Claude3 Opus Sales Report Supplier Defects, '13 vs '14 Prepared: 21 April 2024 This report uses charts designed according to the International Business Communication Standards (IBCS) to ensure clarity, consistency, and information density.

Key elements:

1. **Consistent chart design**: All charts follow a uniform design, making it easier for readers to understand and compare data across different visualizations. This includes consistent use of fonts, sizes, and positioning of elements.

2. **Simplified and focused content**: Charts are designed to be easily readable, with a focus on essential information. Unnecessary decorative elements are avoided to maintain clarity.

3. Proper labeling and titling: Each chart includes clear, descriptive titles and labels to ensure that the data is easily understood without additional context.

4. Standardized notation: IBCS-compliant charts use standardized notation for elements such as time periods, units, and scenarios, making the information more accessible and comparable.

The following conventions are used throughout the report:

- Black represents actual values for the current year
- Grey represents data from the previous year
- Red indicates negative or "bad" performance
- Green indicates positive or "good" performance
- "PY" is used to denote the previous year values
- "AC" refers to the actual current year values
- Underscore "_" is used to represent year-to-date data
- Tilde "~" indicates a rolling year or 12-month period

Executive summary

Index At a glance Sales breakdown Data insights Trends Backup **Defect Costs Surge**: Supplier defect costs jumped by 13.9 million CAD from 2013 to 2014, largely due to high-impact defects in Logistics, Mechanicals, and Packaging. The company managed to offset some issues through strong performance in certain areas, but costs varied significantly across plant locations and defect types. To effectively manage supplier defect costs, targeted strategies must consider the unique factors impacting performance in different dimensions.

Sales Breakdown Reveals Key Drivers: Logistics faces the highest Supplier Defects costs at 33.1 million CAD, with 89% stemming from impactful defects. Packaging has the most defective units across all types, and although Mechanicals have the highest unit price, Logistics and Packaging lead in total costs due to strong demand and high volumes sold. Rejected defects surged by 327%, and while non-impactful defect costs are decreasing, costs for significant Impact or Rejected defects are rising, particularly in Logistics and Mechanicals.

Data Insights Highlight Opportunities: High-priced Corrugate and Raw Materials primarily drive the company's costs, despite lower sales volumes, while high-volume, low-cost Film and Carton contribute less to overall costs. Defects impact costs differently across categories, with Mechanical defects having the widest range in unit prices and Packaging and Other defects clustering at moderate levels. This indicates a need for targeted improvements and systematic process enhancements. Focusing on high-impact Class A defects will maximize cost savings, while efficiently managing inventory based on the unit contributions of Class B and C defects.

Troubling Trends Require Action: The company's costs grew rapidly at 22.2% from 2013 to 2014, far outpacing the 1.9% increase in units sold, suggesting declining cost-efficiency that could impact profitability. While some cost categories saw reductions, Logistics, Materials & Components, and Packaging had substantial increases, with defect costs rising 23% and Logistics and Packaging seeing the biggest jumps. To manage financials and defect costs effectively, targeted action is crucial, especially in Logistics and Mechanicals.

Executive summary Index At a glance Sales breakdown Data insights Trends Backup At a glance: High-impact defects, especially in Logistics, Mechanicals, and Packaging, drove a 13.9 million CAD increase in supplier defect costs from 2013 to 2014. Despite challenges, the company offset some issues with strong performances in certain areas, but costs varied significantly across plant locations and defect types. Targeted strategies are needed to manage supplier defect costs effectively, considering the unique factors impacting performance in different dimensions. Pages 8 to 14.

Sales breakdown: Logistics faces the highest Supplier Defects costs at 33.1 million CAD, with 89% from impactful defects, while Packaging has the most defective units across all types. Although Mechanicals have the highest unit price, Logistics and Packaging lead in total costs due to strong demand and high volumes sold. Rejected defects surged by 327%, and non-impactful defect costs are decreasing, but costs for significant Impact or Rejected defects are rising, especially in Logistics and Mechanicals. Pages 16 to 22.

Data insights: The company's costs are primarily driven by high-priced Corrugate and Raw Materials, despite lower sales volumes, while high-volume, low-cost Film and Carton contribute less to overall costs. Defects impact costs differently across categories, with Mechanical defects having the widest range in unit prices and Packaging and Other defects clustering at moderate levels, indicating a need for targeted improvements and systematic process enhancements. Although costs are more concentrated in top defects than units, the company should focus on high-impact Class A defects to maximize cost savings while efficiently managing inventory based on the unit contributions of Class B and C defects. Pages 24 to 30.

Trends: The company's costs grew rapidly at 22.2% from 2013 to 2014, far outpacing the 1.9% increase in units sold, suggesting declining cost-efficiency that could impact profitability. While some cost categories saw reductions, others like Logistics, Materials & Components, and Packaging had substantial increases, and defect costs rose 23% with Logistics and Packaging seeing the biggest jumps. To manage financials and defect costs, the company should take targeted action, especially in Logistics and Mechanicals. Pages 32 to 39.

Executive summary Index **At a glance** Sales breakdown Data insights Trends Backup The dataset "Supplier Defects Costs in kCAD by Dimension '14" reveals that 68% of costs stem from high-impact defects, with Logistics, Mechanicals, and Packaging each contributing over 20% of total defect costs (p.9). From 2013 to 2014, total costs increased by 13.9 million CAD, driven by a positive price variance of 33.0 million CAD, partially offset by a negative variance of -18.7 million CAD from units and mix (p.10).

Costs grew for Controllers, Raw Materials, and Others from '13 to '14, indicating potential areas for business focus (p.11). A variance bridge analysis shows that despite challenges in bad seams and some mechanical issues, the company offset these with strong performances in logistics, some mechanical aspects, and packaging (p.12).

Supplier defect costs varied between 2013 and 2014, with dramatic increases for Skokie, II and Bangor, Mi plants and Misc and Foreign Material defect types, while costs improved for Bad Seams and Out Of Spec defect types and Electrical and Goods & Services categories (p.13). A breakdown of supplier defects costs across Logistics, Mechanicals, Packaging, and Other rank >3 categories by plant location highlights the need for localized strategies and the impact of various factors on performance across categories and locations (p.14).

The data emphasizes the importance of addressing specific operational issues while leveraging successful strategies from wellperforming areas. It also underscores the need for targeted approaches to manage supplier defect costs across different dimensions, such as plant locations, defect types, and business categories (p.13, p.14). The dataset "Supplier Defects Costs in kCAD by Dimension '14" breaks down costs from supplier defects across seven business dimensions. 68% of costs come from high-impact defects. Logistics, Mechanicals, and Packaging each account for over 20% of total defect costs, with Corrugate and Raw Materials as the main materials involved. Many smaller plants, less common defects, and smaller vendors collectively result in substantial costs, falling under 'Other rank >8' for Plant, Defect, and Vendor dimensions.



From 2013 to 2014, total costs increased by 13.9 million CAD. A positive price variance of 33.0 million CAD drove this increase, but it was partially offset by a negative variance of -18.7 million CAD from units and mix.



From '13 to '14, costs grew for Controllers, Raw Materials, and Others, making them potential areas for business focus. Carton and Composites faced challenges, mainly due to negative Units & Mix variance. Most categories except Raw Materials and Others had positive price variance, suggesting possible price increases or better product mix.



A variance bridge analysis from 2013 to 2014 shows a complex interplay of factors affecting costs. Despite defects in bad seams and some mechanical issues, the company offset these with strong performances in logistics, some mechanical aspects, and packaging. Costs grew from \$62.7 million CAD in 2013 to \$76.6 million CAD in 2014.



Supplier defect costs varied between 2013 and 2014. Defect costs increased dramatically for Skokie, II and Bangor, Mi plants and Misc and Foreign Material defect types. However, defect costs improved notably for Bad Seams and Out Of Spec defect types and Electrical and Goods & Services categories. The data shows the need to address specific operational issues while leveraging successful strategies from well-performing areas.



A breakdown of supplier defects costs across Logistics, Mechanicals, Packaging, and Other rank >3 categories by plant location for 2013 and 2014 shows high variability. Logistics saw significant increases in Bangor, MI and decreases in Springfield, IL. Mechanicals generally faced declines, particularly at major plants. Packaging showed growth, especially in Joliet, IL and Detroit, MI. The data highlights the importance of localized strategies and the impact of various factors on performance across categories and locations.



Executive summary Index At a glance **Sales breakdown** Data insights Trends Backup The Supplier Defects' costs are highest in Logistics at 33.1 million CAD, with 89% from impactful defects, suggesting frequent and severe issues (p.17). Impact defects dominate costs across most categories and plants, particularly in Logistics at Bangor, MI, and Cincinnati, OH, significantly affecting operational or production costs (p.18).

The "Rejected" category saw a remarkable 327.0% increase, while the "No Impact" category faced a severe 59.0% decline, and the "Impact" category experienced a slight 3.0% decrease (p.19). Costs for non-impactful defects are decreasing, while those for significant defects (Impact or Rejected) are increasing, especially in Logistics and Mechanicals (p.20).

The 'Packaging' category has the highest number of defective units across all defect types, with a particularly high 3.0 million rejected units, suggesting significant quality issues (p.21). Logistics shows the highest costs at 33.1 million CAD, correlating with 3.4 million units sold, the highest among all categories, suggesting strong demand or effective costs strategies (p.22).

Mechanicals have the highest unit price but don't lead in total costs, surpassed by Logistics and Packaging (p.22). Packaging has the lowest unit price at 3.5 CAD but significant costs at 17.4 million CAD, driven by selling over 5 million units, the most among all categories, demonstrating that lower-priced items in high quantities can substantially contribute to total costs (p.22).

Supplier Defects' costs are highest in Logistics at 33.1 million CAD, with 89% from impactful defects. This suggests frequent and severe issues, potentially indicating systemic problems or critical process failures. Mechanicals and Packaging also have significant defects costs, with a more balanced mix of Impact and Rejected defects, pointing to both severe and less severe defects.



Impact defects dominate costs across most categories and plants, particularly in Logistics at Bangor, MI, and Cincinnati, OH. While the defects may not lead to outright rejection, they significantly affect operational or production costs. The 'Other' category, encompassing multiple plants, shows a diverse range of defect costs, indicating a complex scenario that might require detailed individual analysis for optimization.



The "Rejected" category saw a remarkable 327.0% increase, while the "No Impact" category faced a severe 59.0% decline. The "Impact" category experienced a slight 3.0% decrease. Despite the negative growth rates in the other categories, the overall average growth rate remains positive at 22.0%, significantly influenced by the high growth in the "Rejected" category.



Costs for non-impactful defects are decreasing, while those for significant defects (Impact or Rejected) are increasing, especially in Logistics and Mechanicals. The Rejected defect type shows a very high growth rate in costs across all categories: Logistics leads at 926.0%, Mechanicals at 726.0%, Packaging at 170.0%, and Other at 124.0%. This points to a major increase in costs for rejected defects, possibly due to stricter quality controls or more severe defect issues.



The 'Packaging' category has the highest number of defective units across all defect types, with a particularly high 3.0 million rejected units. This suggests significant quality issues. The 'Logistics' category shows a disproportionately high 2.9 million units under 'Impact'. Defects here likely significantly affect operations or customer satisfaction.



Logistics shows the highest costs at 33.1 million CAD, correlating with 3.4 million units sold, the highest among all categories. This suggests strong demand or effective costs strategies. Mechanicals have the highest unit price but don't lead in total costs, surpassed by Logistics and Packaging. Packaging has the lowest unit price at 3.5 CAD but significant costs at 17.4 million CAD, driven by selling over 5 million units, the most among all categories. Lower-priced items in high quantities can substantially contribute to total costs.



Executive summary Index At a glance Sales breakdown **Data insights** Trends Backup The company's costs are primarily driven by Corrugate and Raw Materials due to their high unit prices, despite lower sales volumes. In contrast, Film and Carton have high sales volumes but low prices, contributing less to overall costs. The company should focus on either high-volume, low-cost materials or high-cost materials, depending on their business model and market conditions (p.25). Across various categories, certain materials consistently drive costs and defects. Raw Materials in Logistics and Mechanicals have high unit prices, indicating costly defects, while Labels and Carton, used extensively in Packaging, have high units sold, suggesting that even small defects could lead to significant aggregate costs (p.26).

Class A accounts for 79.9% of costs despite having just 24.4% of defects, while Class C contributes only 5.1% to costs but has 47% of defects. Production or quality processes for Class C products should be investigated and improved, while maintaining the high value and low defect rate of Class A products (p.27). Most defects have low unit costs and occur in moderate to high quantities, with less common defects having very high unit prices or volumes. Targeting higher unit price defects for reduction or elimination could yield significant cost savings, while the concentration of lower-cost defects signals opportunities for standardized quality improvement processes (p.28).

Defects impact costs differently across categories. Mechanical defects have the widest range in unit prices, requiring targeted improvements. Packaging and Other defects cluster more densely at moderate levels of both units and unit prices, indicating a need for systematic process improvements. Focus on defects that are both common and costly to prioritize quality control measures and balance quality improvement with cost reduction (p.29).

Costs are more concentrated in top defects than units, so some high-value defects may not be high-volume movers, impacting inventory and production planning. The uneven distribution of unit volume and costs for lower-ranked defects means supply chain management must balance both for optimal resource use. Focus on high-impact A class defects to maximize costs, but don't neglect B and C classes for efficient inventory management based on unit contributions (p.30).

Corrugate and Raw Materials drive the company's costs due to their high unit prices, despite lower volumes sold. In contrast, Film and Carton have high sales volumes but very low prices, contributing less to overall costs. This suggests a need to either focus on high-volume, low-cost materials or high-cost materials, depending on the business model and market conditions.



Across various categories, certain materials consistently drive costs and defects. Raw Materials in Logistics and Mechanicals have high unit prices, indicating costly defects due to their critical nature. Labels and Carton, used extensively in Packaging, have high units sold, suggesting that even small defects could lead to significant aggregate costs. Each category shows distinct patterns in terms of which materials have the most defects, guiding targeted quality improvement efforts.



Unit Price

Class A accounts for 79.9% of costs despite having just 24.4% of defects. Class C contributes only 5.1% to costs but has 47% of defects. Production or quality processes for Class C products should be investigated and improved. The high value and low defect rate of Class A products should be maintained as a standard.



Most defects have low unit costs and occur in moderate to high quantities, as seen in the dense clustering in the bottom left quadrant. Defects with very high unit prices or volumes are less common. Targeting higher unit price defects for reduction or elimination could yield significant cost savings. The concentration of lower-cost defects also signals opportunities for standardized quality improvement processes to reduce their frequency.



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Defects impact costs differently across categories. Mechanical defects have the widest range in unit prices, from very low to very high, so targeted improvements are needed. Packaging and Other defects cluster more densely at moderate levels of both units and unit prices. They're more frequent but less variable, so systematic process improvements could help. Focus on defects that are both common and costly to prioritize quality control measures and balance quality improvement with cost reduction.



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Costs are more concentrated in top defects than units, so some high-value defects may not be high-volume movers. This impacts inventory and production planning. The uneven distribution of unit volume and costs for lower-ranked defects means supply chain management must balance both for optimal resource use. Focus on high-impact A class defects to maximize costs, but don't neglect B and C classes for efficient inventory management based on unit contributions.



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Executive summary Index At a glance Sales breakdown Data insights **Trends** Backup The company's costs grew at a CAGR of 22.2% from 2013 to 2014, significantly outpacing the 1.9% increase in units sold, indicating declining cost-efficiency that could impact profitability if not addressed (p.33). The high CAGR suggests rapid expansion or rising vendor costs (p.35). Costs across categories showed mixed results, with significant reductions in Electrical and Goods & Services, but substantial increases in Logistics, Materials & Components, and Packaging, hinting at differences in operational efficiencies, market conditions, or strategic resource allocation shifts (p.34, p.37).

Vendor-related costs grew healthily, primarily due to costs from active vendors, while minimal costs from lost vendors in 2013 and no such costs in 2014 suggest vendor loss hasn't significantly impacted financials during these periods (p.36). Defect costs increased by 23% in 2014 compared to 2013, with significant monthly fluctuations, indicating potential seasonal trends or specific supply chain or production process issues (p.38).

Logistics defect costs increased the most year-over-year, followed closely by Packaging, while Mechanicals had a modest overall increase with significant fluctuations (p.39). The Other rank >3 category saw decreased costs, suggesting fewer defects (p.39). The steady rise in Logistics and variability in Mechanicals indicate a need for targeted action to manage and reduce defect costs (p.39).

The business's costs grew at a CAGR of 22.2% from 2013 to 2014, much faster than the 1.9% increase in units sold. This suggests declining cost-efficiency, which could hurt profitability if left unaddressed.



From 2013 to 2014, costs across categories showed mixed results. Electrical and Goods & Services costs reduced significantly. However, Logistics, Materials & Components, and Packaging costs increased substantially. These variations hint at differences in operational efficiencies, market conditions, or strategic resource allocation shifts between the categories.



The '13 cohort's costs grew 4.0% year-over-year, while the new '14 cohort added significantly in their first year. The high 22.2% CAGR suggests the company is rapidly expanding or vendor costs are rising sharply.



Vendor-related costs grew healthily, primarily due to costs from still active vendors. Minimal costs from lost vendors in 2013 and no such costs in 2014 suggest vendor loss hasn't significantly impacted financials during these periods.



From 2013 to 2014, costs were mixed but generally rose, with an overall CAGR of 19.6% across all categories. Despite significant reductions in Electrical and Goods & Services, increases in Logistics, Materials & Components, Mechanicals, and Packaging more than offset these decreases, indicating cost management challenges in several key areas.



Defect costs increased by 23% in 2014 compared to 2013, suggesting a worsening supplier defect situation. There were significant monthly fluctuations, with substantial increases in January, May, June, October, and December, indicating potential seasonal trends or specific supply chain or production process issues.



Logistics defect costs increased the most year-over-year, with Packaging close behind. Mechanicals had a modest overall increase, but with significant fluctuations. The Other rank >3 category saw decreased costs, suggesting fewer defects. The steady rise in Logistics and variability in Mechanicals indicate a need for targeted action to manage and reduce defect costs.





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Supplier Defects

Bar length: Avg Unit Cost in kCAD by Plant and Category. Bar width: Units in m. Bar area: Sales in kCAD





Supplier Defects Avg Unit Cost in CAD, aggregated by Defect '13 vs '14



Supplier Defects Avg Unit Cost in CAD, aggregated by Defect by Category '13 vs '14



'14

'13