

POLITECNICO DI TORINO

Faculty of Engineering

Master of Science in Engineering Management

Master Thesis

Data Automation in Small Companies



Advisor:

Prof. Marco Cantamessa

Candidate:

Mehrad Aminiharandi

February 2020

Introduction	5
Company Introduction.....	5
Industry Overview	6
Digitalizing MS	8
Cloud Solution.....	8
Multi-publisher Platform.....	8
The problems	9
Acquisition.....	9
Car Arrival	10
Technical check and preparation.....	10
Major transportations between showroom and main inventory.....	10
Photography.....	10
Routine Maintenance.....	10
Digital Marketing	11
Sales and Aftersales Administration	11
Tracking System	11
Solutions theories and projects	12
Optimized Flow Chart	12
GO.....	12
pCloud and DealerK	13
Data Entry of GO.....	13
The interfaces	13
Arrival Check System.....	14
Transportation Schedule	14
Maintenance and Audit.....	14
RCTS (Repair Center Tracking System).....	14

SIP (Sales Info Panel).....	14
Accounting.....	15
Documentation.....	15
Technical structure of projects.....	15
GO.....	15
Apps.....	18
Creation.....	18
Columns.....	19
Slice.....	21
UX panel.....	21
Arrival App.....	22
Audit App.....	23
Sales Control Panel.....	24
Sales App.....	24
Arrival Transport Schedule App (ATSA).....	26
Documentation.....	28
Price Tag.....	28
DealerK.....	29
Leads.....	30
CRM.....	31
Statistics.....	32
Analysis.....	33
Brands.....	35
Quantity vs Quality.....	36
Suppliers.....	38
Conclusions.....	41

Achievements41
 DealerK project.....41
 GO.....41
 Process Flow Chart42
 Financial Contributions42
Further Projects.....42
 Macro Development42
 Franchising.....42

Introduction

The topic that I would like to discuss within this dissertation is about data automation in small companies. The level of complexity of data automation, in my opinion is related to the data flows entering, being processed and exiting through a company. Basically, the implementation of data automation would benefit a firm in many ways such as enhancing the acceleration and accuracy of data processing within each departments of a company, as well as increasing the volume of inputs and leveraging the real capacity of resources and functions in a company. Moreover, cost reduction and profit enhancement would benefit the company. Data process accuracy is critical when the smallest error may change the results and causes distraction away from firm's goals and strategies. Creating data automation platforms, it is necessary to maintain its functionality utilizing latest technology and science to maximize efficiency of data flows, prohibiting unwanted errors that create queues and delay the process. When it comes to digitalization, physical barriers are gone, meaning that a firm can activate its virtual capacity to handle different tasks, which is much faster and accurate than traditional way. Take a sales office as an example, a traditional salesperson using old paperwork for information and time-consuming conversations with clients about the points he or she may not be interested. On other hand, consider a salesperson completely trained and equipped with latest IT solutions and methods. He or she would use statistical analysis to perceive a client's points of interest, offering best alternatives accordingly to customers digitally.

Now that the growth rate of science and technology has led all the industries in the world to be digitalized, the need to manage and optimize the sectors affected by this digitalized trend is more than ever. Massive volumes of basic data flows collected by the machines, operators, sensors, computer programs, questioners and simple observations, need to be collected, ordinated, filtered and analyzed. Managers at every level in an organization hierarchy need to be working with clues and tips extracted by the results of these analysis to lead the organization according to its goals and strategies. Numerous analysis can be extracted from these databases, helping managers to make an informed decision. The definition of analysis based on their perceived functionality is what makes a company position itself ahead of its competitors. Today's trend of digitalization and artificial intelligence challenges all firms to extracted data and translated those to perform more efficient tasks (optimized chain value).

Company Introduction

MS Automobili is a car dealership with more than 300 used vehicles available for sell and is the third biggest dealer in Turin. The company was founded in 2012 utilizing two locations. One, which is nearer to city center, would act as a showroom for the customers with more than 150 car spots. In the other

venue, which is bigger, would take place the preparation part including washing, technical check of vehicles, taking photos and videos for digital marketing purposes. The aim of the company is to satisfy customers helping them to choose a proper alternative by giving consultancies based on their needs and after-sale services. Apart from sales, they offer warranty service for 12, 24 or 48 months with cooperation of another company named Mapfre to ensure customer's satisfaction. They also offer financing plan based on customer's requested duration and budget. They would also act as a potential buyer in the area, proposing substitutions in exchange for the estimated value of cars.

When it comes to used car dealership business, several important questions will raise that the answers to each of them would optimize the whole process easier. Questions like: What cars to buy to bring the most profit? How to do the quality, storage and logistics control in the most proper way? How to do digital marketing? How to keep track of cars? How to manage internal transportation between showroom and storage? How to do proper CRM? Brand reputation plays an important role here since the market is full of other competitors offering same products and services (RED OCEAN). Innovative strategies are limited to the services offer by the company.

The problem the company had encountered was lack of data consistency since they were not doing any sort of data repository. As I started working at MS Automobili as the process optimizer, I tried gathering as much as information about the market, company's position in the market, suppliers and the internal process of the company. For each part I started defining simple but useful projects. I found an idle competitor on London Stock Exchange Market named MotorPoint, targeting all their activities as clues. To run the projects as soon as possible I started using spreadsheets as a start point and gradually add control, monitor and presentational and analytical features to these spreadsheets. I also turned them into a reference used for digital marketing. These spreadsheets will be updated within different parts of the company by users helping each department to cooperate smoothly and accurately through the process. Different interfaces and tools were provided for the staff to develop and update the very first form of data base in the company as there were no such records before.

Industry Overview

As a car manufacturer, it seems the effort of selling a car should be focused on a new one, which has a higher price and profit, rather than a used car (targeting richer customers). On the other hand, OEMs (original equipment manufacturers) by offering wide range of spare parts for a car, have significantly changed the desire of purchasing a used car which is reliable and has good quality. As a result, car manufacturer started their own used car market after understanding the residual value a customer is willing to pay.

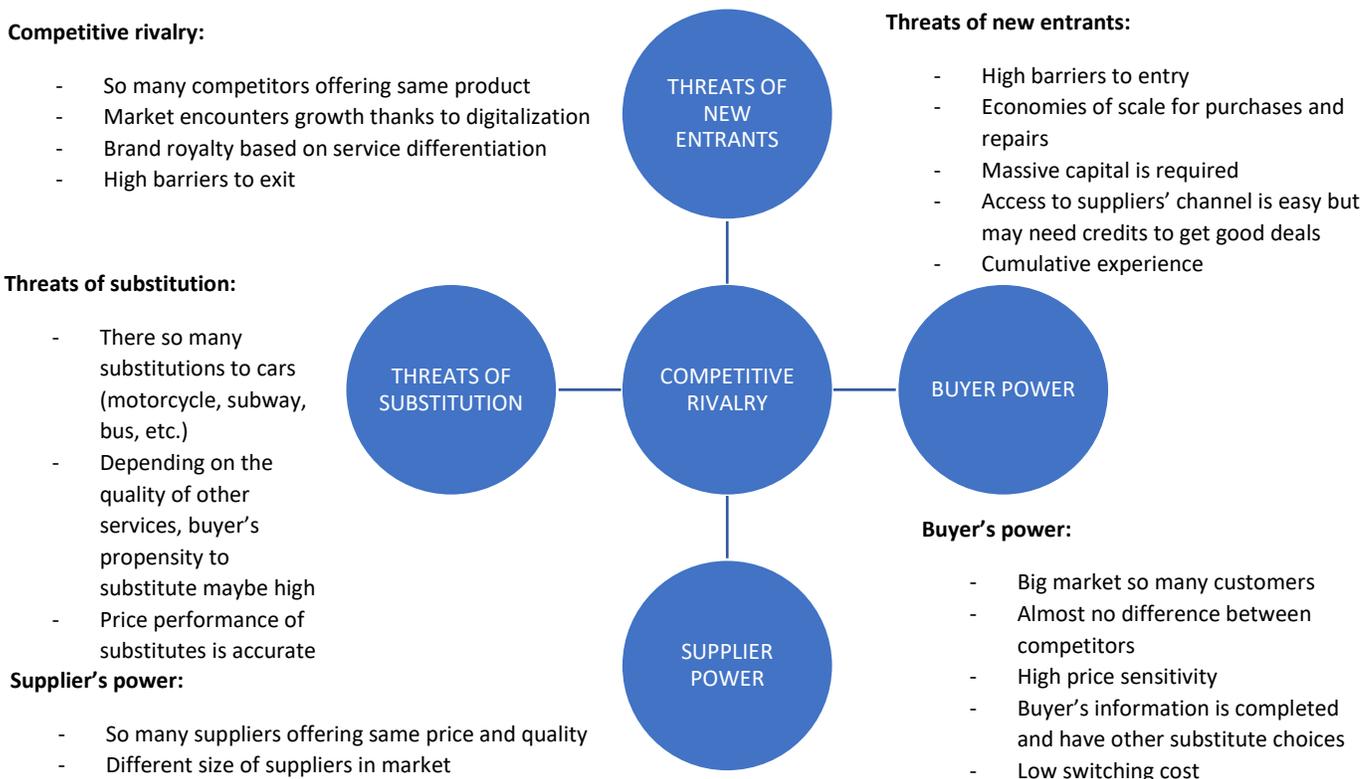
In today's world, customers have an upper hand when buying a used car. Thanks to the internet and correspondent platforms, buyers are fully aware of what they are buying, its quality, abundant, residual value, reliability. The methodology a customer would use to buy a car has changed. They rather to have all information available, including photos and videos indicating current conditions of the car and

relative correspondent description online, instead of passing by a car dealership browsing through their collection. Now, a customer knows exactly what to look and where to look.

To answer those needs, new platforms have been introduced to market accelerating the search speed and facilitating digital marketing in a sense that a dealer would absorb as much attention as possible from a customer looking for a car online (utilizing authorized cookies by clients, advertisements, multi-publisher platforms, social media announcements, etc.). These platforms publish announcements online on numerous websites to save time and increase sales as much as possible.

The answer to become successful in this market is transparency and symmetry of information. As all information related to products are online, customers have a clear access. Therefore, new strategy acquired by used car dealers should benefit firm's reputation based on trust and respect. Such a symmetrical relationship confirms product's quality and ensures the lock-in effect.

Unfortunately, MS Automobili's top level management was not pursuing this trend, causing major conflicts for the company. Lack of data consistency led to customer's unsatisfaction. As explained in Industry Overview, to continue remaining in such market, customer's satisfaction is important. Considering full access of customers to technical information (thanks to the internet), managing a car dealership in traditional way (false advertising, neglecting customer's satisfaction) would lead to failure.



In such competitive market, where buyer's power is high and there are so many competitors, innovation would happen in services. It is recommended for MS Automobili to offer services that other competitors

do not offer, to increase its market share and improve its reputation. Services that would confirm customer's satisfaction (full and accurate information about offered cars, future potential expenses, repairing facilities to guaranty the cars sold, more differentiated financing plans).

Digitalizing MS

This chapter would define the strategic relevance of two major projects being done in MS Automobili. The objectives of these projects is to bring data automation and market share growth to the company.

Cloud Solution

By creating a standard database as spreadsheet on cloud, MS would utilize digitalization in several aspects. This database would record, update and illustrate information about accounting, product's technical detail, dates, administration and documentation of the cars. Then, it would use several interfaces to maintain and improve itself as new cars enter to system and sold cars exit.

The strategy is to accelerate data flow and create synchronization between each part of the organization. Data synchronization would widely eliminate queues behind each activity, enabling the flow to move at its maximum efficiency and feed other system inputs. It would prohibit mistakes made by each part of value chain since data inputs are updated real-time. It also gives the chance to salespersons to provide better experience for a customer using specific interfaces.

Multi-publisher Platform

MS would improve its market share utilizing a third-party platform as multi-publisher to create announcements for online markets at a same time. This project would significantly improve sales as MS used to upload announcements manually on each website in a long process.

The format chosen as the first type of database is a typical Excel spreadsheet which can enable different macros for web-developing purposes using VBA. These macros can be useful for accounting and web announcing activities. As every company must propose accounting and financial statements on governmental platforms, these macros can automatically send reports by filling out web forms periodically.

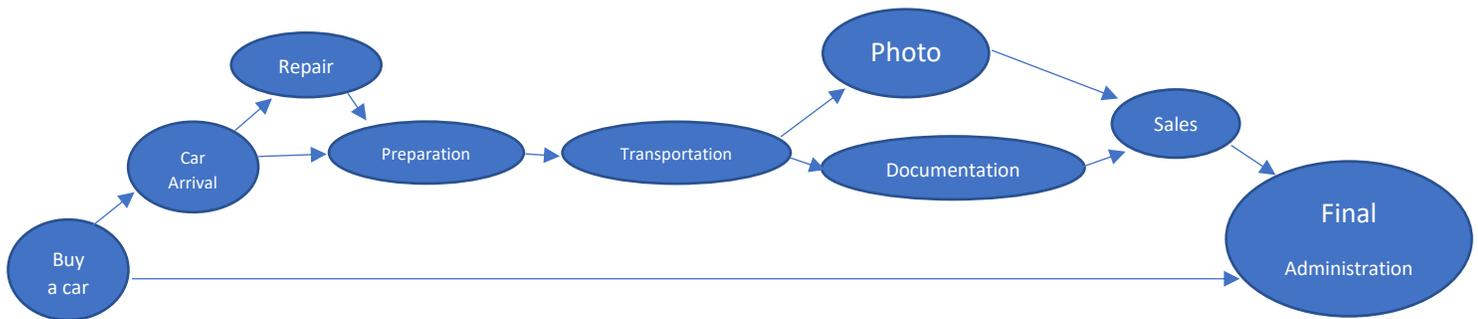
Another macro can be about digital marketing. As it is required an operator to insert information manually on multi-publisher platform, this macro can export required information for the data entry part of platform. In this way, the queue behind uploading an announcement online would be eliminated.

To build interfaces, a third-party server would download the spreadsheet from cloud, formulizes the functionality and usage of interface by defining its inputs, outputs and interactions with other interfaces. In case the server was not able to read the formula written in excel, one can create a function using these expressions. Technical data of how this platform works would be explained in technical part of implementation.

The problems

How to optimize the process flow chart to decrease TTM?

The flow chart used by the company was based on repetitive paper works that delayed the whole process. Recognizing critical points throughout the main flow chart that were creating time-consuming queues, a simple Time-Motion study was introduced the main problems within flow chart.



Results of this study is as followed:

In first observation, considering which tasks are misplaced or causing queue, the following problems are noticeable:

Acquisition

As there are many other car dealerships in town, the supplier's power low, but the main challenge is to find out which car to buy and from which car dealership? Are there any other ways to do it? What are the methods to optimize and develop this process?

Even though MS Automobili was not using any type of data repository of sales, within 7 years of their activity, through experimental learning, they perceived the behavior of different market segments when it comes to buying a used car. Although, this was never based on results from statistical analysis, in fact there was always a sort of ambiguity of different choices available as suppliers. More than 40 Brands of car with more than 8 models in average for each brand, more than 10 big suppliers in town. Simple calculation shows the difficulty of choosing among all these alternatives.

Another undeniable problem in the acquisition part was the fact that most of the purchases were made through verbal agreements with no immediate purchase proposal or invoice. This created major problems in the process flow chart, but it was hardly noticeable by the managers. This type of acquisitions delayed the legal registration done by the administration office. Because not only there was no proof of transaction, the required documents were missing as well. Long time-consuming

tracking was taking place just to close a contract. Following this type of acquisitions, later will happen other problems regarding the flow chart that we will cover in future steps.

Car Arrival

As the ordered lot size increases, it will be difficult to keep track of all arrival and their agreed conditions on purchase proposal. A major reference was missing to control and check arrival list and their conditions. A mistake made by a supplier could bring about hidden costs for the company (labor, repetitive transportation, etc.).

Technical check and preparation

How to do the preparation part and technical check in the most optimized way targeting TTM reduction and customers satisfactory strategies?

According to a customer's view, the only important point about a used car is that it should work properly, all the consumable parts should be renewed, so the car would be in its best conditions. As a car arrives in the company's inventory, lack of technical checks cause entering not acceptable cars in the process. This was a major problem, since it was creating repetitive tasks of transportation and communications with repair centers. There were times that a technical problem didn't exist until the time that customer wanted to take out the car (Bad reputation).

Major transportations between showroom and main inventory

Following the process flow chart, most critical task for the company is to sell a car as soon as possible. The more a car stays through the process, the less is the profit from it. The dedicated post for photography was in showroom, therefore all the new arrivals eventually had to be transported to the showroom. This was an issue since the current capacity of showroom was limited. A proper management system was needed to correctly keep the balance within, as showroom was divided into three different categories (Car classification).

Photography

Making Photos and videos is the start point of digital marketing section. Almost the most important task within the company's flow chart, which was significantly limited by its position in showroom since it used to be done in an open. Specific conditions were required start the process such as the angle of sunlight, whether it's rainy, dark or foggy. The most critical process which would truly reduce TTM, was being delayed. Well of course, when we mention photography, the whole process of photo modification and getting them ready for cloud upload, should be considered.

Not all the new arrivals were able to be transported to photography post because of showroom's limited space. It was impossible to balance this trade-off between showroom and main inventory causing delay in TTM.

Routine Maintenance

The company was truly suffering from the cost caused by mal maintenance. Basically, car maintenance consists of several simple checks and activities that almost all of us who own a car should know them. Not doing them can damage some other major parts of the car that can be extremely expensive to repair. A simple maintenance routine was required to resolve this problem. At that moment, random

maintenance was taken place in showroom whenever a transportation was going to be done and there were no maintenance actions being done in the main inventory. Considering that almost 60% of all the cars were not being checked at all, causing extra costs for the company.

Digital Marketing

How to develop and accelerate marketing? What are the methods to increase market share using digital marketing? How to scope and enter to new markets (What competencies are required and how to overcome entering obstacles)?

Following photography part, now it was time to put the cars online, making them available to the market as soon as possible. Lack of knowledge of upper level management about today's virtual infrastructure technology was causing tremendous costs of labor. For creating an announcement on a website, they were repeating a same long task. Since there are more than 15 active online markets available in this field, one can figure how long it would take for them to put all information available to the customers on each of these websites. Approximately each car for each website would take 15 minutes to be uploaded. Considering 7 cars in average a day, almost 27 manhour were required which is beyond the current labor capacity of the firm.

On the other hand, the firm was completely behind the trend of its top competitors inside and outside of the country. Regarding digital marketing tools, MS Automobili was not utilizing other aspect of this field like platforms available as social media (Facebook, Instagram, LinkedIn, Google Review, etc.). Brand reputation was not being improved.

Sales and Aftersales Administration

How to digitalize data administration? How to implement data consistency of accounting reports with respect to storage control (reports required for commercialists)?

The legal registration of car's ownership is a time-consuming process requiring all the documents. Since car acquisitions was based on verbal contracts, after closing a contract, the documents required for registration were still missing. Tracking these documents to finalize a contract was taking a lot of time including controlling the payments to suppliers, the final change of ownership registration and settling the rest of payments with customers. The problems arise from this delay was going further, up to even settling the traffic fines made by customers while they took a car out on street after acquisition (legal ownership of the car still belonged to dealership).

The administration part itself was being done manually inserting repetitive information on two separate platforms for registration. The whole accounting process and sales administration respectively were being affected by issuing invoices and final contract in delay. The queue created behind this activity caused customer's dissatisfaction.

Tracking System

More than 300 cars in a month entering and exiting between suppliers, Showroom, Inventory, Repairing Centers, Carwash, Bodyshop throughout different cities and regions. A comprehensive updated tracking system was missing to simply look for cars. Basically, all the departments within the value chain

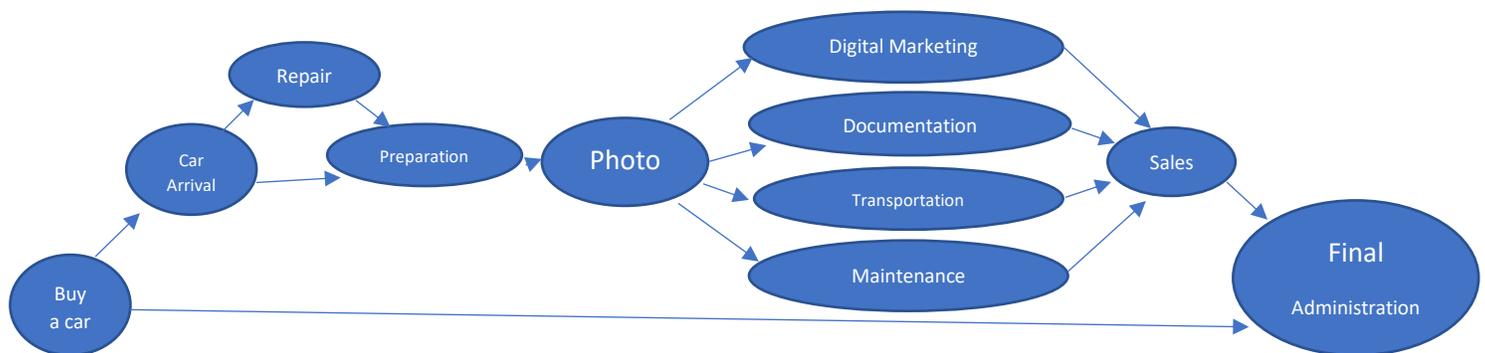
needed this kind of tracking system to schedule for their everyday routines (Preparation, Maintenance, Transportation, Sales Office, Customer Appointments and Top-level Management).

Solutions theories and projects

I planned to tackle the problem proposing three projects: 1- Flow Chart project 2- GO project 3- PCloud-DealerK project. All these projects will be explained completely during future parts.

Optimized Flow Chart

The results of time-motion study clearly point out the critical points of current process flow chart. A new project of creating photography post was proposed to the management board. Considering the problems mentioned in the photography part and transportation limits between showroom and main inventory, Having a new post for photos immediately after the preparation part wiped out two main queues of the process: 1- There were no limits of making photos and videos because of weather conditions since it would be done indoor the main inventory (This project was constructed by a third-party firm). 2-Transport limitation to showroom was eliminated thanks to strategic change in photography post.



Time to Market is significantly reduced thanks to this project. Balanced data flows within new flow chart ensures smoothest interaction through each activity. The new flow chart is demonstrated in the figure below.

GO

Basically, what I proposed in this project is to create a spreadsheet of data flows within each activity including quantity, location, date, etc. and an interface to expand and update it. This interface is the main tool to build and develop the database and ensure the utility of using current spreadsheet by other interfaces of different activities. The interaction of spreadsheets is the key element which is undefinable unless we know exactly how the new data process flow chart works.

The title GO (La Giacenza Ottimizzata) is what from now on we refer to as the main database feeding all other interfaces. As the figure below shows, this database is most critical element of data automation in the company, allowing all other parts collaborating smoothly and synchronized. Interfaces proposed by this project are available on smartphones and PCs of staff, utilizing and feeding GO, making it available for next activity to be planned and carried out. The relation graph of how GO and its interfaces

interact is shown in the figure below. Later, a technical instruction of how each interface works and communicates would be explained in detail.

pCloud and DealerK

pCloud is the cloud solution which one can find in almost all the companies, utilizing backup of data. Moreover, pCloud offers an application for smartphones enabling its users to extract required categorized data using keywords. The best way to assign id to information uploaded on cloud is the plate number (It's not repeatable and the format used in a plate number is standard). The categories consist of scanned documents, images, videos, analytical reports, financial reports, proposals of purchase, etc.

DealerK is of the most critical tool used for digital marketing. Existence of DealerK has change and affect almost all the activities and processes. DealerK is an online platform offered by a third-party to publish an announcement on numerous online marketplaces in a same time. It can import information used to create an announcement from standard categorized spreadsheet (GO project) as Excel macros. DealerK has several useful features including different platforms for CRM and Sales Management, possibility to export all sorts of statistical information required for market share and digital marketing analysis in xlms format. The Sales Management panel available for salespersons, includes all features required to contact a client and close a contract. The sales statistics are exportable in xlms format as well. What DealerK does for the company, is feeding major parts of GO as inputs and help it to update interfaces fed by GO.

Now we would discuss the solutions offered by these three projects to carefully observe their contribution to system and how they collaborate through flow chart.

Data Entry of GO

The first step of creating a case in system. The data entry clerk starts with receiving proposals arrived from other car dealerships (as suppliers) or after evaluation part offered by MS, creating the very first step of building GO. The platform offered for GO is in Excel because of its commodity and flexibility and more importantly its standardized format of import and export. Thanks to standard combinations of information required to enter to system, we were able to define regulations for data entry using VBA as a development tool for Excel. Consider the plate number as an example which consists of 7 digits or Chassis number which is 17 digits etc. Moreover, there are cells that can be selected from a range of choices (drop-down list) and another cell based on what we have chosen from previous cell (dependent drop-down list). The structure of an interface is different based on their functionality. Following this chapter, we would explain the mechanism of each interface interacting with GO, DealerK and other interfaces.

The interfaces

Different interfaces are designed for different parts of the process including: Arrival check, Maintenance, Transportation, Repair Center Tracking System and Sales Info Panel. These interfaces are specific ad have limited access for each staff regarding their activity.

Arrival Check System

Based on purchase proposal contracts, GO is enabled to export technical and status information of a car arriving at MS, like mileage, physical condition, service booklet etc., on related application, for the control team. The responsible team would control and confirm the information extracted from GO on the application. Moreover, they would update the preparation and technical check status. In this way two other platforms would be activated if need: 1- Transportation Schedule 2- Repair Center Tracking System.

Transportation Schedule

Before explaining this part, I would introduce a Ranking System used for prioritizing the cars located in showroom. Basically, the showroom is divided into three parts, main part is for expensive cars, the remaining two parts is categorized based on brand and market share (this priority is based on statistical data from sales management). The transport interface would identify cars with higher priority according to showroom divisions capacity. There is a second schedule for cars need to be transported to repair center or carwash etc. So, an accurate list of all transportations is being updated daily.

Internal transportations would be updated as well, using this interface. This activity utilizes a part of Sales Info Panel related to car localization.

Maintenance and Audit

From the moment a car is arrived, the audit schedule begins to record all the activities regarding changing batteries, tires, oils and basically all other consumable parts of a car which throughout time need to be maintained or replaced. Based on the standard instruction defined for each element, the schedule would update itself, notifying the users about future procedure. Implying different filters of these elements, creates useful lists of day to day activities.

One other activity regarding maintenance is updating Price Tag of each car, which is basically a laminated A4 page consist of all technical information useful for customers when they walk into showroom for a closer look. Price Tag is printable automatically through a separated spreadsheet extracted from GO, entering plate number.

RCTS (Repair Center Tracking System)

After technical check, cars need to be transported to repair center would be updated on transportation interface. A ballpark figure would be presented by a professional about the parts required to be purchased (whether they would prepare it or else) and duration of repair process. The information would be updated on RCTS which is utilized with an alarm system developed with VBA on Excel.

SIP (Sales Info Panel)

Practically, SIP is the most important platform extracted from GO. Not only it works as complete illustrator of technical data required for a salesperson, but it has additional features including car localization, customer contact list, photos and videos of the car with ability to share on social media, current status of car (utilized by maintenance) and financial information (price target and leasing plan offered). It helps salespersons to provide accurate consultancy and make the best offer which would increase the chance of closing a contract, making a good experience for customers to buy a car at MS Automobili.

Accounting

MS uses an online interface interacting with assigned commercialist named BPointSaas, which is a common application used for accounting activities like preparing balance sheet, income statement, EPS and cashflow statement. The project being done about BPointSaas is that, before they used to enter required data manually for each car which is a long process, but now thanks to GO, a standard framework of required fields for BPointSaas is ready as excel macro developed in VBA (developing macro in VBA did not proceed further because of lacking a programmer in the team).

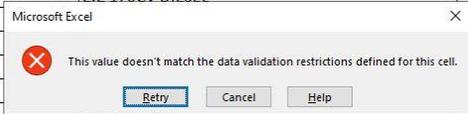
Documentation

MS used to do paperwork manually by hand at some points about documentation. There were no records of purchase proposals, transport documents, original documents, changing property documents etc. virtually available. Thanks to GO, I was able to define several forms filled out automatically by just inserting the plate number.

Technical structure of projects

TARGA	MARCA	MODELLO	IMM	TELAIO	ALLESTIMENTO	IVA	C BU	BUY	FATT. A	Repair Cl	KL	C SELL	SELL DATE	ARRIV	FATT	STATO	OL	KM	LUB	NEC	EU	BOI	RE	COLORE	FORNIT
1034	FIAT	PEUGEOT	308	29/02/72	VF4R8H85159917	0.0 HDI 165 CV CC ALLURE 1* SERIE DIESEL	695,24 €	€ 8.820	19/11/19	522000	240.000	€ 4.800		8/11/19	58	INVIATO	YES	YES	YES	NO	1	gen-20	giu-20	ARGENTO MET	BI AUTO
1035	FIAT	ALFA ROMEO	156	20/06/18	WAU2Z6AH00019383	2* SERIE 3.0 TDI 272 CV QU TIP. BUSINESS PLUS	-	€ 8.740	29/11/19	884000	74.000	€ 41.900		8/11/19	58	INVIATO	YES	YES	YES	NO	1	mag-20	giu-20	GRIGIO	BI AUTO
1036	BMW	BMW	X3	01/10/10	WBAPD110500H64143	2.0 D 150 CV DIESEL	-	€ 2.000	16/11/19	208.000	€ 5.200		6/11/19	58	VENUTA	YES	YES	YES	NO	4	apr-20	ott-21	GRIGIO	PERMUTA	
1037	LANCIA	PRIDEA	PRIDEA	14/02/07	ZFA370000133257	2.0 MULTISERIE CV DIESEL	-	€ 3.000	16/11/19	364.000	€ 2.900		6/11/19	58	VENUTA	YES	YES	YES	NO	4	gen-20	lug-21	GRIGIO	PERMUTA	
1038	FIAT	OPEL	CORSA	18/10/10	WLDKCF084053770	3* SERIE 1.6cc 90cv BENZINA	-	€ 500	7/11/19	183.873	€ 1.600		7/11/19	58	VENUTA	YES	YES	YES	NO	4	gen-20	mar-20	NERO	PERMUTA	
1039	NISSAN	NISSAN	JUNE	21/12/12	SNFZP3106154891	1.5 cci Accra 110 CV DIESEL	-	€ 4.800	24/11/19	80001024	129.500	€ 8.900		10/11/19	58	INVIATO	YES	YES	YES	NO	5	nov-19	dic-19	BIANCO	GINO
1040	ALFA ROMEO	156	18/02/02	ZAR8320000181001	1W 1.1 1.1 Serie 1.8 Progression 140cv Benzina	-	€ 2.200	23/11/19	1066007	155.581	€ 1.900		10/1/20	58	INVIATO	YES	YES	YES	NO	3	dic-19	gen-20	ARGENTO MET	NOVELLI	
1041	ALFA ROMEO	156	18/02/02	ZAR8320000181001	1W 1.1 1.1 Serie 1.8 Progression 140cv Benzina	-	€ 2.200	23/11/19	1066007	155.581	€ 1.900		10/1/20	58	INVIATO	YES	YES	YES	NO	3	dic-19	gen-20	ARGENTO MET	NOVELLI	
1042	FIAT	CROMA	CROMA	30/04/97	ZFA19400002049157	1.9 mpi 16v Dynamic 130cv Diesel	-	€ 620		180.000	€ 1.900		26/11/19	58	INVIATO	YES	YES	YES	NO	4	apr-20	giu-20	NERO	NOVELLI	
1043	ALFA ROMEO	156	07/04/12	ZAR9550000115980	1.3 16m 2 Progression 84cv 95cv Diesel	-	€ 2.700	20/11/19	1721 GDI	159.375	€ 4.500		15/11/19	58	INVIATO	YES	YES	YES	NO	5	dic-19	apr-21	BIANCO	NOVELLI	
1044	BMW	BMW	318D	20/09/16	WBABH71500833774	2.0cc 150cv Diesel	1.915,57 €	€ 10.700	26/11/19	54200	130.000	€ 13.900		08/11/2019	58	INVIATO	YES	YES	YES	NO	18	ago-20	set-20	NERO	BI AUTO
1045	NISSAN	NISSAN	COOPER SD CLUBM	20/09/16	MMML531070252613	2.0 190 CV Business Auto DIESEL	3.015,57 €	€ 16.800	26/11/19	54100	100.000	€ 18.900		08/11/2019	58	INVIATO	YES	YES	YES	NO	68	ago-20	set-20	MARRONE	GINO
1046	NISSAN	NISSAN	COOPER SD CLUBM	26/09/16	MMML531070252613	2.0cc 190CV Business Auto Diesel	2.925,45 €	€ 16.800	26/11/19	54100	84.000	€ 18.900		08/11/2019	58	INVIATO	YES	YES	YES	NO	68	ago-20	set-20	BLU	PERMUTA
1047	FIAT	FIAT	PUNTO	13/03/97	ZFA1300000774908	35 SP 3.1 cc 16cv Benzina	-	€ 1.100	11/11/19	175.000	€ 3.000		11/11/19	58	INVIATO	YES	YES	YES	NO	5	dic-19	feb-21	NERO	PERMUTA	
1048	BMW	BMW	318D	14/01/19	ZFA3120001627558	COMPETIZIONE	-	€ 11.620	18/11/19	845000	2.189	€ 28.900		11/11/19	58	INVIATO	YES	YES	YES	NO	6	ago-20	set-20	VERDE	GINO
1049	BMW	BMW	318D	14/09/16	WBABE710400716046	TOURING 2.0cc 116cv Diesel	-	€ 3.200	14/11/19	1300085	223.000	€ 13.900		12/11/19	58	INVIATO	YES	YES	YES	NO	6	ago-20	set-20	NERO	BI AUTLET
1050	BMW	BMW	318D	20/10/10	WAU2Z6AH00019383	2.0 16V TDI AMBITION	-	€ 3.000	14/11/19	1300085	235.911	€ 2.600		15/11/19	58	INVIATO	YES	YES	YES	NO	4	set-20	ott-19	NERO	GINO
1051	VW	GOLF	GOLF	09/02/04	WVWZZ1K24W622119	2.0 16V TDI SERIE 5 SP Comfortline 140cv Dtd	-	€ 1.000	14/11/19	1300085	200.286	€ 2.400		15/11/19	58	INVIATO	YES	YES	YES	NO	4	set-20	feb-20	GRIGIO	GINO
1052	VW	VW	GOLF	27/09/10	WVAZ989401073532	2.4 D 180cv Momentum Geartronic Automatica D	-	€ 4.700	14/11/19	80001022	229.459	€ 8.500		14/11/19	58	INVIATO	YES	YES	YES	NO	4	lug-20	ott-21	ARGENTO MET	GINO
1053	VW	VW	GOLF	05/08/05	WVAZ989401073532	2.4 D 180cv Momentum Geartronic Automatica D	-	€ 2.000	14/11/19	80001022	274.000	€ 3.900		14/11/19	58	INVIATO	YES	YES	YES	NO	4	lug-20	feb-21	GRIGIO	GINO
1054	CITROEN	CITROEN	C4 PICASSO	27/09/10	VFL09H2CA746884	1.6cc HDi 110cv FAP Style Diesel	-	€ 2.200	14/11/19	80001020	158.979	€ 3.400		14/11/19	58	INVIATO	YES	YES	YES	NO	4	ago-20	gen-21	GRIGIO	GINO
1055	NISSAN	NISSAN	ALTIMA	07/02/08	1B3H8C1830519819	2.0 TurboDiesel DIFF RE 140cv	-	€ 1.000	14/11/19	1927000066	254.000	€ 3.400		14/11/19	58	INVIATO	YES	YES	YES	NO	4	ago-20	feb-20	BIANCO	GINO
1056	VW	VW	GOLF	26/04/04	VWU19W79924216728	2.4 25V 20V DS 180cv cat. DIESEL	-	€ 500	14/11/19	80001018	118.000	€ 1.500		14/11/19	58	INVIATO	YES	YES	YES	NO	3	mar-20	giu-20	BLU	GINO
1057	NISSAN	NISSAN	ALTIMA	26/03/14	WDC1666414124289	BlueTEC 1600cc Premium	-	€ 26.500	11/11/19	80000236	144.000	€ 33.500		15/11/19	58	INVIATO	YES	YES	YES	NO	1	dic-19	mar-20	BIANCO	AUTOHDI
1058	FIAT	FIAT	500	10/12/98	ZFA1870000125326	1.1 3UITE 54cv BENZINA	-	€ 300	15/11/19	150.000	105.000	€ 1.600		15/11/19	58	INVIATO	YES	YES	YES	NO	2	ago-20	feb-20	AZZURRO	PERMUTA
1059	NISSAN	NISSAN	ALTIMA	20/02/08	WDC12841281409151	AMATIC SPORT Chrome 4.0cc 308cv Diesel	886,36 €	€ 3.500	14/11/19	10102155	200.000	€ 9.900		15/11/19	58	INVIATO	YES	YES	YES	NO	4	gen-20	mar-20	GRIGIO	GINO
1060	NISSAN	NISSAN	ALTIMA	27/08/10	WDC12841281409151	2.5 25V DS 180cv cat. DIESEL	-	€ 4.900	14/11/19	13000864	194.000	€ 3.900		15/11/19	58	INVIATO	YES	YES	YES	NO	2	dic-19	apr-20	GRIGIO	GINO
1061	NISSAN	NISSAN	ALTIMA	10/12/12	134P1D9FWS46847	2.0cc 140cv DIESEL	-	€ 7.700	16/12/19	437180	147.000	€ 14.500		18/11/19	58	INVIATO	YES	YES	YES	NO	58	ago-20	set-20	GRIGIO	AZZURRA
1062	CHEVROLET	CHEVROLET	DISCOVERY	30/10/10	1L1SF348738012173	3.0cc 72CV 58 ecologic Benzina+GPL Sp.	-	€ 1.000	22/11/19	749780	109.000	€ 2.500		18/11/19	2070	INVIATO	YES	YES	YES	NO	4	set-20	ott-19	NERO	AZZURRA
1063	NISSAN	NISSAN	ALTIMA	20/02/08	WDC12841281409151	2.5 25V DS 180cv cat. DIESEL	-	€ 5.000	18/11/19	13000864	194.000	€ 7.500		18/11/19	58	INVIATO	YES	YES	YES	NO	4	dic-19	mar-20	BIANCO	AUTOHDI
1064	NISSAN	NISSAN	ALTIMA	18/02/08	WDC12841281409151	3* SERIE TDV6 HSE 2.7cc 190cv 7 POSTI DIESEL	-	€ 3.200	18/11/19	13000864	231.000	€ 3.400		19/11/19	58	INVIATO	YES	YES	YES	NO	4	dic-19	mar-20	NERO	AUTOHDI
1065	NISSAN	NISSAN	ALTIMA	18/02/08	WDC12841281409151	SPORTBACK 3.0cc 250cv GPL+Benzina	-	€ 4.000	18/11/19	13000864	271.000	€ 6.300		19/11/19	6549	RIPARAZIONE	YES	YES	YES	NO	4	ago-20	giu-20	NERO	AUTOHDI
1066	FIAT	FIAT	PANDA	29/08/08	VF15600001231381	1.2 Natural Power Combining	-	€ 2.500	22/11/19	147180	195.000	€ 8.600		15/11/19	2485	VENUTA	YES	YES	YES	NO	4	ago-20	feb-21	BIANCO	BROKER
1067	NISSAN	NISSAN	ALTIMA	18/02/08	VF15600001231381	1.6 HDI 8V Business 110cv Diesel	-	€ 5.000	29/11/19	1268180	186.000	€ 7.900		15/11/19	2486	VENUTA	YES	YES	YES	NO	38	ago-20	ago-20	GRIGIO	BROKER
1068	RENAULT	RENAULT	CLIO	27/06/06	VF11830K13792137	2* Serie 1.2 Confort GPL Sp.	-	€ 1.000	22/11/19	1313780	186.000	€ 2.300		15/11/19	5218	INVIATO	YES	YES	YES	NO	4	mag-20	#####	GRIGIO	CONATTI
1069	RENAULT	RENAULT	PUNTO	30/05/07	ZFA1870000125326	1.2 Classic Dynamic sp. 3* Serie 80cv Benzina	-	€ 1.000	22/11/19	1260180	145.000	€ 1.900		15/11/19	2071	INVIATO	YES	YES	YES	NO	4	ago-20	#####	GRIGIO	AZZURRA
1070	RENAULT	RENAULT	AVEO	01/10/09	WVAZ989401073532	3* SERIE 1.3cc 80cv GPL	-	€ 3.800	16/12/19	1266180	147.000	€ 3.900		18/11/19	2486	INVIATO	YES	YES	YES	NO	4	ago-20	nov-17	NERO	AZZURRA
1071	RENAULT	RENAULT	AVEO	13/09/05	WDD160001202499	ELEGANCE 2.0cc 80cv Avantgardie Diesel	-	€ 1.500	22/11/19	1248180	148.000	€ 2.600		18/11/19	2486	INVIATO	YES	YES	YES	NO	4	ago-20	set-20	GRIGIO	BROKER
1072	RENAULT	RENAULT	AVEO	01/09/05	ZAR930000795309	1.9 SW 1700 d1st 130cv Progression	-	€ 1.000	22/11/19	1251180	151.000	€ 2.900		18/11/19	2486	INVIATO	YES	YES	YES	NO	4	ago-20	mar-21	GRIGIO	AZZURRA
1073	RENAULT	RENAULT	AVEO	29/02/12	VF112100014664888	III XMOD 1.5 cc 110cv Diesel	-	€ 4.500	29/11/19	1259180	192.000	€ 5.900		18/11/19	2486	INVIATO	YES	YES	YES	NO	5	dic-19	set-20	GRIGIO	BROKER
1074	RENAULT	RENAULT	AVEO	01/12/12	WDF6398113635961	1.2cc 161cv Trend EL Diesel	-	€ 1.000	22/11/19	1248180	148.000	€ 13.900		20/11/19	2486	INVIATO	YES	YES	YES	NO	5	nov-19	set-20	NERO	AZZURRA
1075	RENAULT	RENAULT	HOLIOS	30/11/12	VF1100001231381	2.0 dci Bose 444 150cv ES Diesel	-	€ 4.500	29/11/19	1260180	160.000	€ 6.500		21/11/19	2493	INVIATO	YES	YES	YES	NO	5	ago-20	nov-19	NERO	BROKER
1076	RENAULT	RENAULT	HOLIOS																						

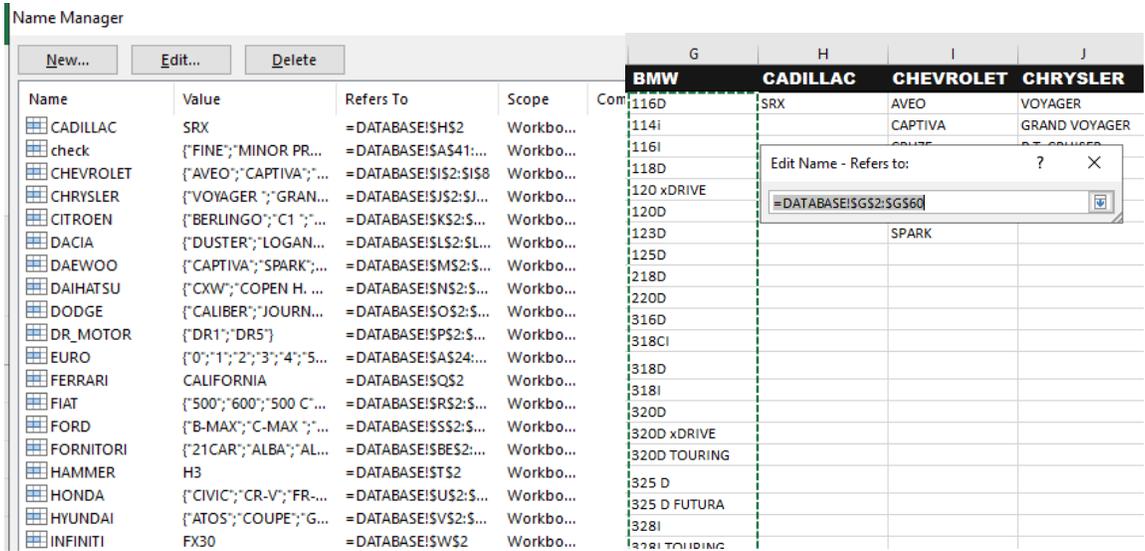
1344	EW186WP	MERCEDES	CLA 220	01/08/14				2.2 170CV DIESEL		
1345	EW989MJ	FIAT	500 C	23/09/14						
1346	ET980TE	MITSUBISHI	OUTLANDER	30/12/13						
1347	EK804SX	FIAT	BRAVO	01/10/11						
1348	DT140AC	JAGUAR	X-TYPE	11/12/08						
1349	FD412MW	FIAT	PUNTO EVO	01/03/16				1.4 78CV GPL		
1350	TO22750T	PEUGEOT	106	01/07/92	VF31CHDZ250211853			1.2 60CV GPL		
1351	FC280VZ	MASERATI	Ghibli	01/04/16	ZAMTS57B001187908			3.0 275CV Diesel	€	26.500
1352	EN010WK	MINI	ABBAY ROAD	12/11/12				1.6 98cv Benzina		
1353	CW394DD	VW	POLO	23/06/05				1.4 16V 86CV FSI 3P COMFORTLINE		
1354	12GH									
1355										



As you enter the right format the row will be unlocked and ready to fill.

1349	FD412MW	FIAT	PUNTO EVO	01/03/16						
1350	TO22750T	PEUGEOT	106	01/07/92						
1351	FC280VZ	MASERATI	Ghibli	01/04/16						
1352	EN010WK	MINI	ABBAY ROAD	12/11/12						
1353	CW394DD	VW	POLO	23/06/05						
1354	AA111AA									

For entering the brand and model we used dependent drop-down lists. “BRAND” is a name range that we defined in excel in another spreadsheet called database. The second data validation for formatting the model uses “INDIRECT” formula to create a dependent drop-down list. So, as we choose the brand, the list of models would change accordingly.



To open a new there should be a purchase proposal. The excel clerk continues entering the rest of data available on proposal making GO ready for first part of arrival section.

	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	TELAIO	ALLESTIMENTO	IVA	€ BUY	BUY D	FATT. Acq	Repar Due	KM	€ SELL	SELL DATE	DI ARRIV	FATT.	STATO	OLL	KE	LIB	NEO	EUR	
1337	SALLSA648A183548	2.7 TDV6 SE 190cv Diesel		€ 6.800	17/1/20			183.000	€ 8.900		YES	17/1/20	ONLINE	YES	YES	YES	NO	4	
1338											YES	17/1/20	PREPARAZIONE	YES	YES	YES	NO		
1339	SALVA2DC3CH698167	l Serie 2.2 150cv td4 5p Dynamic Diesel		€ 12.120	23/1/20	16MGL		194.000	€ 15.500				ONLINE	YES	YES	YES	NO	5	
1340	WBA1C31030J536489	Business 5p 184cv	1.789,00 €	€ 10.020	23/1/20	37VUS		120.000	€ 11.900				IN ARRIVO	YES	YES	YES	NO	58	
1341	WBA1V71020V822571	1.5 116cv 5p diesel	2.492,00 €	€ 13.920	23/1/20	33VUS		90.473	€ 15.500				IN ARRIVO	YES	YES	YES	NO	68	
1342	ZFA334000P302900	1.4 M-AIR OPENING EDITION 4X2 140CV		€ 12.120	23/1/20	45MG5		32.000	€ 13.900				IN ARRIVO	YES	YES	YES	NO	68	
1343	WDD2040081A215207	AVANGARDE 2.0 170cv DIESEL		€ 4.000	17/1/20	29761		62.031	€ 6.900				ONLINE	YES	YES	YES	NO	4	
1344		2.2 170CV DIESEL						86.464	€ 16.500				ONLINE	YES	YES		NO	6	
1345		1.2 79cv benzina						103.489	€ 7.900				ONLINE	YES	YES		YES	6	
1346		2.2 156CV DIESEL						55.849	€ 12.900				ONLINE	YES	YES		NO	5	
1347		1.6 MIT 120CV DISTINCTIVE						106.277					ONLINE	YES	YES		NO	5	
1348		X400 2.2 146CV Diesel auto luxury CD						63.903	€ 7.900				ONLINE	YES			NO	4	
1349		1.4 78cv GPL						73.000	€ 6.990				ONLINE	YES	YES		YES	8	
1350	VF31CHD2250211853	1.2 60CV GPL						29.030	€ 2.900				ONLINE	YES	NO	YES	YES	0	
1351	ZAMT3578001187908	3.0 275CV Diesel	€ 26.500					182.118	€ 32.900				ONLINE	YES		COPIA	NO	68	
1352		1.6 98cv Benzina						89.554					ONLINE	YES			NO	5	
1353		1.4 16V 86CV FSI 3P COMFORTLINE						144.000					ONLINE	YES			YES	4	
1354													IN ARRIVO						
1355																			

Apps

As the car is arrived, the arrival check and audit team continue the flow of completing and utilizing GO. This is the part where I used Appsheet as a platform to develop required applications according to firm's needs. Appsheet is a platform for creating apps with no code using spreadsheets instead of other complicated and expensive approaches. I started by connecting GO from PCLLOUD (the cloud I used to build the virtual database) to Appsheet.

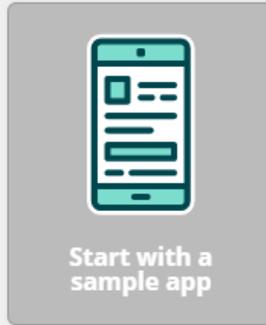
Since almost half of employees' time is spent outside of office in open area and storages etc., having a mobile application updating GO as main data source of company, can save valuable time and enhance accuracy of data flow. Queues behind each activity was wiped-out after usage of these interfaces.

Creation

The Appsheet server would download GO spreadsheet from cloud. A simple synchronization is required for the first time when we create the app:

Create a new app

CANCEL



[or follow our easy three-step tutorial](#)

Select a file ×

My Drive

Spreadsheets

My Drive ▶ GO

Name	Owner	Last modified ↓
 La Giacenza Ottimizzata.xlsx	me	Feb 13, 2020

Columns

Next step is to define the functionality of each column's type. We can assign a formula or an initial value. One can also decide which columns to show depending on the user accessibility. We can make it an editable or mandatory column to fill. Appsheet does not import all the formulas written in excel environment, so may as well use internal expressions for the formula part.

Slice

Slice is a filtered part of a column as we define for specific functionality. Apart from excel formulas, again in case of conflict we can use internal expressions. Basically, application illustrate what we define as UX panel.

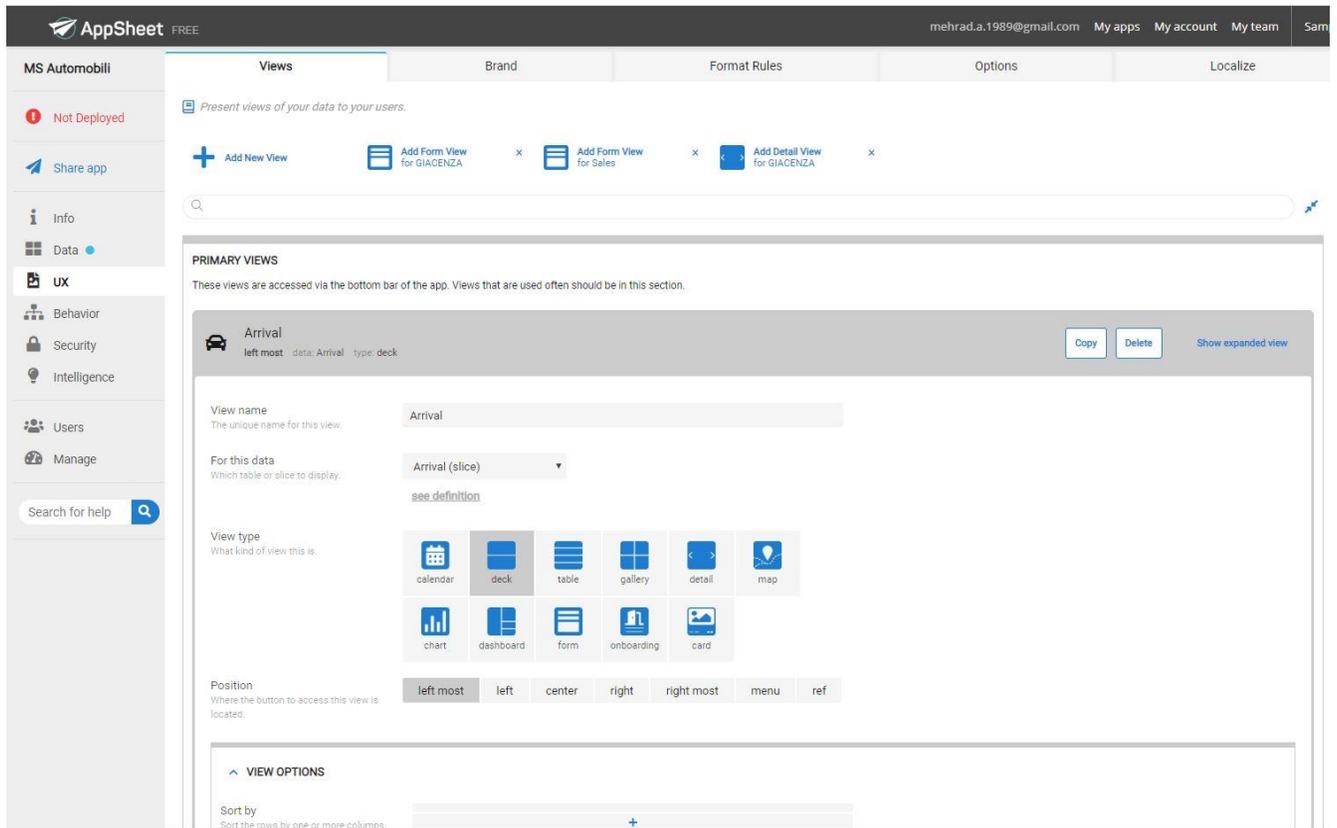
The screenshot displays the AppSheet configuration interface for a table named 'Arrival'. The 'Slices' tab is active, showing the following configuration:

- Slice Name:** Arrival
- Source Table:** GIACENZA
- Row filter condition:** (Empty)
- Slice Columns:** A list of columns is shown under the 'Custom' tab, including: _RowNumber, TARGA, MARCA, MODELLO, ALLESTIMENTO, KM, DOT, ARRIVO, FATT. TRASP., STATO, and LIBR.

On the right side, a preview of the application is shown, displaying a list of car records with columns for license plate, brand, and model. The records include: ZA289RS (LAND ROVER), ZA583SB (TOYOTA), EX798DD (OPEL), DM180AA (BMW), ZA372PG (LAND ROVER), and DA706DD (FIAT). A red plus sign indicates the option to add a new record.

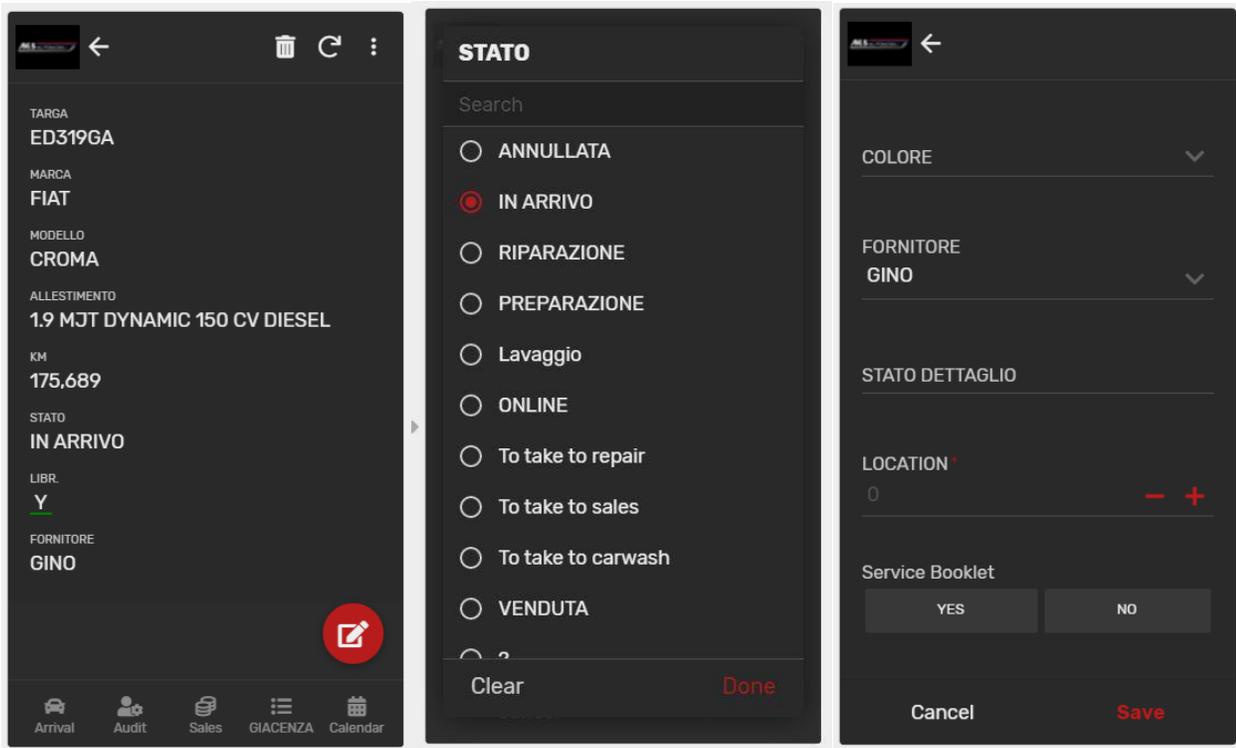
UX panel

Here is the main part of creating application. By referencing the predefined slice, data are available to the interface. UX panel is also used for design part as well. The layout of application and the positions of sub-applications are done here. One upload company or application logo from here and assign certain structure to an application.



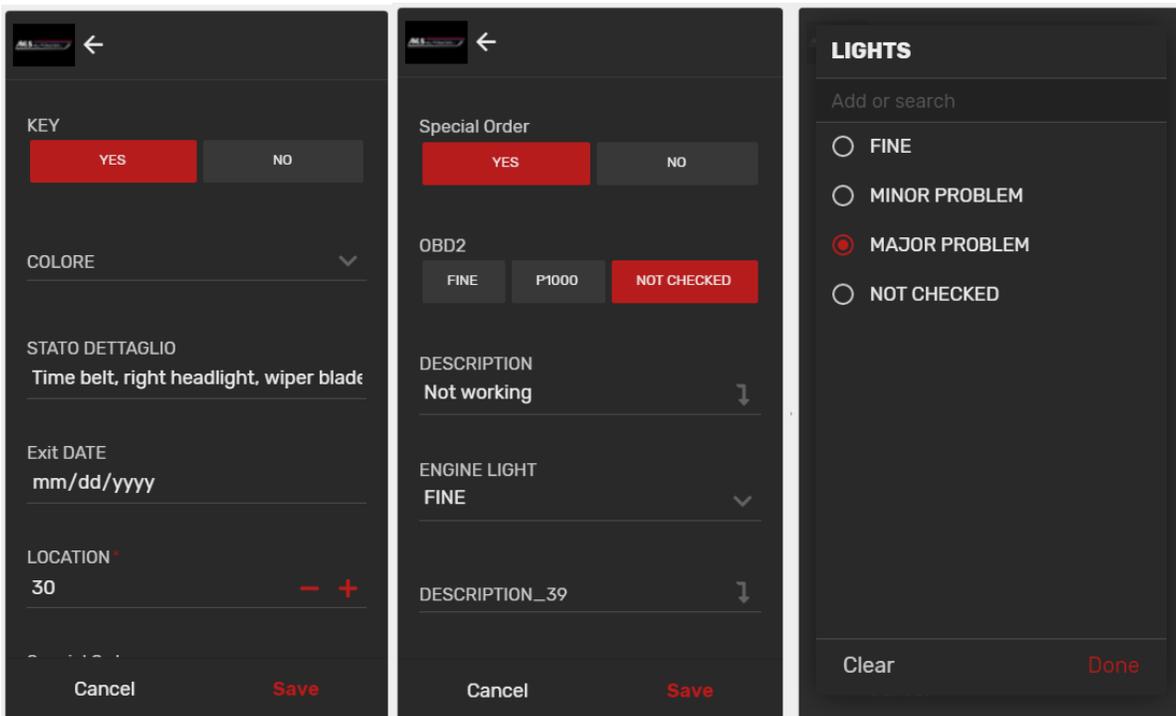
Arrival App

The arrival team would start by entering to their interface to update the case. In this way GO can utilize next steps in the process. By changing the status of arrival cars, new lists would be available on GO as we have already defined filtered columns for that part. Other circumstances are being check as well like mileage or service booklet.



Audit App

The audit team is there, ready to control all technical aspects of arrival cars according to purchase proposal. This process would activate the control panel for sales department.



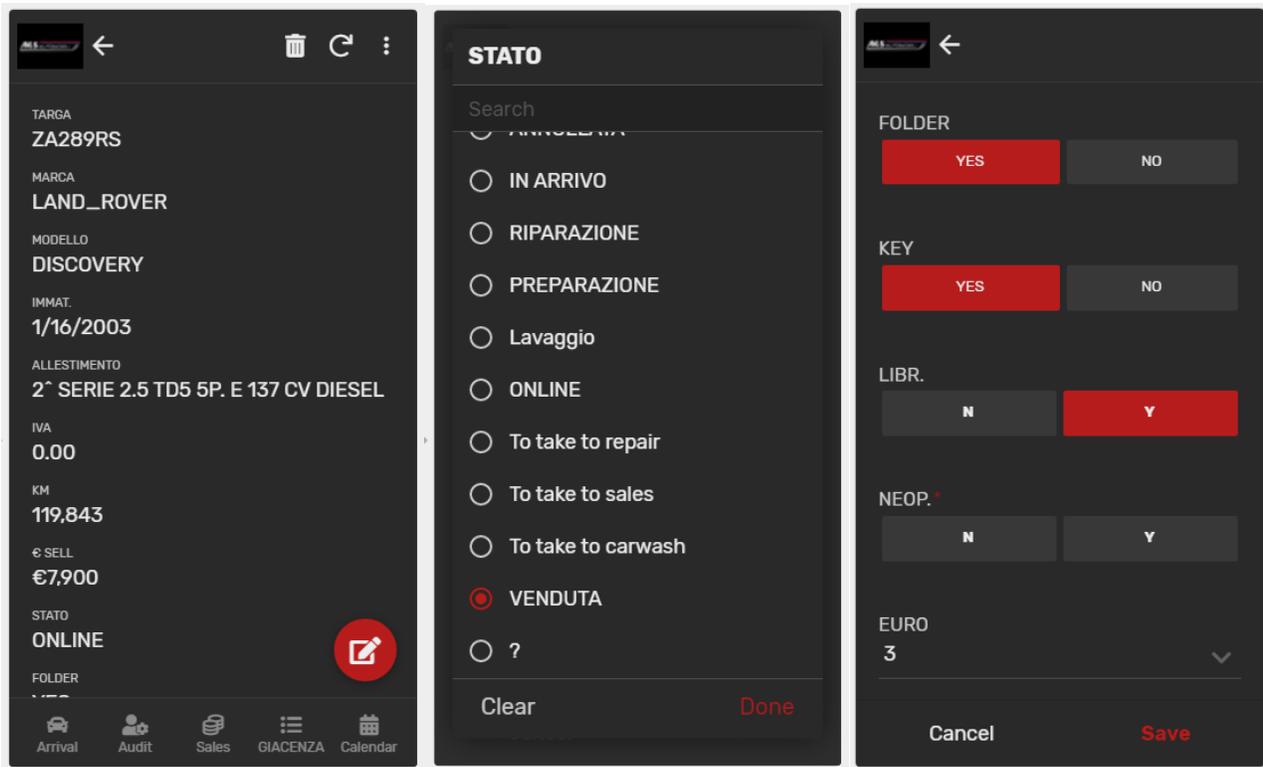
Sales Control Panel

The results are uploaded directly on GO utilizing the control panel for all, specifically the salespersons. By entering the plate number, this interface would extract data and illustrate them with conditional colors and notification system. Other than that, Audit app would update the special-order list in case needed, utilizing procurement team.

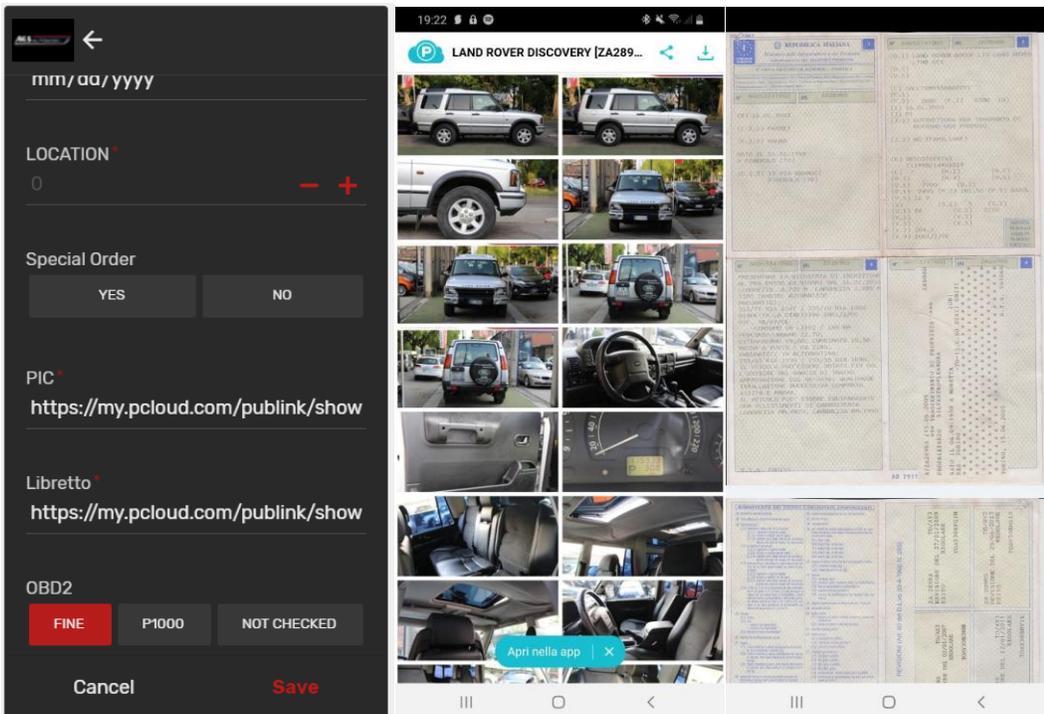
=CONCAT(GIACENZA!A1;INDEX(GIACENZA!AO:AO;MATCH(CONTROL!A1;GIACENZA!A:A;0)))										AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
CB749XA			TOYOTA			RAV 4			SERVICE BOOKLE T	SECOND KEY YES	BMW RECORD S	LIBRETT O YES	LOCATIO N 30	SPECIAL ORDER YES					
Time belt, right headlight, wiper blades, flat tire						0			MINOR PROBLEM			COOLANT SYSTEMNeeds refill							
0						0			MINOR PROBLEM			COOLANT SYSTEMNeeds refill							
NOT CHECKED	OBD2Not working		FINE	ENGINE LIGHT	FINE	ABS LIGHT	FINE	AIR BAG LIGHT	FINE	SEATBELT	FINE	HOOD FRAME & DEFENDER							
FINE	BRAKE MASTER CYLINDER		MINOR PROBLEM	POWER STEERING OILNeeds refill	FINE	OIL RESERVE	MINOR PROBLEM	OIL DEEPSTICKBlack oil	NOT CHECKED	TRANSMISSION FLUID	MINOR PROBLEM	HOSESAir filter loose							
MAJOR PROBLEM	BELTSTime belt needs replacing		NOT CHECKED	EXHAUST SMOKE	FINE	ENGINE MOVEMENT	NOT CHECKED	ENGINE AIR PULSE CHECK	FINE	WATER PUMP	FINE	ENGINE RUNNING SPEED AND SOUND							
FINE	SEATS		FINE	FLOOR MAT	FINE	PEDAL RUBBER	MINOR PROBLEM	SPARE TIREAir refill	MINOR PROBLEM	CAR KEY BATTERY change	MINOR PROBLEM	ELECTRIC BOTTONSRight window not working							
MINOR PROBLEM	AIR CONDITIONGas refill		FINE	SUN ROOF	FINE	HAND BRAKE	MAJOR PROBLEM	WIPER FLUIDBlades are broken	MAJOR PROBLEM	LIGHTSRight headlight broken	FINE	MAGNET TEST							
NOT CHECKED	SUSPENSION		FINE	BRAKE FLUID	MAJOR PROBLEM	TIRERear left flat	FINE	CRUISE CONTROL	MINOR PROBLEM	STEERING WHEELWeird sound	MINOR PROBLEM	HORNCan't barely heard							

Sales App

Extracting valuable information of cars in showroom while talking to a customer without going back to office to check the paper folders, was almost a dream for salespersons at MS Automobili. Using Sales app, not only they do not waste time with a customer, they directly update and close a contract next to the car that customer is willing to buy.



Not only they can check required information, Sales app utilizes links to photos, videos, car documents (libretto, service booklet, bollo receipt etc.) uploaded on pcloud.



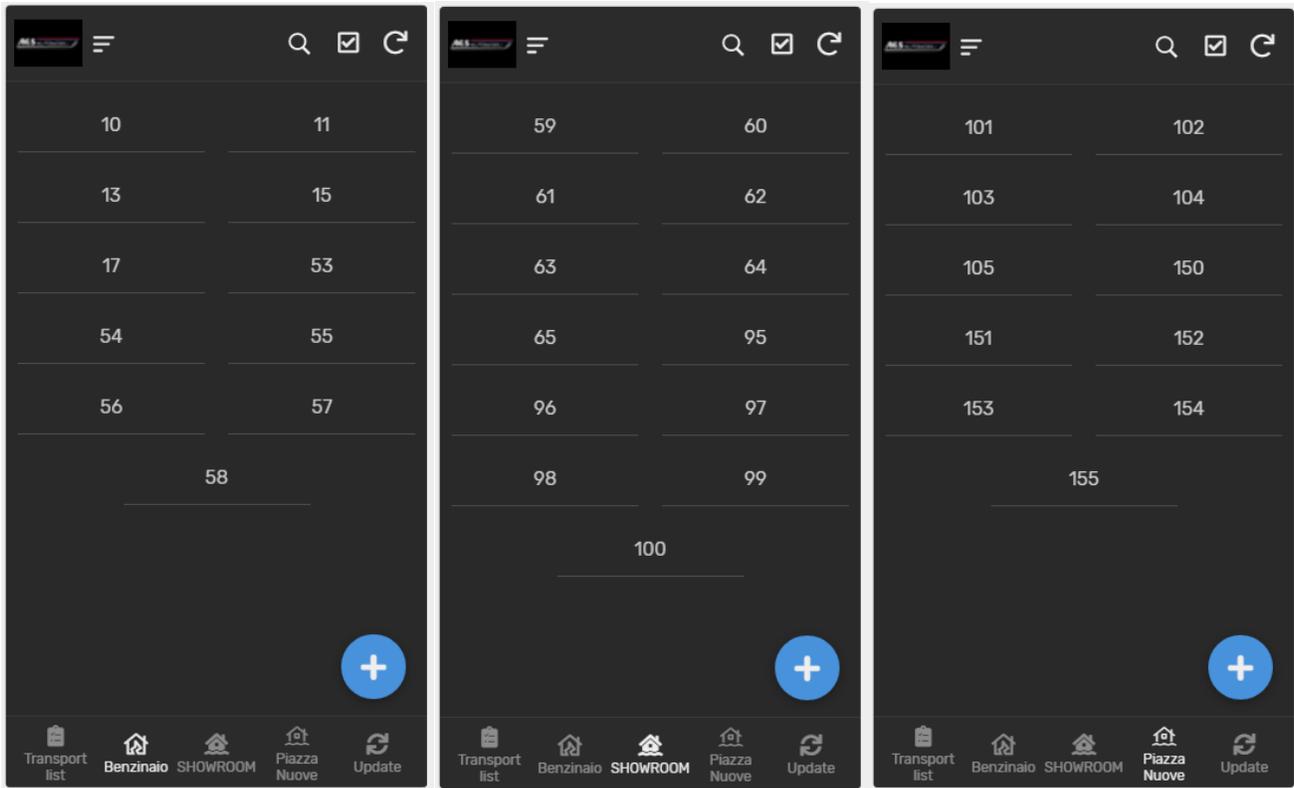
Arrival Transport Schedule App (ATSA)

As the status of arrival cars is registered, the transportation schedule would automatically choose the cars needed to be transported to other places like carwash, repair center, showroom, etc. On the other hand, there is a limit of parking spots available. The algorithm written for GO utilizing the new transportation list would be explained step by step: The three possible destination of arrival cars have limited capacity. As regular transports made by transportation team (moving cars for several reasons is a routine of a car dealership) updates the location column in GO, ATSA would compare the list of existing posts (whether occupied or vacant) to location column, using SUMPRODUCT formula. To complete the comparison, I needed a name range representing the occupied list.

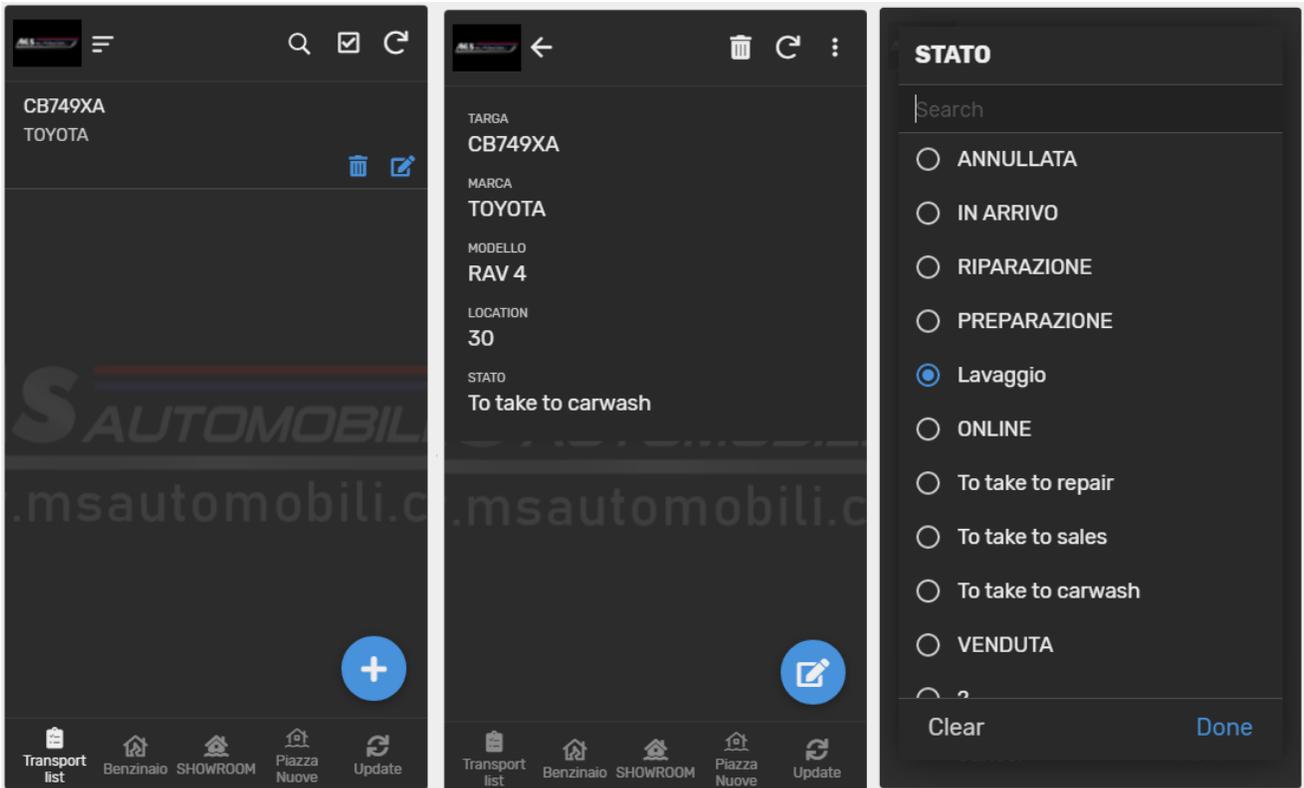
AF	AG	AH	AI
LOCATION	Special Orde	PIC	Libretto
14			
16	Name Manager - Refers to: ? X		
	=GIACENZAISAF:SAF		
18			
19			
20			
21			
22			
23			
24			
25			
26			

B2		=(SUMPRODUCT(--(A2=LOCATION))>0)						
	A	B	D	E	F	G	H	I
1	Spot	Update						
2	1	TRUE						
3	2	TRUE						
4	3	TRUE						
5	4	TRUE						
6	5	TRUE						
7	6	TRUE						
8	7	TRUE						
9	8	TRUE						
10	9	TRUE						
11	10	FALSE						
12	11	FALSE						

So, TRUE means the spot number 1 is occupied. What ATSA does is that it would filter only the FALSE value rows (considering the current vacancy status is being update real-time using cloud solution). In this way, the transportation team would have an updated list of vacant choices on their application.



The new transportation list would be updated accordingly.



Documentation

C4 X ✓ fx =INDEX(GIACENZA!B2:B9985;MATCH(COPERTINA!C7;GIACENZA!A2:A9985;0))

P.S.	DEL	
MARCA	FIAT	PANDA
ALLESTIMENTO	1.2 2ª SERIE DYNAMIC SOUND 60 CV BENZINA	
TARGA	CX534KN	
ANNO	9/2005	
KM	160.000	
PREZZO	2.300 €	
DOPPIE CHIAVI	YES	EURO 3
LIBRETTO	YES	NEOPATENTATI YES
SCADENZA REVISIONE	SCADENZA BOLLO	IVA
apr-21	ago-20	
ACQUISTO	COLORE	TAGLIANDI
NOVELLI	NERO	

Now all the folders are printed through GO, documents are scanned and uploaded on pcloud and are available from MS application.

Price Tag

D27 X ✓ fx =INDEX(DATABASE!H2:H1003;MATCH(INTESTAZIONE!M8;DATABASE!A2:A1003;0))

smart
fortwo
fortwo 700 coupÃ© passion (45 kW)

ANNO: 2005
C/C: Cerchi in lega 15
61
KM: 125.000
EURO4
2.300 €
CV129BV

www.msautomobili.com

SCRIVI LA
TARGA

G4 X ✓ fx

MARCA	LOGO
ABARTH	
ALFA_ROMEO	
ASIA_MOTORS	
AUDI	
BENTLEY	
BMW	
CADILLAC	
CHEVROLET	
CHRYSLER	
DS	
CITROEN	
DACIA	
DAEWOO	
DAIHATSU	
DODGE	
DR_AUTOMOBILES	
FERRARI	

Name Manager

Name	Value	Refers To	Scope	Comment
ABARTH		=MARCHE!\$B\$2	Workbo...	
ALFA_ROMEO		=MARCHE!\$B\$3	Workbo...	
ASIA_MOTORS		=MARCHE!\$B\$4	Workbo...	
AUDI		=MARCHE!\$B\$5	Workbo...	
BENTLEY		=MARCHE!\$B\$6	Workbo...	
BMW		=MARCHE!\$B\$7	Workbo...	
CADILLAC		=MARCHE!\$B\$8	Workbo...	
CHEVROLET		=MARCHE!\$B\$9	Workbo...	
CHRYSLER		=MARCHE!\$B\$10	Workbo...	
CITROEN		=MARCHE!\$B\$12	Workbo...	
DACIA		=MARCHE!\$B\$13	Workbo...	
DAEWOO		=MARCHE!\$B\$14	Workbo...	
DAIHATSU		=MARCHE!\$B\$15	Workbo...	
DODGE		=MARCHE!\$B\$16	Workbo...	

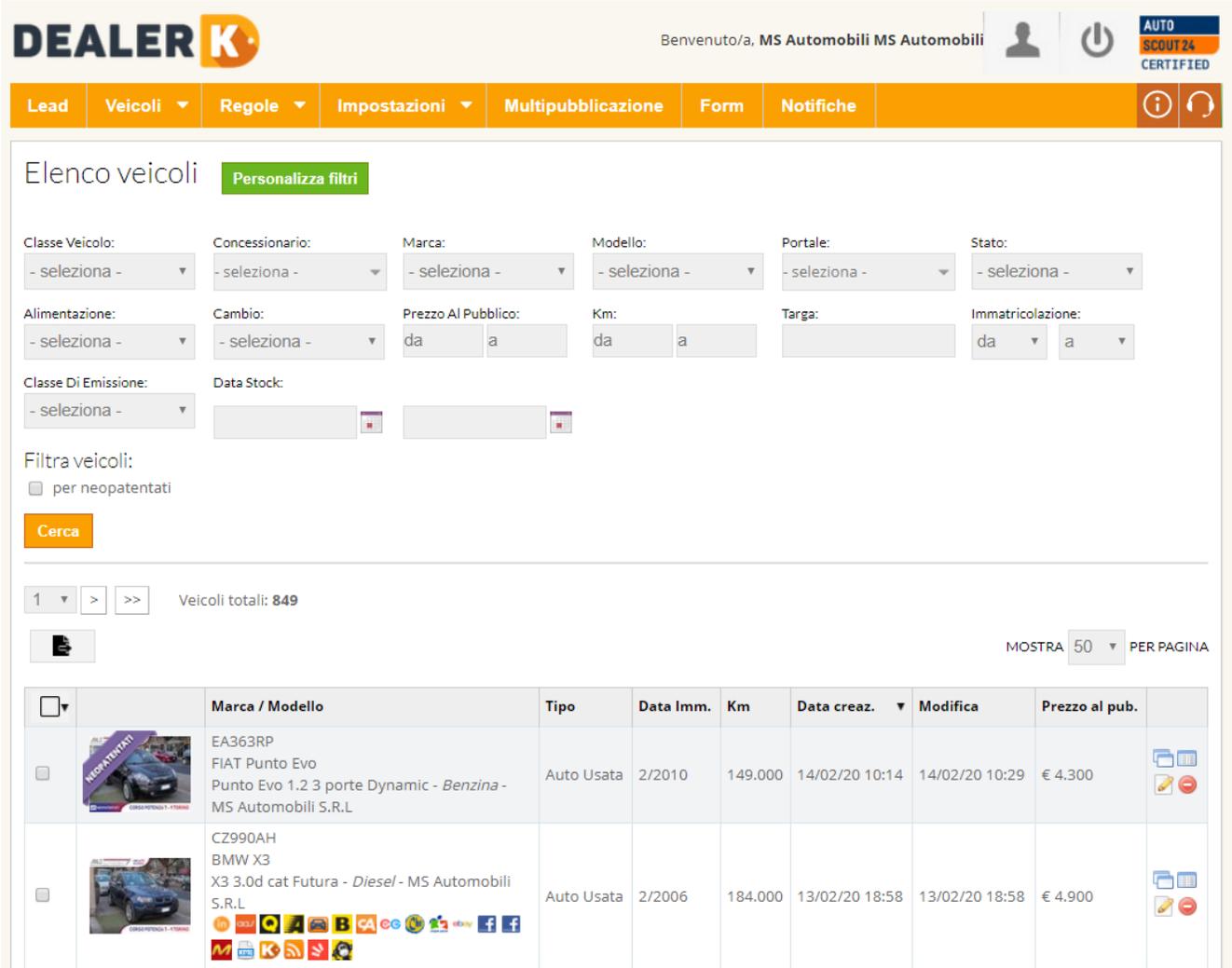
Refers to: =MARCHE!\$B\$8

INTESTAZIONE UPDATE SHEET MARCHE DATABASE

DealerK

As mentioned before, DealerK is a multi-publication interface utilizing numerous online markets to create an announcement. Basically, for creating the main announcement, one must fill out a web form to upload required information on DealerK.

Since I found this opportunity to use such platform, I figured it is worth mentioning it.



The screenshot displays the DealerK website interface. At the top, there is a navigation bar with the DealerK logo, a user profile icon, a power icon, and an 'AUTO SCOUT 24 CERTIFIED' badge. Below the navigation bar is a menu with options: Lead, Veicoli, Regole, Impostazioni, Multipubblicazione, Form, and Notifiche. The main content area is titled 'Elenco veicoli' and includes a 'Personalizza filtri' button. The filter section contains several dropdown menus for 'Classe Veicolo', 'Concessionario', 'Marca', 'Modello', 'Portale', and 'Stato'. There are also input fields for 'Alimentazione', 'Cambio', 'Prezzo Al Pubblico', 'Km', 'Targa', and 'Immatricolazione'. A 'Cerca' button is located below the filters. Below the search section, there is a pagination control showing 'Veicoli totali: 849' and a 'MOSTRA 50 PER PAGINA' option. The main table lists two vehicles:

<input type="checkbox"/>	Marca / Modello	Tipo	Data Imm.	Km	Data creaz.	Modifica	Prezzo al pub.	
<input type="checkbox"/>	 EA363RP FIAT Punto Evo Punto Evo 1.2 3 porte Dynamic - Benzina - MS Automobili S.R.L.	Auto Usata	2/2010	149.000	14/02/20 10:14	14/02/20 10:29	€ 4.300	
<input type="checkbox"/>	 CZ990AH BMW X3 X3 3.0d cat Futura - Diesel - MS Automobili S.R.L.	Auto Usata	2/2006	184.000	13/02/20 18:58	13/02/20 18:58	€ 4.900	

Macros developed in VBA can fill and submit web forms from excel data. Unfortunately, this project (creating excel macro fed by GO) wasn't accomplished lacking a programmer onboard. So far so good,

the process of creating an announcement was being done much faster thanks to simultaneous announcement publish and GO database (there were no missing data anymore).

DEALER K Benvenuto/a, MS Automobili MS Automobili AUTO SCOUT 24 CERTIFIED

Lead Veicoli Regole Impostazioni Multipubblicazione Form Notifiche

Inserisci una nuova auto

Seleziona il veicolo Libera Cambia stato

* TIPO: - seleziona - * DATA IMMATRICOLAZIONE: - mese - / - anno - * DATA DI PRODUZIONE: - mese - / - anno -

* MARCA: - seleziona - SIGILLO: - seleziona - * MODELLO: - seleziona - TUTTI I MODELLI

* ALIMENTAZIONE: - seleziona - * CARROZZERIA: - seleziona -

* ALLESTIMENTO: Specifica l'allestimento manualmente TUTTI GLI ALLESTIMENTI

Continua

Prezzi e listini >

Dati tecnici >

Dettagli veicolo >

Descrizione veicolo >

Equipaggiamenti >

Foto e Video >

Salva

Veicolo importabile

RIEPILOGO

Allestimento:
Tipo:
Alimentazione:
Carrozzeria:
Cambio: / N° marce:
Trazione:
Potenza KW/CV: / Potenza KW/CV:
Cilindrata:
Porte:
Posti:
Classe di emissione:
Data inserimento:
Data ultima modifica:

Leads

Leads are clues of customers clicking on an announcement. DealerK would record their email address, phone number, website visited etc. (with their authorization of cookies) exporting them as an excel file. Digital marketing analytical reports would be available based on the exported file.

There will be an operator working with DealerK to distribute leads between salespersons, sending them required information to contact customers.

Alert Tutti

TIPO	TC	CLIENTE	VENDITORE	SCADENZA
W	-	andrea	D. Ivan	07:27
W	-	andrea Di Mauro	D. Ivan	07:27
W	-	Nassif	D. Ivan	07:27
W	-	Disumma Nazario	Ciuffreda Matteo	09:02
W	-	damir	Ciuffreda Matteo	09:02
W	-	- mehdi Mobile	Ciuffreda Matteo	09:02
W	-	Carrucciu Mirko	Ciuffreda Matteo	09:12
W	-	Benevento Michele	Ciuffreda Matteo	09:12
W	-	Alberto Atzeni	Ciuffreda Matteo	09:12
W	-	Martina Stagni	Ciuffreda Matteo	09:27
W	-	Francesco	Ciuffreda Matteo	09:38

LEAD16655 AutoWeb 14:23

Contatto da web - CarGurus.it | 14/02/2020 00:10 LINK EMAIL ORG

Sede di MS Automobili (c.so Potenza) (Corso Potenza, 7)

Venditore <input type="text" value="R. Emanuele - MS Automobili (c.so Potenza)"/>	Caller <input type="text" value="R. Emanuele"/>	Numeri di Telefono <input type="text" value="XXXXXXXXXX"/> <input type="text" value="Altro tel."/>	E-mail ✉ <input type="text" value=""/>
Località cliente Grugliasco	Marca/modello Preventivo - Usato - Audi 2009 Q5 170 CV quattro	Data inizio alert 14/02/2020 07:02	Data scadenza alert 14/02/2020 09:02

Descrizione richiesta

Commento: Mi interessa 2009 Audi Q5 170 CV quattro. Desidero essere contattato via email all'indirizzo it_3vsmhh2qs@anon.cargurus.com in qualsiasi momento Grazie.

Tentativi di chiamata: 0

Azioni

NON RISPONDE/NON RAGGIUNGIBILE NUMERO INESISTENTE HA RISPOSTO - PIANIFICA

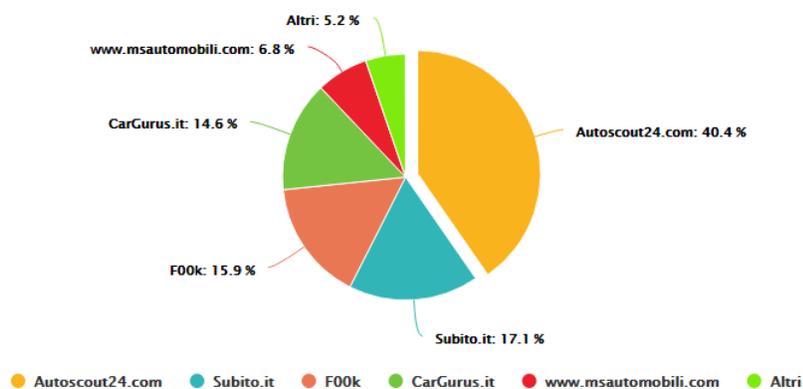
CRM

From the time a car is sold, the CRM spreadsheet is updated with a 30-day alarm to track the car's condition after sales, making a good impression of the company. Based on the technical checks on arrival cars, there must be no surprise after selling the car.

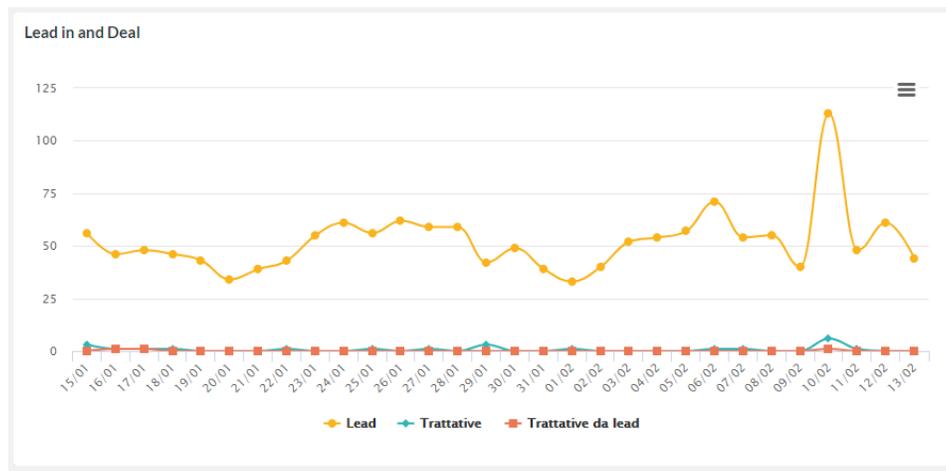
A	B	C	D	E	F	G	H	I	J	K
id	Stato Crm	Data di creazione	Stato	Azienda/Privato	Channel	Nome	Cognome	Telefono	Cellulare	Email
1	1927634	14-02-2020 10:20:01	Nuovo	Privato	F00K	Gabriel Ionut	Nistor	+393515255574		nistor26@gmail.com
2	1927011	13-02-2020 23:43:31	Nuovo	Privato	F00K	Mirko	Carruciu	+393489718096		mirkocarruciu@gmail.com
3	1926949	13-02-2020 23:12:06	Nuovo	Privato	https://www.msautomobili.com	Michele	Benevento	3474106375		beneventomichele3@gmail.com
4	1926258	13-02-2020 18:14:07	Nuovo	Privato	https://www.msautomobili.com	Patrizia	Sacco	3299812685		pattysacco@gmail.com
5	1925949	13-02-2020 16:23:10	Nuovo	Privato	https://www.msautomobili.com	Carlo Alberto	Miele	3473245811		alby1087@gmail.com
6	1925923	13-02-2020 16:13:56	Nuovo	Privato	https://www.msautomobili.com	tabacchi	nicola	3396516865		nick.carter6@libero.it
7	1925790	13-02-2020 15:14:25	Nuovo	Privato	https://www.msautomobili.com	ANDREA	TRAPANI	3494312098		ANDREATRAPANI1989@GMAIL.COM
8	1925643	13-02-2020 14:20:53	Nuovo	Privato	F00K	Terry	Bazan	+393894425206		terrybazan30@hotmail.com
9	1925638	13-02-2020 14:16:53	Nuovo	Privato	F00K	Mohamed	Lamnaour	+393287019257		ammara740@hotmail.it
10	1925421	13-02-2020 13:08:40	Nuovo	Privato	https://www.msautomobili.com	Domenico	Riaca'	3498544126		domenico.riaca@gmail.com
11	1925406	13-02-2020 13:05:35	Nuovo	Privato	https://www.msautomobili.com	Stefano	Boccardo	3463546576		sboc65@gmail.com
12	1924736	13-02-2020 10:09:37	Nuovo	Privato	F00K	Beppe	Falci	+393486400973		direzione@italianavalvoleindustriale.it
13	1924672	13-02-2020 09:37:34	Nuovo	Privato	F00K	Abdelaziz	Antar	+393292954036		abdelaziz1133@gimel.com
14	1924527	13-02-2020 08:49:54	Nuovo	Privato	https://www.msautomobili.com	BRUNO	RIGHETTONI	3335254064		brunorig1@nwind.it
15	1924256	13-02-2020 02:58:43	Nuovo	Privato	https://www.msautomobili.com	Patrizia	Sacco	3299812685		pattysacco@gmail.com
16	1923520	12-02-2020 20:01:42	Nuovo	Privato	F00K	Marian	Dragoi	+393209273118		dragoi.marianalessia@gmail.com
17	1923056	12-02-2020 17:22:38	Nuovo	Privato	F00K	Elio	Conforti	+393894904565		antonio.elio@hotmail.it
18	1922869	12-02-2020 16:16:07	Nuovo	Privato	F00K	Sandra	Noto	+393383951191		sandra.pragelato@gmail.com
19	1922819	12-02-2020 15:54:48	Nuovo	Privato	https://www.msautomobili.com	VINCENZO	Di Lauro	3345407710		mad.washer@gmail.com
20	1922386	12-02-2020 13:22:25	Nuovo	Privato	https://www.msautomobili.com	Federico	Guercio	3401515857		federico.guercio@gmail.com
21	1922342	12-02-2020 13:07:39	Nuovo	Privato	F00K	Anna	Traversi	+393407083583		annnnna.tr@gmail.com
22	1921379	12-02-2020 07:36:51	Nuovo	Privato	https://www.msautomobili.com	Simone	Pichini	3461267715		simone.pichini@hotmail.it
23	1919320	11-02-2020 19:41:30	Nuovo	Privato	https://www.msautomobili.com	Antonio	De Meo	3495271735		antonio82_adm@gmail.com
24	1919249	11-02-2020 19:16:03	Nuovo	Privato	https://www.msautomobili.com	giemme sas	manias	3394395002		giemme.manias@libero.it
25	1919037	11-02-2020 17:57:13	Nuovo	Privato	F00K	Cornelia	Butacel	+393465417481		corneliasciandra@gmail.com
26	1918542	11-02-2020 14:56:05	Nuovo	Privato	F00K	Federico	Moretti	+393453291891		chiccomoretti91@hotmail.it
27	1917905	11-02-2020 11:14:49	Nuovo	Privato	https://www.msautomobili.com	Marisa	Berardi	3288432686		meiguuyuan@gmail.com
28	1917791	11-02-2020 10:28:29	Nuovo	Privato	F00K	Simo	Simo	+393881292934		amir_2111@hotmail.it
29	1917230	11-02-2020 00:50:47	Nuovo	Privato	F00K	Gheorghie	Dehelean	+393279797877		minchiachilignu@gmail.com
30	1916982	10-02-2020 22:05:29	Nuovo	Privato	https://www.msautomobili.com	Raffaella	Fancullo	3277667502		raffaella.fancullo@gmail.com
31	1916700	10-02-2020 20:36:28	Nuovo	Privato	F00K	Giuseppe	Grillo	+393663288365		pinogrillo1969@gmail.com
32	1916563	10-02-2020 19:49:28	Nuovo	Privato	F00K	Senad Hana	Kadic	+393248799165		autotrasportikadic@hotmail.it
33	1916389	10-02-2020 18:54:49	Nuovo	Privato	F00K			+393270326272		hakimsalah1999@gmail.com
34	1916278	10-02-2020 18:28:38	Nuovo	Privato	https://www.msautomobili.com	Daniele	Savella	3667191052		gepposailor5@gmail.com
35	1916027	10-02-2020 17:10:07	Nuovo	Privato	https://www.msautomobili.com	Nicola	Palagi	3276690091		Palagnicola8@gmail.com
36	1915706	10-02-2020 15:22:22	Nuovo	Privato	F00K	Mariana	Simion	+393806875821		Catalea@gmail.com
37	1915538	10-02-2020 14:32:19	Nuovo	Privato	F00K	Laura	Oppedisano	+393385707739		lauraoppedisano1980@gmail.com
38	1915280	10-02-2020 13:25:24	Nuovo	Privato	F00K	Sam	Abou	+393914933090		abou.el.enain79@gmail.com
39	1915160	10-02-2020 12:51:49	Nuovo	Privato	https://www.msautomobili.com	Antonio	Lauria	3889917270		antoniolauria78@virgilio.it
40	1915135	10-02-2020 12:37:07	Nuovo	Privato	F00K	Daniele	Lucchitto	+393393424643		Lucchitodaniele@gmail.it
41	1915019	10-02-2020 12:08:22	Nuovo	Privato	F00K	Med Wahbi	Zaabani	+393208386765		w_blacky@hotmail.fr
42	1914728	10-02-2020 10:53:08	Nuovo	Privato	F00K	Miloud	Ennaoum	+393394720818		miloud.ennaoum@gmail.com
43	1914727	10-02-2020 10:53:05	Nuovo	Privato	F00K	Seddik	Sadraoui	+393331471132		saddiksadraoui78@gmail.com
44	1914720	10-02-2020 10:53:01	Nuovo	Privato	F00K	Maicol	Ermacora	+393703756195		maicolermacora@yahoo.it
45	1914716	10-02-2020 10:52:58	Nuovo	Privato	F00K	Dan	Finutu	+393899143722		senciuodaniel819@gmail.com
46	1914715	10-02-2020 10:52:55	Nuovo	Privato	F00K	Fabio	Moschin	+393496567509		fax12381@libero.it
47	1914713	10-02-2020 10:52:51	Nuovo	Privato	F00K	Destino	Salvatore	+393355903652		salvodestino@libero.it
48	1914711	10-02-2020 10:52:48	Nuovo	Privato	F00K	Papi	Hazizaj	+393927178387		Paphazizaj@gmail.com

Statistics

The share of each website of total arrived leads:



Daily reports indicating number of users visiting announcements and do a click.

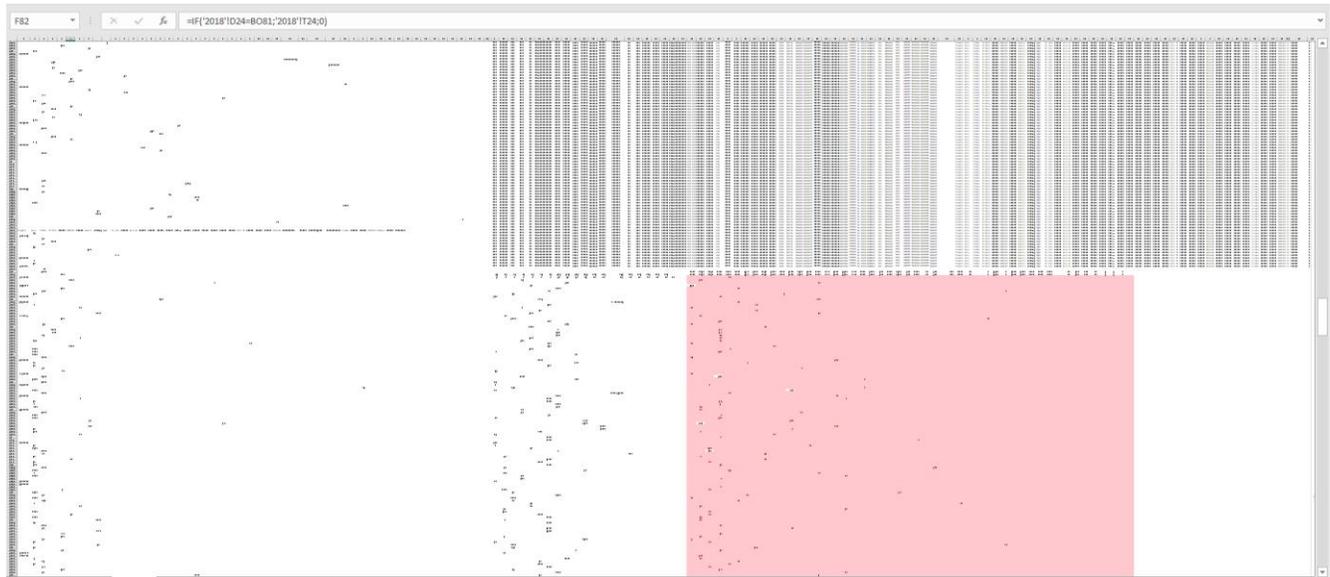


Analysis

As I started in MS January 2019, there was no such records of data like GO, what I did was creating tables including required information for analytical reports. This process required entering data manually from more than 1200 cases of sales for 2018. To implement those analysis that I had in mind, I chose the hard way of some may mention it as excel slave, but it was worth it. These results were by far more accurate and informative than what the top-level management had in mind. This spreadsheet later formed the very basic idea of GO as I got to know Excel features and abilities. I started analysis by entering financial, brand, suppliers, enter/exit dates etc. data in a spreadsheet.

	A	B	C	D	E	F	H	I	K	L	Q	R	S	T
1	R. FAT	TARGA	p. vendita	MARCA	MODELLO	ANNO	Fornitore	F. ACQUISTO	p. acquisto	F. VENDITA	GIACENZA	Utile	Perdita di valore due all'inflazione	U netto/T
965	964	ER562YE	€ 18.000,00	AUDI	A6	2013	FC Motors	14/10/18	€ 18.000,00	15/11/18	31		0,084015735	€ (0,08)
966	965	CS445XA	€ 5.500,00	BMW	X3	2005	biAuto	16/7/18	€ 4.120,00	3/10/18	77		0,208684246	€ 1.379,79
967	966	CS828CE	€ 1.100,00	FORD	TOURNEO	2005	Privato	19/3/18	€ 1.400,00	30/7/18	131		0,355034236	€ (300,36)
968	967	EF434AC	€ 2.990,00	FIAT	PUNTO EVO	2010	DELUXE & ALTEA	17/9/18	€ 2.300,00	4/10/18	17		0,046073145	€ 689,55
969	968	DX969YY	€ 7.700,00	MINI	ONE	2009	biAuto	30/7/18	€ 4.620,00	5/10/18	65		0,176162026	€ 3.079,82
970	969	CS857RH	€ 2.400,00	FIAT	PUNTO	2004	DELUXE & ALTEA	17/9/18	€ 1.000,00	5/10/18	18		0,04878333	€ 1.399,55
971	970	DC152NG	€ 2.900,00	ALFA_ROMEO	147	2006	Privato	20/7/17	€ 500,00	29/8/17	39		0,105697215	€ 2.399,89
972	971	CV003CB	€ 3.500,00	VOLVO	V50	2005	Privato	8/10/18	€ 2.400,00	8/10/18	0		0	€ 1.100,00
973	972	EA082AR	€ 5.000,00	CHEVROLET	CAPTIVA	2010	Gino	10/9/18	€ 4.500,00	9/10/18	29		0,078593365	€ 499,52
974	973	DT384BZ	€ 4.800,00	SEAT	IBIZA	2008	Privato	9/8/18	€ 2.900,00	11/10/18	62		0,168031471	€ 1.899,83
975	974	DN504LS	€ 5.300,00	MINI	ONE	2009	Gino	6/8/18	€ 3.200,00	11/10/18	65		0,176162026	€ 2.099,82
976	975	EJ410KZ	€ 5.200,00	CITROEN	BERLINGO	2011	CARROZZERIA PROJECT	25/7/18	€ 3.500,00	12/10/18	77		0,208684246	€ 1.699,79
977	976	DV055IL	€ 6.250,00	CHEVROLET	CAPTIVA	2009	Gino	30/8/18	€ 3.000,00	12/10/18	42		0,11382777	€ 3.249,89
978	977	DZ012RR	€ 5.480,00	FIAT	500	2010	Target	30/8/18	€ 3.120,00	12/10/18	42		0,11382777	€ 2.359,89
979	978	ES189LJ	€ 18.000,00	LAND ROVER	EVOQUE	2013	Privato	12/10/18	€ 18.000,00	12/10/18	0		0	€ -
980	979	DV699PA	€ 3.000,00	MINI	COOPER	2002	Gino	28/7/18	€ 2.000,00	15/10/18	77		0,208684246	€ 999,79
981	980	ED763RM	€ 2.000,00	FIAT	IDEA	2010	Progetto	22/1/18	€ 3.020,00	12/10/18	260		0,704648103	€ (1.020,70)
982	981	EL672XC	€ 3.000,00	NISSAN	MICRA	2012	AUTO_1	30/4/18	€ 3.207,00	12/10/18	162		0,439049972	€ (207,44)
983	982	DM676KC	€ 1.500,00	FIAT	BRAVO	2008	Gino	28/2/18	€ 2.000,00	12/10/18	224		0,607081442	€ (500,61)
984	983	DE175LZ	€ 1.200,00	FORD	FOCUS	2006	Gino	10/9/18	€ 1.000,00	12/10/18	32		0,08672592	€ 199,91
985	984	BY180TL	€ 1.600,00	TOYOTA	RAV 4	2002	Gino	16/4/18	€ 1.500,00	12/10/18	176		0,476992562	€ 99,52
986	985	DT102SE	€ 2.200,00	FIAT	PANDA	2008	DELUXE & ALTEA	11/9/18	€ 2.000,00	15/10/18	34		0,09214629	€ 199,91
987	986	DR716PZ	€ 1.200,00	FORD	FUSION	2008	CONCE. RENAULT S.R.L	29/11/17	€ 1.600,00	15/10/18	316		0,856418463	€ (400,86)
988	987	DM715KY	€ 1.600,00	OPEL	MERIVA	2008	Progetto	30/11/18	€ 1.920,00	30/11/18	0		0	€ (320,00)
989	988	CP686CV	€ 1.000,00	AUDI	A4	2004	biAuto	8/10/18	€ 920,00	16/10/18	8		0,02168148	€ 79,98
990	989	DS543CP	€ 2.000,00	FIAT	CROMA	2008	Privato	4/9/18	€ 3.500,00	12/10/18	38		0,10298703	€ (1.500,10)
991	990	DX196MV	€ 3.920,00	FIAT	PANDA	2009	Auto Zentrum Torino	5/9/18	€ 2.100,00	3/10/18	28		0,07588518	€ 1.819,92
992	991	DF423AJ	€ 7.900,00	LAND ROVER	FREELANDER	2007	Gino	26/9/18	€ 6.000,00	10/10/18	14		0,03794259	€ 1.899,96
993	992	DD183HF	€ 2.500,00	FIAT	CROMA	2006	Privato	25/9/18	€ 1.000,00	12/10/18	17		0,046073145	€ 1.499,95
994	993	CI323XS	€ 2.650,00	MINI	ONE	2003	Gino	10/9/18	€ 1.000,00	2/10/18	22		0,09662407	€ 1.649,94
995	994	DR587HD	€ 3.000,00	FIAT	500	2008	Privato	9/7/18	€ 4.500,00	12/10/18	93		0,252047206	€ (1.500,25)
996	995	BH334DA	€ 1.500,00	RENAULT	SCÉNIC	2001	CONCE. RENAULT S.R.L	29/1/18	€ 800,00	2/10/18	243		0,658574958	€ 699,34
997	996	DT471ZZ	€ 4.500,00	DODGE	CALIBER	2009	Gino	5/10/18	€ 2.370,00	15/10/18	10		0,02710185	€ 2.129,97
998	997	EW234LZ	€ 18.000,00	AUDI	Q5	2014	Gino	30/8/18	€ 17.000,00	8/10/18	38		0,10298703	€ 999,90
999	998	EW966TT	€ 13.000,00	MERCEDES	B 200 CDI	2014	Gino	30/8/18	€ 11.000,00	11/10/18	41		0,111117585	€ 1.999,89
1000	999	FM555PK	€ 10.300,00	AUDI	A1	2014	Privato	8/8/18	€ 11.500,00	8/10/18	60		0,162611101	€ (1.200,16)

To implement the analysis that I had in mind (since I was an amateur Excel user), I chose the hard way of creating super big tables extracting specific data with IF function (simplest way existed). A long shot of how big the tables were, is show below.

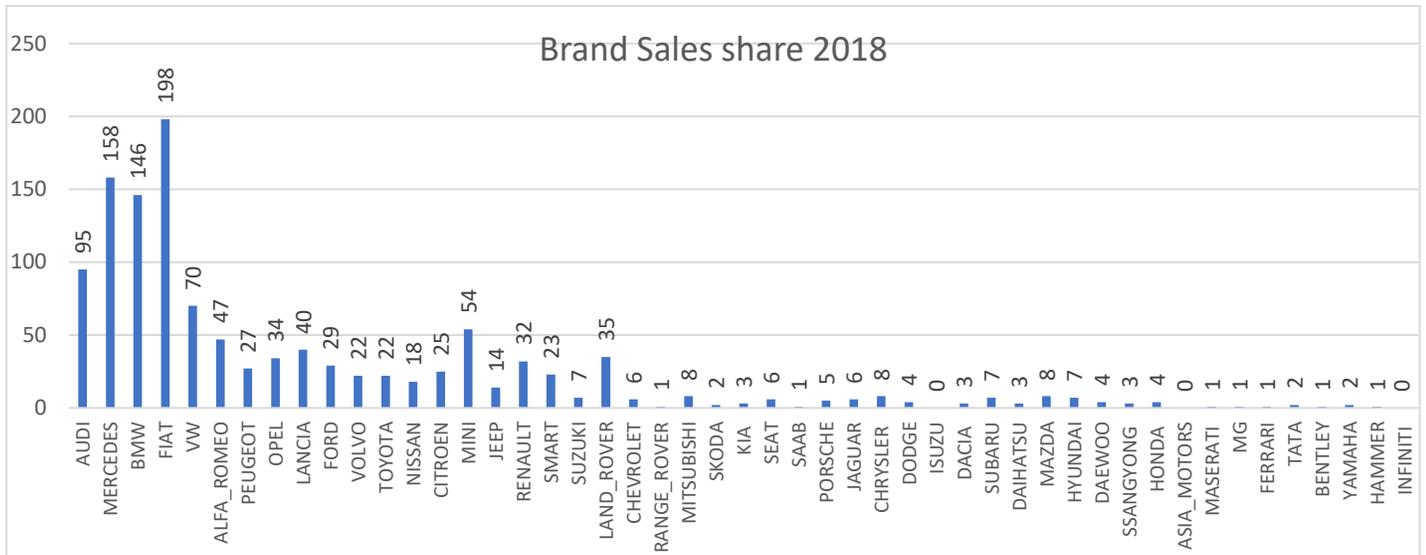


F82																		
=IF('2018!D24=BO81;'2018!T24;0)																		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
52		1194																
53	172259,357	124699	223622	185640	169926	11923	281547	127295	97317	74925	34508	32606	30223	13297	10345	12173	264	
54	172259,357	124699	223622	185640	169926	11923	281547	127295	97317	74925	34508	32606	30223	13297	10345	12173	264	
55	105361,781	659987	325921	17747	64195	107392	46148	218736	45884	47847	6296,5	3999,8	11790	11389	2229,9	5038,6	17	
56	105361,781	659987	325921	17747	64195	107392	46148	218736	45884	47847	6296,5	3999,8	11790	11389	2229,9	5038,6	17	
57	138789,83	253231	212751	249475	95308	72968	40969	48486	53080	31615	35284	30903	20019	43266	74742	27902	424	
58	138789,83	253231	212751	249475	95308	72968	40969	48486	53080	31615	35284	30903	20019	43266	74742	27902	424	
59	AUDI	IEPCDEDE	BMW	FIAT	VW	FA_ROMPEUGEOT	PEL	LANCIA	FORD	VOLVO	TOYOTA	NISSAN	CITROEN	MINI	JEEP	RENAU		
60	#1D2#B;J53;202#BK59;J2#BL59;	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018	#IF(2018
61	0	-1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1699,9	0	
63	899,682308	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
64	0	0	0	0	0	2199,8	0	0	0	0	0	0	0	0	0	0	0	
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
66	0	0	0	0	0	0	0	0	0	0	1680	0	0	0	0	0	0	
67	0	0	0	-630,1	0	0	0	0	0	0	0	0	0	0	0	0	0	
68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-600,8	0	
69	0	0	0	0	0	1639,8	0	0	0	0	0	0	0	0	0	0	0	
70	0	0	0	0	0	0	0	1999,9	0	0	0	0	0	0	0	0	0	
71	1699,85365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
72	0	0	0	0	0	0	0	1549,9	0	0	0	0	0	0	0	0	0	
73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-0,035	0	
74	0	199,93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
76	0	0	0	1409,6	0	0	0	0	0	0	0	0	0	0	0	0	0	
77	399,869911	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
78	0	0	0	0	0	0	0	0	1999,7	0	0	0	0	0	0	0	0	
79	0	0	0	1119,7	0	0	0	0	0	0	0	0	0	0	0	0	0	
80	0	0	0	1519,7	0	0	0	0	0	0	0	0	0	0	0	0	0	
81	0	0	0	1839,9	0	0	0	0	0	0	0	0	0	0	0	0	0	
82	0	0	0	1749,9	0	0	0	0	0	0	0	0	0	0	0	0	0	
83	0	0	0	2869,8	0	0	0	0	0	0	0	0	0	0	0	0	0	
84	2189,77234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
85	0	0	0	0	0	0	0	0	0	1219,9	0	0	0	0	0	0	0	
86	0	0	0	0	799,99	0	0	0	0	0	0	0	0	0	0	0	0	
87	0	0	0	5199,5	0	0	0	0	0	0	0	0	0	0	0	0	0	
88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
89	2543,86178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	709	
91	0	0	0	0	0	0	1879,8	0	0	0	0	0	0	0	0	0	0	
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
93	0	0	0	0	0	0	0	0	0	0	0	0	109,99	0	0	0	0	
94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
95	899,902433	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
96	0	0	0	-0,466	0	0	0	0	0	0	0	0	0	0	0	0	0	
97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
98	0	0	0	2000	0	0	0	0	0	0	0	0	0	0	0	0	0	
99	0	0	0	6119,9	0	0	0	0	0	0	0	0	0	0	0	0	0	
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
101	0	0	0	0	0	0	0	0	0	0	0	99,26	0	0	0	0	0	
102	0	0	0	0	499,73	0	0	0	0	0	0	0	0	0	0	0	0	
103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	899	
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
105	0	0	0	499,73	0	0	0	0	0	0	0	0	0	0	0	0	0	

The results are shown in the graphs below.

Brands

Number of cars sold based on brand division. Since MS Automobili was offering wide variety of choices, this graph shows a clear tendency of used car choices in Turin. Since the technical features of products (Year of production, KM etc.) offered were the same, this graph can clarify focus of future purchases according to market's tendency.



Quantity vs Quality

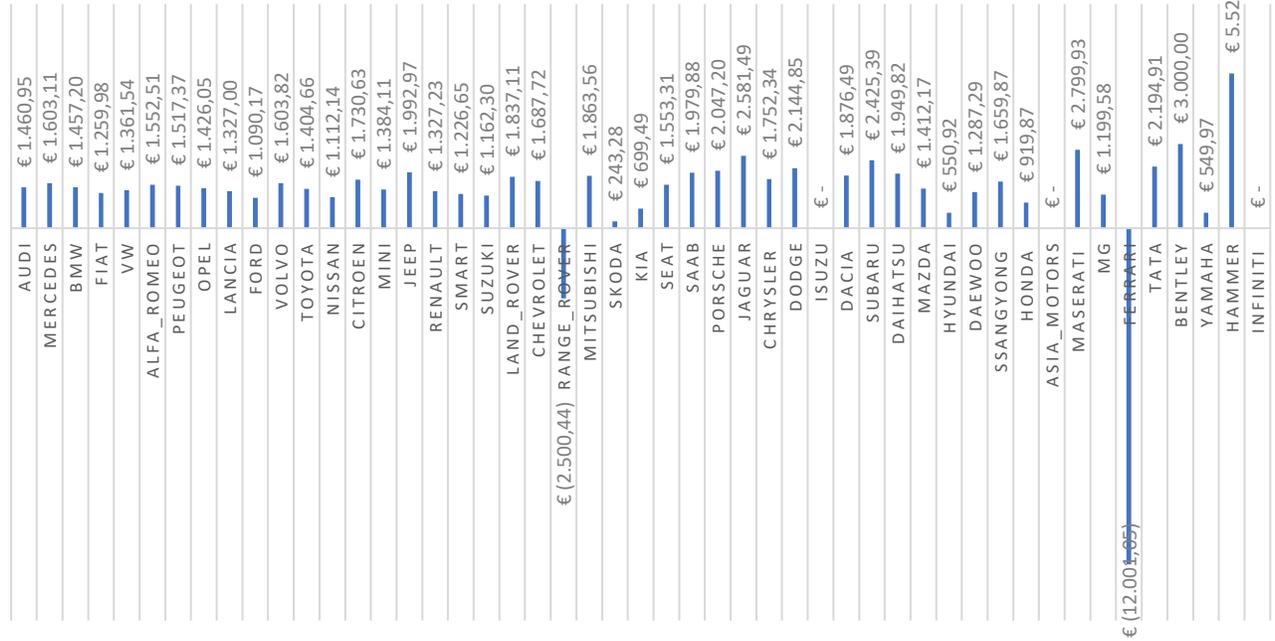
Fiat vs. Mercedes. Whether to sell more for less profitable products or to sell less for more profitable? Interesting trade off situation where top level management must decide whether to buy more Fiat at low price or less Mercedes at high price. Other comparisons are available as well, like for BMW vs. Mercedes: $146 < 158$ sold cases with respect to $212k€ < 253k€$ net profit. This graph combine with previous graph shows for example in average for each BMW we make a profit of 1,400 € while for a Mercedes we have 1,600 €. The average profit for Fiat would be 1.200 €. Considering customers' desire, these graphs help make better choices from suppliers.



So many observations are there. Average profit of Jaguar for example which is 2.500 €. This would also question whether it is better to offer this wide range of choices or it would be better to focus on one or two brands only.

To answer this question, I searched the market for monopolists of each brand. I understood there are big players dealing specifically focusing on a unique brand. Companies like GINO or biAuto group etc. After a meeting with directors, I suggested focusing on services and becoming a trustworthy base for car dealing rather than becoming well known for a certain brand of car, since we did not have the credits and more importantly communication channels required. Focusing on lock-in customers, GO project was born.

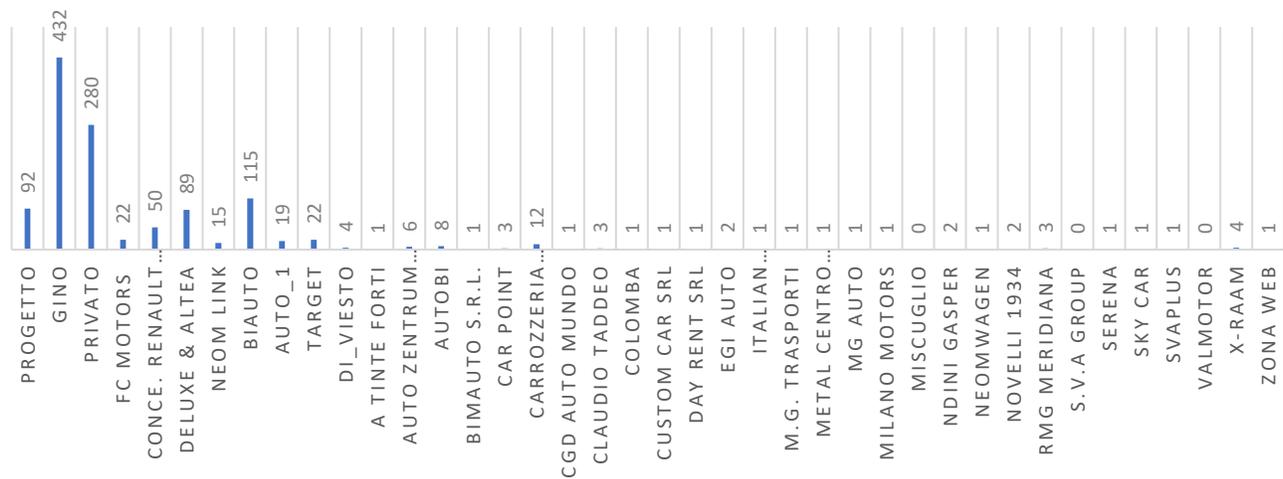
AVERAGE PROFIT FOR EACH BRAND



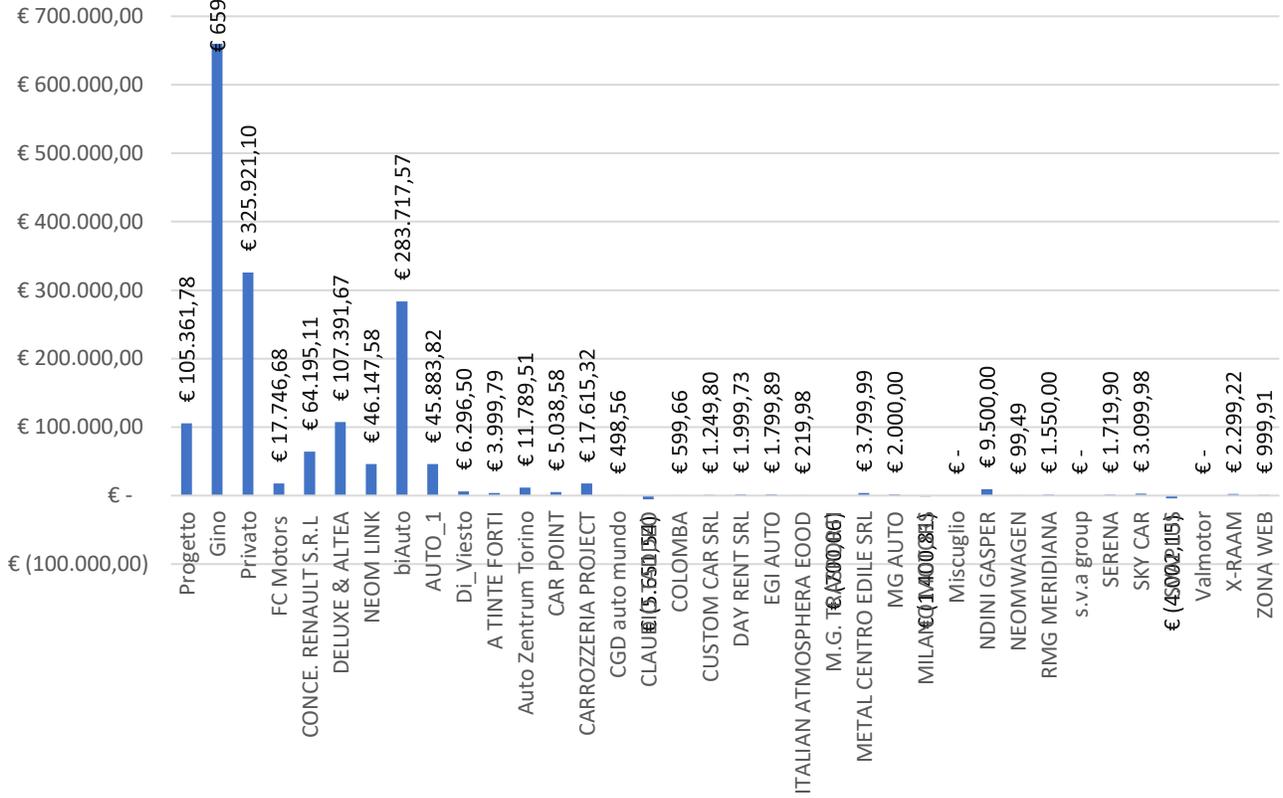
Suppliers

Clear strategy of developing further cooperation with suppliers is achieved from this graph. Another point in this graph is when a customer wants to buy a car and he/she is willing to exchange the car as well. As we can see this graph, private suppliers are ranked second within most profitable suppliers.

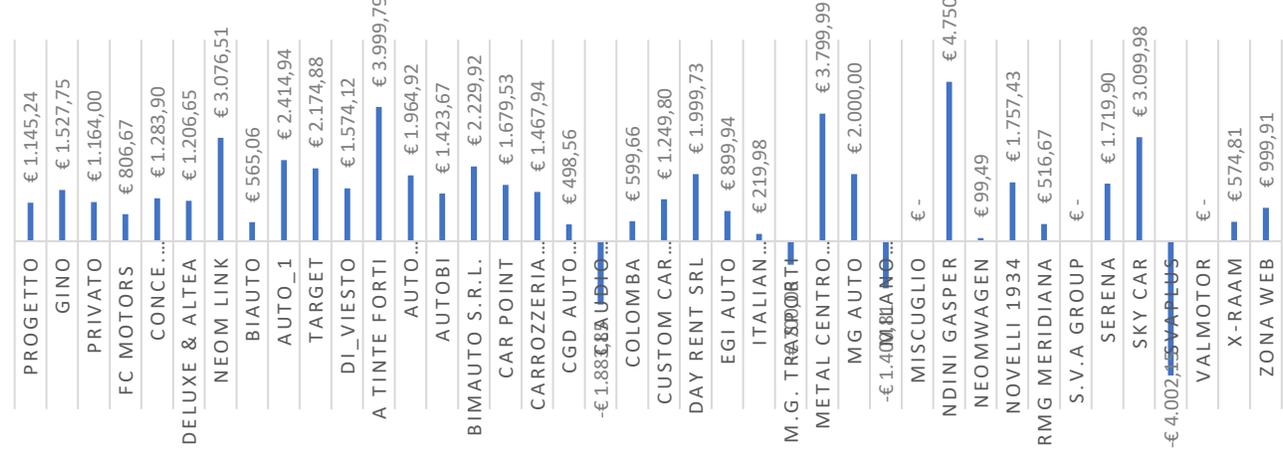
NUMBER OF CARS PURCHASED FROM SUPPLIER



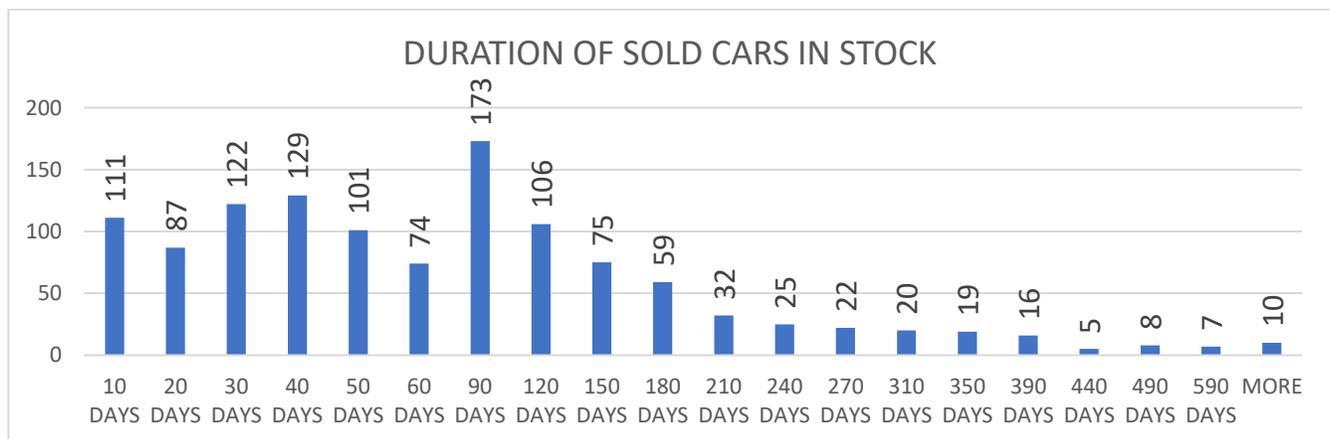
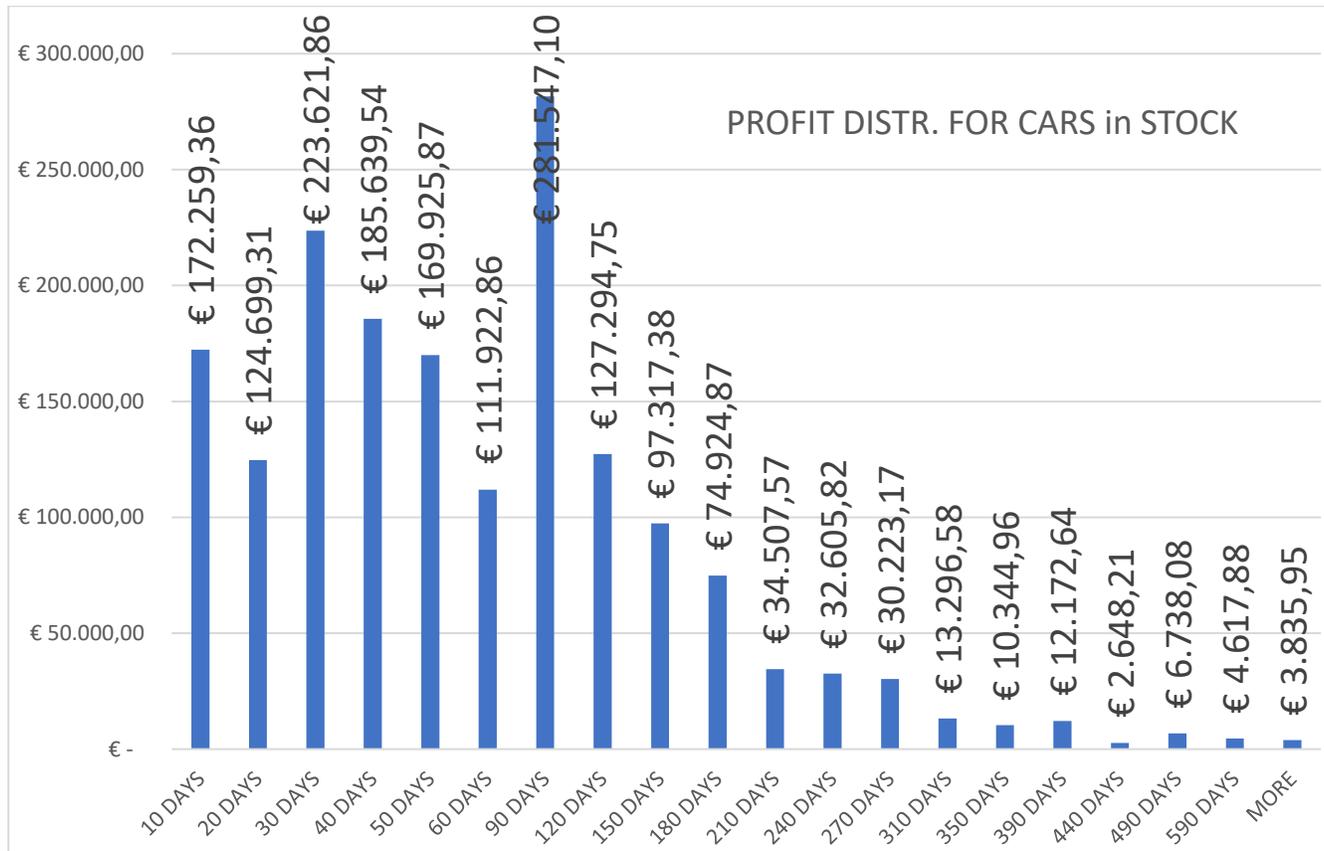
PROFIT FOR EACH DEALER



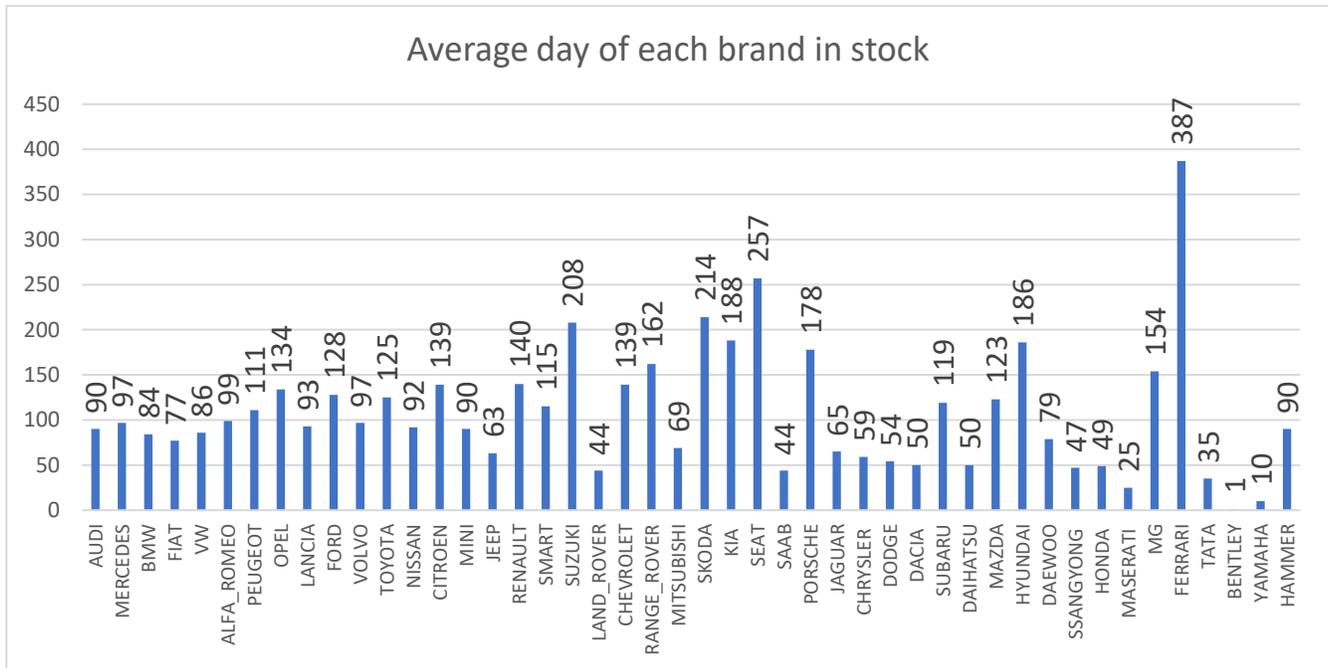
AVERAGE PROFIT FOR EACH CAR BASED ON SUPPLIER



One of the most critical points of managing a dealership, is liquidation. How long will it take to sell a car? Should I wait more to sell the car at its price, or should I lower the price to get the money back and buy one more?



Normally, a Fiat would take 77 days in average to be sold, but a Mercedes takes 97 days (almost 21% more than Fiat). Again, this would bring the old question of “Should MS buy Mercedes or Fiat?”.



Conclusions

Achievements

DealerK project

The speed rate of creating announcement for online markets increased to almost 10 times faster. Moreover, advertisement started as new marketing tool (Facebook ad, Instagram ad) thanks to this platform. The sales procedure is now being monitored through sales platform of DealerK with the ability to export statistics data for further decision-making problems. A salesperson can now close a contract directly from web utilizing SIP. CRM has been implementing effective strategies since using DealerK.

GO

GO brought data automation to the company utilizing different interfaces to eliminate queues before each activity. The efficiency of each part of the process has enhanced greatly thanks to synchronization of data flow within each department. Take the transportation list or maintenance schedule for examples. MS Automobili now is ready to offer services that the greater competitors in the market cannot offer thanks to SIP. A customer will feel safer than before while buying a car. The reputation of MS will increase gradually as they expand and increase their market share thanks to great reputation. Brand reputation in a red ocean is important. Turning a car dealership into a trustworthy place is impossible if we do not consider customers' expectations. What MS now offers is by far better than other car dealers.

As a customer, when buying a car, apart from the good price offered, it is important to be aware of future possible expenses. MS Automobili maybe the first car dealer offering control panel for its salespersons informing the clients about further expenses. This brought great brand reputation to MS considering only word of mouth.

Process Flow Chart

Moving the photography post to arrival part in main inventory was a critical change. Not only we eliminate the queue for cars waiting to be transported to showroom, we started the IN ARRIVO section online for those who were seeking specific models. In this way we don't lose the potential customers of cars not uploaded yet. The documentation part of arrival now is being done before arrival. This flow chart modification greatly changes to speed of closing a contract in case of short periods (Shorter liquidation periods).

Financial Contributions

Investment

The cost of goods sold in 2018 was about 5.489 M€ while in 2019 this amount increased to 5.963 M€. Almost 500 K€ increase in procurement budget says a lot.

Sales

The value of cars sold in 2018 was about 8.852 M€ while in 2019 this amount reached out to 9.580 M€.

Profit

Gross profit of 2018 is about 3.363 M€, while in 2019 this amount increased to 3.620 M€. It means 257 K€ difference with respect to last year.

Further Projects

Macro Development

As the company expands, interactions of IT sections start to get more complicated. As a primary project it is recommended to hire a programmer to finish the macro project to fully utilize DealerK platform from GO and make a great contribution to accounting platforms (BPointSaas) to accomplish tasks automatically from GO. Further development of MS requires creating super complicated IT projects that would lead the company to other sectors of management.

Franchising

It is recommended to open several showrooms in other cities to follow the new implemented customer-oriented strategies of MS. Brand reputation in a red ocean is very important. As the company expands, GO project can be upgraded to more complicated projects to serve the synchronization of MS branches.