

SAM'S CLUB CASE STUDY

A dramatic shift from reactive to proactive analytics empowers retail giant to markedly improve logistics and supply chain management

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Participant

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A new CEO and corporate strategy prompted a reengineering of supply chain analytics at Sam's Club's. Read how the newly centralized analytics team evolved from responding to data requests to providing insights to inform high-level decision making.

ABOUT THE ORGANIZATION

Headquartered in Bentonville, AR, Sam's Club is an American chain of membership-only retail and warehouse clubs owned and operated by Walmart. Founded in 1983 and named after Walmart founder Sam Walton, the chain operates approximately 600 warehouse clubs across the U.S. and Puerto Rico, each averaging 136,000 square feet. For the fiscal year ending January 31, 2017, Sam's Club's total revenues were \$57 billion.

ANALYTICS TEAM STRUCTURE AND STRATEGY

Mohamed Boudoum joined Walmart in 2015, initially serving on the organization's global people analytics team. In 2017, he assumed the role of manager in a newly formed, centralized supply chain analytics team within the Sam's Club's supply chain organization.

The formation of this newly centralized analytics function, he says, stemmed from a new corporate strategy. When career Walmart employee John Furner took over as Sam's Club Executive Vice President, Chief Executive Officer, and President in February 2017, he made it clear that the focus for the new Sam's Club organization would be to simplify the business and think differently.

NEW CORPORATE STRATEGY

At that time, Sam's Club adopted a new corporate strategy around three pillars, in their words, to:

Pillar 1: People – Engage and align our employees, at all levels in the organization, to put our members first.

Pillar 2: Products – Ensure we have the right items, in the right quantities, at the right time, in the right locations.

Pillar 3: Digital – Adapt and move with speed, to meet the needs of our increasingly digital customers.

To enable this new strategy, Sam's Club created a new, dedicated supply chain organization (apart from Walmart's) and, within it, created a centralized supply chain analytics team.

ANALYTICS STRATEGY: FROM REACTIVE TO STRATEGIC

Boudoum says that prior 2017, the analytics function was decentralized, with analytics people embedded in different supply chain teams throughout the organization. Much of their time was spent pulling data and creating single-purpose reports.

The new analytics team set out to create an analytics strategy for the organization that would enable and inform future decision making, throughout the organization. This, they knew, would require a shift from reporting the results of past activities to providing insights to enable higher-level decision making.

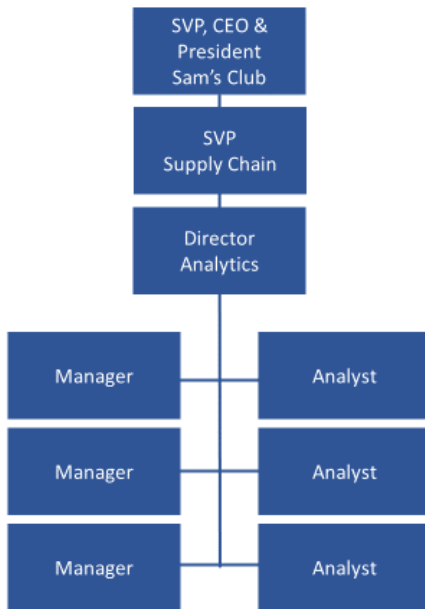
With the centralization of the analytics function, the team's mission is more strategic. "Our new team looks at the whole business holistically, to allow and enable the business to be more nimble and efficient," he says.

We help make sure that our leadership has the insights and the tools to make evidence-based decisions.

-- Mohamed Boudoum

ANALYTICS TEAM STRUCTURE

The analytics team is part of the larger Sam's Club supply chain organization, led by a senior vice president of supply chain, who reports directly to the Sam's Club CEO. Boudoum says this is the first time Sam's Club has had a dedicated senior vice president of supply chain. Prior to the reorganization, he says, Sam's Club and parent company Walmart shared resources, including supply chain management.



Located in the organization's Bentonville headquarters, the supply chain organization includes individuals who interface with different organizational functions, including e-commerce, replenishment, and transportation, and "networks," including the perishable, import, and grocery networks. Working alongside them is the analytics team, which, Boudoum says, is responsible for holistically looking at all of those functions and networks.

The analytics team is comprised of seven people – a director, three managers, and three analysts, who, prior to centralization, were embedded within the networks and functions.

THE ANALYTICS JOURNEY

Once the analytics team was in place, they worked together to operationalize their strategy, starting with gaining a better understanding of the needs of the organization.

Step 1: Learn the business.

Boudoum says it helps that he and his fellow team members came from within the Walmart organization and were well versed in analytics skills and best practices, But two things might have held them back. First, the Walmart business was similar to but different from the Sam's Club's business. And second, because they had been working in supply chain siloes, each lacked a holistic view of the business. So, they started out by rolling up their sleeves to educate themselves on the entirety of the Sam's Club business.

"The main criterion for composing the new group was analytics skills, but we also needed an understanding of the business. To succeed in today's analytics world, you have to have both technical skills and business acumen," says Boudoum.

Step 2: Segment and model the supply chain.

Before deciding how to focus their time and efforts, the team took stock. They inventoried and evaluated available data elements and resources. They segmented and modeled the supply chain and related processes, such as facilities, transportation, carriers, suppliers, and order and fulfillment, to gain a holistic view. Then, for the next six months, they created analytical profiles for each segment, which, Boudoum says, allowed them to respond more quickly to requests and to be proactive in network modeling. Once complete, they started workstreams, to generate individual projects to support segment development.

Step 3: Identify areas of focus.

With the corporate strategy and their newfound knowledge of the business as a backdrop, the new team worked together to identify four categories, or pillars, of services they would provide:

Data Mining and Modeling – The analytics team develops models to forecast or predict future states and performance, to provide an objective and accurate foundation for the global supply chain strategy, grounded in analytics insight.

Data Visualization, Prototyping, and Reporting – To facilitate insight consumption and to allow internal customers to get answers to their daily, recurring questions, the team developed prototypes and self-service tools. Those internal customers extend beyond supply chain to include leadership and other functions, such as merchandising and asset protection.

Testing and Measurement – The team analyzes different designs and programs, testing new ideas – and gauging their potential impact – before they are rolled out to the whole chain.

Research and Insight – While the first three pillars entail gathering, analyzing, and reporting quantitative data, the team marries that data with qualitative information, gathered through focus groups, meetings, calls, and visits with operators, to ensure quantitative findings jibe with the day-to-day business.

ANALYTICS TOOLS & IT SUPPORT

The Sam's Club analytics team utilizes enterprise licenses held by parent company Walmart. Different team members use different tools, depending on the work they are performing and their personal preferences.

Boudoum likes Alteryx and Python for data mining ("great tools for complex analysis of huge amounts of data that exceed the capacity of Excel"), Tableau for data visualization ("great tool for building dashboards"), and Excel as an interface for reports that don't require visualization.

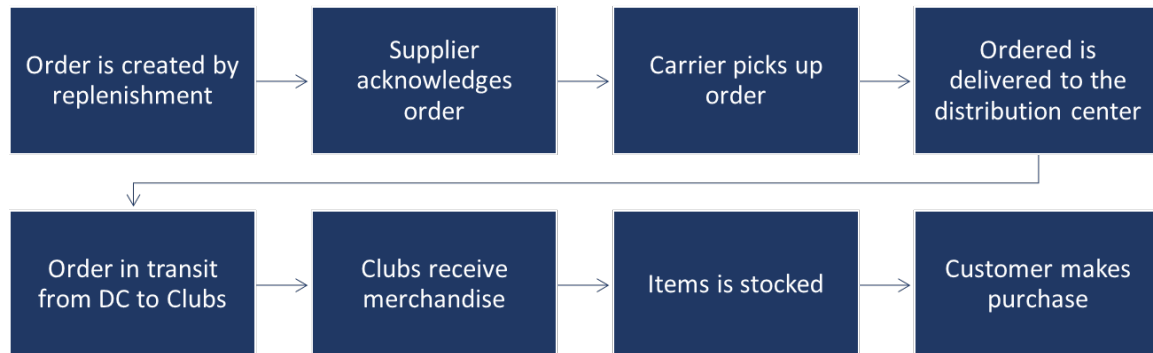
Walmart's centralized IT group provides oversight of all the tools, infrastructure, and guidelines used companywide. Within it, there are smaller IT departments dedicated to different parts of the organization, including Sam's Club.

The tool doesn't define the person.
-- Mohamed Boudoum

MEASURING RESULTS

Once the team was clear on their strategy, objectives and methodologies, they identified metrics that would allow them to track the organization's success and failure at every point in the supply chain, from the time an order is created by replenishment to the time the customer places an item in her basket, as depicted below.

SIMPLIFIED VIEW OF SAM'S CLUB SUPPLY CHAIN PROCESS



Once the team was clear on the process, they established metrics for measuring performance, both overall and at each step in the process.

METRICS: AN UMBRELLA AND FOUR BUCKETS

Sam's Club and Walmart have both recently adopted an overarching metric of inbound performance they call "ONTIF," which stands for on time in full. "It's a KPI for the whole organization and a measurement of the business' ability to work together, across the entire cycle," says Boudoum. "It tells us when an order is not on time and in full, and who was responsible."

In addition to the ONTIF umbrella metric, Sam's Club has four "buckets" of metrics that map to every point in the supply chain. Sample metrics are depicted in the graphic below. Together with the ONTIF metric, they comprise an accountability program that helps Sam's Club pinpoint weaknesses in the supply chain, as shown below.

ONTIF – On Time In Full



Supplier Performance

- Did they bring me what I ordered?
- Was it delivered on time?
- Was it delivered to the right location?



Distribution Center Performance

- Do they offer timely appointments to suppliers?
- Are trucks unloaded in a timely fashion?
- Do they ship?



Carrier Performance

- Are deliveries made on time?
- Are they delivering the right merchandise?
- Are trailers being utilized optimally?



Club Performance

- Are deliveries unloaded on time?
- Are items shelved on time?
- Are items always in stock?
- Does the Club have the right in-stock percentage?

REPORTING: VISIBILITY FOSTERS ACCOUNTABILITY

The team's goal is to empower suppliers and internal constituencies with the information they need to improve their performance. They provide self-service tools to managers responsible for daily oversight, to enable them to monitor their own performance. Access is role based. In addition, the team generates and pushes reports to leadership that contain overview data, trends, problems or exceptions, and suggested actions.

OUTCOMES AND LESSONS LEARNED

In the 18 months the team has been together they have made great progress, says Boudoum. "We have reached the point where the organization sees us as internal consultants for the supply chain – where they come to us with business problems, rather than data requests. They expect us to come up with creative and innovative solutions for them. I think that's a win for our team. It allows us to be more embedded and more influential in the decisions."

They come to us with business problems instead of data requests.
-- Mohamed Boudoum

When asked what advice he would give to others on similar journeys, Boudoum points to two key learnings:

1. The people doing analytics should not just be purely technical people; their technical skills and business acumen must be on the same level; and
2. Spend the right time building the foundation – the methodologies and processes – so that when team members move to other opportunities, you’re not starting from zero.

THE ROAD AHEAD

Looking ahead, Boudoum says the team will endeavor to take an even more holistic view of the supply chain, employing advanced and predictive analytics to be even more proactive.

“Looking at things holistically,” he says, “we start connecting the dots, thinking about, for instance, where our distribution centers and our clubs should be located five or 10 years out. Are the places we’re in today going to be the best places to allow our suppliers to bring us the best products? I would like for our team to get more involved in helping shape the future of the organization.”

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