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LUISS

Data Driven Contact Strategy

Deloitte for LUISS

2022 - 02 - 22

Nice to meet you!

Marco Caridi
Manager

Marco is lead specialist of AI & Data in Deloitte Consulting Italy. Graduated in Electronic Engineering, Automation and Control Systems, he is passionate about of man-machine interaction. He has collaborated with the Department of Computer Science on various AI researches, one of which was published during the Matlab Workshop in Turin (1998). Subsequently, as a tech lead, he worked on the automation of the sw of the digital press review. He has been a senior consultant for several years (CS-VAS Telecom of Rome) and has published dozens of articles in the Computer Programming magazine. In 2006 he founded Obd2world, specialized in AI and IoT solutions in the automotive sector and designed a virtual eco-driving assistant and a chatbot. In 2013 it obtained a patent concerning the reduction of CO_2 emissions. Since February 2018 he has been part of the Samsung Bixby ASR team (Vocal Assistant and ChatBot) and has worked as a partner of the Samsung HQ research center. He has been involved in challenges on artificial intelligence algorithms applied to audio and NLP. He joined Deloitte's AI & Data team in January 2021.

Marzia Del Prete
Manager

Marzia is Manager at Deloitte. She has a Ph.D. in Marketing Management, and her research interest focuses on AI&ML. She has conducted studies, research and strategic consultancy on Emotional Artificial Intelligence for CRM systems. She has published on AI and Customer Emotions in top ranking journals. She has five years of experience in leading consulting firms such as Deloitte Consulting and Value Team (NTT DATA). Furthermore, for 6 years, she was co-founder of a management consulting start-up (Abigail Consulting). Over time she has developed leadership skills in international projects. She has more than 6 years of practical experience in strategic and applied marketing in multinational companies such as H3G Italy (CK Hutchison Holdings Limited) and in the academy (University of Salerno, Sapienza University of Rome, University of Laval, Canada).

DELOITTE ANALYTICS & COGNITIVE OFFERING

Big Data & Insights driven Organization

Big data to answer critical and complex business questions

An insight-driven organization embeds analysis, data, and reasoning into the decision making process, every day.

AI, Cognitive & Advanced Analytics

Analytics in the IOT improve processes efficiency and optimize assets usage

Cognitive technologies automatically learn autonomously and extend both human and machine actions

Advanced analytical methods provide insurers opportunities to obtain client-specific insights.

A&C GLOBAL

29
GLOBAL DELIVERY CENTERS

28
DIGITAL STUDIOS

28
GREENOUSES

10.000+
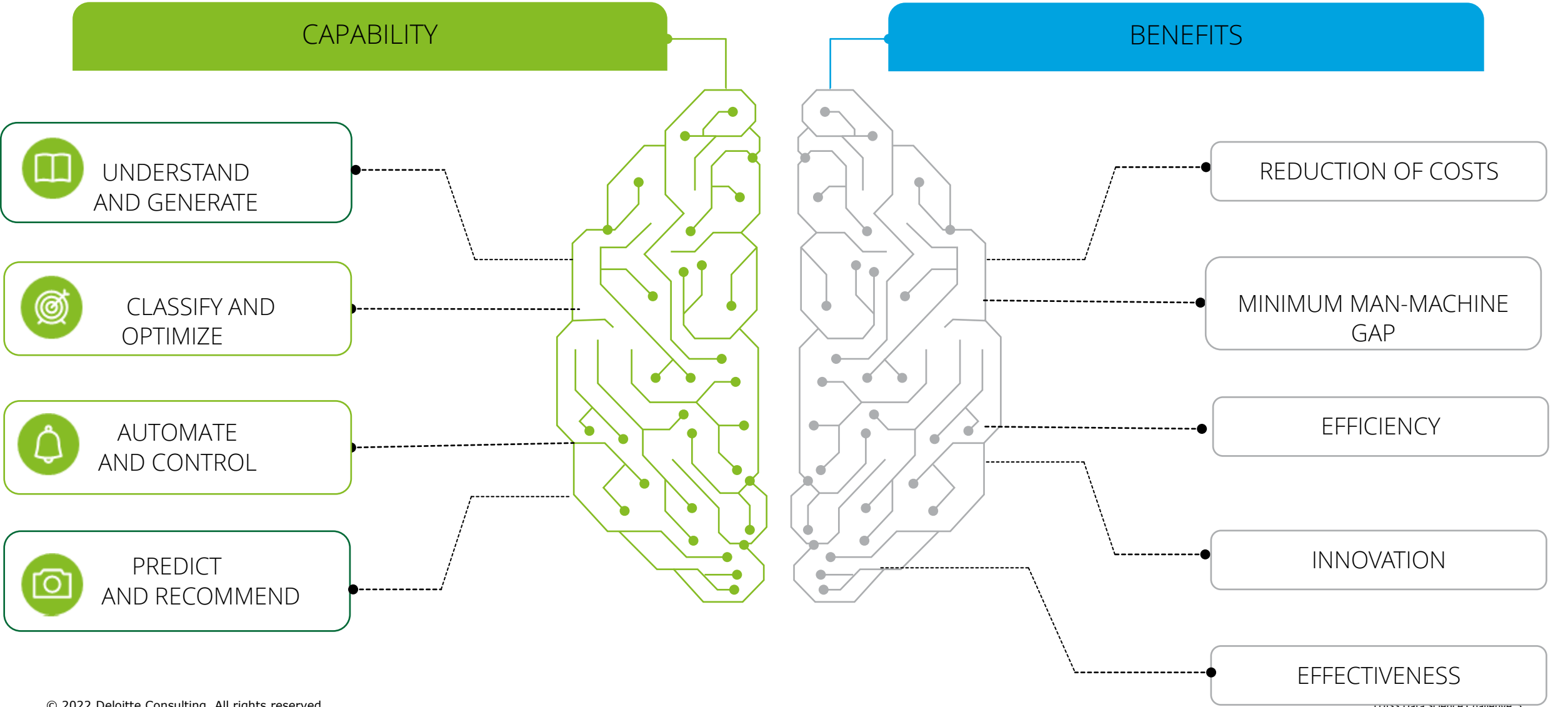GLOBAL HEADCOUNT

A&C ITALY

250+
RESOURCES IN ITALY

30+
BROAD TECH SKILLS

50+
CLIENTS

Artificial Intelligence helps to solve key business cases for the company with accurate and efficient methodologies that renew traditional approaches.

Deloitte.

CAPABILITY

- UNDERSTAND AND GENERATE
- CLASSIFY AND OPTIMIZE
- AUTOMATE AND CONTROL
- PREDICT AND RECOMMEND

BENEFITS

- REDUCTION OF COSTS
- MINIMUM MAN-MACHINE GAP
- EFFICIENCY
- INNOVATION
- EFFECTIVENESS

LUISS Data Science Challenge 3

The context

In the world of Digital Marketing, personalizing sales actions on individual customers with Data Driven strategies is increasingly important. It is essential to identify the target to address a specific product / offer through the most suitable channel (eg DEM, SMS, TLS). Advanced Analytics algorithms can support rule based tools in making the personalization of marketing / caring campaigns more accurate.

A company in Energy & Utilities sector

The company deals with the sale of electricity and gas and high energy efficiency solution (boilers, air conditioners, photovoltaics)

2 marketing campaigns

- CROSS-SELLING to offer a commodity to a customer that has a gas/power contract
- SOLUTION to offer a highly energy efficient solution

3 Communication Channels

- DEM
- SMS
- TLS (teleselling)

Goal: Data driven contact strategy

Develop, on an annual basis, a monthly contact strategy that maximizes the success of the campaigns by avoiding contacting the customer excessively and distributing the contacts evenly over
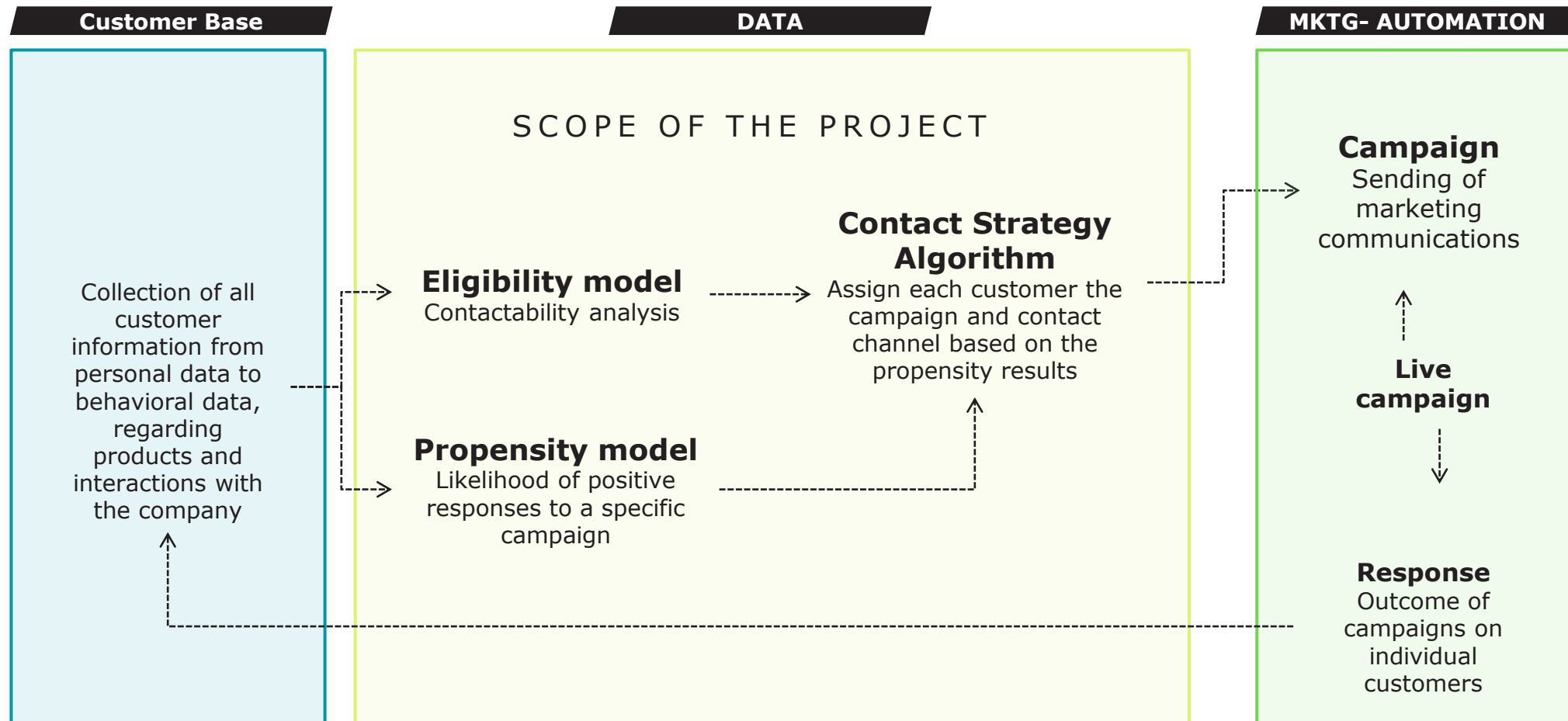
Timeline

- **2022-02-22:** Project work presentation
- **2022-03-22:** Check Point
- **2022-04-26:** Presentation of the solution and sharing of results

Evaluation

- Originality and effectiveness of the proposed solution
- Clarity and creativity of the presentation
- Approach to the problem

The process

SCOPE OF THE PROJECT

| Customer Base | DATA | MKTG- AUTOMATION |

Collection of all customer information from personal data to behavioral data, regarding products and interactions with the company

Eligibility model
Contactability analysis

Propensity model
Likelihood of positive responses to a specific campaign

Contact Strategy Algorithm
Assign each customer the campaign and contact channel based on the propensity results

Campaign
Sending of marketing communications

Live campaign

Response
Outcome of campaigns on individual customers

The rules of the game

General rules

- The contact priority is based on the propensity for the type of campaign
- Customers at risk of being churned or outbound cannot be contacted for commercial purposes
- Max 1 commercial campaign for customer for month:
  - 1 Cross Selling DEM+SMS
    or
  - 1 Cross Selling TLS
    or
  - 1 Solution DEM+SMS
    or
  - 1 Solution TLS

Campaign Rules

DEM
- Max **1 DEM every 2 months**
- Yes, overlaps between DEM and SMS in the same month for the same type of campaign
- No overlaps between DEM and TLS in the same month for the same type of campaign

SMS
- Max **1 SMS every 2 months**
- No overlaps between SMS and TLS in the same month for the same type of campaign

TLS
- Max **1 TLS every 6 months** for the same type of campaign

Cross-Campaigns rules

DEM
- Max **1 mail for month**(max 12 email per year)

SMS
- Max **1 SMS for month** (max 12 pr year)

TLS
- **No TLS in 2 consecutive months (maximum 6 TLS per year)**

- All customers selected for TLS are considered contacted, regardless of the response

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TLS

TARGET
Customers with valid phone number and privacy consent

 # CONTACTS/YEAR
- CROSS-SELLING: **2**
- SOLUTION: **1**

DEM

TARGET
Customers with valid email address and privacy consent

 # CONTACTS/YEAR
- CROSS-SELLING: **6**
- SOLUTION: **2**

SMS

TARGET
Customers with valid phone number and privacy consent

 # CONTACTS/YEAR
- CROSS-SELLING: **6**
- SOLUTION: **2**

E L I G I B I L I T Y

General rule: those customers whose last contact dates back to at least **N months ago are eligible** (N = # months / # contacts per year)

CROSS SELLING
- Mono commodity customers (GAS / POWER no DUAL)
- TLS / DEM / SMS only if the authorization / privacy flag is present

SOLUTION
- Customers (GAS / POWER / DUAL)
- TLS / DEM / SMS only if the authorization / privacy flag is present

Dataset

CUSTOMER

ID
GENRE
YEAR_OF_BIRTH
CLC_STATUS
NEW_CUSTOMER
FIRST_ACTIVATION_DATE
SUPPLY_START_DATE
EMAIL_VALIDATED
PHONE_VALIDATED

CUSTOMER CARE INTERACTIONS

ACQUISITION_CHANNEL
DESK_VISITS_LAST_MONTH
DESK_VISITS_LAST_3MONTHS
DESK_VISITS_LAST_YEAR
LAST_VISIT_DATE_DESK
INBOUND_CONTACTS_LAST_MONTH
INBOUND_CONTACTS_LAST3MONTHS
INBOUND_CONTACTS_LAST_YEAR
CC_REQUESTS_LAST_MONTH
CC_REQUESTS_LAST_3MONTHS
CC_REQUESTS_LAST_YEAR

BEHAVIOUR

PRIVACY_FLAG
LOYALTY_PROGRAM
AVG_CONSUMPTION_GAS_M3
AVG_CONSUMPTION_POWER_KWH
WEB_PORTAL_REGISTRATION_FLAG
N_MISSED_PAYMENTS
BEHAVIOURAL_SCORE
BAD_PAYER_FLAG

PRODUCTS

COMMODITY
SOLUTIONS
N_GAS_POINTS
N_POWER_POINTS
LAST_PRODUCT_GAS
LAST_PRODUCT_POWER

CHURN

N_GAS_POINTS_TERMINATED
N_POWER_POINTS_TERMINATED
N_GAS_TERMINATED_SWITCH
N_POWER_TERMINATED_SWITCH
N_CASES_RISK_CHURN_POWER
N_CASES_RISK_CHURN_GAS

CAMPAIGNS

LAST_CAMPAIGN_TIPOLOGY
LAST_CAMPAIGN_DATE
N_CAMPAIGN_SENT
N_CAMPAIGN_CLICKED
N_CAMPAIGN_OPENED
N_DEM_CARING
N_SMS_CARING
N_TLS_CARING
N_DEM_RENEWAL
N_TLS_RENEWAL
N_SMS_RENEWAL
N_SMS_CROSS_SELLING
N_DEM_CROSS_SELLING
N_TLS_CROSS_SELLING
N_TLS_SOLUTION
N_DEM_SOLUTION
N_TLS_SOLUTION

Suggestion: Not all data is helpful in solving the problem. Use only those you deem indispensable!

The expected output

Presentation of the contact strategy

- How did you approach the problem?

- What methods did you use to prioritize customer contact on one channel rather than another?

- How do you associate the right campaign with the right customer?

- How will your solution integrate into the process?

- What could be the future developments?

Planning of the customer base

Starting from the file 'DLT_AI_and_DATA_CUSTOMER_BASE.csv' indicate the customers to contact in the next 12 months in 6 csv files:

- Cross_Selling_DEM.csv
- Cross_Selling_SMS.csv
- Cross_Selling_TLS.csv

- Solution_DEM.csv
- Solution_SMS.csv
- Solution_TLS.csv

The files must have one row per customer, and contain the following columns:

ID: The customer's ID present in the file 'DLT_AI_and_DATA_CUSTOMER_BASE.csv'

Month_1, Month_2,...Month_12: they will take the value 0 if the customer will not be contacted for the campaign with that channel and 1 otherwise.

ID	Month_1	Month_2	...	Month_12
1	0	1	...	1
2	1	0	...	0

Marco Caridi
Manager, Analytics & Cognitive
Contact: mcaridi@deloitte.it

Marzia Del Prete
Manager, Analytics & Cognitive
Contact: madelprete@deloitte.it

Thank you

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