An Approach to Build a D&A Core for Innovation

Overview

Cattolica’s ambition to become a data-driven organization required a modernized data and analytics core for building and scaling new innovative analytics solutions. Many organizations prioritize their foundational D&A investments poorly. They think they should wait until their foundational D&A capabilities (such as data governance and quality) are uniformly ready before they start to deliver value. Instead, Cattolica relied on a set of high-value D&A use cases to iteratively build their D&A core while delivering value.

Solution Highlights

1. Move the Identification of D&A Use Cases Closest to the Point of Value Delivery: A fusion team of SMEs, data scientists and data engineers identifies new D&A solutions.
2. Foster Executive Buy-In For Investments in the D&A Core: The fusion team prioritizes high-value analytics use cases to demonstrate the business-value of investing in the D&A core.
3. Co-Create a Minimally Viable D&A Core: IT and the fusion team collaborate to identify the minimally viable foundational D&A capabilities required to develop the prioritized use cases.
4. Test New Use Cases to Improve the D&A Core: The fusion team identifies and tests new D&A solutions using a data science innovation lab, helping IT prioritize new D&A investments.

About the Company

Cattolica Assicurazioni

Industry: Insurance
Headquarters: Verona, Italy

Revenue 2020: €5.7 Billion
Employees 2020: 1,796
Three Pillars of Cattolica’s Business Strategy (2018-2020)

An Integrated D&A and Business Strategy

Profitable Growth

Innovation and Data Management

Execution Excellence

Data-Driven Company
Business Model Evolution: From Damage-Reimbursement to Prevention-Protection
- Improve Anti-Fraud Identification
- Optimize Pricing
- Innovate with Product Offerings

Smart Connected Products
- Telematics
- IoT (Internet of Things)
- Smartphone-based technologies
- New partnerships

Source: Adapted From Cattolica Assicurazioni

“The ability to manage and analyze data is critical to enhance our customer offerings and stay ahead of competition. That is why we have chosen to build a modern and scalable data & analytics infrastructure, relying on the expertise of Google Cloud, to accelerate Cattolica’s transition to a data-driven organization.”

Luigi Barcarolo, Director — Motor Insurance, Insurance Analytics and Business Architecture, Cattolica
The D&A Value Sweet Spot

Benefits of a Use-Case Driven Approach to Foundational Data and Analytics Investments

<table>
<thead>
<tr>
<th>High</th>
<th>Low</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of D&amp;A Initiatives</td>
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Prioritize D&A Investments Based on High Value Use Cases

Let 1,000 Flowers Bloom
“Let 1,000 Flowers Bloom
“If we just let our business partners run a lot of pilots, something will generate value!”

Large Data Engineering Efforts
“We can’t begin without integrating all our data and improving its quality!”

- Individual business units cannot afford at-scale investments.
- Islands of data and divergence of standards
- Missed cross-functional opportunities
- Better alignment between D&A investments and consumption
- Quicker value generation from foundational investments
- Reduced upfront investments
- Misaligned functionality due to insufficient user involvement
- Long-term ROI promise; no immediate value generated
- Protracted timelines result in outdated capabilities

Source: Adapted From Cattolica Assicurazioni
Target D&A Investments on High-Value Use Cases

Major Milestones In Cattolica’s Journey to Become a Data-Driven Company

Anchor D&A Investments on High Impact Use Cases

1. Move the Identification of D&A Use Cases Closest to the Point of Value Delivery
   A fusion team of business domain experts, data scientists and data engineers is brought together to innovate on new D&A solutions closest to the point of value delivery.

2. Foster Executive Buy-In for Investments in the D&A Core
   The D&A fusion team prioritizes high value analytics use cases that help senior leaders understand the need for foundational investments in the D&A core.

3. Co-Create a Minimally Viable D&A Core
   The D&A fusion team partners with the BI & Analytics team within IT to identify foundational D&A capabilities required for prioritized use cases (which data definitions to create, data to clean, datasets to curate, data models to build, etc.).

4. Boost Demand for D&A Solutions Across the Enterprise
   The D&A fusion team identifies new analytics use cases in different business areas to generate ongoing demand for D&A investments.

5. Quickly Test New Use Cases to Spot Opportunities to Improve the D&A Core
   The D&A fusion team builds pilot solutions in a Data Science Lab to spot gaps in the production environment that help IT prioritize new investments in the D&A core.

Wave I (2018-2020): Use Cases Demonstrate Immediate Value From D&A Investments

Wave II (2021-2023): Use Cases Help Improve D&A Capabilities

Source: Adapted From Cattolica Assicurazioni
Building a Data-Driven Enterprise

A New Model for Democratized D&A (Partial Representation)

- Business Technologists
- BI and Analytics Staff Within IT

**Non Motor Insurance**

**Motor Insurance**

**Insurance Analytics**: A fusion team aligned to Cattolica’s largest business unit that spots use cases and builds D&A solutions for Motor Insurance and other business units.

**Data Science Innovation Lab**: A prototyping environment to test new uses cases and spot gaps in the foundational data and analytics capabilities.

**Foundational Data and Analytics Capabilities** required to build and scale D&A solutions.

Source: Adapted From Cattolica Assicurazioni
Building the Data-Driven Enterprise Is a Team Sport

Cattolica’s Insurance Analytics and BI & Analytics Teams

- Business Technologists
- BI and Analytics Staff Within IT

Insurance Analytics
- Pricing Actuaries
- Data Scientists
- SMEs
- Data Engineers
- Business Translators

Compact Staffing: The Insurance Analytics team includes 12-13 FTEs and 3-4 consultants.

Spotting Gaps in the Production Environment
- Business Translators: Translate business requirements into analytical problems.
- Data Engineers: Manage the prototyping environment and act as translator to IT.

BI & Analytics
- Data Engineers
- Data Manager
- Analytics Specialist
- Solution Architect
- Project Manager
- BI Analyst

Aligning IT to Insurance Analytics: The BI & Analytics team includes 8 FTEs and 30-40 consultants.
- Analyzing functional and technical requirements for new D&A use cases
- Monitoring the D&A production environment and resolving issues
- Developing and managing the BI Platform
- Designing BI solutions, including quality checks

Source: Adapted From Cattolica Assicurazioni
Foster Executive Buy-in for Investments in the D&A Core

Characteristics of Cattolica’s Use Cases to Kickstart Investments in the D&A Core

Principles for Selecting Initial Use Cases

1. Start with use cases that will significantly impact strategic objectives
2. Prioritize time to value to achieve rapid benefit realization
3. Evaluate use cases for broader applicability, to attract funding
4. Benchmark current analytics maturity against industry best practice

Initial Use Cases of High Value to Cattolica

- **Fraud Detection**
  (e.g., deterministic scoring, predictive ML algorithms)

- **Sophisticated Pricing**
  (e.g., credit scoring, vehicle allocation, tailored discount structures)

- **Customer Value Management**
  (e.g., single customer view, predictive algorithms for customer churn)

Source: Adapted From Cattolica Assicurazioni
Co-Create a Minimally Viable Data and Analytics Core

Cattolica’s Approach to Build the D&A Core, Focused on Rapid Value Delivery

- Business Technologists
- BI and Analytics Staff Within IT

Logical Data Architecture Definition

- Assess the data architecture needs of initial D&A use cases.
- Prioritize opportunities to close data architecture gaps.

Scouting (Request for Information)

- Define deployment model (cloud, etc.).
- Scout vendors for required capabilities.
- Estimate budget and timelines for deployment.

Data Platform Selection (Request for Quotation)

- Formalize and share requirements.
- Define vendor evaluation parameters.
- Invite and review vendor proposals.

System Integration

- Define integration requirements.
- Shortlist vendors for Proof-of-Concept (POC).
- Select vendors based on POC outcomes and terms.

Source: Adapted From Cattolica Assicurazioni
Execution: Continuously Refine the D&A Core

Cattolica’s Iterative Approach to Prioritize New Investments in the D&A Core (Illustrative)

Source: Adapted From Cattolica Assicurazioni
# Results

## Outcomes Enabled by the D&A Core

<table>
<thead>
<tr>
<th>No. of Analytics Use Cases</th>
<th>Time to Deploy New D&amp;A Solutions</th>
<th>Other Efficiency Results</th>
</tr>
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<tbody>
<tr>
<td>Before D&amp;A core</td>
<td>After D&amp;A core</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>79</td>
<td>Reduced Total Cost of Ownership</td>
</tr>
<tr>
<td>3 months</td>
<td>15 days</td>
<td>Eliminated Duplication, Inconsistency through Reduced Data Fragmentation</td>
</tr>
<tr>
<td>Before D&amp;A core</td>
<td>After D&amp;A core</td>
<td>Improved Decision-Making through Integrated Data Management</td>
</tr>
<tr>
<td>3 months</td>
<td>15 days</td>
<td></td>
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</tbody>
</table>

Source: Adapted From Cattolica Assicurazioni

“The benefits obtained from the initial analytics use cases developed in Wave I have abundantly covered the initial investments in the D&A core, which has kickstarted a second wave of analytics use cases from additional business areas.”

Luigi Barcarolo, Director — Motor Insurance, Insurance Analytics and Business Architecture, Cattolica

“The combination of the new team structures and the new data & analytics core has strengthened IT’s ability to directly contribute to analytics opportunities that increase revenue, customer satisfaction, and reduce costs.”

Giovanni Gerardi, Head of IT Architecture & Innovation, Cattolica

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## Results

### Outcomes Achieved From High-Value D&A Use Cases

<table>
<thead>
<tr>
<th>Fraud Detection Use Case</th>
<th>Sophisticated Pricing Use Case</th>
<th>Customer Value Use Case</th>
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<tbody>
<tr>
<td>Strengthened anti-fraud procedures</td>
<td>Optimized pricing models</td>
<td>Improved customer profiling</td>
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**Fraud Detection Use Case**
- With advanced capabilities to:
  - Design an anti-fraud score (with an accuracy of 70 - 80%)
  - Extract entities (mentioned in unstructured text) from claims documents

**Sophisticated Pricing Use Case**
- With advanced capabilities to:
  - Improve risk evaluation
  - Align with European best-practice market pricing
  - Integrate external data sources (such as credit, traffic scores)

**Customer Value Use Case**
- With advanced capabilities to:
  - Predict Customer Churn and Customer Lifetime Value
  - Use Customer Lifetime Value and Churn for targeted offerings, marketing campaigns

Source: Adapted From Cattolica Assicurazioni