

# From Data Modelling to Business-to-Business Application Development: the Targa Services / FIAT Auto Case.

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## Abstract

*Database Driven Direct Marketing is not just a matter of implementing an efficient Customer Database, but involves the process of developing customized analysis tools and sharing marketing intelligence in a Business to Business perspective.*

*To meet these requirements you need:*

- *A dedicated Customer Database (CD), structured for data analysis, containing information on identity and buying behaviour of all your customers;*
- *Skills and tools for producing relevant market and customer intelligence from the CD;*
- *An application for managing outbound and inbound information flows while delivering up to date campaign reporting;*
- *A system which integrates Central Sales Dept. with Dealers for sharing marketing strategies.*

*Targa Services is a FIAT Auto Group Company whose mission is to introduce innovative customer oriented marketing solutions.*

*In this paper we describe the joint Targa/Nunatac effort to achieve the above mentioned objectives with the purpose of showing how this approach gives sounder knowledge of your customers and leads to the development of better performing Business to Business marketing tools.*

## Introduction.

Nunatac is a Milan (ITA) based consulting firm which operates in the Italian market through a team of experienced professionals with statistical, computing and marketing skills. Focused on delivering tailor made business solutions for decision support, Nunatac is a SAS Institute European Quality Partner and has implemented various projects in the field of Data Warehousing, Data Mining and Database Marketing exploiting SAS System functionalities.

Targa Services is a company of the FIAT Auto Group created in 1996 with the aim of providing FIAT customers everything they need apart from the car itself: loan, insurance, warranty extension, traffic and tourist information, additional services etc. Nevertheless, the mission of Targa Services is also that of improving customer relationship management by providing relevant information on market trends, customers' behaviour and prospects' needs. Strictly speaking, the clients of Targa Services for this kind of added value information fall into two main categories:

- Marketing users of the Central Sales and Marketing Department based in Turin

(ITA) with offices in the main European capitals;

- Local Car Dealers spread all over Europe.

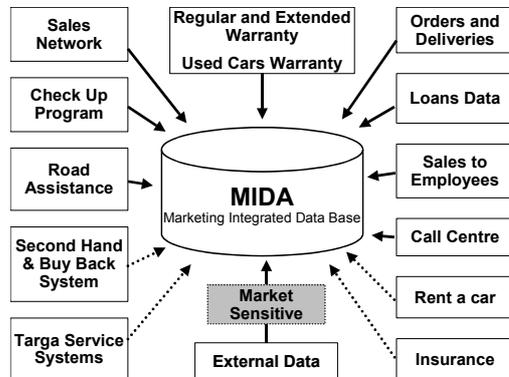
It's in the scope of this paper to present the solution developed by Targa Services and Nunatac to fulfil the information requirements of both these two categories of users giving them a description, as accurate as possible, of their customers while taking into account their different business needs.

## 1. The Existing System.

Fiat Auto commitment to build a Customer Database began in 1995 and the project has been carried out through the creation, in 1996, of Targa Services which released the very first version of MIDA (Marketing Integrated Data base) in late 1997. The initial goal of MIDA was to collect from the operational systems, and organize in an entity relational database, as many data as possible about the customers of the Fiat Group three brands, namely FIAT, Alfa Romeo and Lancia. That means not only data about car ownership, but also about all the different services provided by Targa itself.

As a second step in the implementation of the database, Targa Services started the integration of additional data from external lists to be

added to those already stored. The final result of this integration was an Oracle database stored on a DecAlpha/UNIX server and accessible to users from the Central Sales Department via SQL server.



Further developments of the MIDA project led to the opening of MIDA access to the network of Fiat, Alfa Romeo and Lancia dealers all over Europe in a business to business perspective. The main functionalities available to the dealers, via the intranet, were at this stage:

- target selection (and download), according to the rules established by Fiat Auto regarding customers ownership;
- access to targets selected for “central” marketing initiatives for recall purposes;
- access to the loyalty plan, managed by MIDA on behalf of the dealers.

Geo-marketing, customer identification and on demand mailings were also included in a later release of MIDA.

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With its 39 million customer records (27 for the Italian market and 12 for the other 11 countries featured in the database) and 60 million for products/services, MIDA is the largest source of information on the car market in Italy and one of the largest in Europe. The growth rate averages a 10% a year and the approximate size in bytes has fast reached and exceeded the terabyte.

## 2. The Business Perspective.

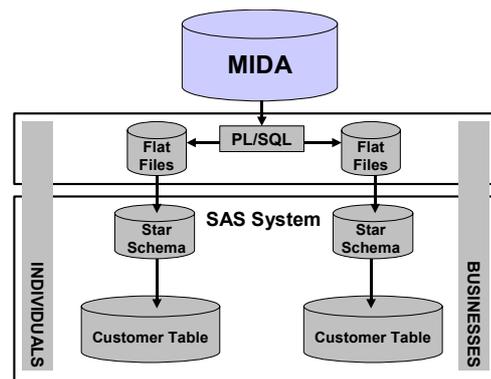
Despite these numbers, MIDA is an entity relational, normalized database which can store loads of data very efficiently but remains quite unsuitable for analytical purposes. For this reason, in early 1999 Targa Services started a project with Nunatac to build a Data Mart dedicated to customer analysis, called DMA.

The DMA was projected to have a clear logical reference, the customer, and therefore to be highly de-normalized.

The business requirement the DMA was expected to meet, was basically the need to have a comprehensive view of Fiat customers. The idea was not only to know what customers do in terms of car purchases (and use of car related services) but also to understand why they behave that way.

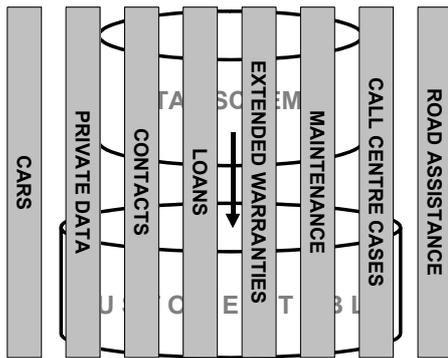
## 3. A Data Mart for analytical purposes.

In compliance with the policy chosen by Targa Services, the only source of data for the DMA is the MIDA database and the granularity of the first is the lowest available in the latter. Due to the different type of target, in terms of marketing strategies, it has been decided to split the whole structure of the DMA between tables concerning private car owners (Individuals) and corporate car owners (Businesses).



Furthermore, tables concerning different categories of facts have been kept physically separated so that, both at the Star Schema level and at the Customer Table level we can identify eight main business entities:

1. Cars
2. Private data
3. Contacts
4. Loans
5. Extended Warranties
6. Maintenance
7. Call Centre Cases
8. Road Assistance.



As in the figure above, the structure of the DMA comprises two different levels:

- ☉ The STAR SCHEMA level in which is stored the most accurate detail of data. At this level, and for each of the two lines of customers (Individuals and Businesses), we find eight different tables, one for each business entity.
- ☉ The CUSTOMER TABLE level in which we find one single record for customer in each of the eight tables.

The choice of keeping tables of different business entities separated also at the second level was meant to optimise the access to these quite ‘large’ tables (having sometimes more than 70 variables) even if, theoretically, you could merge (*by consumer*) the eight tables making one big Customer Table which wouldn’t be very easy to handle.

These optimisation concerns became relevant due to the size of the DMA itself. Up to now, there are stored data ‘just’ on Italian customers, nevertheless some of its tables have several million rows. The DMA is refreshed every other weekend and the method selected for the refreshment has been the integral scan of the whole tables of MIDA so that every two weeks the DMA is completely re-generated.

		individuals	businesses
<b>Stars.</b>	<b>Car</b>	24.530.982	2.735.148
	<b>fin</b>	817.377	53.606
	<b>exw</b>	435.742	49.669
	<b>win</b>	2.901.068	664.239
	<b>cc</b>	11.160	762
<b>Ctab.</b>	<b>auto</b>	20.130.820	741.084
	<b>anag</b>	22.756.878	1.312.108
	<b>ctfin</b>	781.371	35.813
	<b>cnt</b>	5.948.984	289.026
	<b>ctexw</b>	418.920	35.253
	<b>ctwin</b>	1.571.900	117.848
	<b>ctcc</b>	9.546	718

The Customer Table level of the DMA contains mainly derived data, but, for each customer, it was chosen to keep the detail of all the events concerning the last two cars owned by that customer. Therefore, for instance, in the car customer table, one can find all the various counters for the total number of purchased cars and so on, but also the detail – brand, model and version - of the last two cars purchased (the very last one being the one currently owned by the customer).

The reason for this redundancy is that, in a business perspective, the events related to the cars prior to the last two may not be relevant at all. There is a huge difference between Customer A who called the Customer Care Service ten times for a technical failure happened ‘three cars ago’ and Customer B who called ‘just’ three times but for the car he presently owns. The total counter, in this case, might not give the right information if it assigns an higher criticality degree to the former instead of the latter.

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At the present stage of the project, the information stored in the DMA is available only to the first of the two categories of users listed above (Marketing users of the Central Sales and Marketing Department). For these users, Nunatac has developed a number of index values, computed for each customer and inserted in the car customer table, aimed at describing the buying potential of the customer, its loyalty to a specific brand (not only Fiat Group brands are featured in the DMA), the likelihood of a new purchase in the months to come and so on.

A loyalty matrix was designed and implemented for monitoring how the customers who buy a car in each semester switch from one brand to another or remain loyal to the brand they used to own.

#### 4. The Sharing of Information.

Thanks to the common belief of Targa Services marketing managers that strategic information available centrally should be shared with the Dealers Network for a sounder and more effective implementation of marketing actions, a set of tools is being devised to allow each of the 800 Italian Dealers to access on line the portion of the DMA related to its own customers. The tool is meant to be scalable, giving the dealer the possibility of integrating the DMA view with local data unknown centrally (an example of

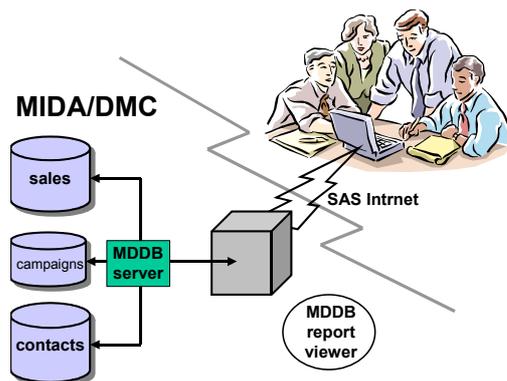
this type of information is the maintenance done after the warranty period).

While making the DMA become a reality, Targa Services got concerned about another aspect of the overall effectiveness of its marketing policies: the redemption of marketing campaigns.

For this specific purpose, in the second half of 1999, Nunatac, supported by SAS Institute consultants, started the development of a new Web based application for Campaign Reporting.

### 5. The Web based Campaign Reporting.

From this project Targa Services was expecting a tool, user friendly and Web integrated, through which both the central users and the local dealers could monitor the performance of marketing for a certain campaign by measuring the redemption of the specific type of action selected.



The application, released by the end of 1999, works with the SAS MDDB server which generates a data hypercube putting together information about car sales and outbound campaign contacts and computing the redemption of the campaign. This data is stored on a dedicated Oracle data mart, part of MIDA itself, which is called DMC (Campaign Data Mart) and is retrieved with SAS Access to Oracle. Users can access the Reporting on line via intranet and navigate the hypercube thanks to SAS MDDB Report viewer.

Due to security concerns, the solution adopted for the Dealers was to create as many hypercubes as the number of the dealers so that every one of them could drill down its own particular cube of data without interfering with other dealers and affecting the performance of the system.

In the transition to SAS V8, this solution isn't viable anymore and Nunatac is devising, in collaboration with SAS Institute Technical

Support, a brand new way for handling security with an unique hypercube accessed simultaneously by different users with different rights.

### 6. Conclusions.

The Data Mart for Customer Analysis (DMA) and the Web based Campaign Reporting are two milestones in the Fiat Auto path to an improved Customer Relationship Management. The deepest understanding possible of customers' needs and expectations is in the philosophy of Targa Services and these two projects have been conceived to provide a set of state of the art marketing tools for achieving this objective.

Web based technologies are significantly influencing the development of these tools, making possible the sharing of strategic information between the Centre and the Local Dealers in what is becoming more and more a e-b2b perspective.

This will lead to a coordinated approach to the business in which shared marketing strategies will be implemented by the Sales Force in a team oriented, proactive way.

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Success is determined also by the right technology.

In this paper we discussed a case in which SAS products, from SAS Base and Stat themselves to SAS MDDB Server and Report Viewer, played a key role in shaping the whole project.

Nevertheless, translating data into relevant information is a complex matter which requires an expertise that goes beyond the mere technology concerns.

This expertise is Nunatac's mission.

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