HOW RETAILERS CAN LEVERAGE DATA TO STAY COMPETITIVE IN AN EVER-CHANGING DIGITAL LANDSCAPE

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AGENDA

1 Introduction
2 Retailers landscape
3 Data-driven value cases
4 Prenatal Retail Group: a practical example
5 Key learnings & takeaways
INTRODUCTION
200+ Big Data Engineers & Data Scientists

50+ Production projects, up and running

Speech @STRATA in NY: «...turning Data into value » (IOT)

BIG DATA & VISUALIZATION
Architects and developers with wide experience in big data platforms, cloud & real-time and visualization tools

DATA SCIENCE
Scientists specialized in designing and implementing Advanced Analytics solutions, ML, AI

FOCUS GROUPS
Strong vertical domain knowledge and experience, dedicated consultants on IoT platforms, Agriculture Market, and Quantum Computing
ADVISORY & EDUCATION

Advisory to assist and drive company data transformation in order to assess **data, technology** and **human capital** with the purpose of designing business case, processes and organization.

**The Data Incubator**
Training course for employees and graduated student to develop Data Science competences on new generation analytical tools.

**The Data Lab**
Consulting and advisory service which allows to drive data experimentation that unlock business value.

FACTORY & DELIVERY

Project management, designing and implementation professional services to enable ideas and prototypes to become a **data-driven product**. This process is characterized by agile development step and data driven decision system.

**Machine Learning**
Models building and industrialization to deploy predictive analytics in production environment.

**Big Data Platform**
Integration and development of advanced analytics solutions to support business decisions and actions.
RETAILERS LANDSCAPE
Some Key Elements of the Landscape

- Digital and physical
- The concept of store
- Speed
- Omnichannel & customized
- Data protection
DATA-DRIVEN VALUE CASES
WHERE DATA VALUE LIES
OUR EXPERIENCE SUPPORTING RETAILERS

CUSTOMER DIMENSION

Customer Prioritisation
Understanding & Targeting
Service Improvement

PRODUCT DIMENSION

Logistics Optimization
Production Optimization
Price Tuning

Functional units
SALES & MKTG
DISTRIBUTION
PRODUCTION
SERVICE
LOGISTICS OPTIMIZATION
DIMENSION: PRODUCT - FUNCTION: DISTRIBUTION

VALUE CASES

★ Sales forecast & stock optimization
★ Product placement optimization
★ Distribution optimization

WHY?

$ Stock-out and over-stock reduction
$ Revenue/space increase
$ Cost reduction

APPLICATIONS

☑ Predictive demand planning & strategic planning
☑ Layout optimization
☑ Replenishment planning
☑ Distribution network optimization
☑ Predictive demand & production planning
PRODUCTION OPTIMIZATION

DIMENSION: PRODUCT - FUNCTION: PRODUCTION

VALUE CASES

★ Quality prediction
★ Waste root cause analysis
★ Predictive maintenance

WHY?

$ Product quality increase
$ Waste cost reduction

APPLICATIONS

✓ Automatic quality drop & waste detection
✓ Early anomaly detection
✓ Suppliers evaluation
✓ Maintenance planning
PRICE TUNING
DIMENSION: PRODUCT - FUNCTION: SALES & MARKETING

VALUE CASES

- Customized pricing
- Phase-out tuning
- Product features value inference

WHY?

- Margin optimization
- Marketing automation
- Discount & margin optimization
- Over-stock reduction
- Improved price understanding
- Support in pricing new products

APPLICATIONS

- Dynamic pricing
- Customized promotions
- Campaign automation
- Price prediction & tuning
CUSTOMER PRIORITISATION
DIMENSION: CUSTOMER – FUNCTION: SALES & MARKETING

VALUE CASES

★ Customer lifetime value

WHY?

$ Value drop detection
$ Upselling

APPLICATIONS

✔ Customized promotions
✔ Recommendation support

★ Churn prediction

$ Increased retention
$ Campaign optimization

✔ Customized promotions
✔ Engagement campaigns
UNDERSTANDING & TARGETING
DIMENSION: CUSTOMER - FUNCTION: SALES & MARKETING

VALUE CASES

★ Single customer view
★ Online journey optimization
★ Physical journey tracking
★ Recommendation & Next Best Offer

WHY?

$ Enable up & cross-selling
$ Improve customer service level
$ Proactive customer support
$ Most searched / viewed
$ Layout optimization
$ Cross-selling
$ Cross-selling & upselling
$ Customer engagement

APPLICATIONS

✓ Customized marketing actions
✓ Omnichannel interaction
✓ Funnel optimization
✓ Real-time pop-ups
✓ Data-driven product placement
✓ Customized real-time campaigns
✓ Marketing automation
✓ Coupons & banners
SERVICE IMPROVEMENT
DIMENSION: CUSTOMER - FUNCTION: SERVICE

VALUE CASES

★ Text-based feedback analysis
★ Service chat analysis

WHY?

$ Trend detection
$ Topic analysis
$ Churn prediction

APPLICATIONS

✔ Targeted actions
✔ Real-time customized actions
A PRACTICAL EXAMPLE
More than 700 POS in Europe (300 in Italy)

4 Specialized Brands
2 for pregnancy and childcare
2 for toys
BUSINESS SCENARIO

Until 2015 the four brands were controlled from different companies and were competitors.

In 2017 M&A operation brings all the brands within the control of a single private company: Artsana S.p.A.

Each brand has its own positioning, commercial strategy, customer base and tone of voice.
BUSINESS NEEDS

Know your customer
- Most of the customers buy in different brands
- It’s necessary to know the customer base and understand how customers move from one brand to another

Know your product
- Most of the products are common within brands, but they are sold with different codes
- Only *Prenatal* has its own private label
AIM OF THE PROJECT

• Find customers that buys on different brands

• Understand customers behaviors cross brand and cross channel

• Define a new 1-to-1 campaign strategy

• Move the customer from one brand to another during years
  • From childcare (0-11) to toys (0-99)
The project supports transformation by focusing on:

- **Unified Product Catalogue**
- **Customer Database** to achieve the Single Customer View (per brand and cross brand)
- **Campaign Management** to optimize the Engagement Process
- **Data Lake adoption** to increase flexibility
- **Machine Learning** to define a data-driven commercial strategy

These pillars are designed to support the overall transformation efforts.
THE PROJECT

...WITH A BRAND NEW ARCHITECTURE

- e-commerce
- POS
- Customer Database
- Product Catalogue
- Loyalty
- Campaign Management

Data Lake
THE PROJECT
DATA LAKE

All this data are stored and harmonized inside the Data Lake

Sell-out data:
all the channels (stores, ecommerce sites)
send their data to the lake

Customer information:
the customer inside the lake is unified,
also if he has multiple loyalty cards on different brands

Product information:
is possible to unify all the product inside the lake to understand
how the same product was sold in different brand stores
THE PROJECT
DATA LAKE – A BIG ENABLER

A Big Data centered architecture allows to:

- Add and remove brands in an easy way
- Define new cross-brand analysis
- Define new cross-brand marketing policies
- Add new data of other department (e.g. Logistic) to improve different processes
THE PROJECT

MACHINE LEARNING – THE QUESTIONS TO ANSWER

How many children does my customer have?
How old are the children? Which sex?

What is the purchasing potential of my customer?
Am I fully exploiting the customer potential?

What products is my customer interested into?

Most of families declare only the first new born
+ children +spending
Use MANY to understand ONE
THE PROJECT
MACHINE LEARNING TO SUPPORT CAMPAIGN STRATEGY

e-commerce

POS

Data Lake

Customer Database

Loyalty

Product Catalogue

Campaign Management
THE PROJECT
MACHINE LEARNING – USE CASE ROADMAP

Purchasing Probability Curves Estimation

Child Age Estimation + Hidden Children Detection

How many children does my customer have?

Attribution Model Product2Child

What is the purchasing potential of my customer?

Customer Lifetime Value

Am I fully exploiting the customer potential?

Value Change Detection

How old are the children? Which sex?

What products is my customer interested into?

Product Recommender
THE PROJECT
HIDDEN CHILDREN DETECTION & CLTV

Past Value
Child 1 + Net Present Value
Child 1 = Customer Value
Child 1

Past Value
Child 2 + Net Present Value
Child 2 = Customer Value
Child 2

CLTV
THE PROJECT
CLVT - ACTIONABILITY

Evaluate Marketing budget to invest in the customer

Detect drops in spending behavior

«Unfreeze» customers with high potential
THE PROJECT
PRODUCT RECOMMENDER - ACTIONABILITY

RECOMMENDER ENGINE

Website live suggestions (up-selling)

Customers who bought this item also bought

Applied Predictive Modeling
Deep Learning

50% Off
Checkout Coupons (fidelization)

Customized DEM (cross-selling)
THE PROJECT

FINAL SUMMARY

Understand as accurately as possible the number of children the customer has, their age and sex.

Understand the customer purchasing potential and calculate the CLTV.

Understand the customer tastes and recommend the right product at the right time.

Use the algorithms output as input for the Campaign Manager.

Personalized campaigns – Real time actions – Optimize retention.
KEY LEARNINGS & TAKEAWAYS
OUR EXPERIENCE DISTILLED

KEY ASPECTS TO CONSIDER IN A BIG DATA ANALYTICS PROJECT

- Start from the problem
- Stakeholder number & type
- Clear way to measure results
- Proceed iteratively
- Context & actionability
- Start from low-hanging fruits
We’re living in a new era of constant sabotage, misinformation, and fear, in which everyone is a target, and you’re often the collateral damage in a growing conflict among states. From crippling infrastructure to sowing discord and doubt, cyber is now the weapon of choice for democracies, dictators, and terrorists.

David Sanger explains how the rise of cyberweapons has transformed geopolitics like nothing since the invention of the atomic bomb. Moving from the White House Situation Room to the dens of Chinese, Russian, North Korean, and Iranian hackers to the boardrooms of Silicon Valley, David reveals a world coming face-to-face with the perils of technological revolution—a conflict that the United States helped start when it began using cyberweapons against Iranian nuclear plants and North Korean missile launches. But now we find ourselves in a conflict we’re uncertain how to control, as our adversaries exploit vulnerabilities in our hyperconnected nation and we struggle to figure out how to deter these complex, short-of-war attacks.

David Sanger
The New York Times

David E. Sanger is the national security correspondent for the New York Times as well as a national security and political contributor for CNN and a frequent guest on CBS This Morning, Face the Nation, and many PBS shows.
LET’S KEEP IN TOUCH!

Come see us at booth 202!

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