



Case Study: Crayola

Industry: Arts and Crafts Industry

US Manufacturing Locations: Easton, PA

COMPANY OVERVIEW

Crayola is one of the most well known names in the arts and craft industry, with over 99% name recognition in the United States.¹ Nearly every child has grown up using a Crayola crayon, and the smell of paraffin wax brings many back to their youth.

Crayola is a company with humble origins that has been around for over a century. Crayola was started by Edwin Binney and C. Harold Smith, who formed a partnership called Binney & Smith in 1885. They began their business selling red iron oxide and carbon black pigments for use in paint and car tires, but slowly developed more products over the years. In 1903 the company launched their first 8-pack box of crayons, which retailed for a nickel. At this time Alice Binney, Edwin's wife, came up with the iconic Crayola name which was based off of the French word meaning "oily chalk".² Crayola continued to grow at a steady pace over the next 60 years, until it went public in 1961. At that point, growth skyrocketed; Crayola acquired other companies and expanded operations. The company opened a flagship plant in Easton, Pennsylvania in 1969, where they still produce 3 billion crayons today. In 1984, Binney & Smith became a wholly owned subsidiary of Hallmark Cards Inc., the globally recognized greeting card brand, and in 2007, changed its name to Crayola LLC to give emphasis to their principal brand.



“A LARGE PORTION
OF THIS RECENT
SUCCESS CAN BE
ATTRIBUTED TO
THE EVOLUTION OF
CRAYOLA’S SUPPLY
CHAIN OVER THE
PAST DECADE ...”



Crayola began to automate production and in 1996 they produced their 100 billionth crayon in Easton. Crayola Crayon sales continue to dominate the global market. A large portion of this recent success can be attributed to the evolution of Crayola’s supply chain over the past decade under the leadership of Executive VP of Global Operations and Technology, Pete Ruggiero, who is passionate about maintaining the high quality standard Crayola is known for, while simultaneously increasing the amount of automation used in the factories to lower costs and speed production.

THE STATE OF MANUFACTURING IN THE U.S.

In the 1990s, American manufacturing began offshoring at an alarming rate to take advantage of low international wages and operating costs. China was the biggest beneficiary of the offshoring movement, but in recent years, economic policy has made overseas manufacturing less desirable to American corporations. To this end, many large companies have begun the process of Reshoring. A survey conducted in 2015 indicated that 54% of all U.S. companies surveyed said that they were reshoring now or considering it.³ Local manufacturing allows these companies much greater control over product cost and quality, as well as greatly reducing costs to get the product to the end consumer. In nearly all cases, domestic production has proven to be both a viable and better alternative to offshoring.

SUPPLY CHAIN DECISION FACTORS

Crayola is a U.S. based company that has remained true to its roots throughout its growth history. Crayola’s domestic manufacturing is impressive, with over three billion crayons rolling off of the Easton, PA production line yearly. 83% of Crayola’s customers are in North America, and over two thirds of all products which are sold globally are made in the United States.⁴

¹ <http://www.crayola.com/about-us/company/history.aspx>

² <http://www.crayola.com/about-us/company/history.aspx>

³ Sirkin, Harold. Bloomberg-Businessweek “More Companies See Advantage to Manufacturing in the U.S.”

⁴ Interview with Crayola Executive VP, Pete Ruggier



Crayola doesn't just manufacture in the United States because it is easier, or because they were founded here, but rather makes their manufacturing decisions based on a large number of complex supply chain factors. The most important decision factor is an elaborate Total Cost of Ownership (TCO) model that considers all of the factors required to land a product in a specific market. TCO has led Crayola to evolve its regional supply chain modeling, whereby the company produces as much as possible in geographic regions where products will be sold. The strategy enables a core supply chain foundation of close-to-market responsiveness, which Crayola executives believe differentiates Crayola from the competition.

Crayola has standardized processes globally, in addition to focus on innovation and integrating high-speed production into operations. Crayola's unique manufacturing advantage is the scale of its operations, which is substantial relative to the arts and crafts industry. Because of the scale of the business, bulk raw materials are acquired at cheaper costs. The Company locates raw material suppliers within a one-day transport to its plants, enabling the response to unforecasted orders. The company employs a highly skilled workforce, and makes extensive use of custom automation in their manufacturing to maximize capacity. All of these aspects allow Crayola to execute an especially responsive supply chain model where they can react rapidly to the inherent changes in demand that occur in this seasonal business. The automation component of Crayola's strategy is particularly vital to Crayola's production model, as it allows them to viably produce products in the United States at costs competitive with offshore suppliers.

Total Cost Ownership (TCO) is very important in Crayola's decision making process. The sourcing team analyzes

many TCO factors, such as lead times, inventory risk, and carrying cost, before deciding on where raw materials are sourced and where products should be built. Crayola has created a supply chain that can rapidly and accurately respond to seasonal peak demand for many of their products.

Traditionally, Crayola has experienced its largest sales spike around the back to school period. For the first time in 2014, purchases outside of back to school exceeded those within back to school with the expansion of new products such as toys, activity kits, and Color Wonder, an innovative no-mess paper and marker system. So many Crayola products are available that retailers frequently dedicate an entire aisle to Crayola. Through the use of TCO and cost management, Crayola has been able to maintain service levels on this expansive product range, minimize inventories, and maintain competitive costs. Crayola is the envy of many manufacturers.

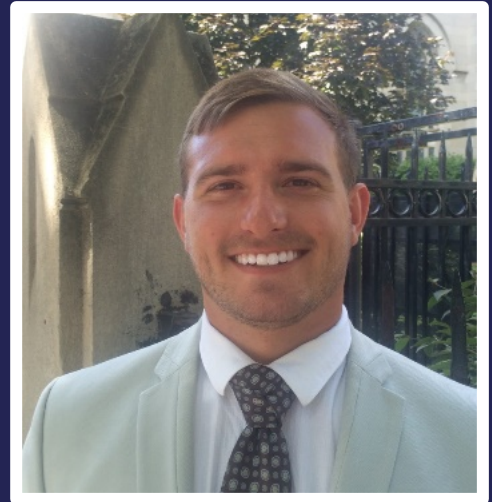
CRAYOLA'S MANUFACTURING – NO REASON TO EVER LEAVE

Crayola employs over 1,250 people across the United States, Canada, Australia, and Mexico, with the bulk of the staff working in their main Lehigh Valley, PA locations. Crayola has strategic advantage in the art supplies marketplace due to their continuing dedication to quality and domestic production serving America, their largest customer market. Crayola's "American Made" standard makes the company an outstanding example of the best US manufacturers. Crayola continues to innovate and develop new products, and is working to make the Crayola brand as recognizable worldwide as it is in the United States.



ABOUT THE AUTHOR

Andrew Gruszka is a Student Researcher for the Reshoring Institute. He is currently pursuing a Bachelor of Accountancy and Bachelor of International Business degrees with a minor in Supply Chain Management from the University of San Diego. Andrew has an expected graduation date of December.



ABOUT THE RESHORING INSTITUTE

Our Mission

In collaboration with the University of San Diego Supply Chain Management Institute, we provide information, research and support for companies trying to Reshore manufacturing. This includes topics such as site selection, tax incentives, science and math education, marketing, public relations, cost comparison development and case studies.

www.ReshoringInstitute.org

For more information: www.Crayola.com

