used to transfer the gathered data to GM's servers. The data will be sold to radio stations and other companies, such as restaurants, shops or cultural spots. An important decline of the listening of terrestrial radio can be observed. This is due to the upcoming in-dash streaming apps. The collected data could so help radio stations to analyze listener's habits and could afterwards improve their program and make it more attractive. According to GM, ''(...) the whole concept is still theoretical (...) '' (Hawkins, 2018, para. 3). However, such concepts should help to create more targeted in-car advertising based on specific consumer habits. ''Our cars have become rolling listening posts. They can track our phone calls, log our text messages, answer our voice commands, and, yes, even record our radio stations'' (Hawkins, 2018, para. 7). Several companies, such as restaurants, local shops, local governments, tech companies but also the car companies themselves, profit from the gathered data. The collection of data will even increase in the near future ''(...) as cars begin to become more automated and transform into self-driving shuttles'' (Hawkins, 2018, para 7.). Telematics data is used to make money (Hawkins, 2018).

Contextual Marketing

Contextual marketing plays an important role in in-car marketing. Unique customer experiences can be created as telematics allow car companies to know about consumer's personal preferences and geographical location (Warc, 2017). Thanks to the new technologies companies can reach the customers whenever and wherever they want to. In-car location based advertising is on the rise. Brands are so able to send personalized and tailored advertisements to the car driver via the dashboard when he drives past a specific place. If the driver is for example driving along a restaurant he uses to go during the lunch break, he will get a push notification or an offer of this restaurant (Warc, 2017).

Problem with In-Car Marketing

With the arise of in-car marketing, the safety problems arise too. In-car marketing will favorise distracted driving which, in return, favorises car accidents. If the possibility of infotainment is given in the car, the driver will be more likely to concentrate on the infotainment display as on the road. According to experts, the new cars can be compared to smartphones. However, the use of smartphones while driving is are already forbidden. This explains why experts puzzle over the fact that now digital dashboards will be an integral part of vehicles (Posky, 2018).

3.5.1 Personal Advertisements

In recent years, investigations have shown that consumers are not satisfied with the impersonal, standardized advertisements anymore. More and more human beings get annoyed by advertisements, especially unrelatable advertisements (Hyken, 2017). Nowadays, consumers show up as a confident bunch and require highly personalized experiences based on their preferences (Smith, 2018). Customization and personalization have become increasingly popular, it can even be said that it has become a trend (Pedersen, 2002). A personalized advertisement can be seen as an advertisement tailored to the customer's profile based on customer's preferences. ''(...) the basic goal of personalization systems is to provide

users with what they want or need without requiring them to ask for it explicitly'' (Giaglis & Lekakos, n.d., p.1). Customers are expecting from a company that it remembers who they are as well as their likes and dislikes and desire custom-tailored service. If they receive personalized recommendations, they are willing to spend more. This explains why companies will profit from the delivery of personalized shopping experiences (Hyken, 2017). A recent survey conducted by Clutch with 1000 U.S. consumers, showed that nearly half of consumers are willing to buy again after they have been delivered a personalized shopping experience (Clutch, 2018). ''(...) 40 percent bought something they hadn't planned to purchase as a result of personalization'' (Smith, 2018, para. 1). This customer behavior is part of the new customer journey. Two major advantages result from personalized shopping experiences: a higher sales rate and the gain of loyal customers. Furthermore, such experiences allow companies to stand out from their competitors (Smith, 2018). ''Most often, the process of personalizing advertisements is based on demographic information directly provided by users (...)'' (Pedersen, 2002, p.1).

''Personalizing advertisements, i.e. providing viewers with messages that they are most likely to be interested in, offers marketers the opportunity to increase the accuracy of their targeting, while at the same time providing viewers with messages that increase their satisfaction in terms of interest in the advertised product'' (Giaglis & Lekakos, n.d., p.2).

3.5.2 BMW & In-Car Marketing

In our eyes, in-car marketing is the perfect solution for the question: How do we use the existing data of the users to enhance the sale of the portfolios using in-car marketing ? And how can this be used as a new business model that involves 3rd party consumers? We choose in-car marketing as technique as there are and will be important digital advances in the automotive industry. There will be a huge rise of connected cars in the near future as a change in the customer need has been recently discovered. More and more people are seeking for car mounted infotainment systems. Furthermore, autonomous cars will appear on the market. In-car mar-

keting will even gain more importance with the appearance of autonomous cars. If a human being is owner of a self-driving vehicle, the car owner doesn't have to concentrate all the time on the road anymore. His/her individual tasks will be reduced during the ride. This explains why the user can concentrate on other things, such as advertisements, which will be shown to him on the in-car digital screens. Another reason is that people are nowadays spending more time in the car as in the past. The average driver is spending 72 minutes a day in his vehicle (KLICK, 2018). All of this demonstrates why more and more companies are experimenting with in-car marketing. With all this in mind, in-car marketing seems to be a useful tool to push BMW's different portfolios: new cars, used cars, the different lifestyle collections, the mobility services, and the services.

Thanks to the telematics data, BMW knows about consumers' identity, personal life, behavior and preferences. Based on this data, BMW has the possibility to launch personalized advertisements about their portfolio to the vehicle owner. If one of their customers is for example a parent, he/she will get an advertisement about the BMW Kids Collection. Another example is if a vehicle owner has already bought a product of one of BMW's clothes collection, BMW can send an advertisement about a product in the appropriate size of the already purchased collection or of another collection, which suits to the driver's personal taste.

How does the systems work?

In-car marketing will be possible thanks to the already collected data by BMW. The advertisements, offers and messages will be based on the data gathered by BMW in the past. This technique enables BMW to launch advertisements and notifications tailored to the car owner's identity, preferences, taste and personal style. In return, the customer will be more satisfied as he/she is only confronted to relatable advertisements. Customers are not simply bombarded with advertisements but will be asked for permission. When the vehicle owner enters the car and starts the engine, he/she is asked via the digital screen if he/she wants to get personalized advertisements about the different portfolios. This procedure

allows the driver to decide for him-/herself if he/she wants to get push-notifications.

How to avoid problems with safety?

To not distract the motorist while driving and keep him from interacting with the touchscreen of the dashboard and not paying attention to the road, our team has thought about using a voice-system. While driving, the touchscreen of the dashboard will be deactivated and interaction with the screen is only possible via voice commands. If the car stops, the touchscreen will be activated again, so that the driver will be able to use the dashboard at his ease.

3.6 Data Analysis

In this section we discuss the new GDPR and ePrivacy rules and regulations and how it affects the online experience for most of the companies or organizations. This paper briefly goes through the new changes and rules in GDPR, ePrivacy and cookie consent. This is followed by the study and analysis of the data collected by BMW and for what purposes it is being used. Based on this information, a categorization of user data has been made in the paper to understand the data requirements by various BMW portfolios for in car marketing.

GDPR (General Data Protection Regulation)

“For those with only passing familiarity, GDPR is the result of an effort by the European Parliament and other governmental bodies to strengthen data protection for those living in the EU, while also providing greater uniformity to existing data laws. Residents of the EU will gain a greater measure of control over their data (and how it is used), by parties both inside and outside the EU.”(Cusick, 2018, p. 1)

GDPR is a law and all the companies and firms are expected to

follow these rules. It gives more security in terms of data to the citizens of Eu. This system affects how the companies collect and process data of their customers.

We shall look more in detail about some of GDPR rules and changes.

Personal data: This affects the way firms collect personal data like name, address, age, gender, etc about the users (Cusick, 2018).

Profiling personal data: GDPR regulates the way companies shape personal data.

Consent: if a user accepts to giving consent it is also possible for the user to take back this consent to share data (Cusick, 2018). The consent for GDPR for the user becomes crucial and these are the following requirements it should meet.

"• It must be in the form of a statement or by a clear affirmative action, and cannot, for example, be in the form of a pre-ticked box. • Consent needs documented so that it can be demonstrated/ proved at any point." ("GDPR – How does it affect Research Data Management and data sharing?", 2018, p. 2)

The consent should also inform the user about all aspects of the data such as how the data is collected, where it is stored, for what purpose, etc. ("GDPR – How does it affect Research Data Management and data sharing?", 2018).

The right to be forgotten: Users can request to delete their data, which is online, at any point of time.

Transparency: It is important for the companies to show how they are using the collected data. The users can also ask for a copy of the stored data and keep a check on where their data is used and for what purposes.

Portability: The users can have their data transferred to any other data controller.

Privacy by design: Data protection should be a part of the whole process of any online service or product (Cusick, 2018).

The GDPR changes aims to give more power to the people to control their data. It is designed to inform them about the whereabouts about their data and they can have access to it at all times, which also means that they have the right to do as they may wish about their data. This gives them a sense of security and protection on the Internet ("Questions and Answers – General Data Protection Regulation", 2018).

It becomes important for the organizations to think of how to make these changes viable and feasible by forming newer business models and future planning. It thus becomes crucial to come up with newer and more effective ways to design consent in order to gain the customer's trust and to inform them in detail about their data. It is vital to identify the areas which will have the biggest impact or which will affect the business the most. Planning and strategizing well in advance will also prove to be cost effective to the companies and organizations ("The GDPR and You General Data Protection Regulation").

E-Privacy

It is important for the firms and companies to understand their customer's behavior before and after the purchase of their goods in order to improvise their products and services to meet the changing needs and demands of their customers. Traditionally the search analysis would be based on the customer's physical actions of comparing, buying different goods and services and this changed with the advent of Internet. Since most of the sales started happening online, it became crucial to monitor and analyze the user's behavior online and use this information for marketing or to improve the goods and services offered. Since the users started feeling vulnerable about their data being collected and used, it became crucial to make them feel safe and well informed about how their data is being used and processed and for what purposes (Annacker, Spiekermann, & Strobel, 2001).

“Colossal amounts of collected data are used, sold, and resold for serving targeted content, notably advertisements, on websites.”(-Datta, Tschantz, & Datta, 2015, p. 92)

ePrivacy usually applies to Electronic communications which include the Internet (email, apps, websites, etc), telephone calls, instant messaging, etc. e privacy also deals with spam, marketing, app developers, online advertising networks, etc (“The new EU ePrivacy Regulation: what you need to know”).

One of the major aspects of e-privacy is simplifying the cookie consent in a friendly way for the users.

Cookie Consent

When we browse through a website, tiny text files known as cookies get downloaded on our device like a smart phone or laptop. These cookies can be tracked by the website and give them information about the user’s preferences and device. This data such as the login data, how often the user visits the website, which pages are visited more often, etc. can be sued to enhance the user experience of the website. It also gives the website companies an insight into the user’s interaction with their websites (“Cookie Consent Examples”, 2018).

According to e privacy regulations, the cookie consent needs to be provided in order to get the user’s consent to use website cookies and provide information on how their data is being managed when they visit the website. The cookie consent pop-ups are the most visible aspect and interact with the user the most. This needs to be done in an easy and user-friendly way in order to make the online experience better for the users (“The new EU ePrivacy Regulation: what you need to know”).

The user can change the cookie settings according to their needs and these cookies could be tracked using softwares. This eliminates the cookie consent pop-ups and lets the user change the settings according to his specifications (“Difference between GDPR and ePrivacy regulation”).

BMW Data

BMW collects data through various ways. This project aims at working with the existing data, which is already with BMW. BMW collects data when a user visits their website, customer care, BMW museum tickets, newsletters. Their partners and third parties can give personal data to BMW as well. However, all this is done only with the user's consent and according to the guidelines of GDPR and e-privacy.

Various kinds of personal data can be collected using these channels and sources such as contact details, which include name, address, telephone number and email address. Additional personal information like date of birth or vehicle history could be collected through forms filled by the user on website or in the museum or the BMW Welt. The user's interests are important, which give an insight into the user's preferences of cars, branches, services, etc. Each user's contract data and registration data is stored with BMW, which includes vehicle number, customer number, booked services, contract number, registration plate. Using the BMW websites and communications gives BMW information about the user such as the user's usage of the website through cookies and tracking technology. Data about the interactions with BMW through complaints and inquiries is collected too. Credit assessment and transaction details are acquired by BMW, which gives information about all transactions for products and services and unpaid bills. Another important set of information is the vehicle settings and functions, which comes through BMW TeleServices, BMW Connected Drive or BMW Car Data.

This data collected by BMW is used for the following purposes: sales delivery purposes, experience purposes such as BMW Welt tours and museum tickets, event services such as event location, etc, to maintain or improve product quality, administrative purposes, customer care, advertising communication and marketing, legal purposes, third parties. This data is usually stored for a period of 6-10 years depending on the contract ("Legal Information on Data Protection.").

3.7 Customer Analysis

A car purchase is a big decision in customers' life as they are financially and emotionally involved in the purchase. Most consumers need lots of time to decide which car model to buy (Mogensen, 2015). According to the study ''Automotive Purchase Journey'' conducted by GfK in collaboration with Facebook IQ, the car purchase journey in Europe takes in general 24 weeks and includes five phases in which several devices are used to research about cars offline and online. In the scheme below, the different phases are shown (FB IQ, 2018).

- Qualifying considerations
- Research before a dealership visit
- Dealership visit
- Research after dealership visits
- Purchase

Online Research

Online research becomes more and more popular. While in the past, customers visited several dealerships to get information about the different car models, customers prefer now looking for information online. Potential car buyers are spending fewer days in-market, dealerships are not the primary source of information anymore (Mogensen, 2015). In the past, customers visited around five dealerships before purchasing a vehicle. However, the number of visits has decreased in recent years, ''(...) the average car purchaser today makes just two dealership visits in the search for the perfect vehicle'' (Mogensen, 2015, para. 4). It is important to mention at this point, that even when dealerships are less important in the research and product comparison phases, they still have value for potential car buyers and contribute to the overall experience. ''Although consumers buy vehicles at dealerships, most of the decision-making process and influential touch points are online'' (MillwardBrownDigital, n.d., p.9).

According to Millward Brown Digital, in recent years, 85 to 90 percent of auto shoppers first do research online before visiting

a showroom. This is due to the fact that the Internet offers the possibility to get research results within seconds. Brochures, ads and test reports can be easily accessed (MillwardBrownDigital, n.d.). ''With a few clicks, potential car buyers can already access a tremendous amount of information'' (McKinsey & Company, n.d., p.15). When a potential car buyer enters the dealership, he is already well informed. The dealer so has only one chance to turn the browser into a buyer (McKinsey & Company, n.d.). The most popular devices used for online research are laptops. 69 % of the prospective buyers use their laptop to get information about the car on the OEM's websites (FB IQ, 2018). However, not only laptops are used to research cars online, but also smartphones. According to IAB's study ''Always On – A Global Perspective of Mobile Consumer Experience'' (2017), almost half of the Europeans use their smartphones around three hours per day. 34% use their smartphone to see visual content about cars, proving that the use of the smartphones during the car purchase process gains in popularity (FB IQ, 2018).

According to the study ''Mobile Device Use at the Dealership'' (2014), the use of smartphones even changes the customer behavior. Before going to a dealership, customers are already informed as smartphones allow them to research information about cars whenever they want and wherever they are. Even at the dealership itself, consumers often use their mobile phones to look up and compare the prices of the different dealers to make sure that they get the best option and deal. Car companies must be aware of the constantly use of web-enabled devices, used to research general information about vehicles, check prices and reviews and locate stores, during the automotive retail journey. They are a digitally empowered and constantly connected consumer. Brands need to adapt their marketing and advertising strategies to the new mobile shopping behavior. An always-on concept is needed to satisfy the modern consumer (Placed., 2014).

According to the ''Car Buyer Journey'' conducted in 2018 by Cox Automotive, customers don't know which car to buy at the start of their car customer journey. ''Only 1 in 3 car buyers know the exact vehicle they want to purchase when they start shopping'' (Cox Automotive, 2018, p.3). This explains why car buyers can be easily in-

fluenced by companies about what to buy. However, this has to be done online as customers spend lots of time online before making their final decision. Important online influencers are social media channels such as Facebook and Instagram, while important offline influencers are family and friends.

Micro-Moments

The car-buying process is characterized by intent-driven micro-moments. Micro-moments can be described as moments in which customers use their laptops or smartphones to research cars online. The online auto shopping moments, also called Google Searches, can be divided into five steps: Which car is the best ? Is it right for me ? Can I afford it ? Where should I buy it ? Am I getting a deal? (Mogensen, 2015).

In the Which-Car-Is-Best moment, customers search for car brands online. Especially online research on mobile phones becomes more and more popular due to people's busy life. The smartphones allow customers to visit websites whenever they have time. Often several review sites, as well as two manufacturers' websites, are called up. The presence of car brands is important at the beginning of the car purchase journey as this moment is decisive for the final consideration (Gevelber, 2016). The car brand's website is essential in this moment, it should be build in an comprehensive way so that customers can easily and rapidly find the information they are seeking for. If clients are able to find the desired information, they have more trust in the brand. Furthermore, this tactical strategy can help to convince the clients to visit the showroom. Clients are especially interested in four areas: ''pricing information, financing information and options, trade in value of current vehicle and inventory'' (Placed., 2014, p.3). During the Which-Car-Is-Best moment, digital videos are determining. Especially, YouTube videos gain in popularity as they give customer a first impression of the vehicle. According to Google's ''Auto-Shopper Study'' (2015) with 500 participants, ''(...) more than two-thirds of people use YouTube in the car-buying process'' (ALPHA, n.d.).

In the second moment, the Is-it-Right-For-Me? moment, the shopper wants to make sure that the car model fits its desires and

needs. An overview of the car features can be given by Virtual Reality and 360-degree video experiences. Especially, three types of videos are researched: '' (...) vehicle test drives, highlights of features and options, and walkthroughs of the interior or exterior of the vehicle'' (Mogensen, 2015, para. 10). Such videos can help the consumer to better visualize the car. Furthermore, they contribute to the fact that a consumer get the feeling that he is the owner of the car, which convinces him to visit the brand's showroom to test the car in real life (Mogensen, 2015). A popular example of VR experiences are the VR experiences created by the luxury brand Audi which so tries to show the cars in an realistic way. The experience allows consumers ''(...) to see how different customizable options look on their cars before they make the purchase'' (Page & Tan, 2017, para 4.).

In the Can-I-Afford-It moment, the customer asks himself if he is able to finance the car. Clients visit in most cases the dealer's website to get information about the price. As already mentioned above, it is therefor essential that the prices are shown on the websites (Placed., 2014). Once, a customer has found a car which suits his lifestyle, he will research the nearest dealership. The customer is in the Where-Should-I-Buy-It moment. Lots of people prefer buying the car in a dealership to buying it online on the smartphone (Gevelber, 2016). According to the study ''What drives consumers along the automotive purchase journey?'', ''23% [out of 1.979 participants] go through the entire journey on their mobile and then buy in a dealership'' (p.23) Once at the dealership, the client wants to get the most important information about the car model and want to test it. However, the use of the smartphone is also popular in the showroom itself: customers use their mobile phones to compare the prices of different car companies and to look for the best deals. It is question of the Am-I-Getting-A-Deal moment (Placed, 2014).

Those micro-moments explain why, an always-on concept is needed to convince customers about a specific car brand (FB IQ, 2018). As the showroom sales experience cannot longer be seen as a point of contact, companies need to look for other ways to start building brand loyalty (Page & Tan, 2017). Besides the traditional advertising, such as television spots, a car company need to set up

a good digital marketing strategy and has to ensure its presence during the entire online research process if it wants to build trust and to make sure that its showroom is among the two dealerships visited by the average customer (Mogensen, 2015).

''Car companies need to create a state-of-the art Web presence that provides customers with a digitally supported purchasing experience'' (McKinsey&Company, n.d., p.15). Especially, their websites need to be adapted to mobile phones to make sure that customers are able to find easily and rapidly the answers they are looking for. In the near future, it is even expected that car shoppers will buy their vehicle online, circumventing the dealership completely (What drives consumers along the automotive purchase journey?, 2017). This explains why fully digital purchase experiences need to be set up in the near future (ALPHA, n.d.). The car brand Hyundai is already trying to facilitate the online automotive buying process with its ''Click to Buy'' (Hyundai, n.d.).

3.8 Quantitative Research

For the quantitative analysis we decided to conduct a survey online to find out more information about the marketing experience of cars for people. We wanted to find out what were the modes of interaction people had with the car companies or other dealerships and their preferences for other car related services. The following questions were asked on an online forum to friends, family and through social media.

- How old are you?
- What is your gender?
- What is your current occupation?
- Do you prefer to buy a car outright or lease it?
- Do you use DriveNow or any other car sharing services? If yes, how often?
- Do you own a car? If yes, which brand?
- Is it a new or a used car?
- If you bought a new car, what was your first point of contact (On line, Dealership)?

- If you buy a new car, what would be your last point of contact (Online, Dealership)?
- Did you purchase your new car from a private dealer or the Brand dealership?
- If you bought a used car, what was the reason?
- If you buy a used car, would you prefer a private dealer, online/ classifieds or a 2nd hand dealership?
- Would you use the internet to buy a new car? Why?
- If you used the internet to buy a new car, were you satisfied with the online experience?
- Would you use the internet to buy a used car? If no, why?
- If you used the internet to buy a used car, were you satisfied with the online experience?
- Do you use your mobile or desktop to find out basic information about new/used car?
- Do you use your mobile or desktop to customise your new car?
- Do you receive service notifications from your brand? If yes, do you receive emails, phones calls, in-app push notifications, text messages?
- Do you receive lifestyle notifications from your brand? If yes, do you receive emails, phones calls, in-app push notifications, text messages?
- Do you buy lifestyle products from your brand?
- Do you use social media platforms or the company website to get information on offers and services of your brand?
- Have you ever switched car companies? If yes, why?

3.9 Results

We got almost 70 responses for this survey and these results were crucial in deciding the next steps for the project. Most of the questions were focused on the online experience of car related services. From the answers we analyzed the key findings and they helped us further in creating the personas.

The age group of people answering this survey was from 20 to 55 years old including students, professionals and office goers. When people were asked if they wanted to lease a car or buy it, almost

70% of the people preferred to buy their own car.

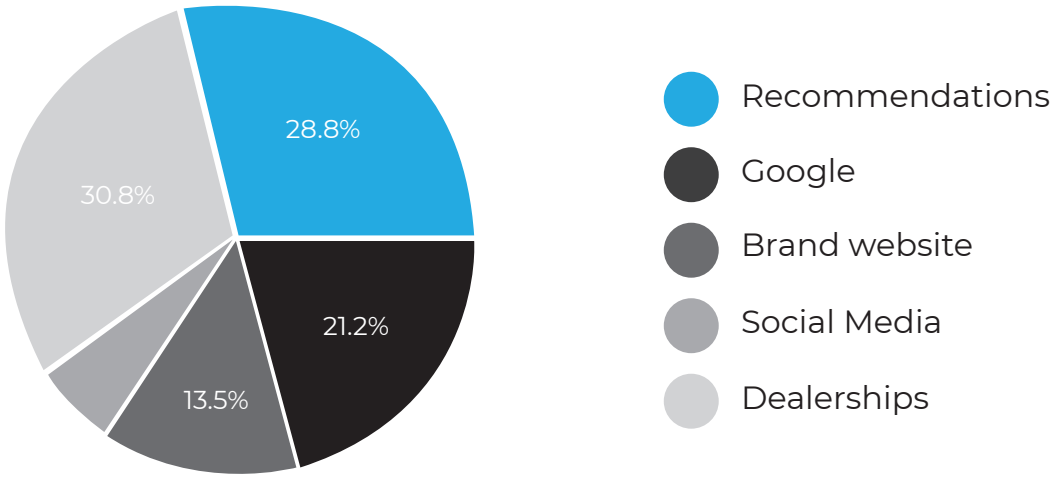


Fig 6: *First point of contact in order to buy a car*

In order to buy the car, they were asked about their preferred first point of contact to which 30.8% of the people chose to opt for dealership and the least being social media. 56% of the people bought their car through a Original Equipment Manufacturer OEM and 44% used a private dealer. For people who bought or would buy a used car in the future, almost 46% preferred buying the used car through secondhand dealership, followed by 31% through private dealers and 19.7% would buy it online.

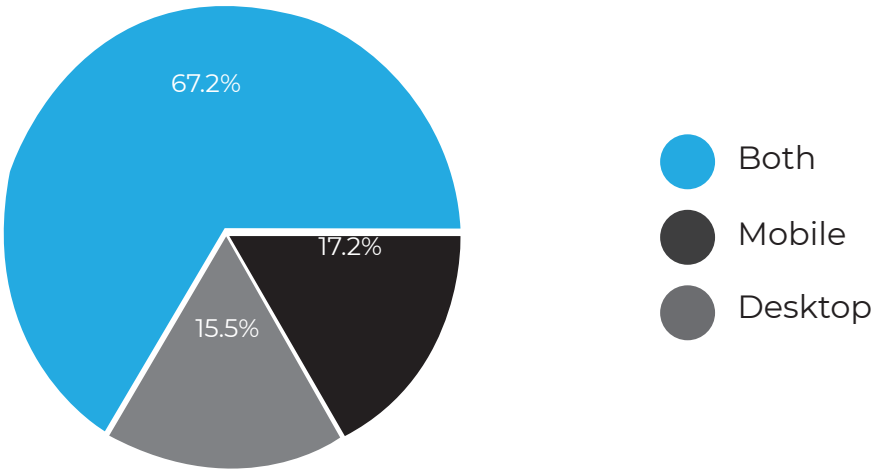


Fig 7: *Which device do you use to find out basic information about a car that you are interested in purchasing?*

According to the survey, people use both desktop and smart phone to find out basic information about new/used car. They also prefer to use both the devices to customize their car.

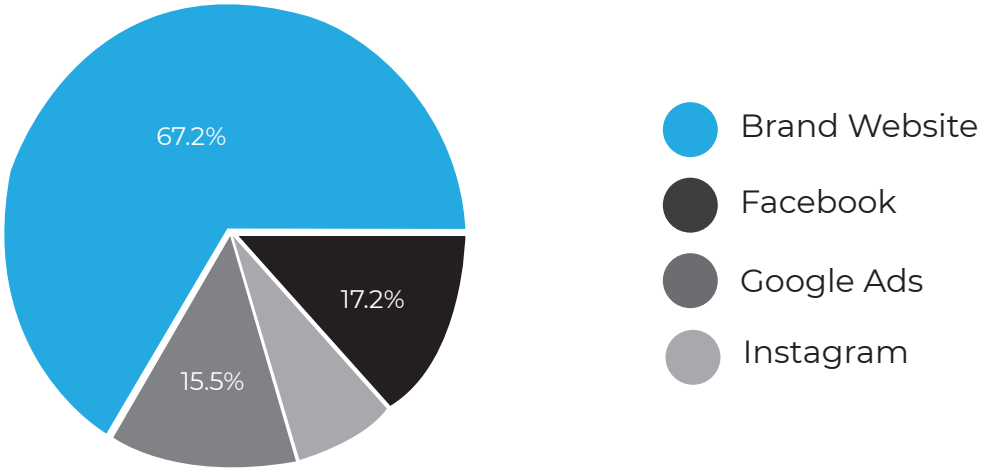


Fig 8: *Do you use the companies website or other social media platforms to get information on offers and services from your brand?*

People consider the brand website as the most reliable source to get information on offers and services of the brand. They use the company website the most for these purposes. This shows that the users are willing to use digital interfaces offered by the car companies in order to make their services and offers a better and convenient experience. They seem to be open-minded about newer ways to interact with the car companies digitally.

04.

Insights

In this chapter we look into the creation of customer personas, user flows, user journeys, the experience loop and the strategy used to enhance BMW's marketing strategy based on the results obtained from the primary and the secondary research that we have looked into the previous chapter. As the aim of the project is to enhance the portfolio's using the existing data that BMW has acquired about its existing customers, we find it essential that the marketing strategy involved should address its customers on a personalized level which would enhance the customers experience and not only contribute to better sales of products and services but in the retainment and promotion of the same to gain new customers. Hence the marketing strategy that we find effective is In-Bound Marketing.

4.1 Inbound Marketing

The term inbound marketing was developed by Brian Halligan in 2005 (Bezovski, 2015). Inbound marketing is about generating leads by watching the way we market products and services and how customers learn and shop which converts to better revenue and growth of the business (Halligan & Shah, 2014). It is about earning the trust of potential customers and bringing them back to the brand rather than pushing advertisements at random customers and waiting for them to respond. Trust is gained using high quality content that is made available through multiple mediums including search engines and social media. High quality content could vary depending on the target group (Bezovski, 2015).

One of the key elements of inbound marketing is the company's website where visitors are converted into leads by optimizing the content of the website by using landing pages, subscriptions forms and so on in return for the customers contact information. These leads are then converted into customers and customers are converted to loyal customers who then become ambassadors of the company as they refer the services and products that are offered

by the company to other potential customers. Apart from the company's website it is essential that the company maintains a good customer relationship management system (Bezovski, 2015).

The four steps that essentially comprise the inbound methodology are as Attract, Convert, Close, Delight (Donahower, 2016).

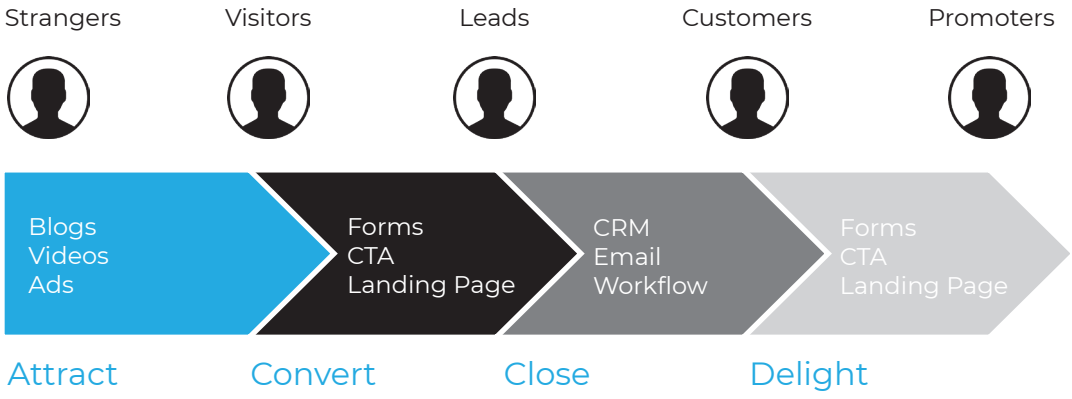


Fig 9: *Inbound Marketing Stages and activites in reference to https://medium.com/@bendonahower/4-stages-of-the-inbound-marketing-methodology-bb72a681f37*

Attract

This step involves in creating awareness of the company, its products and services. This is achieved by creating ads, videos, blogs and social media engagements that in turn bring people to the company's website. The goal is also to cater to the right customers with the right data at the right time. It is more important to address people who are more likely interested in the products and services offered than to people and customers who are not. This is done by creating user personas that help target a specific group of people (Hubspot, n.d).

Convert

"Conversion" is the art and science of encouraging site visitors to further engage with your business." (Halligan & Shah, 2014, p. 129). Once we have attracted people who have returned to the company's website using the ads, blogs and videos, it is not time for us to

convert them into leads. This can now be achieved by asking the customers for basic information such as the email address, phone numbers or any other details that we could use to contact them. The only way a customer would be willing to offer such information is when the company offers the customer with something that they needed in the first place. Hence it is important that the company provides offers to its customers across their buying journey to generate leads in the sales cycle (Donahower, 2016).

Close

Now that we have customers who have provided their information, it is time for us to convert them to paying customers. The important thing that needs to be considered in this step is the amount of information that we are providing to our new leads. There has to be the right amount of information and at the right time. If there is an over load of information that the customer receives, it is more likely that the customer loses interest (Donahower, 2016). Another aspect that needs to be remembered is that it is not about the quantity of leads but about the quality of leads that have been generated. The quality of the lead can be measured by the number of interactions the customer has made with the company through the website, subscriptions, call to actions taken and so on. The better the quality of the lead, better are the chances of converting the lead to a potential paying customer (Halligan & Shah, 2014).

Delight

This step is one of the most ignored steps of the inbound marketing method. Most companies focus so much time and effort on the first three steps and once the customer has paid for the product or service that the company offers, the company stops or does not spend enough time or resources in the keeping the new client delighted. It is important that the new customers are constantly kept informed through newsletters, personalized emails about new products, offers based on the purchase made and so on. When a company keeps its customers delighted there are more chances of them referring new customers to the brand which in turn brings more revenue and helps the growth of the business (Donahower, 2016).

4.2 Personas

''Personas are fictional user archetypes based on user research'' (Long, 2009, p.1). The creation and use of fictious characters can be considered as an interaction design technique (Grudin&Pruitt, n.d.).

To create personas, data, collected thanks to user interviews, is analyzed, refined and later assembled into fictional users. However, personas should be considered as real people and not as actors (Long, 2009). ''Personas are a method for enhancing engagement and reality'' (Grudin&Pruitt, n.d., p.3).

They are used to represent and communicate customer requirements and needs. Furthermore, they help to maintain a consistent user focus in the product development process (Long, 2009). The technique ''(...) forces designers to consider social and political aspects of design that otherwise often go unexamined'' (Grudin&Pruitt, n.d., p.1). ''By using a narrative, picture, and name, a persona provides product designers with a vivid representation of the design target'' (Kozar&Miaskiewicz, 2011, para. 1).

In a further step, scenarios can be built thanks to the creation of personas. To be able to create credible personas, our team conducted quantitative research. As already mentioned in the chapter ''Quantitative Research'', an online survey was launched on Facebook.

Based on this survey, our team has build three personas who reflect the gathered data. The three fictious characters are Jane, John and Julie. As we have decided to concentrate in this case on three portfolio categories, which are used cars, new cars and mobility, each character belongs to a portfolio.

Our personas have age, gender, names, families, occupations, possessions, goals and frustrations. Furthermore, they have preferences in the automotive industry as well as in the car research and buying process. The three personas are driving a BMW car.

Jane

Our first persona is Jane. Jane is a young single woman, aged 25. She is doing her master degree in fashion design and is a working student in a tailor's shop. She uses the BMW mobility services due to financial reasons but would prefer to lease a BMW for convenience as she is sometimes annoyed by the fact that she has to locate the car first. Jane prefers driving a car to taking public transports because she can so be independent and free in time planning. Furthermore, driving a car enables her to be in time, something that is not guaranteed when it comes to public transport. However, she doesn't want to own a car because owning a car is linked to regular financial investments, such as the payment of the tax, insurance or eventual repairs. In her car research process, she is mainly influenced by social media sites, such as Facebook or Instagram, or the car company's website. Her preferred device to conduct research is mainly her smartphone as it enables her to do research whenever and wherever she wants. Her main frustration in life is liability. This is another reason why she doesn't want to own a car.

John

Our second persona character is John, a married man of 40 years. He is an employee in the automotive sector. John drives a used BMW car due to financial reasons but would prefer to own a new car as for him a new vehicle is a status symbol. Furthermore, he considers driving a car as a passion, comparable to other sports. His current frustration is therefore the inability to finance a brand new vehicle. In his car research process, he likes to use the Internet to find information on cars as he gets a global overview of the current automotive market and has more chances to find his desired vehicle. To do so, he likes to browse through different online marketplaces for the purchase and sale of used cars to find the best deal. The Internet allows him to determine his pre-selection online according to his criteria. To access the Internet, he likes using his laptop and smartphone as both devices promises mobility. His vehicle choice is influenced by the publication of important car information on social media channels and the OEM website.

Julie

Our third persona is Julie, a 53-years old married teacher. She owns a new BMW car. Julie is a loyal BMW customer, her current vehicle is her fifth BMW car. Julie is a straightforward person who knows what she wants. She prefers buying a car to leasing a car or to using mobility services. Her preference has two reasons. Owning a car allows her to be more flexible. She considers herself as a frequent driver, as she uses her car every day to drive to her workplace or to pick up her children from school and music classes. Furthermore, she wants to individually determine her journeys as well as to appear punctually at her workplace and personal appointments. In her eyes, owning a car presents lots of benefits as the own vehicle gives her the ability to go anywhere at any time. In the past, her first car purchase was the last big step to independence. Cars are so charged for her with nostalgia. Julie is a more old school person. This explains why she hardly uses the Internet during her vehicle research process. She prefers visiting dealerships to get information about the desired car model as for her, a dealership visit is always more personal and trustworthy. Before buying a car,

she likes to ask her friends or family for advice. She attaches great importance to the opinions of her relatives. Family and friends can so be seen as main Influencer. Julie always wants to be up to date, this is why she frequently changes her car model. Her only frustration is that she can hardly choose a car between all the attractive options available on the market.

4.3 User Journey

Based on the three personas, we decided to make user journeys to map the series of steps in the various portfolio scenarios of the user and his interaction with the car services and goods. This helped us dig deeper in our personas and understand their behavior and activities, which in turn helped us further in the brainstorming sessions. This was an important stage after the personas to gather requirements for the project in the beginning. It helped us give an insight into how the user could possibly interact with our service or what they could possibly expect from our service. Their requirements and expectations turned into tasks for our project.

The user journey starts from the first point of contact of the user with the service or product. It goes through the various stages of experiencing the product or service like awareness, consideration, decision, usage and loyalty. Corresponding to these events are the activities, goals and touch points. The user journey also explains the emotional journey of the user, which shows his pains and happy moments throughout the whole experience. This helped us gauge the possible areas or tasks we could work on through this project.

Figure 10 on the next page shows the journey of Jane who is a working student and prefers to use the BMW services. We mapped out her experience with the BMW DriveNow services and mapped her journey from booking the car till driving to her destination. Jane finds out about the DriveNow service from her friends and family who have already used the services before. Jane's goal is to travel from point A to B using the best solution to commute. The touch points for awareness and consideration about the service

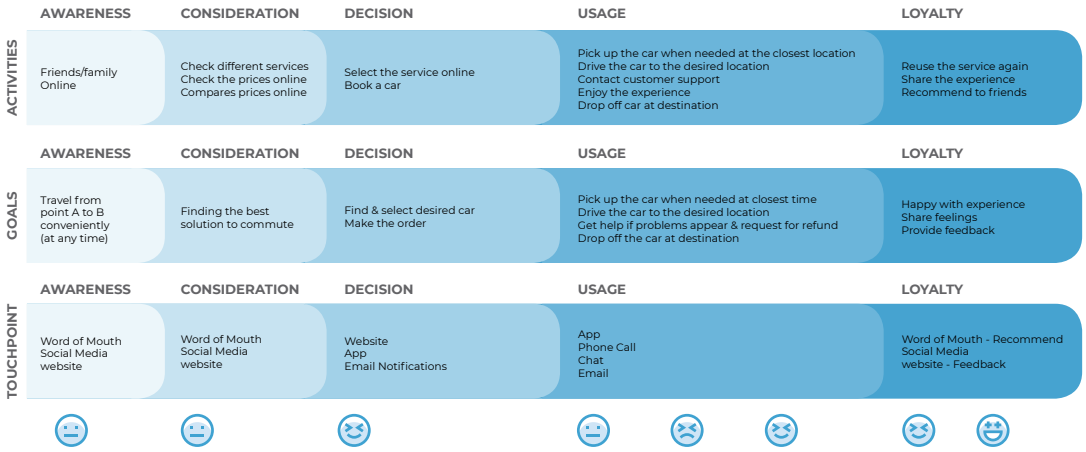


Fig 10: *User Journey - Jane - Mobility Services*

is mainly word of mouth, social media and the company website. Jane's emotional journey through initial stages of awareness and consideration is a bit tensed, since she doesn't know much about the services and has to do research to find out more information before she is sure about what car she would be driving.

When she is informed about car renting services, she considers comparing different car rental services in order to check the best one price wise and quality wise. She does this comparison by re-searching online. Her goal is to find the best solution to commute. Once she finds the best fit for her she is excited and satisfied.

She then chooses the best service online and decides to book it. Once it is booked she gets the confirmation online and then on the desired date she goes to pick up the car at the closest pick up point and drive to her destination. She enjoys the car experience and drops the car back off to the nearest drop off point after she is done using it. According to her goals, Jane wants to pick up the car at the closest location at a suitable time and incase of emergency or complaints she wants to contact the customer care without any problems. If the car is not as good as shown online, she also wish-es for some kind of refund for the money and return the car. The booking of the service is done using mainly the website or app and notified with confirmation emails or messages. In case of custom-er care and other related services, the company can be contacted

using the app, website, call, chat and email. In case of technical difficulties she is scared and annoyed however, she is also unsure of whether she will get the same car as promised online in the pictures.

Being satisfied with the service, she decides to use the service in the future and she wants to let her friends and family know about her experience. Jane can further recommend this service to her friends and family by word of mouth or post on social media (eg. instagram story with hash tag, Facebook post, etc) and leave a feedback in the feedback section on the website or app about her experience. In this phase she is very excited and satisfied.

It shows that Jane is looking for a faster way to interact with the rental services and wants to have a personalized experience with a company that she is loyal to which would ensure her security and safety and recommend cars or deals which would be suitable for her. She would prefer to have an easier more reliable source of information, which could make her initial stages faster and easier.

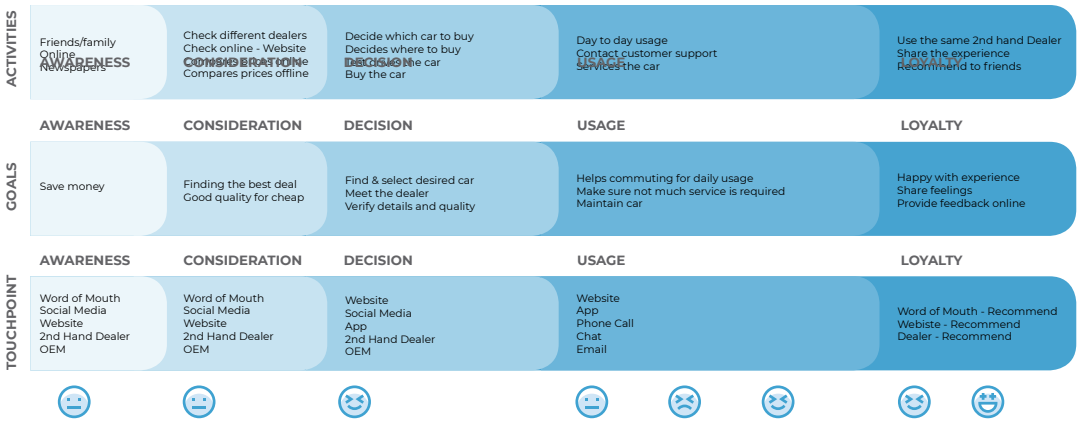


Fig 11: *User Journey - John - Used Car*

In figure 11 We went though a day in the life of John who uses a used BMW car and would like to buy a new one. We mapped his buying experience of a used car.

John finds out about a possible used car, which might suit his needs through word of mouth, online or through a newspaper ad.

His goal is to save money and get the best deal. His touch-points for this stage are word of mouth, from friends and family through social media, company website. At this point he is completely lost and unsure about the source of information and wishes someone would suggest and recommend exactly what he wants.

Once, John is aware about these possible car options, he considers checking out different dealers in order to compare prices online and offline. His goal is to find the best possible car with good quality but for a low cost because he wants to save on money. The touch-points used during this stage are websites, second hand dealers and OEM, social media and talking to friends and family to seek more information. John is feeling very confused and annoyed because he has to do all the research and is feeling lost. This is also very time consuming for him and he is unsure.

After considering various options, John decides which car model to buy, where to buy it from, test drives it and buys it. His goal was to select the desired car, meet the dealer in order to verify the car details and quality. He again uses similar touch-points here. At this point, John is both excited and relieved that all the research finally got him the car he wanted.

John uses the car everyday to work and occasionally contacts the customer support for servicing. His goal is to make sure he is taking his car for servicing at the right time and place and to make sure the car is maintained properly. To contact the customer services, John uses phone call, email, message, website and app. This stage is a bit confusing for John since he needs to find a better way to keep a check on his car maintenance and services. Contacting the customer care is not a personalized experience for him and hence, is time consuming to approach them.

Once he is happy with the experience, John decides to be loyal by recommending it to friends and family and using the same secondhand dealer for future. He uses word of mouth and website to recommend and leave feedback about his experience. At this point, he is happy and satisfied.

This shows that john was looking for a better way to find informa-

tion about the possible used car options and dealers. He also wanted to save time in decision-making but make sure he made the right choice. The customer care was a major concern to him where he wanted to make sure he had a regular check up or reminder for his car maintenance.

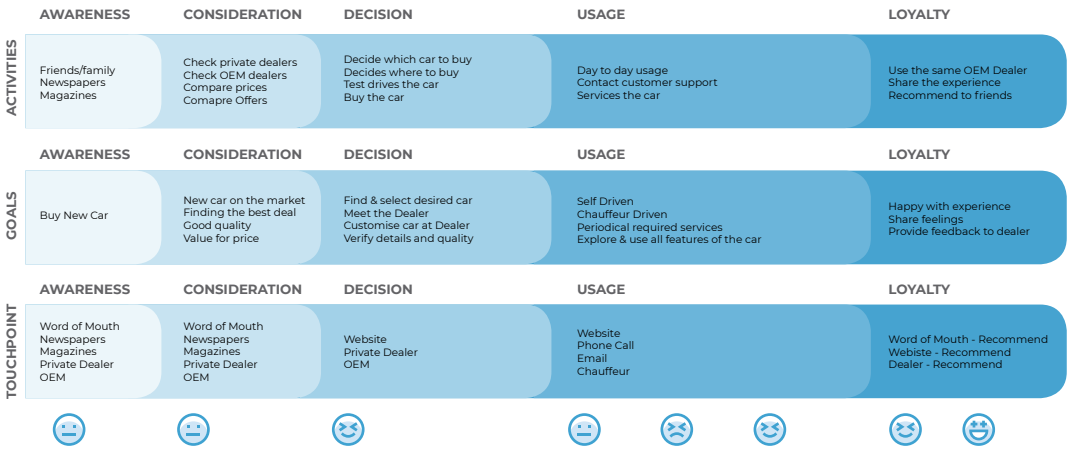


Fig 12: *User Journey - Julie - New Car*

Figure 12 is about Julie who is a loyal customer of BMW and uses a new car. Let's take a look at the buying experience of Julie for a new car. Julie finds out about a possible new model of car, which might suit her, through word of mouth from friends and family, newspapers and magazine advertisement. Her goal is to upgrade to a new model, which would suit her requirements. Since she has to deal with multiple touch-points like, talking to people to find out more, newspapers, magazines, private dealers, OEM, she is confused and overwhelmed.

She considers checking private dealers and OEMs and compares pricing offline. Her goal is to find and select the desired car and meet the dealer in private. She wants to customize the car and verify the details and quality. This is time consuming and confusing for Julie since she is not sure if the source is reliable and trustworthy and she is doing everything offline.

After doing all the research, Julie decides which car to buy and where to buy it. She books it for test drive and buys it. Her touch-

points are the website, dealer and OEM. After the long process she is happy and satisfied with her decision.

She uses this car for daily usage and contacts the customer care occasionally for servicing. She occasionally uses a chauffeur and when she is driving herself she aims at exploring all the features of the car. She needs to send the car for servicing periodically and wishes someone would remind her. Her touch-points for the usage are email, website, phone call, chauffeur. She is concerned about periodic servicing using other features about the car company. She feels like she can use many other products and services offered by the car company if they are made available to her easily. Once happy with the experience, Julie decides to stick with the same OEM Dealer and shares the experience with friends and family. She uses word of mouth and website to recommend and leave feedback about her experience. At this point, she is happy and satisfied.

Julie is willing to learn more about the different features that her car could offer and is open minded about using various interfaces. Her concern is to find a convenient and personalized experience to contact the car company and ensure regular maintenance. Since she is a loyal customer, she wants to use and explore other services offered by the company.

4.4 Data Segregation

Based on the analysis of data collected and analyzed by BMW, we tried to segregate the different categories of data required for the various portfolios of BMW. This categorization of data helped us get a clearer structure of the user flows and guided us further in designing the wireframes and prototypes.

We as a team brainstormed over the existing data collected by BMW and created our own data map. As shown in the figure, the data is listed in tabular form for the BMW portfolios of used car, new car, mobility, service and lifestyle. The data categories mainly needed for this project include website related information, email address, VIN, interactions with the company services and plat-

forms, license details, credibility, vehicle history and purchase history. Some portfolios like used car and new car requires all of this data for in car marketing purpose. Mobility, service and lifestyle on the other hand, do not need all of the collected data as shown in the figure for personalized in car marketing notifications and to push other portfolios.

DATA	USED	NEW	MOBILITY	LIFESTYLE
WEBSITE	✓	✓	✓	✓
EMAIL	✓	✓	✓	✓
VIN	✓	✓	✓	✓
INTERACTIONS	✓	✓	✓	✓
LICENSE	✓	✓	✓	✗
CREDIBILITY	✓	✓	✗	✗
VEHICLE HISTORY	✓	✓	✗	✓
PURCHASE HISTORY	✓	✓	✗	✓

Fig 13: *Data collected by BMW that is needed to enhance each portfolio.*

4.5 User Flow

A user flow can be defined as the path taken by the user to complete a task while using a product or a service. It takes into consideration the entry points, the steps taken and the final goal that I achieved by the user, such as the purchase of a desired product or a service. It also helps us understand the user needs and the information that is required for the user to accomplish a set of given

tasks (Optimizely, n.d). A User flow can also be defined as a flow-chart with visual interfaces or components, since user flows focus only on tasks and not the emotions or feeling of the user, they lay the foundation to create user journeys that focus on the experience (Thalion, 2018).

Some of the consideration that need to me made while looking in to the entry points according to (Interaction Design Foundation. 2019) are:

- Targeted user groups
- How likely are customers going to find our product's or services?
- What problem are we trying to solve?
- How can we keep our customers engaged?
- What kind of content do we use?
- What are the call to actions involved?

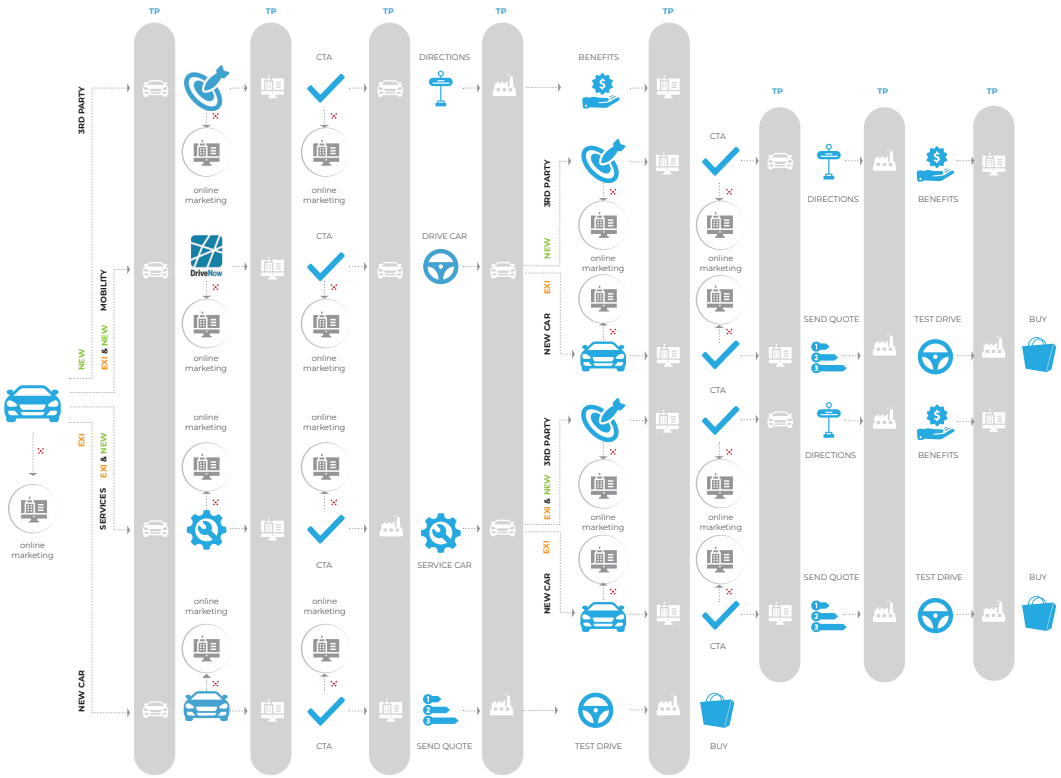


Fig 14: *User Flow of used car, the touchpoints, data triggers and the activities involved.*

Having taken these questions into considerations and based on the personas and research done on the BMW website regarding the data that is being collected, we created the following user flows that look into the touch points, entry points, goals and what the required tasks are to achieve the final outcome such as buying a product or using a service.

Used Car - User flow

The used car user flow looks into the touch points, data triggers required, call to actions, entry points and the final goals that need to be accomplished by a user who is using a used car. The user flow also considers the possibilities of how In-Car marketing could be achieved and how a used car can be used to enhance the other portfolios.

When we consider the user flow of a used car user, there are four portfolios that can be advertised to the user in consideration.

3rd Party Advertising: The third party user flow begins in the car where the customer first receives a notification with a consent asking the customer if he would like to receive personalized notifications based on the driving data and the data collected by BMW from previous interactions that were done online. Once the customers agrees to the consent, he receives notifications. In this case the user receives 3rd party advertisements based on a few data triggers such as location, driving history, parking history, driving routes, personal preferences and shopping routines. The touchpoints in this user flow are the car, mobile device and the desired location. The entry point for all user flows would be the vehicle as the focus is in-car marketing.

Considering the persona that we have created, John uses a used BMW car and the way 3rd party services would work for him is as follows. Once John agrees to the consent that he gets in his car to receive personalized notifications, he would receive a message stating, would you like to have the same coffee at starbucks for example. Once he agrees to it, he receives a notification on his mobile device where he confirms the purchase of the coffee. Once

he completes that, the phone prompts to the closest starbucks to which he can transfer the location to the car. He then drives to the location and picks up his coffee.

Mobility : The way mobility services would function is similar as the entry point is the car, some of the data triggers would be service history, contract details, location and driving routes. The touch-point would be the car and mobile device. Considering John has booked a service appointment with BMW, when he enters his car before leaving his house, he would receive a notification indicating that he could use drive now after he has dropped off his car at the service center, When he agrees to it, he gets a notification on his mobile device and he selects the car of choice. Now when he arrives at the service station, he would have a car waiting for him. This way we have used a used car to enhance mobility services.

The user flow does not end there as the car is the first entry point. When John is using mobility service he could also receive notifications about other used cars that he could be interested or other 3rd party notifications that he would consider as well. This way mobility services enhance 3rd party and used cars services.

Services : In terms of services some of the data triggers would be car details, service history, contract details, location and driving habits. The touch point would be the car, mobile device, desktop and the service center. Considering John has been using his car for over a year now and has completed 20,000 kms, he would automatically receive a notification stating that it is time for service. Once he agrees to the notification in the vehicle, he receives a notification on his mobile device or desktop as an email. This then allows him to make an appointment on his desired day and time and at the location of his choice based on the type of service that needs to be carried out.

Once he receives his vehicle back from service, some of the notifications that he would receive are about possible new cars, used cars and 3rd party that would be of interest as the notifications are personalized based on the data collected about the user. Hence services can be used to in turn enhance 3rd party, used cars and new cars.

New Car : In terms of new car services some of the data triggers would be car details, service history, contract details, location, credibility, interactions on the BMW website and driving habits. The touch point would be the car, mobile, desktop and the dealership. Now considering John car is reaching the end of his leasing contract, he would receive a notification about possible new cars that he could purchase or lease. Once he agrees, he receives a notification on his desktop or mobile device as an email where he would be able to configure his car and choose the options of purchase or lease. Once that is complete, he could request for a test drive at his desired dealership which further on leads to the purchase of his new vehicle.

Having gone through these steps, it is evident that using a used car, the portfolios that can be enhanced are new cars, 3rd party services, mobility and servicing. Normally a sales cycle ends when a purchase is complete, but the way in-car marketing works is that the loop begins all over again as John now a new car owner would receive notifications on lifestyle, servicing and other new cars based on triggers such as contract details, kilometers driven, car details, credibility, previous purchases, previous interactions with the BMW website and so on.

Following are the other two user flows that were created based on the personas Julie and Jane who are users of new car and mobility services.

Figure 15 on the following page explains the user flow that is involved with the second persona Juli who is a new car user. The entry point as the previous user flow remains the same - the vehicle. Now that the user has a new car the data triggers are vehicle details, contract details, kilometers driven, service appointments, previous purchase history, credibility and previous interactions on the BMW website. As the user has a new car some of the portfolios that can be pushed are lifestyle, mobility services based on personal appointments, servicing based on the kilometers driven and 3rd party advertisements based on the users personal preferences, parking locations, driving routes and preferences. It can be seen that the even though the person uses a new vehicle, other portfolios can be advertised which achieves the purpose of using in-car

marketing to enhance other BMW portfolios.

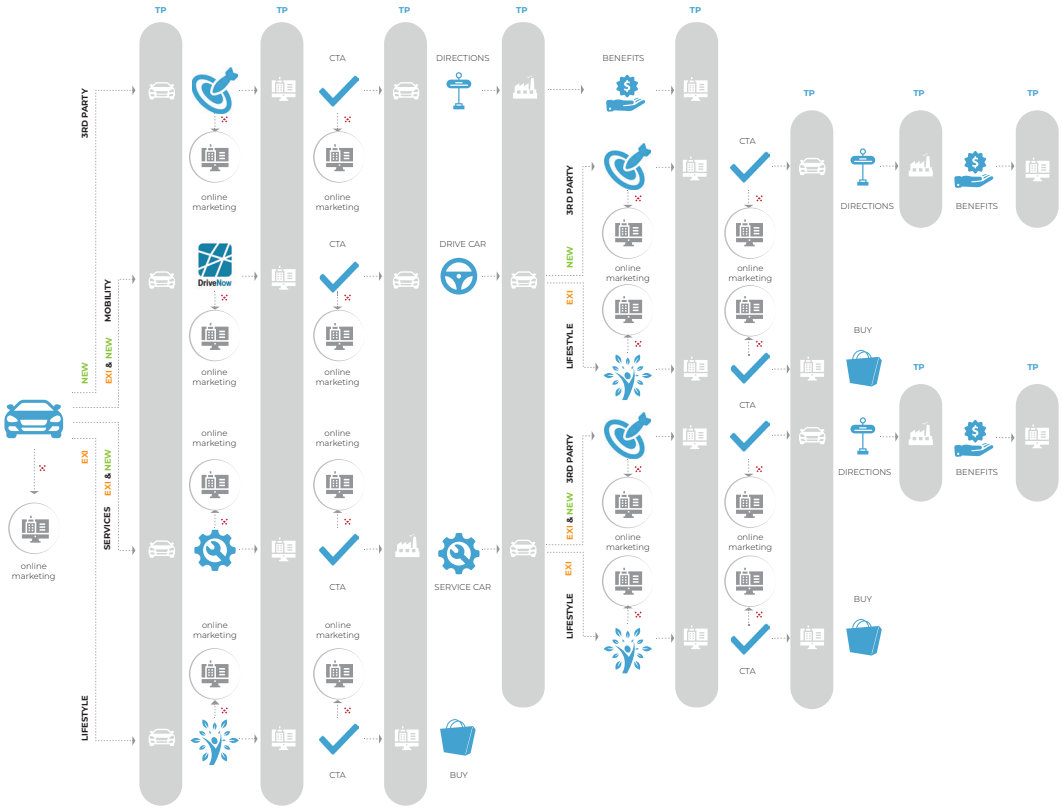


Fig 15: *User Flow of New Car services, the touchpoints, data triggers and the activities involved.*

Figure 16 on the next page explains the user flow based on the third persona of Jane, who uses mobility services as a preferred mode of service as she is only a college student. As she uses mobility services some of the portfolios that can be advertised are new car, used car, lifestyle and 3rd party services. The entry point is still the same - the vehicle. The data triggers are frequency of usage of mobility service, driving routes, purchases on BMW website and credibility. It can be seen again that the even though the person uses a mobility services, other portfolios can be advertised which achieves the purpose of using in-car marketing to enhance other BMW portfolios.

The most important thing to consider is the right data at the right time that helps users archive their tasks which in turn brings about better sales and increases revenue for BMW.

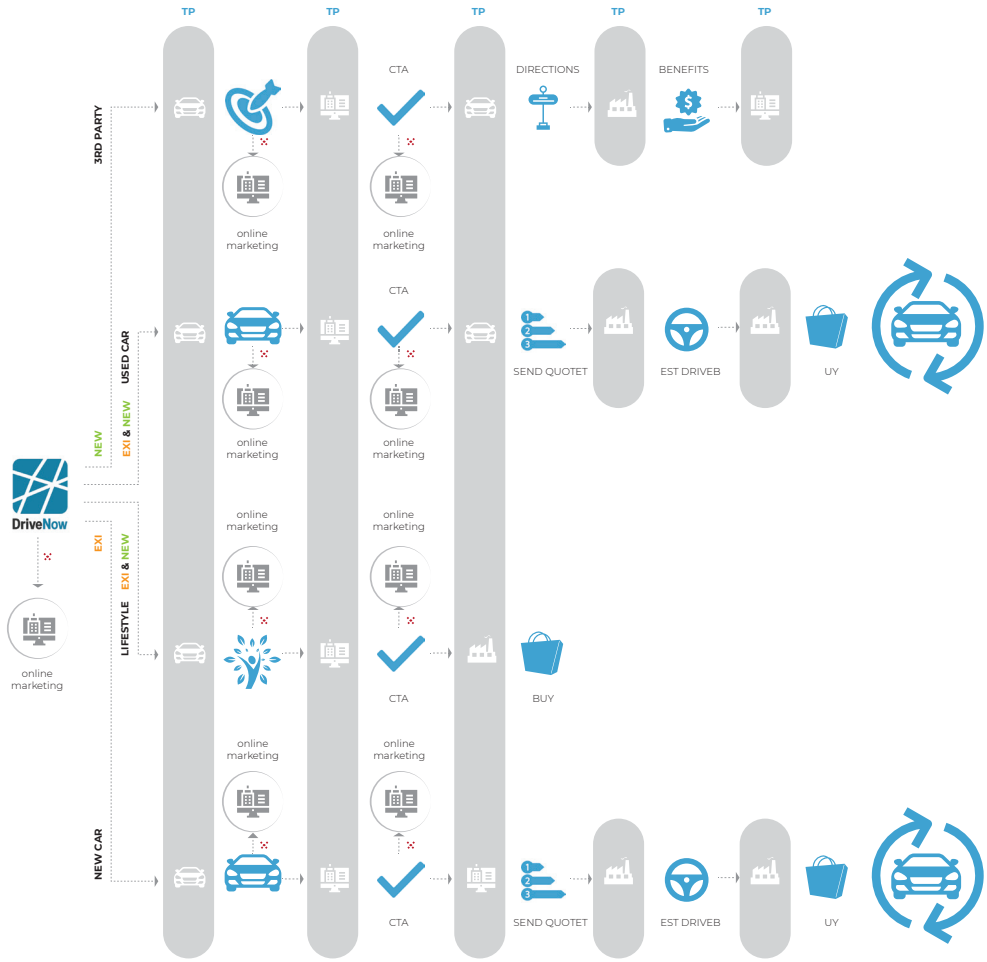


Fig 16: *User Flow of Mobility services, the touch points, data triggers and the activities involved.*

4.6 Experience Loop

Transformation is not something that is only accomplished by the organization. The change begins with the user, who is a vital element in the process of co-creating additional value. The value that is shared by the customer and the organization is the belt of transformation that moves from service diffusion to service experience and then on to service co-creation. This belt is called the experience loop (Schrader, 2017).

There are six elements in the Experience loop and they are Trigger, User Service, Integrate, Expand, Reward and Change habit (Schrader, 2017). The experience loops help us explain how BMW

as an organization can add value to the customers user journey. We consider two essential user journey's, one of the customer and one of the organization to comprehend and ensure that both the organization and the user benefit from the proposition that we make - In-car marketing and which in turn enhance the portfolios, bringing about more revenue with the use and sales of services and products.

The following figure 17 evaluates how BMW adds value to its customers using in-car marketing through the experience loop.

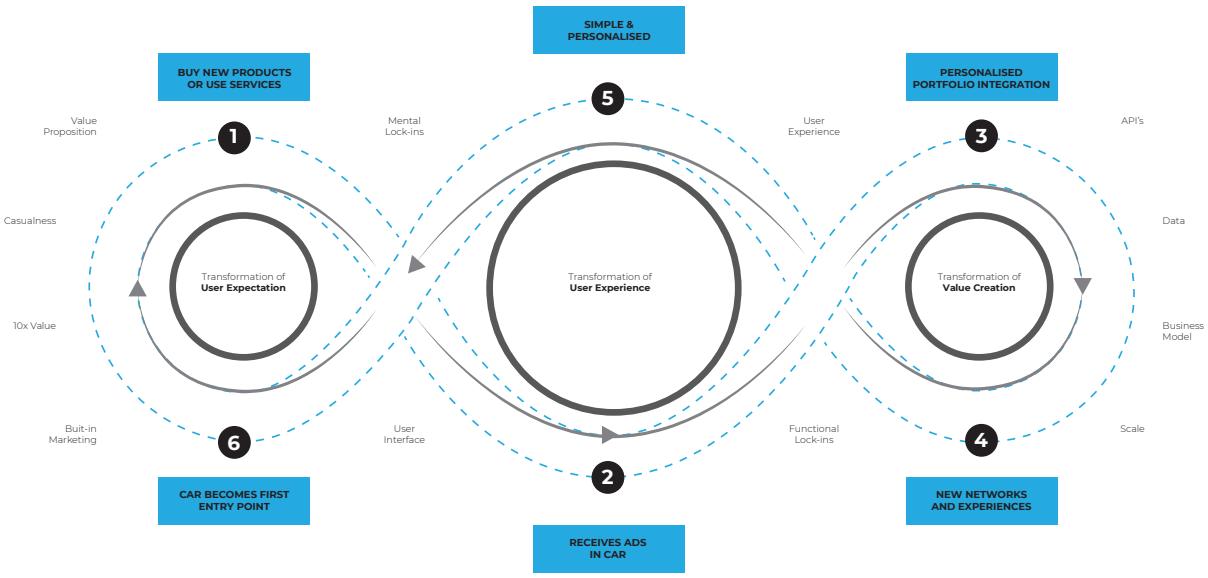


Fig 17: *Experience loop - Value addition in the customers user journey*

Trigger - Usage : The primary goal of a customer being usage of existing services and the possibility of buying new products would be addressed by in-car marketing.

User Service - Using the car's interface : As the customers vehicle is the primary entry point, the customer would receive personalized timely ads based on their preferences and data that they have shared with BMW.

Integrate - New value propositions : Even though BMW does spend a lot of resources on advertisement, In-car marketing addresses

only existing customers with only relevant and personalized ads that gives the customer a chance to explore new products such as new cars, lifestyle and services such as mobility and normal car servicing. Hence with this way of advertising, clients gain a more comprehensive understanding of the products and services that BMW as a brand provide.

Expand - Third party integrations : Third party integrations would be a new possible business model as BMW could use the data that it has already collected from its existing customers to provide not only advertisements about its own products and services, but also about third party businesses based on the customers preference, for example SHELL, as a customer needs to use fuel for their vehicle. Customers could also receive advertisements about departmental stores such as REWE, REAL, STARBUCKS and so on. This not only benefits the customer but BMW as a brand too.

Reward - Lock-ins : Knowledge of new products that are apt and precise for users, shorter user journey's, Personalized notifications, and customized web experiences are some of the few lock-ins that the customer would benefit from. In-car marketing makes it easy for customers to be notified about new and existing services and products, which make help customers spend their time more efficiently and productively.

Change habit – Efficiency: In-Car marketing would create a well-established bond between the users and BMW as a brand by its functional and mental lock ins. Incentives could be provided to satisfied customers for usage of the new service - In-car marketing. This creates a change in the users habit – The customers vehicle becomes the go to place for valuable information on products and services.

Figure 18 on the next page evaluates how BMW adds value to itself as a brand using in-car marketing through the experience loop.

Trigger - Usage : The primary goal of BMW being increase in revenue through more sales in products such as new cars, used cards, servicing, lifestyle and mobility services would be addressed by in-car marketing.

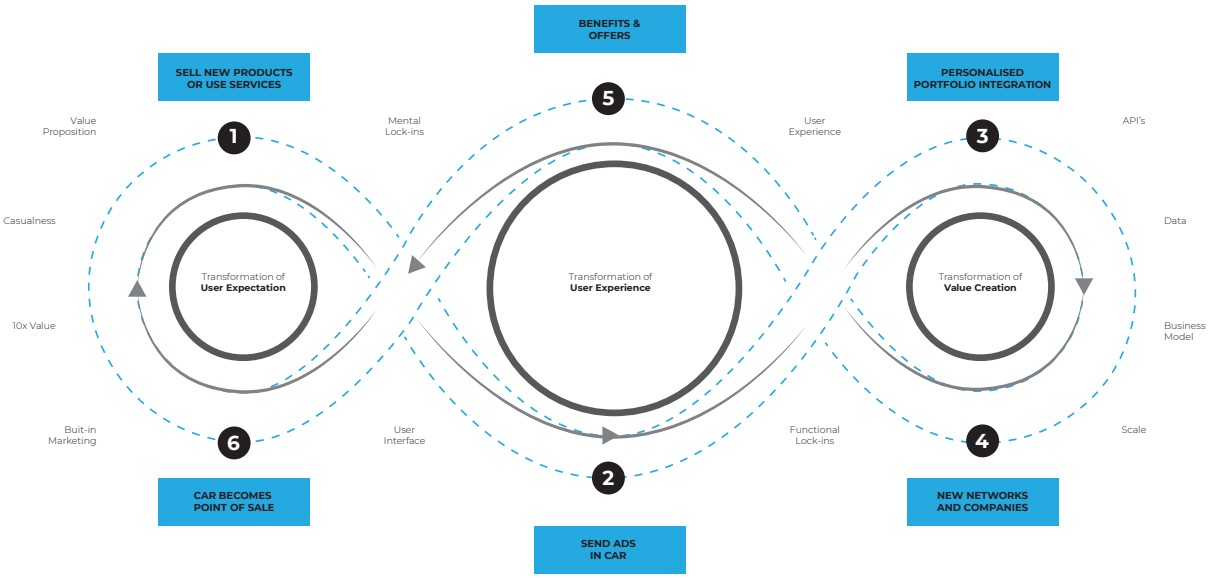


Fig 18: *Experience loop - Value addition in the BMW's user journey*

User Service - Using the car's interface : As the vehicle is the primary entry point, BMW would be able to send personalized timely ads based on customers preferences and data that they have shared with the brand.

Integrate - New value propositions : Even though BMW does spend a lot of resources on advertisement to attract new and potential customers, In-car marketing would addresses existing customers with only relevant and personalized ads that gives the customer a chance to explore new products such as new cars, lifestyle and services such as mobility and normal car servicing, enabling them to become ambassadors eventually. Hence with this way of advertising, BMW as a brand would be able to gain more trust and more efficiently advertise its products and services.

Expand - Third party integrations : Third party integrations would be a new possible business model as BMW could use the data that it has already collected from its existing customers to provide not only advertisements about its own products and services, but also about third party businesses based on the customers preference, for example SHELL, as a customer needs to use fuel for their vehicle. Customers could also receive advertisements about depart-

mental stores such as REWE, REAL, STARBUCKS and so on. This enables BMW to make additional revenue .

Reward - Lock-ins : Knowledge of new products that are apt and precise for users, shorter user journey's, Personalized notifications, and customized web experiences are some of the few lock-ins that the customer would benefit from. In-car marketing makes it easy for BMW to be notify its customers about new and existing services and products, increasing the likeliness of a purchase of a new product or use of a new or existing service.

Change habit – Efficiency: In-Car marketing would create a well-established bond between the users and BMW as a brand by its functional and mental lock ins. With customers gaining more knowledge about the product and services needed to make their lives better, In-Car Marketing could be BMW's new marketing strategy that brings about more revenue and create a bigger network of trusted customers.

05.

Ideation

In this chapter we look into the design methods that we undertook in order to help us create the wireframes, prototypes and the usability testing that was conducted based on the insights that were obtained.

5.1 Design Process

It is very important and the same time challenging to have innovative design solutions by considering most of the user needs and demands. The design process is as important as the final product. Hence, there are several established tools and methods to make the design process better defined and easier. It gives a wide range of possible products or services solution to the designer. Various technologies are available that help in the design process and also in the testing phase of the prototypes and products (Aldersey-Williams, Bound, & Coleman, 1999).

In the research phase, which was the initial phase of the project, we did a deep research on trend analysis and market analysis. We conducted online surveys to gain insights from the user. In the ideation phase we analyzed this information to create personas. The personas were further used in make user journeys in the initial phase of the project.

Key findings from the user journeys helped us brainstorm further in the implementation phase of the project. During the brainstorming sessions, we collected all the ideas from the different group members and this helped us move forward with the possible solution. We made data segregation maps, BMW portfolio analysis and possible user requirements to implement in car services. Considering the user journeys as a point of reference, we designed the user flows which focused on the flow of data in the in car services and the interconnectivity between various portfolios of BMW.

Further we sketched out wireframes in the team to have a rough conceptual idea about the potential prototypes to our in car marketing model. The wireframes were collaborated to make prototype iterations for a human-centric design solution. These prototypes were further tested with users who would roughly match our personas. We analyzed the data gained from this user testing to understand the user's response to our prototypes by understanding their pains and gains. Users were asked to test the existing methods of online servicing and other services and then they were made to test out our prototypes of the similar service. This helped us get their feedback, which proved important in making changes to our prototypes, and then finalize a set of prototypes as our proposed design solution to this project.

This way we collaborated as a team on this project through the various research, ideation and implementation methods of the design process to have a user centric design solution.

5.2 Wireframes

Wireframes are simple drawings of a product. They give designers and test personas an idea of what the final product can look like. They are created to start the design process in the most efficient way. The development of wireframes help to map out the product. The goal is to ''(...) [visualize] the structure of a concept, but at a step above sketching'' (Cao, 2016, para. 5). Wireframes can be seen as a technique between the low-fidelity and high-fidelity techniques.

Wireframes are more detailed than sketches and less detailed than prototypes. They can be seen as a forerunner of prototypes (Interaction Design Foundation, 2018). ''(...) a wireframe is a low-fidelity, simplified outline of [a] product'' (Cao, 2016, para. 2).

How to draw wireframes?

Wireframes are characterized by their distinctive block layouts. The size and placement are elements are thus determined. As the importance lies on the pure structure of the concept, the wire-

frames are in most of the cases black and white. Furthermore, they are deprived from colors, fonts and real design elements (Haas, n.d.). Lines are used to represent text while ''x'' squares represent images (Cao, 2016). It is question of simple designs however with enough details.

Advantages of wireframes?

The wire framing technique presents several advantages. The first advantage is that ''[The] designs are more calculated'' (Haas, n.d., para. 17). Designs are elaborated step by step. Furthermore, it allows the team to better understand where they are heading and to get an idea about what the final product should look like. On the whole, this technique is time-and money-saving: The creation of wireframes allows the design team to get feedback in the beginning of the design process. The already elaborated wireframes can so be changed in time according to the clients' or user's need and desires (Haas, n.d.).

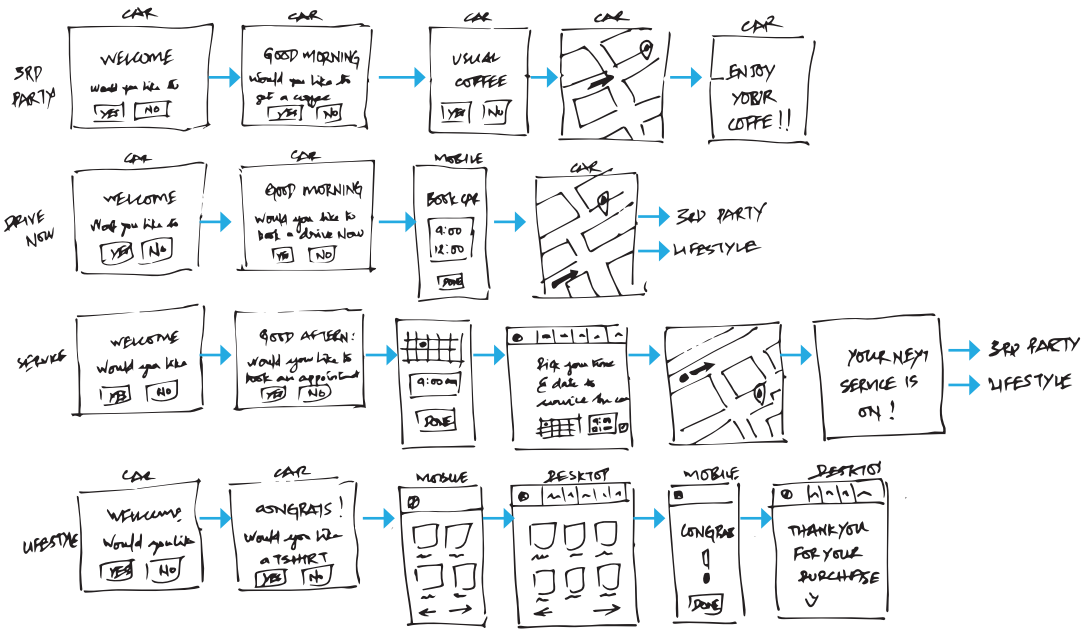


Fig 19: *Wireframes - General wireframes of all the portfolios that are being addressed*

BMW Wireframes

Our team sketched some wireframes on paper, as sketching on paper is faster and easier than drawing completely digitally (Cao, 2016). The developed wireframes are related to four scenario cases according to the different portfolios. In the four cases, the driver will be asked, when he/she gets into his/her vehicle and starts it, if he/she wants to receive personalized advertisements about the different portfolios. There are two methods, which the driver can use to answer to the question: either he can respond via touchscreen, or voice command. He/she will be able to respond via touchscreen as this system is activated any time the car is not driving. After every case, at a certain interval, the sale of another BMW portfolio could be pushed. In the paragraphs below, the different scenario cases are explained.

Third Party marketing : The first wireframe is about third-party marketing. First, the driver has to agree if he wants to get personalized third-party advertisements and offers.

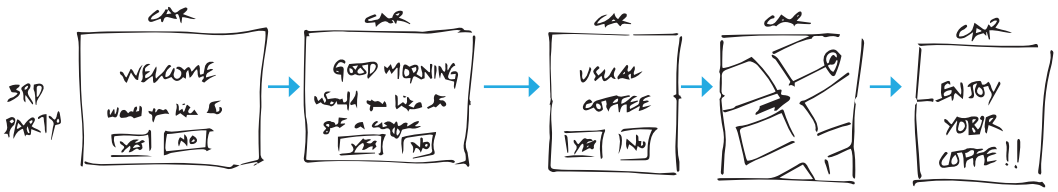


Fig 20: *Wireframe - Third Party Marketing*

As seen in the above image, the driver gets a notification via the dashboard if he/she wants to receive personalized advertisements and offers from different shops, restaurants, bars, or cultural spots he likes, when he/she enters the vehicle and starts the car. If the user agrees, he will get push notifications in specific moments. An example of a moment in which a push-notification is send to the driver is, when he/she is close to the coffee shop, he/she likes and is used to visiting on a regular basis, or drives past it. This could be at any time, during the morning, afternoon, evening or night. In the case the driver is driving past the coffee shop in the morning, the push-notification could be: Good morning, would you like to have

a coffee? If the consumer agrees, he will get shown the exact location of the coffee shop on the car provided map.

After this experience, the sale of one of BMW's portfolios can be pushed. The user could for example receive an advertisement about a product of the lifestyle collection at any time during his ride. This advertisement would be tailored to his preferences and taste, and based on prior purchases.

Drive Now : The second wireframe is about the marketing of ''Drive Now''. If the driver has agreed to the advertising, he/she will get a notification in a specific moment.

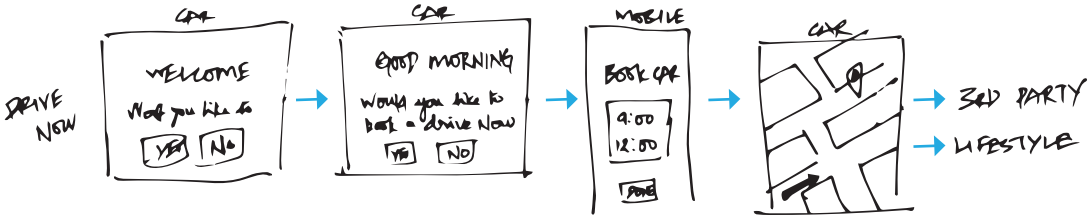


Fig 21: *Wireframe - Drive Now*

If the motorist has for example indicated in his/her digital calendar that he goes on holiday the following week, he/she will be asked if he/she wants to book a ''Drive Now'' service at the holiday destination. If he/she agrees, a message about the available dates and hours will be transferred to this/her mobile phone. This method enables the consumer to book his/her ''Drive Now'' service at ease after the ride. It is a safer alternative as the consumer can choose the dates and hours in peace and quiet and don't have to decide while driving. After having booked the mobility service, the consumer will be shown on a map the location of the ''Drive Now'' car so that he/she can pick it up once being at the holiday destination.

After this process, the driver can be proposed another BMW product. An advertisement about an item of one of the lifestyle collections could be launched, or a new or used car could be suggested to him.

Services : In the third case scenario, the car owner will get messag-

es about BMW services if he/she agrees.

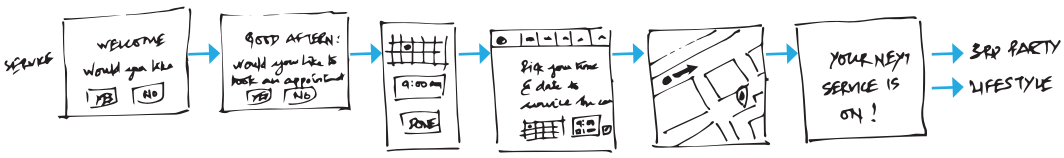


Fig 22: *Wireframe - Services*

If the car for example need a repair or oil change, the driver will be able to book an appointment. The available dates and hours at the nearest service station will be transferred either to his/her smart phone or laptop via email. The car owner is then able to select a date. On the day of the service, the motorist will get a reminder via his smartphone. Furthermore, he will be guided to the service station thanks to the BMW navigation system.

After this experience, products of the lifestyle collections could be proposed to the driver. Moreover, depending on his/her car, used or new vehicles could be advertised to him/her.

Lifestyle : The fourth wireframe shows the case scenario in which the driver will get advertisements and offers about the different lifestyle collections. There are two different scenarios.

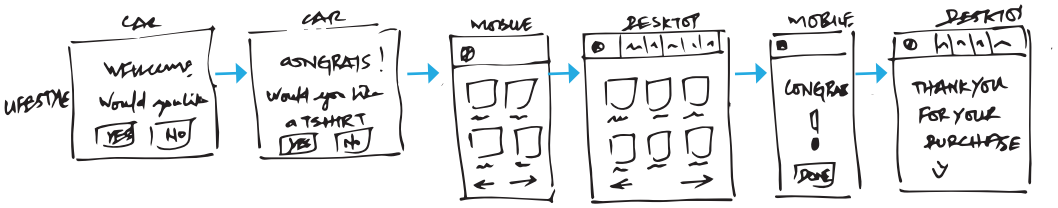


Fig 22: *Wireframe - Lifestyle*

One takes place when the driver owns already products of the lifestyle collections and the other when the driver has not purchased a lifestyle product yet. If the car owner has already purchased lifestyle products in the past, he/she will be proposed products of lifestyle collections that suit his preferences and style, based on the already collected personal style data. An example is the advertis-

ing of a T-shirt. If the data gathered by BMW releases, that the car owner likes black t-shirts, wears the size M, and has a sporty look, he/she will get several suggestions about different black T-shirts available in size M, of the sporty clothing collections, via email. The user is then able to select a T-shirt at ease, either on his smartphone or laptop.

In the case, a car owner hasn't bought a lifestyle product yet but is interested in the purchase, he will be informed about the different life style collections via email and will be transferred to BMW's website. After this experience, based on the vehicle, used or new cars could be advertised to the motorist.

Remark

It is important to mention that if the car owner is not satisfied with the marketing approach, he is able to reverse his decision by changing the settings. Furthermore, the in-car marketing strategy described above can only be used if it concerns the car owner himself as the in-car advertisements, messages and offers are tailored to the car owner's data, such as identity, behavior and preferences, collected by BMW. In the case a person other than the owner of the vehicle drives the car, the marketing strategy will not be efficient because BMW cannot access this person's data.

5.3 Prototypes

Prototypes can be defined as representation of a part or a complete interactive system which is tangible and used by designer, engineers, managers and the users to envision and reflect on the final system. Prototypes are used to support creativity, helps communication and enable early evaluation (Mackay & Beaudouin-Lafon, 2009).

Why do we need prototypes?

Prototypes are often mistaken as the final product, but on the contrair, they are only a mere representation of the final product. Pro-

totypes not only help to inform the stakeholders about the way a product looks but also how the product functions. They enable usability testing which ensures that the product does what it was intended to do. Some of the advantages of prototypes are as follows.

Understand the design intent: As mentioned earlier prototypes not only serve as visual aids but also help the team understand the underlying reason of the design itself. It ensures that we understand the users needs and that we address the issue we set out to solve (Goyale, 2017).

Feedback: One of most important aspects of prototyping is to gather as much as feedback as possible. Feedback always helps in determining what works and what does not for the user. It also gives us insight into the features that are required to make the user journey more efficient (Goyale, 2017).

Validation: Once we have the feedback and have looked into all the requirements that go into the prototypes, it makes the development process much more easier. Prototypes also help prevent changes in the development phase that are more costly and time consuming (Goyale, 2017).

Usablity Testing: As the user is the primary focus, prototypes help is identify and understand the perspective of the user and to determine that the product or service that we are building is effective and addresses the users needs by usability testing. Prototypes enable us to see how the user uses the product which in turn provides insights into the pain and gain points of the user (Goyale, 2017).

BMW Prototypes

With the use of the user flow, user journey and data segregation our team looked into ways of how we could make the user journey much simpler that the existing one. The building of the wireframes and the prototypes are based on the data that BMW has acquired from its users and how it can be used to make the user journey much more personal and efficient. Hence to get a better

understanding of how existing user interact with the website we looked into the existing user journey of how a customer goes about booking an appointment for a regular car service. For our case we looked into the mobile interface as the need of optimizing the mobile experience is much needed as users find it more convenient to use their mobile devices rather than a desktop or a laptop.

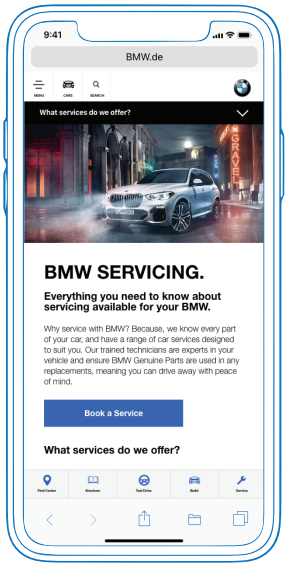


Fig 23: *Home Page*

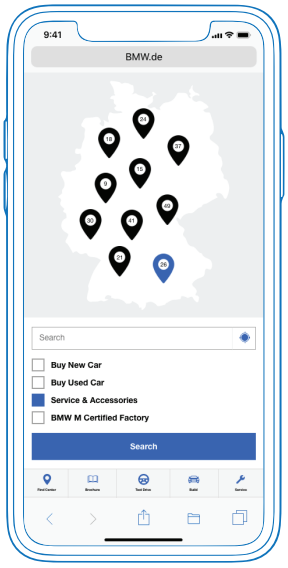


Fig 24: *Select & Search*

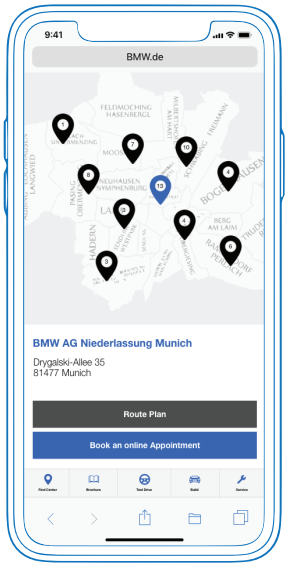


Fig 25: *Select*

Figure 23, 24 and 25 are the first three steps involved in the existing customer journey. As it can be seen, the customer first gets to the BMW website and then has to click on the menu bar in order to select services. Once that is done he customer is directed to the service page where he has the option to book an online appointment. Once the customer clicks on the option he/she is redirected to a page where they are instructed to select from the options provided and select a location(city) based on the country that they are living in. Having completed selecting the city, the customer is then made to select a desired showroom in the city that was previously selected. The customer is provided with two options, a route plan and book an appointment online. In the first three steps that the customer has taken, it has to be noted that the customer had to make 6 clicks to get to the login page.

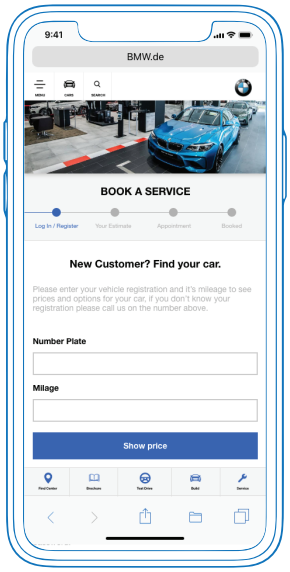


Fig 26: *Login Page*

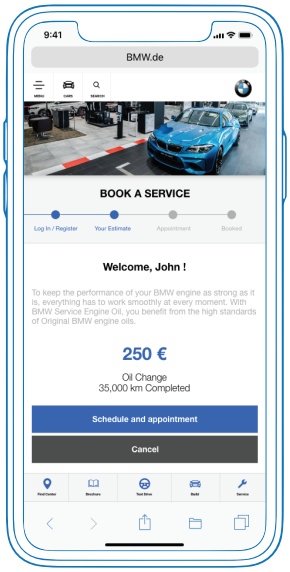


Fig 24: *Estimation*

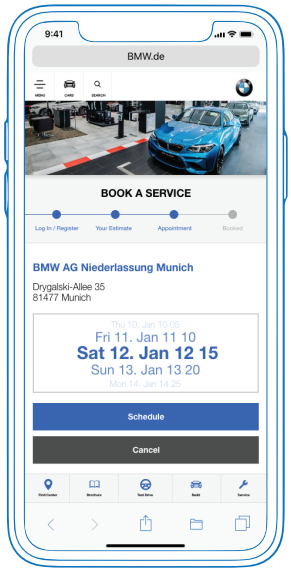


Fig 25: *Select date*

Figure 26, 27 and 28 are the next steps that the customer has to complete in order to book an appointment. Now that the customer has arrived at the login page, he/she is provided with two options to choose from. The first option is where the customer needs to enter the number plate and the mileage of the vehicle in use to obtain an estimate of the service and the second option to use their email and password to login. Once the customer uses either of the details, he/she is provided with the estimate of how much the service would cost. The customer is now provided with two options, one to schedule and appointment and the other to cancel. Considering the customer clicks on schedule an appointment, he/she is directed to the next page where they are provided with the option to select a date and time as desired with two options such as schedule and cancel. Once the customer selects schedule, the booking is confirmed and the customer has successfully made an online appointment. The number of clicks the customer had make in this second part of the process of booking an online appointment is 6.

Going through the current user journey gave us a better understanding of how we could make this much more efficient using the data that BMW has acquired from its existing customers. Since the goal of the project is In-car marketing, our team developed a few prototypes of how notifications could look like when displayed

in the vehicle.

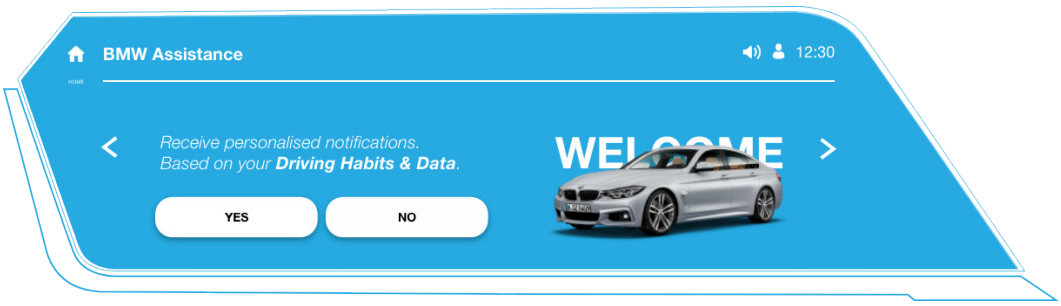


Fig 27: *In Car Notification - Consent Screen*

Figure 27 is a concept of the initial screen which the customer would receive which gives him/her to select if they would like to receive personalized notifications based on the driving habits and the data collected by BMW.

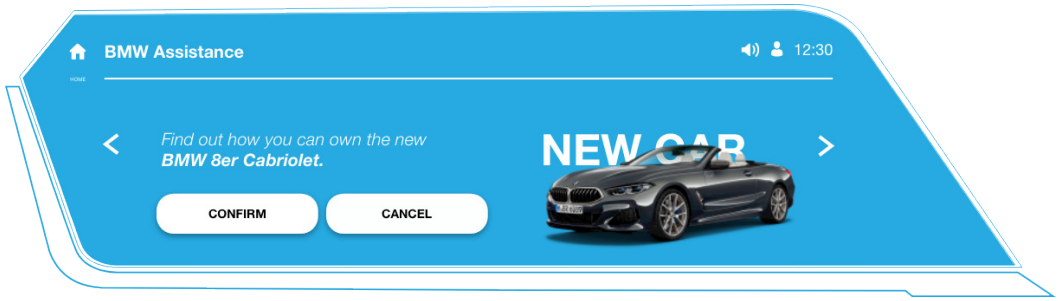


Fig 28: *In Car Notification - New car*

Figure 28 is a concept of the notification that the customer would receive about a new car that he/she would be interested in purchasing. Some of the data triggers for the customer to receive this kind of notification are contract details, vehicle information, previous purchase history and credibility. It has to be noted that the model of the car shown here is only an example for the prototype, as the notifications a customer would receive would be completely personalized and only based on the data that we have about the customer in order to make the chances of a purchase more relevant and effective..

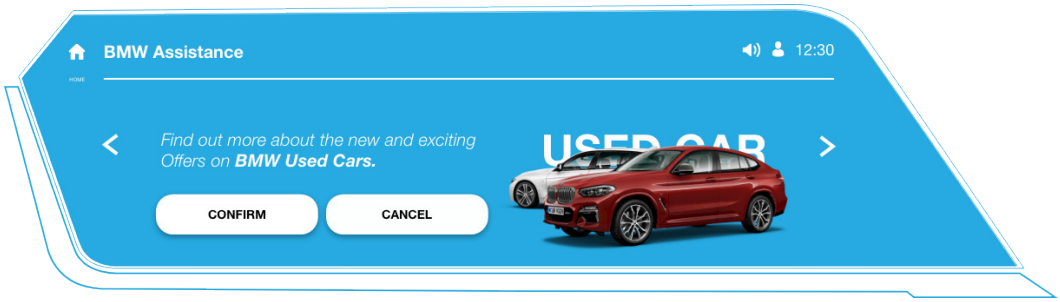


Fig 29: *In Car Notification - Used cars*

Figure 29 is a concept of the notification a customer would receive about the used cars that he/she would be interested in purchasing. The data triggers in this instance are vehicle information, contract details, credibility, previous purchase history and servicing records. Similar to that of the new car notifications, the customer would only receive these notifications only based on the data that has been collected and which are only relevant and precise.

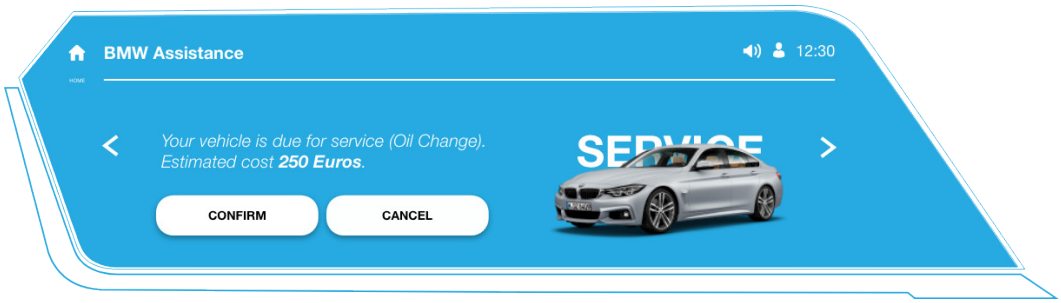


Fig 30: *In Car Notification - Servicing*

Figure 30 is a concept of the notification a customer would receive when it is time for him/her to take the vehicle for a regular service. The data triggers in this instance are vehicle details, kilometers drive, service records and contract details. These service notifications could be made personal with including details such as the cost involved for the upcoming service so that it eliminates the need for the customer to call the service center to find out the estimated cost. This can be made possible as BMW knows the service packages that the customer has opted for which in turn makes the user experience much more simpler and efficient.

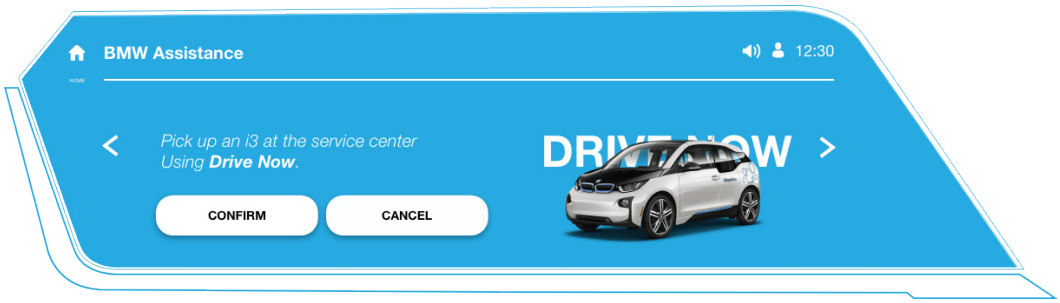


Fig 31: *In Car Notification - Drive Now*

Figure 31 is a concept of the notification a customer would receive based on the appointments that have been made in his/her calendar. For instance, if the customer has made an appointment with BMW for a regular car service, the customer would receive this notification about a drive now that he/she could use once they have dropped of their vehicle at the service station. When the customer agrees to such a notification, the customer would have a vehicle of his choice waiting at the service station that he/she could use while their vehicle is being serviced.

Fig 32: *In Car Notification -Lifestyle*

Figure 32 is a concept of the notification a customer would receive about lifestyle products that BMW as a brand has to offer. The data triggers for this instance as purchase history, vehicle information and interactions done on the BMW website. For instance, once a customer purchase a new vehicle, he/she would receive this notification that provides them information about lifestlye products that they would be interested in purchasing.
Once these prototypes of the in car screens where completed, we

as a team had to look into ways that we could combine in car marketing and the existing mobile user experience to come up with a new and much more efficient moblie experiences. It has to be taken into notice that we do not intend to have the customer complete his/her task in the vehilce as that would distract them while they are driving which could raise safety concerns.

Another reason that we want the customers to come back to using their mobile or desktop is to enable the flow of information more seamless as it is easy to measure and collect data when a customer interacts with the companies website, regardless if it is a mobile or a desktop. This would provide valuable information to the CRM that can be used by BMW as a brand to provide personalized and precise notifications about its products and services to its customers.

As mentioned in the paragraphs earlier about the existing mobile user journey that a customer currently has in making an online appointment for servicing, we now see the possibility of a new and more efficient user journey through in-car marketing and the data that we have acquired from the customer.

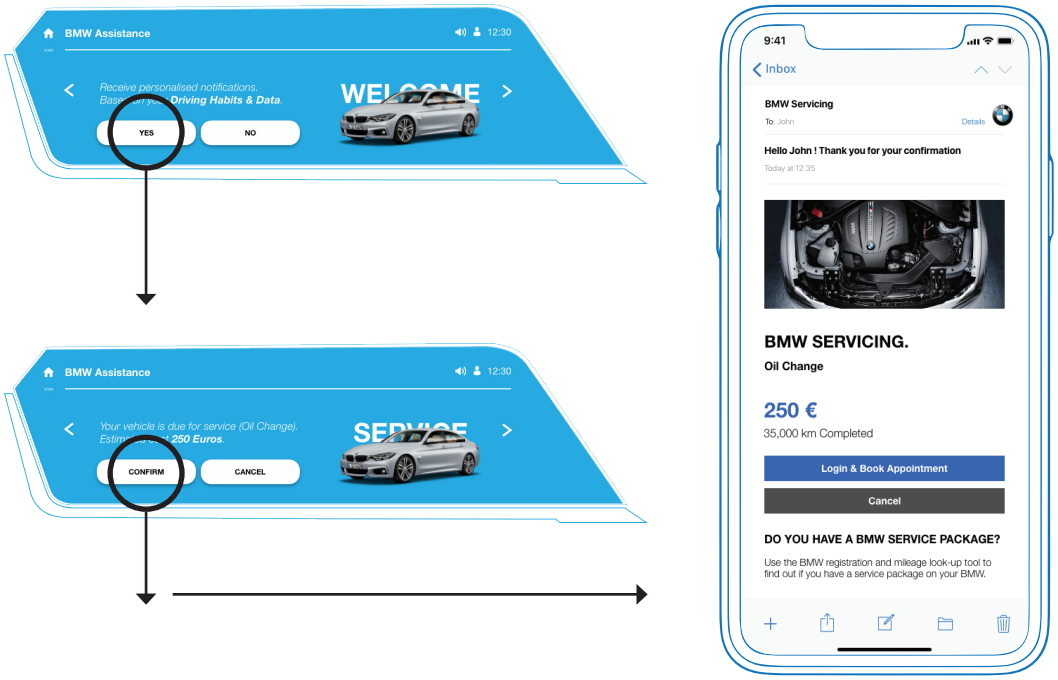


Fig 33: *New User Journey - Booking a service*

Figure 33 on the previous page provides us with the possibility of a new and more efficient user experience. The user journey begins in the vehicle when a customer receives a notification about a consent that ask the customer if he would like to receive personalized notifications based on his/her driving habits and the data that has been collected by BMW. This would be a one time consent as we do not want to keep asking the client for a consent every-time they switch on their vehicle. Once the customer has given us their consent the second notification the customer would receive in this instance is of an upcoming service that he needs to complete. The notification not only prompt the customer about the upcoming service but also provides the customer with additional information such as the cost estimate that is involved. This additional information about the cost can be achieved by using data such as service history, vehicle information, service packages opted and the kilometers driven.

Once the customer opts to book an appointment in his vehicle, he/she would receive an email to his/her mobile device that indicates the confirmation of the notification in the car, with the cost estimation and the opportunity to login and book and appointment. In the existing user journey, the customer is made to enter his vehicle number plate, mileage and then login to receive his estimate, but since we have already provided the customer with such information, he is directed to the page where he can select a data and time.

This new customer journey also gets rid of the task where the customer has to pick the location as we know the exact location of the owner based on the contract details, navigation system and the driving routes. Hence we could automatically select the location for the customer and if there are specific service centers for specific servicing that need to be carried out, that could also be made possible. Hence in the new customer journey, all the customer has to to do is login, select a date and time and the online appointment can be successfully made. In comparison to the existing customer journey, we reduce the number of clicks from 12 to 4. This shows that with the effective use of data and in car marketing we can improve the user experience and in turn advertise about other products and services enhancing our portfolios.

06.

Conclusion

In car services and connectivity is changing the automobile industry and the driving experience. These services depend on the Internet and the machines collect user data in order to offer better services and experience. The changing GDPR and ePrivacy rules and regulations affect most of the major companies and organizations. Our project looked at using the existing data collected by BMW for offering in-car marketing for BMW in order to enhance their portfolios.

This paper showed the various trends, applications, processes and market scenarios for in car marketing including autonomous cars, connected cars, data requirements and analysis and telematics. This research also gave us an insight in to the willingness of customers to make changes to their data sharing preferences in order to accept these newer technologies.

The various ideation and design methods such as online surveys, analysis, personas, user journeys and user flows helped with the further ideation and implementation methods such as wireframes, prototypes and user testing. This was an iterative process and all the phases and methods used were interconnected and codependent on each other. These research and design methods and tools guided and helped in finding an innovative design solution and strategy for BMW.

This is an ongoing project and the next steps for it would be to ideate and brainstorm on innovative business model solutions to come up with a viable and feasible outcome for the project.

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