WHITEPAPER

Trusted Data:
The Backbone of Digital Supply Chains

Achieving Excellence in Data Quality With Lessons From Target

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What Exactly Is "Trusted Data," and Why Is It So Important?

Think about a product—it may have a size, weight, ingredient, dosage, or any number of data points that distinguish it from others available. Now think about consumers. Having this data at their fingertips is now an expectation when searching for and buying products in-store or online. If they can't find the data or it's incomplete, a sale could be lost. If it's inaccurate or out of date, processing a return could be costly both financially and to your brand's reputation.

The importance of trusted data is not lost on many supply chain leaders. In a 2025 survey, nearly half of respondents said they rely on quality data to enable omni-channel fulfillment. Additionally, 63% of respondents stated that improving data sharing practices has led to better efficiency in areas such as inventory management and distribution.

Being "trusted" isn't just about specific data points; it's a mindset supported throughout an organization, including executive leadership, that prioritizes data quality. It features a commitment to standards-based data and processes to ensure that information is captured and utilized effectively for both internal processes and external sharing.

Developing a process or program focused on data quality, including continuous auditing and cleaning, is critical to ensure trusted data.

Targeting Data Quality

The Minnesota-based retailer Target has developed a model for robust data management with data quality at its core. Target is responsible for general merchandise and grocery but also carries health and nutritional products that carry greater accountability to the consumer and regulators. Target has the unique experience of being a retailer that is receiving data from national brands while maintaining data from their in-house brands.

The growth of e-commerce and importance of omni-channel were two primary factors that led to Target's decision to focus on data quality.

"When the digital revolution was taking off, we saw an opportunity to strengthen the data quality of our product information," says Andy Nash, Target's Data Quality Manager.

Target has taken steps to eliminate inefficiencies by adopting a sustainable governance model for data quality.

> **"Accommodating the digital experience, including the multiple fulfillment options, underscored the importance of complete and accurate product information. Target guests had new and evolving demands."**
>
> — Craig Peroutka,
> Senior Director, Target Enterprise Item

Industry leaders define trusted data as accurate, complete, timely, consistent, and synchronized.

Accurate
Data provided is aligned with how it is viewed or used by trading partners. Data provided matches the label.

Complete
Data needed for different business processes or decision-making means a variety of data elements are needed by trading partners.

Timely
Faster business cycles call for a focus on real-time data.

Consistent
Multiple data sources used by trading partners need to have consistent core information.

Synchronized
Collaboration across trading partners is essential to achieve data needs.

One Consistent Truth

Data quality starts with consistent sources such as the GS1® Global Trade Item Number® (GTIN®), which uniquely identifies a product throughout the supply chain. Comprehensive data quality initiatives are increasingly important, as automation is needed for successful commerce in an omni-channel environment.

The Target team came to the realization that data quality refers not just to data accuracy but to its completeness, timeliness, consistency, and its ability to be synchronized with the needs of trading partners. Poor data's impact can range from inventory issues to negative customer experiences.

"High-quality data is available at the right time for the right people to use. That's my textbook definition, but I really define it as fitness for use. Is data available for the way that you want or intend to use it, and does it do what it's supposed to do?"

— Andy Nash,
Manger, Target Data Quality

Figure 1: Data Quality | Focus Areas & Pain Points

Pain Point	Symptoms	Impacts
Barcode	Inaccurate Not Scanable at POS	Non-Tracked Sale Inventory Loss Out-of-Stocks Compliance
Item Package Dimensions	Item Too Big, Small, Not as Expected	Guest Returns Shelf Fit
Casepack Information	Legal Entity	Inventory Loss Out-of-Stocks Problem Receiving
$12.69 ($0.79/count) **Net Contents**	Inaccurate to What Is on the Package Price Per Unit Inaccuracy	Returns Compliance Guest Experience
RFID	Lost Inventory Inaccurate Inventory	Inaccurate Inventory Out-of-Stocks Order Cancellations

Data Governance Strategy

Data governance is the foundation on which an organization's data quality strategy is built. With the massive amount of data an organization like Target must organize and maintain, it's crucial that an established enterprise-wide methodology be adopted to guide how all data activities will evolve.

"Data sources must be scrutinized and scrubbed," says Nash. "If it's purchased, it needs to be very high quality. Consider your source. When was it last reviewed or refreshed? Who tested it? Was it entered using copy-and-paste rather than the result of a true evaluation?"

Target has developed proprietary software that uses rules for every product category and prevents "bad data" from getting into the system. It provides the firewall that blocks deficient or flawed data.

"In many cases, you cannot set up poor-quality information," says Nash. "It's physically impossible. We've got boundaries in place inside of our systems that clearly spell out what the error or issue might be. And, we have a team dedicated to the processes, so vendors get training and ongoing help."

From Many to One

While many companies choose to rate their data for overall health, Target moved from an "issues-per-item" approach to an Item Quality Index that is a more sophisticated yet approachable method to measure data. Target's Item Quality Index, a term that exemplifies both a concept and an ethos, has become familiar to colleagues enterprise-wide.

"Over the past year, we've brought the importance and impact of data quality to the forefront, and the enterprise has responded with its support and buy-in," says Andy Houdek, Director for Target's Enterprise Item Team. "To sustain long-term success, it was important for there to be an aligned understanding of what governance is, its purpose, and its intention. When we started this journey, we had to define what item data was. Understanding and awareness were critical."

Initially, the data teams faced pushback. But business impact analysis and testing along with actual return-on-investment measures turned skeptics into believers. Whether demonstrating a benefit to sales, a reduction in costs, or customer satisfaction results, the outcomes spoke for themselves.

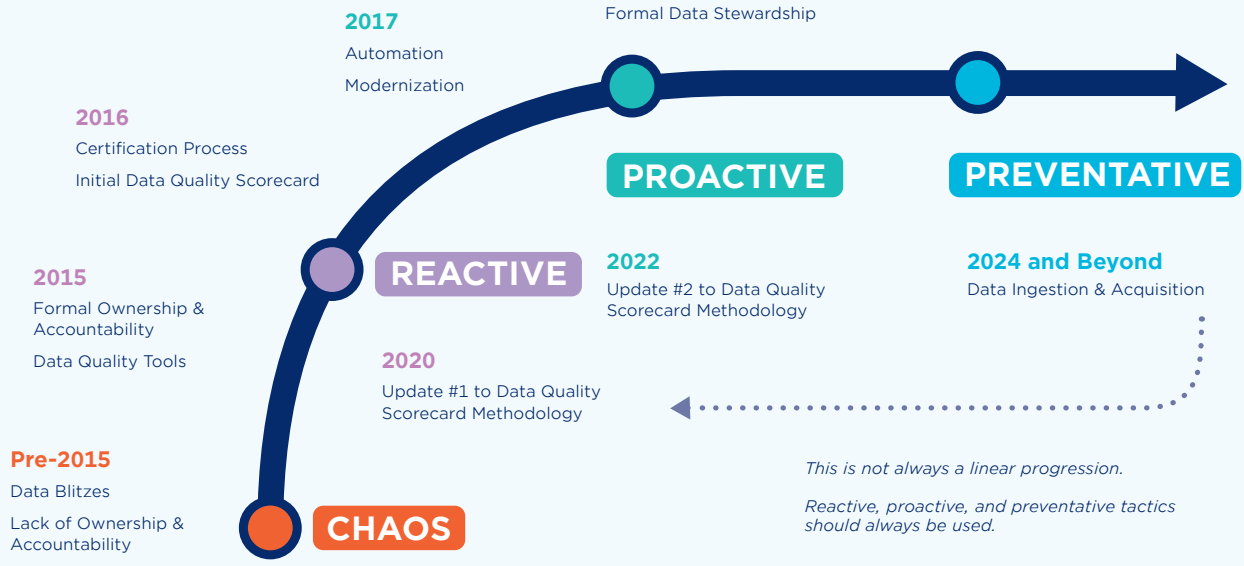
"We didn't necessarily talk about fear or 'Here's what could happen.' We would say, 'Here's what *did* happen,' and we'd put a dollar value behind it," Nash says.

Today, Target describes its data maturity growth curve as moving from reactive to proactive to preventative. Although not always linear, preventative measures have clearly cut down on the reactive, informed the proactive, and eliminated the early chaos.

Through consistent messaging and alignment across the enterprise, Target's team is having substantive conversations that allow for compliance with new regulations and an even deeper dive into data issues. It's anticipated that artificial intelligence applications will place an even greater reliance on accurate and complete data. In the short term, attention is being paid to certifications resulting from spot checks—randomly selected products off the shelf compared to their online data. Revisiting these themes is a given since data quality actions are never a "one-and-done" proposition.

> **"We are on a rinse-and-repeat cycle where we're going back and readdressing some of the early things that we've done that were reactive.**
>
> **How do we move those up to preventative? We manage data as the business asset it is."**
>
> — Andy Nash,
> Manager, Target Data Quality

Target's Maturity Curve: Past, Present, Future



Crucial Components

One of the most valuable insights the team has gained is the importance of prioritizing governance and stewardship early in the process—starting with the right team.

It's not about having more people but about having the right people focusing on governance and stewardship at the onset. At the same time, those marshaling data are not confined to a single team.

"I think maybe if we would have started out differently, we would have more of a focus on stewardship and governance than solely data quality issue detection and remediation," Nash says. "It's a people game. Data is a people thing."

The key to assembling the committed data "governors" is asking questions such as: What functions need to be represented in a data quality team? Which stakeholders need to have visibility into the data quality efforts? Does leadership have a role in the data quality journey? Which individuals own the data sets and are solely responsible for changes and approvals?

Nash points to the importance of building "soft skills" into the process by holding people accountable to roles and responsibilities clearly defined in a data management plan so they're understandable to people from a variety of backgrounds.

Target's mature program focuses on the full life cycle of item data—from item setup through end of life—all in one team. Target's team continues to follow the reactive-proactive-preventative progression.

Along with the right human support comes the need to create a data quality mindset throughout the organization.

> **"Establishing broad buy-in and alignment is important. You want to establish a culture of data quality as much as you can through leadership and throughout the enterprise because it's ongoing, not a one-time reactive push. You want to be preventative in the long term."**
>
> — Andy Houdek,
> Director, Target's Enterprise Item

Accountability

"We have found scorecards to be enormously effective in setting goals and seeing the ROI in meeting those goals," Nash says. "We started out with a pretty basic scorecard, but our measurement techniques have become more sophisticated over time."

The Target experts recommend thorough research and planning when developing a data quality strategy. How big is the challenge, and how promising is the opportunity? What size team will be equal to tackling those?

"Don't just throw a bunch of technology and tools at it," Nash says. "This is, as I say, a people sport.

"For instance, we have a dedicated data quality team, a team of dedicated stewards. However, as we've grown this program, we've been able to have other stewards who have data responsibilities across the enterprise participate for a percentage of their time."

When Target started in 2015, it had four dedicated data quality team members. Today, the company has over 20 data stewards that span different parts of the organization. Data quality is not just the role of a few but the mindset and ongoing responsibility of many.

Target recommends maintaining a centralized source of truth through a data catalog and the metadata associated with it. The data catalog compiles core artifacts an organization assembles to manage its information. It includes rules, definitions, ownership, stewardship, consumption—information that is critical not only for what it includes but also in identifying gaps in knowledge.

"[A data catalog] can be a great source for your analysts and your software developers, says Nash. "Having it in one central location is really critical. It's a critical cornerstone of any good data management program."

The importance of people is never divorced from the data activities.

"Find who is the one who's accountable for the accuracy, completeness, and the overall quality of that specific attribute or the domain of attributes," Nash says.

The experts at Target are unanimous in advising: "Don't wait!" They know all too well that the project can seem overwhelming. It's a long-term investment that can be immensely satisfying as measurable benefits reveal cleaner and cleaner data.

"I'm thrilled at this point that many people across the company, including leaders, know what data quality is, why it's important, and who's working on it. You'll hear about it in the elevator. Data quality is a business problem not an IT problem. It is a business capability. The words 'data quality' are spoken so many times and have had such a huge impact over the last decade."

— Andy Nash,
Manager, Target Data Quality

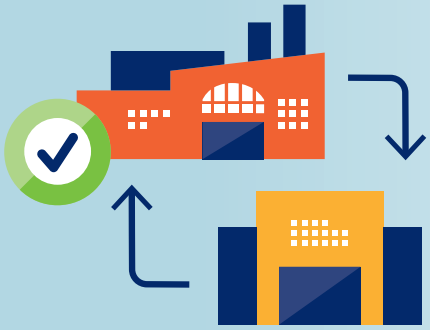
Partnering With GS1 US

Aside from the full complement of GS1 Standards used by Target throughout its business, the retailer is looking to leverage GS1 US Data Hub® as a valuable resource.

"We're using GS1 US Data Hub to validate and confirm GLNs (Global Location Numbers)," Houdek says. "Specifically, we've been testing pulling in barcode numbers almost like a reverse-lookup function. It lets us validate a barcode and tells us who it belongs to, helping us to remediate issues much quicker."

"The thing with data: It doesn't live anywhere. It lives everywhere. It doesn't fit nicely in finance or IT or on the business side. It fits a lot of different places."

— Andy Nash,
Manager, Target Data Quality



Having GS1 at the Table

An organization needs to commit to adopting the GS1 System of Standards and guidelines for assigning attributes properly to its products.

One of the benefits of leveraging GS1 Standards is that a full complement of potential attributes has already been formulated, taking the guesswork out of what is meant by certain attribute categories or measurements so comparisons between products are always apples-to-apples.

About Target

Minneapolis-based Target Corporation (NYSE: TGT) serves guests at nearly 2,000 stores and at Target.com. Since 1946, Target has given 5% of its profit to communities, which today equals millions of dollars a week. Additional company information can be found by visiting the corporate website and press center.

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