# Modern Retail Analytics: Data Visualization Using Tableau

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**New Job, New Data[4]**

On a windy September morning in 2015, Hugh Sander was watching his fourth tutorial video on Tableau, one of the world's most popular data visualization software packages. Hugh had recently been hired as the newest member of *Global Superstore's* newest division - the Data Analytics group. Marine Prickett, the company's CTO, had tasked the group with modernizing the company's operations using analytics. She had delivered an inspirational account of her vision to the new cohort the night before, and Hugh was eager to hit the ground running. He had identified data visualization as a promising first place to begin his investigations and had come into the office early that morning to begin experimenting with potential data visualization tools he might use.

Hugh had recently graduated from an undergraduate program, where he had been exposed to a number of analytical and statistical tools. He had found that his favorite part of working with data was the last mile - putting together convincing visuals to convey the results of his analyses to key stakeholders. When the time came to look for his first job, he considered a number of companies in a broad variety of fields, but when he fell upon Global Superstore's pilot program, he felt sure he would be unlikely to find a better match: the company was at the very start of its analytics journey, and Hugh would be able to play a key part in helping Global Superstore drive value from its endless volumes of data. data. Ms. Prickett's presentation the night before had confirmed that Hughes' aspirations were very much aligned with the company's. She had mentioned that analytics have increasingly featured in her discussions with fellow executives, and that she was eager to move in that direction. Hugh had studied a number of companies in the same position as part of his studies and felt that visualization was a good place to start - Global Superstore was still using Excel as its main data analysis tools, and whilst the company was managing surprisingly well with Pivot Tables and VLOOKUPs, he had seen first-hand how much more powerful modern visualization tools like Tableau could be. Hugh had shared his thoughts with Ms. Prickett, who had agreed to provide him with a Tableau license and data pertaining to more than 50,000 orders handled by Global

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[4] This case study was designed for educational purposes and leverages a synthetic dataset made available by Tableau (http://www.tableau.com/sites/default/files/training/global_superstore.zip). The main goal of this case is to establish a practical retail context around this sample dataset. The story in this case, including details of Global Superstore's operations, the pilot program, and employees of the company are fictional.

Superstore between 2011 and 2014. Hugh was determined to repay Ms. Prickett's trust by building a comprehensive dashboard with interesting and pertinent data visualizations.

**Global Superstore**

Global Superstore is a global online retailer based in New York, boasting a broad product catalogue and aiming to be a one-stop-shop for its customers. Global Superstore's clientele, hailing from 147 different countries, can browse through an endless offering with more than 10,000 products. This large selection comprises three main categories: office supplies (e.g., staples), furniture (e.g., chairs), and technology (e.g., smartphones) **(Exhibit 1)**. Global Superstore's largest demand comes from the U.S., Australia, China, France, and Germany **(Exhibit 2)**. As for their sales revenue, it surpassed $4 million in 2014, a 26% increase from 2013 **(Exhibit 3)**. The growth in Global Superstore's order volume experienced a similarly healthy growth; with more than 17,000 orders processed in 2014 **(Exhibit 4)**.

**Tableau**

Tableau was created in 2003 by Chris Stolte, Christian Chabot, and Pat Hanrahan, three researchers from Stanford University. What is known today as a leading business intelligence software started as a modest commercial outlet for research conducted at Stanford University. Quickly, its user friendliness received wide acclaim; Tableau allowed even non-technical users to generate complex graphs and maps by simply dragging and dropping components in Tableau's interface. This success translated into substantial growth in sales and eventually led to Tableau being recognized as a leader in Gartner's Magic Quadrant for Analytics and Business Intelligence Platforms in 2012. In 2019, Tableau was acquired by Salesforce.com in a $15.7 billion deal.

**The Mandate**

Promptly after onboarding at Global Superstore, Hugh was granted access to a spreadsheet with information on the 51,291 orders that were processed between 2011 and 2014. The dataset provided 24 attributes including Ship Date, City, Category, and Order Priority (for a concrete example of a specific row in the dataset see **Exhibit 5**).

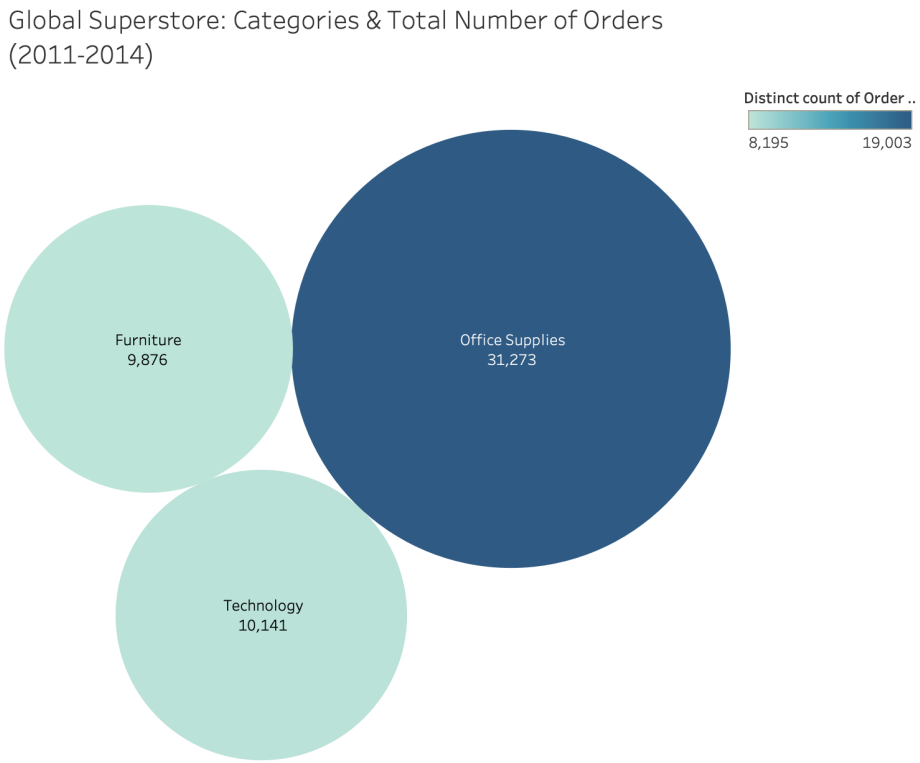
To Hugh's dismay and excitement, Ms. Prickett had heard of his efforts and scheduled a meeting for Hugh to present his findings to a panel of Global Superstore employees. Hugh had barely met his colleagues, didn't even know where the kitchen was, but his first job was clear: to brush up on his Tableau skills and work with the past orders to create an aesthetically pleasing and insightful dashboard. In this context, a dashboard is a customized data visualization tool that displays several business metrics or key performance indicators (KPIs) on a single screen. Hugh was hoping to become more

acquainted with the Global Superstore data and use his dashboard to identify interesting hidden trends and patterns.

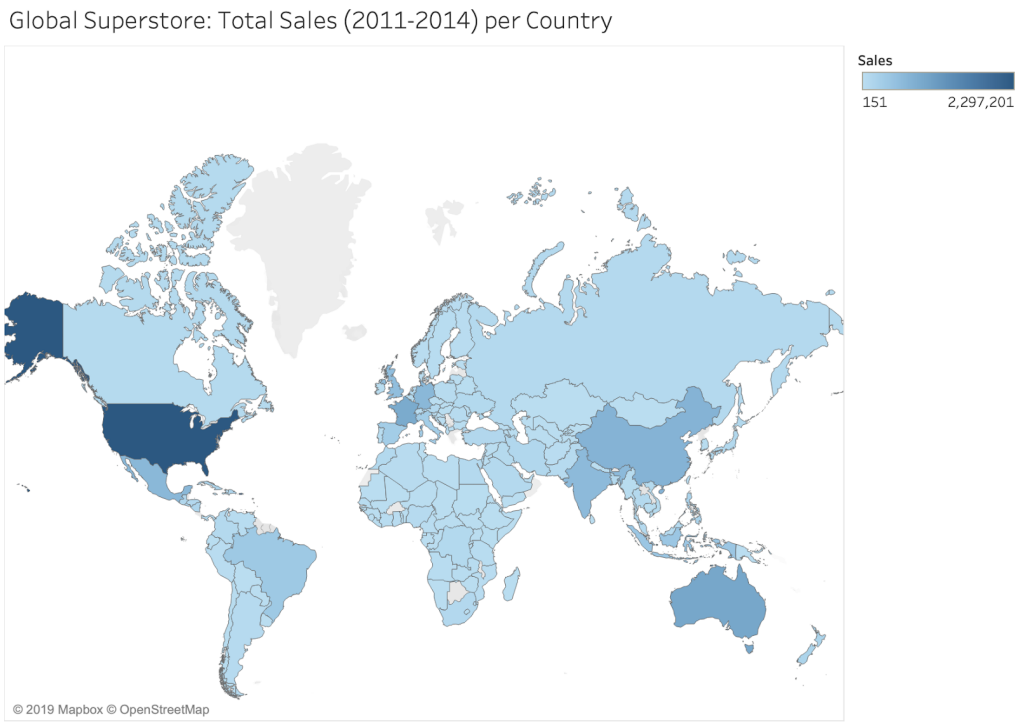
Throughout his hiring process, Hugh had learnt a lot about Global Superstore's operations. Asking the right questions helped him get the job, but also gave him a headstart on his first assignment. For instance, he knew that a topic that was front-of-mind for Global Superstone's executives was the breakdown of sales by category and geography. For instance, is the United States more profitable than China for Global Superstore? In the same vein, Hugh knew that staffing was a current area of concern - in particular, how to adapt staffing decisions on weekdays and weekends to meet Global Superstone's stringent shipping time targets.

Hugh knew he had a lot of work ahead of him, but that the potential to catapult his career at Global Superstore to the next level was enormous. He was eager to get started.

**Exhibit 1.**



## Exhibit 2.




## Exhibit 3.

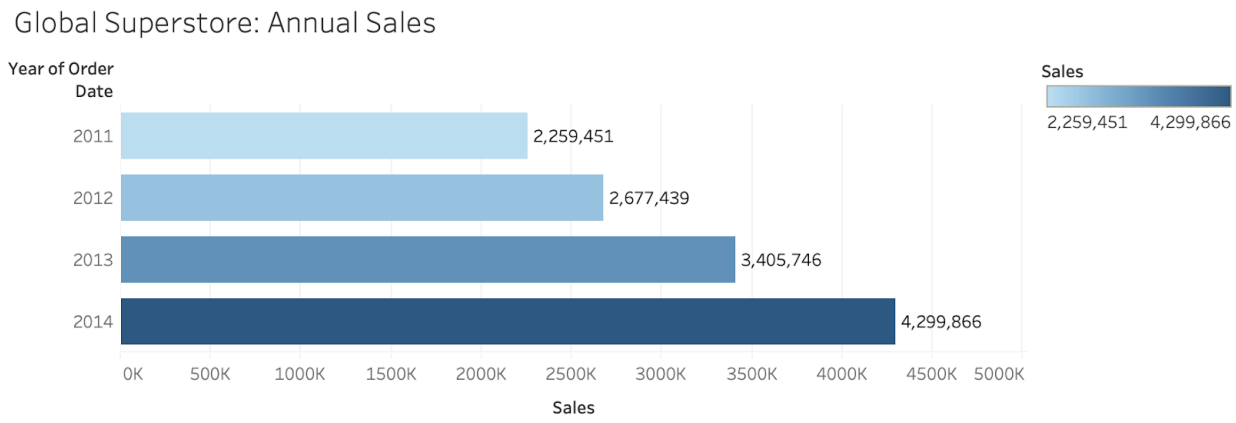


**Exhibit 4.**

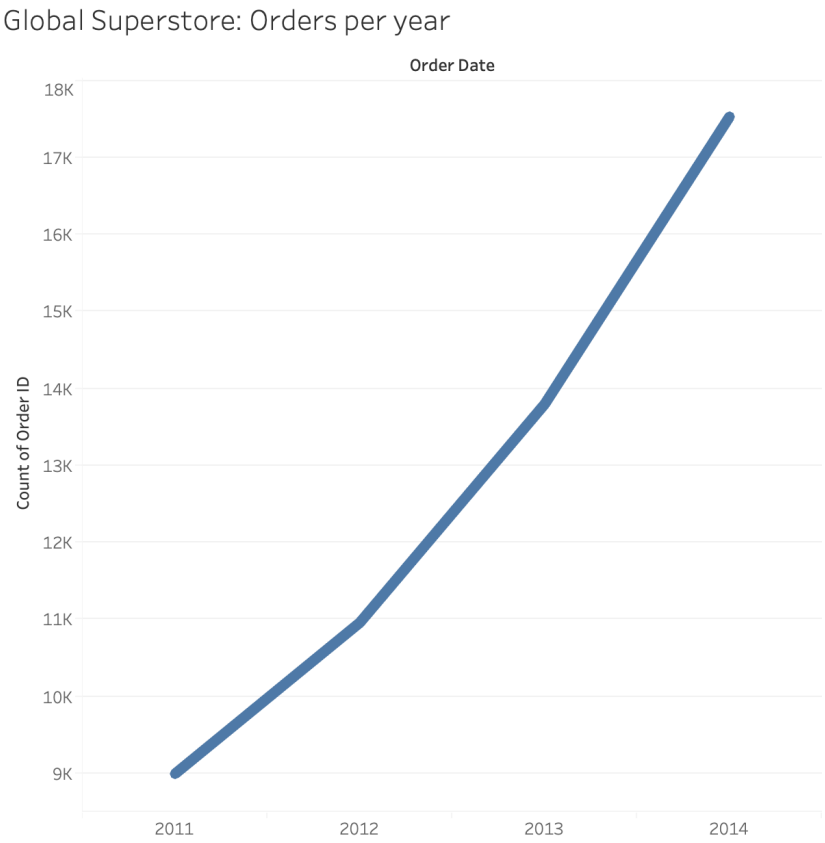



**Exhibit 5: Row 42336**

Row 42336 (Order ID: MZ-2013-3690) represents an order received on 2013-12-18 and shipped using the same-day shipping method. The order was initiated by Deirdre Greer (customer ID: DG-3300) from Maputo, Mozambique. Order MZ-2013-3690 consists of 4 *Motorola Smartphones* (Product ID: TEC-MOT-10002272). The Motorola smartphones belong to the *Technology* category, and more precisely to the *Phones* subcategory. The total sales for this order was $2582.16, and it generated a profit of $593.88. Order priority was labeled as *High*, and the shipping cost was $627.17.