

GROWTH IN THE PLASTIC REPLACEMENT SECTOR

*Balancing Sustainability, Profitability, and New
Business Opportunities at WestRock Company*

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MBA **2023**
CASE COMPETITION



UNIVERSITY OF
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INTRODUCTION

Buoyed by strong financial results, new business partnerships, and recognition for being an outstanding workplace, 2023 started on a high note for WestRock Company. 2022 financials showed record profits, continued growth in all sectors, and a reduced debt load. Such results enabled the company to continue modernizing itself by divesting expensive and non-mission critical assets while increasing its stake in high-growth segments leveraging fiber-based products. Recent notable developments included a contract with Grupo Modelo to replace plastic six-pack rings with recyclable, fiber-based CanCollar, developing a recyclable paperboard package for the Heinz Corporation, purchasing new, modern facilities in the northwest, and divesting older pulp mills. Notably, the firm also continued to meet its rigorous sustainability targets, achieved its employee safety goals, and was recognized as one of the best places to work for LGBTQ+ employees for a second straight year.

WestRock established itself as a leader in both paper and packaging. Its paper mill network had a capacity of ~15 million tons per year in fiscal year 2022, producing both containerboard (used primarily in the production of shipping boxes) and paperboard (used in consumer applications).¹ WestRock converted a large part of its paper production to packaging in its ~300+ facilities (including printing) and sold some of its production on the open market through its Global Paper segment, accounting for ~28% of net sales in 2022.

Despite its impressive accomplishments, the 58,000-employee, highly diversified firm had to decide how to balance sustainability, profitability, and new business opportunities moving forward. The firm had recently developed advanced barrier-coated paperboard, which had the needed features to replace many plastic packaging applications and used sustainable coating. However, WestRock was debating three growth strategies for the sustainable barrier-coated paperboard segment: (1) packaging material production (paperboard only without converting), (2) paper and packaging provider (paperboard production and internal converting), or (3) partnering as the paper provider with a different packaging company.

Option 1: limited capital investment but reduced WestRock's participation in the value chain. Option 2: covered the full value chain but required additional capital and resource investments. Option 3: required the same capital investment as option 1 but left WestRock reliant on a partner firm to convert and market its new product. WestRock also had to consider how the green barrier-coated paperboard strategy would influence strategic investment decisions in other areas such as automation and corrugated packaging, among others. In a nutshell, WestRock must determine how to manage its new technology while maintaining sustainability, achieving profitability, and coexisting with its other successful segments.

COMPANY OVERVIEW

The WestRock Company (WRK) was created in 2015 through the merger of MeadWestvaco and RockTenn. The 58,000-employee Atlanta-based global firm specialized in developing innovative, eco-friendly, fiber-based paper and packaging solutions. WRK experienced record financial results in the fiscal year ending September 2022 (FY22) as sales, net income, and dividends increased significantly. Corrugated packaging remained the firm's bedrock, accounting for 42.3% of net sales. Sales of consumer packaging products accounted for 23.2% of net sales, and paper products, converted by WRK's customers to corrugated, consumer, and other packaging, made up 27.9% of net sales. Sales from WRK's distribution segment made up 6.6% of net sales. Even though WRK primarily served American clientele, non-American operations accounted for 18.3% of the company's 2022 net revenues.

Commenting on their growth and recent results, CEO David B. Sewell noted,

*"WestRock delivered record net sales of \$21.3 billion in fiscal 2022 and continued our track record of strong operating cash flow by generating more than \$2 billion in the same period. Our team remains relentlessly focused on partnering with our customers to help them meet their needs for sustainable paper and packaging solutions as we deliver on our overall transformation initiatives. . . Looking ahead to fiscal 2023, we will continue to strengthen our business as we drive innovation across our portfolio. While market conditions remain uncertain as our customers work through the current high inventory levels, WestRock's ability to serve a variety of end markets with our diverse portfolio provides resiliency that will serve us well. We remain confident that our business model, scale, and ongoing transformation initiatives will continue to drive long-term shareholder value."*²

Climate risks/impacts, emissions reduction, energy use, water stewardship, waste reduction, recycling, responsible sourcing, sustainable forestry, and environmental compliance were the main focuses of WRK's sustainability goals. For instance, in 2021, one of its energy-intensive manufacturing units, which made Kraft paper, burned renewable biomass to meet more than 60% of its energy needs.

The firm had also recently established an innovation council to coordinate innovation across the company and work with stakeholders to create shared projects, standardize measurements, and apply best practices. WRK hoped that such efforts would enhance sustainability across the packaging industry.

Along with innovation and sustainability, WRK placed a high priority on its employees and local communities. Notably, the company strove to have a 100% safe work environment by continuously lowering workplace risk and promoting employee well-being. WRK has also made significant investments in technical education and sought to help provide 1 million people access to workforce training by 2030. Management felt such initiatives demonstrated leadership in diversity, inclusion, and belonging and would encourage young people and members of underrepresented communities to pursue employment in modern manufacturing.



NOTABLE RECENT COMPANY ACHIEVEMENTS

DECEMBER 2022: WRK finalized the acquisition of Grupo Gondi, a previous joint venture partner. The purchase of Grupo Gondi includes “four paper mills, nine corrugated packaging plants, and six high graphic plants throughout Mexico that produce sustainable packaging for a wide range of end markets in the region.”³ The \$970 million acquisition was expected to have a high rate of return and enhanced WRK’s leading position in the Latin American market.

OCTOBER 2022: WRK won six packaging design excellence awards, including the prestigious Folding Carton of the Year award for a package designed for a Limited Edition of Scottish Leader’s Moonchild Whisky.⁴ The additional awards WRK won include the following:

- Remy Martin XO Extra Old Cognac, Gold Award
- Recipe Unlimited Swiss Chalet Takeout Cartons and Trays, Excellence Award in Sustainability
- WestRock EverGrow Grape Tomato Punnet with Kroger, Excellence Award in Sustainability
- WhistlePig The Boss Hog® VIII Lapulapu’s Pacific Excellence Award
- Fun Wine® Variety Pack, Excellence Award

JUNE 2022: WRK was named one of *Forbes’* Best Employers for New Graduates based on an analysis of an independent survey of more than 20,000 young professionals employed at more than 1,000 different locations. WRK’s chief human resources officer Vicki Lostetter commented on the accomplishment, “Being recognized for these efforts is especially rewarding as we

continue to build and empower future leaders, taking the required steps to be a company where people choose to work.”⁵

JANUARY 2022: For the second consecutive year, WRK received a top score of 100 on the Human Rights Campaign Foundation’s Corporate Equality Index (CEI). CEI was the nation’s foremost benchmarking survey and report measuring corporate policies and practices related to LGBTQ+ workplace equality. When commenting on this achievement, WRK’s CEO David B. Sewell stated, “Equity and inclusion are essential to who we are as a company, because we know our team is at its best when every member is heard, represented and respected. As we continue this ongoing work to ensure greater equity for our LGBTQIA+ employees, we’re honored to be recognized by the HRC Foundation’s Corporate Equality Index for the second year in a row.”⁶

OCTOBER 2021: WRK won two sustainability awards from the American Forest & Paper Association (AF&P) recognizing WRK’s outstanding sustainability accomplishments.⁷

JUNE 2021: WRK committed to setting science-based targets (SBTs) for greenhouse gas (GHG) emission reductions.⁸

JANUARY 2020: For the fifth consecutive year, WRK was named to *Fortune* magazine’s annual list of the world’s most admired companies. This list was widely considered the definitive report card on corporate reputation.⁹

PERFORMANCE

WRK reported record financial results for both the 2022 fourth quarter and fiscal year (FY) 2022.¹⁰ FY22 net sales increased 13.6% over FY21 at \$21.3 billion, while fourth-quarter net sales were up 6.1% over 2021 fourth-quarter net sales at \$5.4 billion. Fourth quarter net income was up \$21 million to \$345 million, while FY22 net income increased \$106 million to \$945 million. Notably, consolidated adjusted annual earnings before interest, taxes, and depreciation and amortization (EBITDA) came in at a record \$3.45 billion, an increase of 15.3% from FY21. The outstanding results allowed WestRock to increase its stock dividend by 10% to \$1.10 per share and return ~\$600 million in stock repurchases to investors.

The firm noted a 10% increase in overall packaging sales in FY22, crediting pricing increases for the sales bump. Bright spots in corrugated packaging in the food and beverage sector offset weaker demand in the industrial and food service spaces. During the first quarter of FY22, WestRock also reorganized into the four reporting segments: corrugated packaging, consumer packaging, global paper, and distribution. The firm noted that the reorganization was better aligned with how it assesses performance, allocates resources, and makes critical decisions.

In its Investor Day presentation in 2022, WestRock highlighted its focus on differentiated solutions, which delivered 30% higher profit per ton than standard business.

SUSTAINABILITY

WestRock prided itself on a multipronged approach to sustainability in an effort to become both a better business partner for its customers and create the best products.¹¹ Recent notable sustainability initiatives included setting specific targets for GHG emission reductions, water usage, employee training/safety, diversity, equity, and inclusion. In addition to setting/achieving important targets in these areas, the firm sought to use sustainability to promote innovation.

For WRK, it was not about simply reducing GHG emissions or winning awards for being a great workplace for new graduates and LGBTQ+ employees. It was also a belief that hiring and supporting a diverse workforce would, in turn, spur the creativity and passion for developing sustainable packaging products that were of higher quality, more durable, and cheaper. An example of such creativity and innovation is its fiber-based CanCollar, which would gain market acceptance because it was more attractive, stronger, and more affordable than plastic 6-pack rings, thus reducing plastic waste and increasing recycling by being the best solution. Similarly, if biodegradable coated paperboard proved stronger and more durable than polyethylene-coated products, customers who purchased the stronger and more durable product would indirectly support sustainability.

This strategy appeared to be working quite well for WRK. Notable 2021 sustainability achievements included a 15% reduction in GHG emissions, using renewables for 63% of their energy needs, and a 39% reduction in coal usage since 2015. WRK recycling efforts also recovered 7.3 million tons of paper, and firm employees displayed their community engagement by donating over 1 million meals to local food banks in 2021. During the same year, WRK increased ethnic diversity, was recognized as a “best company” for LGBTQ equality for the second straight year, had a record number of team members participate in employee resource groups, noted that over 86% of managers participated in inclusive leadership training, and reported that 74% of employees felt a sense of belonging at work.

While no exact metric existed to prove that such impressive sustainability accomplishments caused WRK’s record-setting 2022 financial performance, it was clear that the commitment to sustainability was consistent with high levels of profitability. Further, and perhaps more importantly, WRK was achieving a key part of its mission to be highly innovative while also setting and reaching impressive sustainability and workplace targets. These targets strongly suggest that WRK’s philosophy of supporting a diverse workforce was achieving dividends in employee satisfaction, product development, and profitability.

MARKET FORCES

WestRock is one of the largest paperboard producers in North America and competes primarily with Graphic Packaging, Clearwater, Pactiv Evergreen, and Greif.¹² WestRock’s paperboard production gets sold through two different channels: Some of it is converted internally and sold through its Consumer Packaging segment, with the other volume sold as paperboard that gets converted to varying end-uses by WestRock’s Global Paper customers (note: WRK’s Global Paper segment also sells non-paperboard products, including containerboard used by its customers to make corrugated packaging, and Kraft paper primarily used in paper bags).

WestRock’s Paperboard mills produce bleached paperboard (SBS, 41% of FY22 capacity), coated natural kraft (CNK, also referred to as coated unbleached kraft or CUK, 27% of FY22 capacity), and coated recycled board (CRB, 16% of FY22 capacity).

The key driver of paperboard demand is packaging for various consumer products such as food & beverage, beauty & healthcare, and food service. Paperboard demand is thus highly correlated with consumer demand. Competition comes primarily from plastic packaging (e.g., single-use plates and cups), which has led WestRock to explore innovative solutions to broaden paperboard’s end-use applications and work closely with partner firms to identify new market offerings.





COATED PAPERBOARD

Barrier Coated paperboard holds up when exposed to various environmental factors such as humidity, grease, aromas, heat, light, and oxygen. As such, the product is used in myriad packaging applications, including frozen food trays, paper cups, dairy product containers, and paper plates.¹³ However, traditional coatings made from polyethylene (PE) and polypropylene (PP) are petroleum-based, limiting their recyclability and linking the product to the petroleum supply chain and its inherent cost volatility.

The industry is thus transitioning to greener barrier coatings that are completely recyclable, easier to source, and comparable to traditional barrier coating in nearly all situations. Among the novel barrier coating solutions are dispersion technology (replaces barrier coating with a water-based treatment that protects the paperboard from grease and fluids), green PE (a plant-based version of polyethylene that provides humidity protection), and biodegradable coatings (coatings produced from petroleum or plants which decompose into humus and CO₂, allowing them to be recycled and composted).

WRK's EnShield product line competes in the green barrier-coated space. The product has faster lead times and is highly resistant to oil and grease, making it ideal for packaging bakery items, frozen food, and takeout.¹⁴ EnShield is also polyethylene and fluorocarbon-free, making it sustainable and recyclable.

PAPERBOARD MANUFACTURING

To produce paperboard, WRK had the option to manufacture internally or use external partners for part or all of the converting process. The first part of the paperboard manufacturing process turns forest products into paperboard at a paper mill. Key steps in this process are turning the wood into a pulp, bleaching the pulp, then straining and flattening it before drying the flattened pulp into paperboard. This process creates one large continuous roll of paperboard.¹⁵

The second part of the process is called "Converting" and involves cutting and sizing the large continuous rolls of paperboard into the size desired by customers, laminating, coating, folding, and/or printing, to get to final packaging material that is ready for use by the customer.¹⁶

YOUR CHALLENGE

Using this case and accessible publicly available information, develop a business model for WestRock's EnShield paperboard segment that will emphasize sustainability, profitability, and novel opportunity exploitation. To guide your business model, consider the three general market penetration strategies that WRK was debating for the sustainable paperboard segment: 1) packaging material production (paperboard only without converting), (2) paper and packaging provider (paperboard production and internal converting), or (3) partnering as the paper provider with a different packaging company.

While the first option reduces the capital investment WRK would need to commit, it provides the company with little to no control over how EnShield would be marketed and used by consumers and limits its participation in the value chain. The second option of becoming a fully integrated supplier of both the EnShield paperboard and all packaging solutions provides WRK full control but requires extensive capital and resource investment. The partnership option provides WRK with a middle-of-the-road solution as it only requires a capital investment to produce the EnShield paperboard line. However, that option leaves WRK at the mercy of a partner who would have a highly influential role in determining the success of the EnShield line.

Please also consider how your suggested EnShield business model will influence WRK's strategic investment decisions in other important sectors, such as automation and corrugated packaging.



APPENDIX

Table 1: Representative investments in mill and converting capacity for both paperboard and containerboard

TYPE	LOCATION	COMPANY	SUBSTRATE(S)	EST. CAPACITY (000s tons)	COST (\$MM)	START-UP DATE	SOURCE	INVESTMENT TYPE
Mill	Trois-Rivieres, QC	Kruger	Recycled CTB	363	190	2017/Q2	RISI	Conversion
Mill	Wallula, WA	PCA	CTB	363	150	2018/Q2	RISI	Conversion
Mill	Wapakoneta, OH	Pratt	Recycled CTB	363	275	2019/Q4	RISI	New Facility
Mill	Florence, SC	WestRock	CTB	645	470	2020/Q4	RISI	New machine
Mill	Selma, AL	IP	CTB	408	300	2020/Q4	RISI	Conversion
Mill	Green Bay, WI	Green Bay Packaging	Recycled CTB	685	500	2021/Q1	RISI	New machine
Mill	Catawba, SC	New-Indy Containerboard	CTB	400	260	2021/Q2	RISI	Conversion
Mill	Jackson, AL	PCA	CTB	700	450	2020-24	RISI	Conversion
Mill	Ashland, VA (Bear Isl)	Cascades	Recycled CTB	465	525	2023/Q1	RISI	Conversion
Mill	Kingsport, TN	Domtar	Recycled CTB	600	350	2023/Q1	RISI	Conversion
Mill	Henderson, KY	Pratt	Recycled CTB	540	400	2023/Q4	RISI	New Facility
Converter	Wallkill, NY	President Container	Corrugated	Additional 1.1 BSF to 3.35 BSF	49.4		RISI	Expansion/Investment
Converter	Morganton, NC	Jackson Corrugated	Corrugated	1+ BSF	12	2Q19	RISI	New Facility
Converter	Cleveland, TN	Schwarz	Corrugated	Record of 5.456 MSF in a shift	44		RISI	New Facility
Converter	Elizabethtown, KY	Kruger	Corrugated	2.4 billion ft ²	114.2		RISI	New Facility
Converter	Lancaster, TX (Dallas)	Bio-Pappel	Corrugated	500,000 sq ft	35	2Q22	RISI	New Facility
Converter	Piscataway, NJ	Cascades	Corrugated	2.4 BSF	76	Apr-19	RISI	New Facility
Converter	Piscataway, NJ	Cascades	Corrugated	increase of 480 million SF	9	2Q23	RISI	Expansion/Investment
Mill	Kalamazoo, MI	GPK	CRB	500	600	Q1-2022	GPK Press Release	
Mill	Waco, TX	GPK	CRB	200	1,000	2026	GPK Waco News Release	New Facility
Mill	Somerset, ME	SAPPI	SBS	520	418	1H 2025	RISI	
Mill	Escanaba, MI	Billerud	Paperboard (PB): FBB/CUK	550	1,000	2026	Billerud Escanaba Conversion	Conversion
Converter	Orange County, CA	Exeter / Yebo	CTB and PB	N/A, Private company	N/A	Q1 2023	Exeter Street Capital Partners	
Converter	Jackson, TN	G-P	SBS	900,000 sq ft	425	Q3 2024	G-P Dixie Site	New Facility

¹[WestRock annual reports](#) – Retrieved January 30, 2023

²[WestRock Recycling Today](#) – Retrieved January 30, 2023

³[Grupo Gondi Acquisition](#) – Retrieved January 30, 2023

⁴[WestRock Packaging Design Excellence](#) - Retrieved January 30, 2023

⁵[WestRock Named to Forbes Best Employer for New Graduates](#) – Retrieved January 30, 2023

⁶[WestRock Perfect Human Rights Score](#) – Retrieved January 30, 2023

⁷[AF&P Sustainability Awards](#) – Retrieved February 3, 2023

⁸[WestRock Commits to Emission Reductions](#) – Retrieved January 30, 2023

⁹[WRK named to FORTUNE's List of World's Most Admired Companies](#) – Retrieved February 3, 2023

¹⁰[WestRock 2022 Fiscal Fourth Quarter Results](#) – Retrieved January 30, 2023

¹¹[2021 WestRock Sustainability Report: Imagining and Delivering on the Promise of a Sustainable Future](#) – retrieved January 30, 2023

¹²[Graphic Packaging International](#) – Retrieved March 13, 2023

¹³[Barrier Coatings - Paperboard Materials | Stora Enso](#) – Retrieved January 30, 2023

¹⁴[EnShield Paperboard: Ideal for Food, Foodservice | WestRock](#) – Retrieved January 30, 2023

¹⁵[Paper Converting Process](#) – Retrieved March 6, 2023

¹⁶[How It's Made - Printed Packaging](#) – Retrieved March 6, 2023



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