TARGET CASE STUDY

GROUP 3

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Overview

- Retail leader leveraging data as a competitive weapon – among the earliest large-scale adopters of predictive analytics in consumer retail.
- Famous case: “Pregnancy Prediction Model” — used purchase data to infer life events and personalize marketing.
- Enterprise-wide analytics evolution – now spanning marketing, supply chain, fulfillment, and customer experience (“Endless Aisle,” omnichannel).
- Strategic alignment – analytics deeply embedded in operations, leadership, and culture through Centers of Excellence (Data, BI, Guest Insights).
- Ethical turning point – public privacy backlash shaped Target’s shift toward responsible, transparent data use.
- High DELTA maturity – Target exhibits traits of an Analytical Competitor (Stage 5), where analytics are pervasive, strategic, and enterprise-driven..

WHAT IS DELTA?

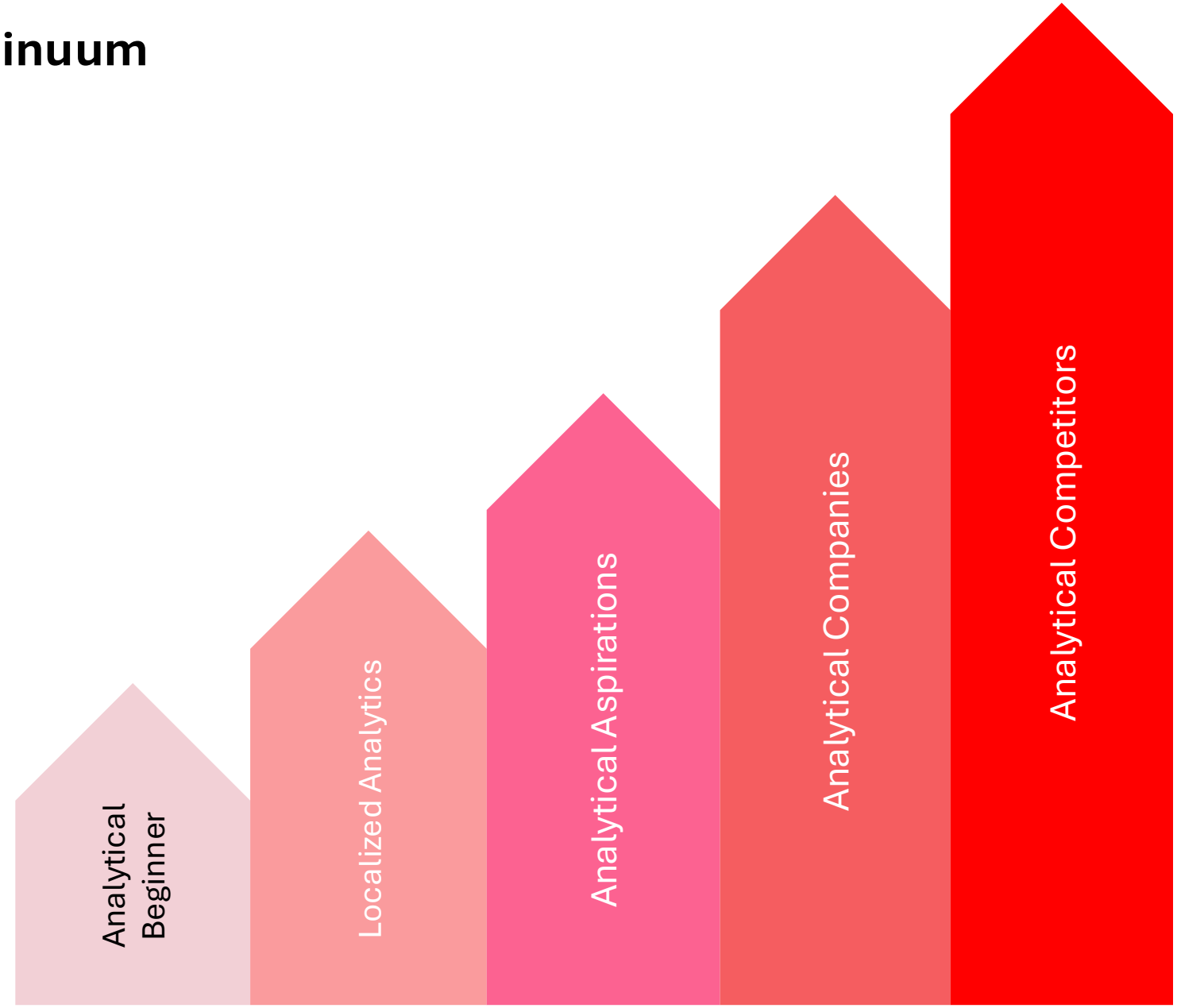
- A framework for assessing and advancing analytics capability across enterprises, developed by the International Institute for Analytics (IIA).

- **Key Principle** - Emphasizing balanced advancement

DATA	Accessible and high quality
ENTERPRISE	Extent to which analytics are embedded across departments
LEADERSHIP	Passion and Commitment
TARGETS	Specific, strategic, and high-value
ANALYSTS	Professional and Amateurs

Target’s Place on the DELTA Continuum

- Each stage represents increasing data sophistication, governance, and strategic integration.
- In the next few slides, we’ll analyze where Target stands within this continuum using the DELTA framework.



Five Stages of the DELTA model

DELTA Rubric

Table 1 Success Factors	Stage 1: Analytically Impaired	Stage 2: Localized Analytics	Stage 3: Analytical Aspirations	Stage 4: Analytical Companies	Stage 5: Analytical Competitors
Data	Inconsistent, poor quality and organization; difficult to do substantial analysis; no groups with strong data orientation; basic reporting tools and descriptive analytics.	Much data useable, but in functional or process silos; senior executives don't discuss data management; BI and basic analytics tools.	Identifying key data domains and creating data warehouses or data lakes; expansion into unstructured NoSQL data.	Integrated, accurate, common data in central warehouse; data still mainly an IT matter; little unique data: use of unstructured NoSQL data analysis.	Relentless search for new data and metrics; organization separate from IT oversees information; data managed as strategic asset.
Enterprise	No enterprise perspective on data or analytics. Poorly integrated systems.	Islands of data, technology and expertise deliver local value.	Process or business unit focus for analytics. Infrastructure for analytics beginning to coalesce.	Key data, technology and analysts are managed from an enterprise perspective.	Key analytical resources focused on enterprise priorities and differentiation.
Leadership	Little awareness of or interest in analytics.	Local leaders emerge, but have little connection.	Senior leaders recognizing importance of analytical capabilities.	Senior leaders developing analytical plans and building analytical capabilities.	Strong leaders behaving analytically and showing passion for analytical competition.
Targets	No targeting of opportunities.	Multiple disconnected targets, typically not of strategic importance.	Analytical efforts coalescing behind a small set of important targets.	Analytics centered on a few key business domains with explicit and ambitious outcomes.	Analytics integral to the company's distinctive capability and strategy.
Analysts	Few skills, and those are attached to specific functions.	Disconnected pockets of analysts; unmanaged mix of skills.	Analysts recognized as key talent and focused on important business areas.	Highly capable analysts explicitly recruited, deployed and engaged.	World-class professional analysts; cultivation of analytical amateurs across the enterprise.
Technology	Desktop technology, standard office packages, poorly integrated transactional systems.	Individual analytical initiatives, statistical packages, descriptive analytics, database querying, spreadsheets.	Enterprise analytical plan, tool and platforms; predictive analytical packages.	Enterprise analytic plan and processes, cloud-based big data.	Sophisticated, enterprise-wide big data and analytics architecture, cognitive technologies, prescriptive and autonomous analytics.
Analytical Techniques	Simple visual analytics, measures of central tendency, exploration, trending.	Correlation and linear regression, segmentation, database querying, use of ranges, confidence intervals.	Simple predictive analytics, logistic regression, classification and clustering; dynamic forecasts.	Advanced predictive methods deployed to discover insights; advanced optimization, sentiment analytics, text and image analytics.	Neural nets and deep learning, automated machine learning, ensemble models.

D- DATA

- Target manages petabytes of enterprise data through a centralized Analytical Platform Architecture.
- Identified earlier issues: duplicate data, inconsistent pipelines, weak governance, and lack of visibility.
- Built a data pipeline framework using Apache Spark and Scala, enabling certified, trusted datasets for all departments.
- Introduced **Atomic History → Core History → Aggregations → Analytical Datasets (ADS) model** to ensure data lineage, quality, and traceability.
- Certified Datasets guarantee reliability and are used for analytics, AI modeling, and business reporting across the enterprise.
- Maintains **8 TB** of data daily, with **1M+ queries** and **4,000+ pipelines** supported by Data Site Reliability Engineering (SRE) teams for monitoring and compliance.
- Data governance strengthened through clear ownership, access control, and audit policies.
- **Result**: consistent, reusable, scalable, and high-quality data driving Target's data-driven culture.

Source: https://tech.target.com/blog/creating-certified-datasets

E- ENTERPRISE

- Analytics embedded across all business areas from marketing and guest insights to supply chain, fulfillment, and store operations.
- The Data Sciences team collaborates enterprise-wide, building certified datasets and predictive models accessible to all departments.
- Developed enterprise-scale predictive modeling (e.g., *Inventory-Not-Found (INF)* model) to optimize product availability and fulfillment efficiency.
- INF model runs **~250 million** predictions per day, directly integrated into Target's order-allocation systems to improve inventory accuracy and delivery performance.
- Earlier initiatives like the Pregnancy Prediction Score unified marketing, loyalty, and sales data — demonstrating analytics alignment across functional silos.
- Enterprise-level data platforms, shared governance, and cross-functional collaboration ensure analytics consistency and scalability.
- Analytics outcomes directly influence operational, financial, and customer experience decisions organization-wide.
- Result: analytics is a core enterprise capability, driving Target's transformation into a data-driven, agile organization.

Source: Target Case Study (Forbes, 2012); https://tech.target.com/blog/predictive-modeling-for-availability

L- LEADERSHIP

- Target's analytics success is driven by executive commitment to a data-driven culture.
- The Chief Data & Analytics Officer (CDAO) and senior leaders prioritize enterprise-wide adoption of analytics in decision-making.
- Cross-functional data leadership teams (Data Science, SRE, Product Analytics) collaborate through the "Target Data Ecosystem."
- Leaders promote a "test and learn" mindset, supporting experimentation and rapid feedback loops.
- Analytics maturity is measured and reported to leadership regularly, ensuring accountability and continuous investment.
- **Result:** Leadership alignment enables sustained innovation and analytics integration across business units.

T - TARGETS

- Target defines clear, measurable analytics goals aligned with strategic business outcomes.
- Example initiatives: supply chain optimization, hyper-personalized marketing, real-time inventory visibility, and store operations forecasting.
- Analytics teams use KPIs such as reduced stockouts, improved on-shelf availability, and increased digital conversion rates.
- Quarterly “Analytics Targets Review” ensures data initiatives tie directly to ROI and customer satisfaction.
- **Result:** Quantifiable targets guide analytics priorities, enabling business value realization and competitive advantage.

A- ANALYSTS

- **High investment in data science:** hiring for senior roles, competitive pay and advancing adoption of analytical and generative AI.

- **Specialized Data Sciences teams** build predictive models, optimize algorithms with machine learning, and validate solutions using advanced AI methods.

- Analysts apply **econometrics, optimization, and simulation** to drive personalization (e.g., identifying pregnancy to personalize ads and coupons), fraud detection, automation, and inventory efficiency.

- **Embedded across business units** (marketing, supply chain, fulfillment), ensuring insights directly support revenue growth and operational improvements.

- *Example*: Supply Chain Data Science team determines optimal inventory quantities and placement across channels and locations, balancing cost efficiency with customer experience.

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Center-of-Excellence (COE)

Analysts reside in major business units (marketing, supply chain, fulfillment), applying models and insights in their domains.

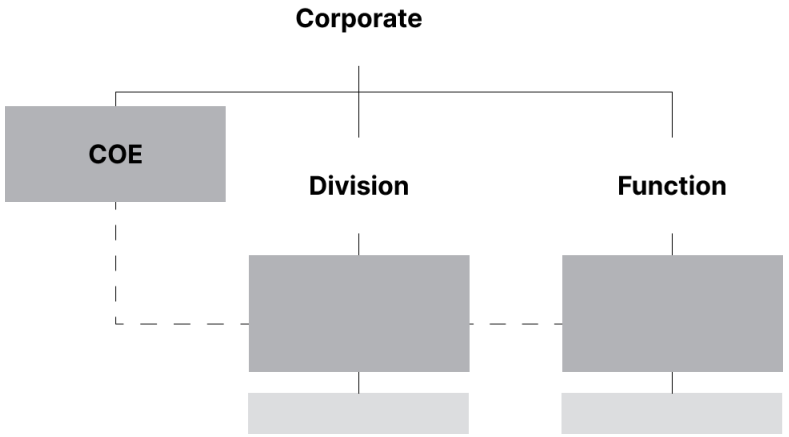
Senior Data Scientist – Digital Fulfillment T+

Tower 02, Manyata Embassy Business Park, Bangalore, Karnataka, IN 560045 Target Tech

Full-time

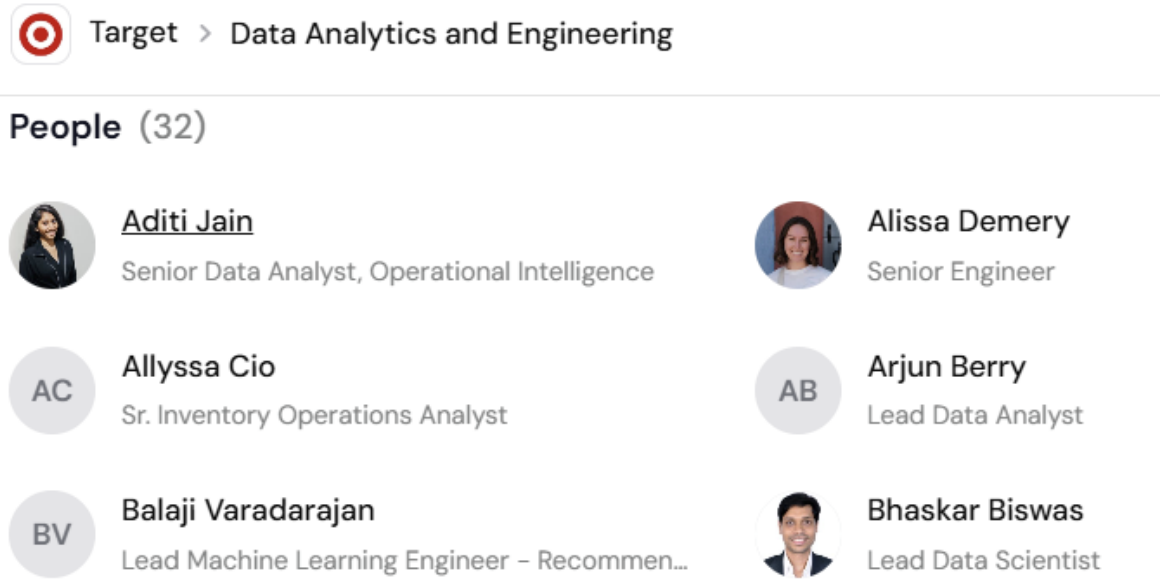
Sr Data Scientist - Stores and Properties (applied ML, Simulation)

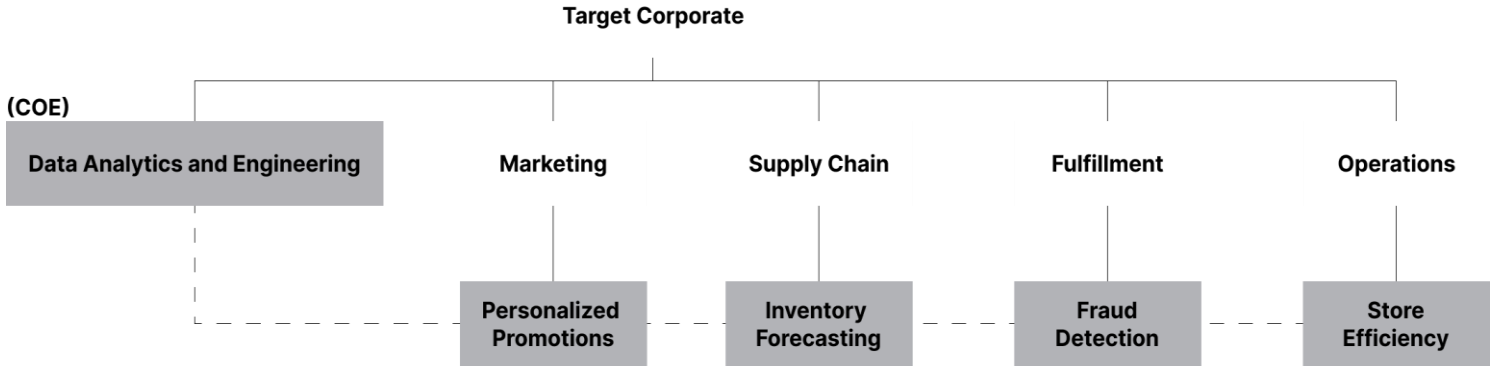
7000 Target Pkwy N, Brooklyn Park, MN, US 55445 Target Tech Full-time



Center-of-Excellence (COE)

- **Analysts reside in major business units** (marketing, supply chain, fulfillment), applying models and insights in their domains.
- All analysts are members of the **Data Science and Engineering team** (COE).





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