

Claude3 Opus supplier defect costs Report

Supplier Defects, '13 vs '14

Prepared: 19 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" dynamic
- **Green** indicates positive or "good" dynamic
- **"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

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Supplier defect costs dynamic

The company experienced a 13.9 million CAD increase in supplier defect costs from 2013 to 2014, primarily due to unit defect cost variance. Challenges arose in supplier defect costs volume and product mix across different material types. High unit defect cost Corrugate and Raw Materials drove supplier defect costs, despite lower supplier defect costs volumes compared to Film and Carton. Logistics showed high supplier defect costs with the highest supplier defect costs volume at 33.1 million CAD and 3.4 million number of defects, while Packaging generated substantial supplier defect costs of 17.4 million CAD through a high-volume, low-unit defect costs dynamic.

Supplier Defects

High-impact defects in Logistics, Mechanicals, and Packaging accounted for 68% of supplier defects costs. The Logistics category faced the highest supplier defect costs in 2014 at 33.1 million CAD, with 89% attributed to severe issues. Packaging had the highest number of defective units, particularly in the 'Other rank >3' plant, despite having the lowest defect unit cost at 0.003 CAD. Supplier defects varied across materials and categories, with costly Raw Materials defects in Logistics and Mechanicals, and high-volume defects in Labels and Carton. Notably, Class C contributed only 5.1% to supplier defect costs but had a 47% defect rate.

Operational Efficiency

Variability in defects costs across plant locations suggests different operational conditions and potential areas for best practice sharing. Most defects occurred with low unit costs and moderate to high quantities, indicating opportunities for cost efficiency improvements. The uneven distribution of units and supplier defect costs among defects highlights the need for a balanced supply chain approach. From 2013 to 2014, the company faced significant cost increases with a 22.2% CAGR, while number of defects only grew 1.9%, suggesting declining efficiency.

Strategic Implications

Costs rose substantially in Logistics, Materials & Components, and Packaging, but fell in Electrical and Goods & Services, indicating varying operational efficiencies or strategic shifts. Supplier defects costs jumped 23% year-over-year, with Logistics and Packaging showing the highest increases, pointing to potential supply chain or production issues that require targeted interventions. Addressing these challenges while maintaining the positive defect cost variance and optimizing the product mix will be crucial for the company's future success.

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At a glance: The company saw a 13.9 million CAD increase in supplier defect costs from 2013 to 2014, largely due to a positive defect cost variance, despite challenges in supplier defect costs volume and product mix across different material types. While some defect categories decreased, others rose dramatically, with high-impact defects in Logistics, Mechanicals, and Packaging accounting for 68% of supplier defects costs. Variability in defects costs across plant locations suggests different operational conditions and potential areas for best practice sharing. Pages 8 to 14.

Supplier defect cost breakdown: The Logistics category faced the highest supplier defect costs in 2014 at 33.1 million CAD, with 89% attributed to severe issues, and experienced significant increase in rejected and impactful defects. Packaging had the highest number of defective units, particularly in the 'Other rank >3' plant, despite having the lowest defect unit cost at 0.003 CAD and generating substantial supplier defect costs of 17.4 million CAD. Logistics also showed high supplier defect costs with the highest supplier defect costs volume at 33.1 million CAD and 3.4 million number of defects. Pages 16 to 23.

Data insights: The company's supplier defect costs is driven by high unit defect cost Corrugate and Raw Materials, despite lower supplier defect costs volumes compared to Film and Carton. Supplier defects vary across materials and categories, with costly Raw Materials defects in Logistics and Mechanicals, and high-volume defects in Labels and Carton; notably, Class C contributes only 5.1% to supplier defect costs but has a 47% defect rate. Most defects occur with low unit costs and moderate to high quantities, suggesting areas for cost efficiency improvements, while the uneven distribution of units and supplier defect costs among defects highlights the need for a balanced supply chain approach. Pages 25 to 31.

Trends: The company faced significant cost increases from 2013 to 2014, with a 22.2% CAGR, while number of defects only grew 1.9%, suggesting declining efficiency. Costs rose substantially in Logistics, Materials & Components, and Packaging, but fell in Electrical and Goods & Services, indicating varying operational efficiencies or strategic shifts. Supplier defects costs jumped 23% year-over-year, with Logistics and Packaging showing the highest increases, pointing to potential supply chain or production issues that require targeted interventions. Pages 33 to 40.

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The company experienced a 13.9 million CAD increase in overall supplier defect costs from 2013 to 2014, driven by a significant defect gravity variance of 33.0 million CAD. However, this increase was partially offset by a negative variance in defect units and gravity mix of -18.7 million CAD, suggesting an improvement in supplier defect costs volume or mix (p.10). The supplier defect costs dynamic varied across material types, with Controllers, Raw Materials, and Others showing increase, while Carton and Composites declined significantly due to negative Units & Mix variance (p.11).

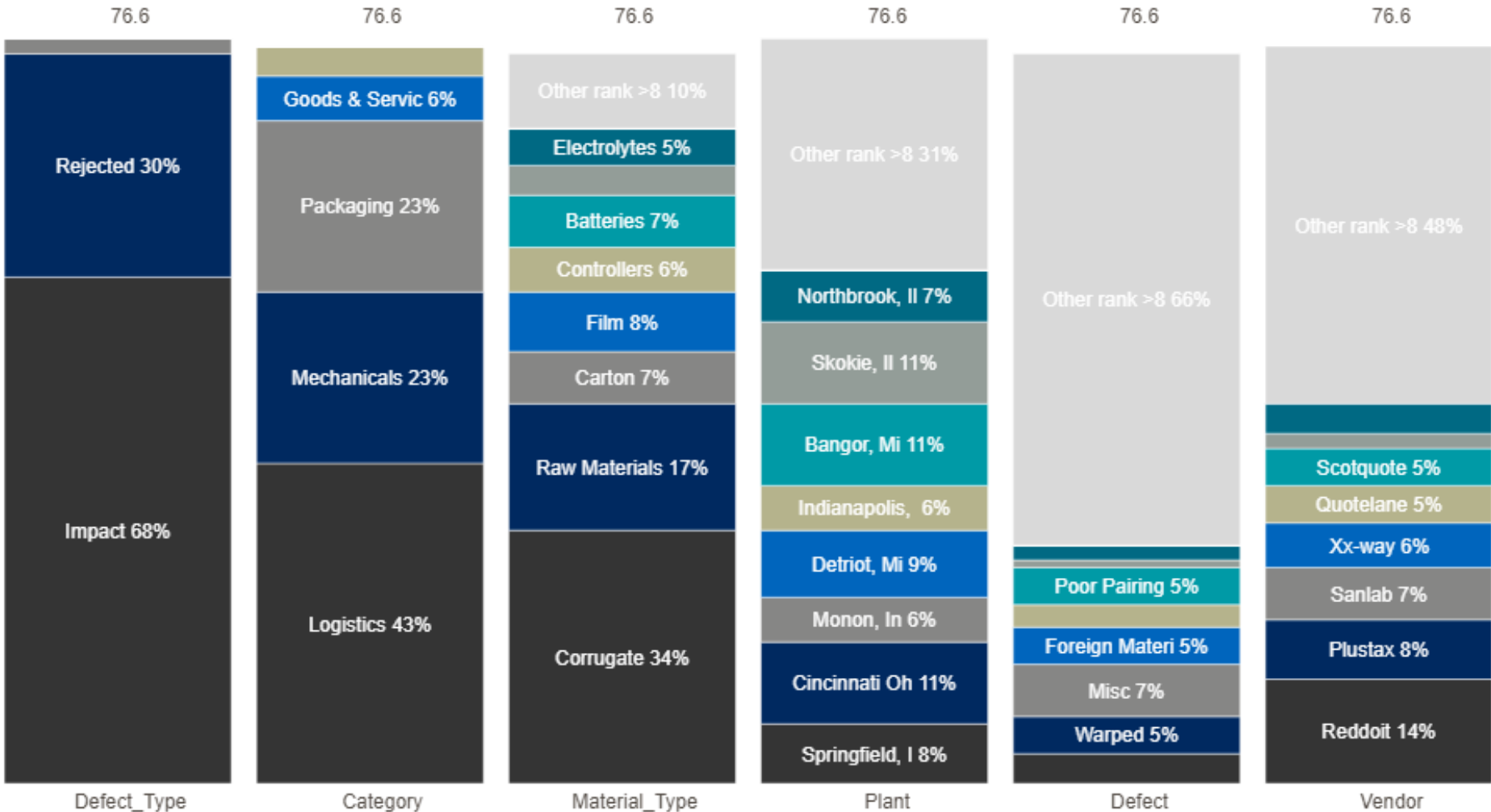
Despite some defects in bad seams (-\$8.8 million) and mechanical issues (-\$7.8 million), the company experienced a net supplier defect costs increase, driven by high supplier defect costs in logistics (+\$13.6 million), certain mechanical aspects (+\$8.5 million), and packaging (+\$5.2 million) (p.12). High-impact defects account for 68% of the company's supplier defects costs, with Logistics, Mechanicals, and Packaging being the top contributing categories (p.9).

From 2013 to 2014, the company experienced mixed results in supplier defects costs. While some categories, such as No Impact Defects, Electrical, and Bad Seams, saw significant decreases, others like Rejected, Film, and Misc defects increased dramatically (p.13). The costs varied significantly across categories and plant locations, with notable increases in logistics defects at Bangor, MI (+643%) and Other rank >4 (+254%), and mechanicals at Skokie, IL (+1,284%) (p.14).

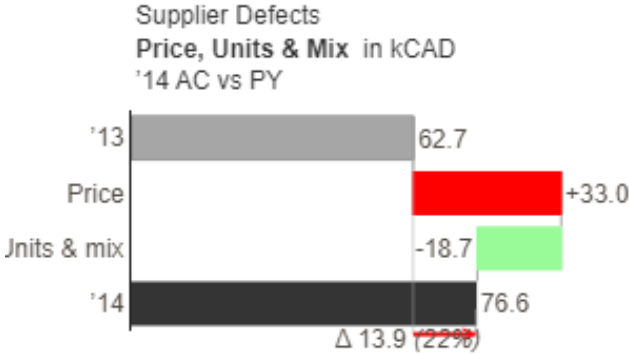
The variability in supplier defects costs suggests different operational or market conditions at each plant and potential areas for best practice sharing (p.14). A wide range of smaller factors in Plant, Defect, and Vendor dimensions collectively result in substantial costs, as indicated by the 'Other rank >8' categories (p.9).

High-impact defects drive 68% of the company's supplier defects costs. The top contributing categories are Logistics, Mechanicals, and Packaging. Corrugate and Raw Materials are the main materials involved. A wide range of smaller factors in Plant, Defect, and Vendor dimensions collectively result in substantial costs, as suggested by the 'Other rank >8' categories.

Supplier Defects
Costs in kCAD by dimension
'14

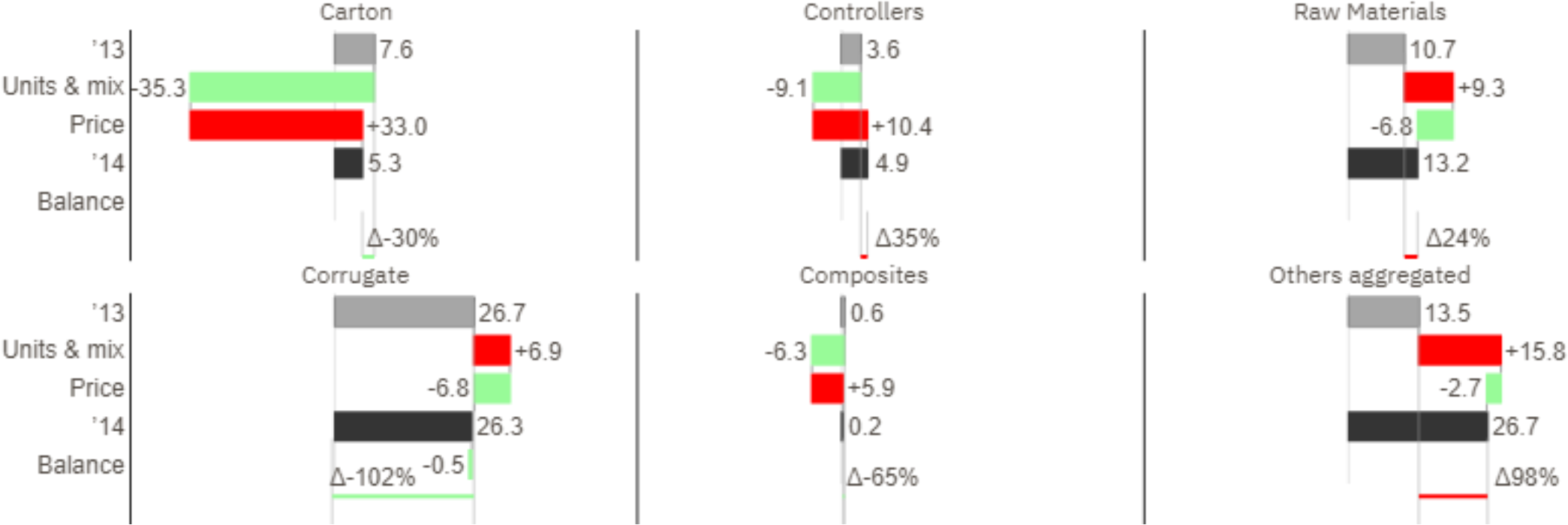


From 2013 to 2014, overall supplier defect costs increased by 13.9 million CAD. This was driven by a significant increase in defect gravity variance of 33.0 million CAD. However, the increase was partially offset by a negative variance in units and mix of -18.7 million CAD, indicating an improvement in supplier defect costs volume or mix.

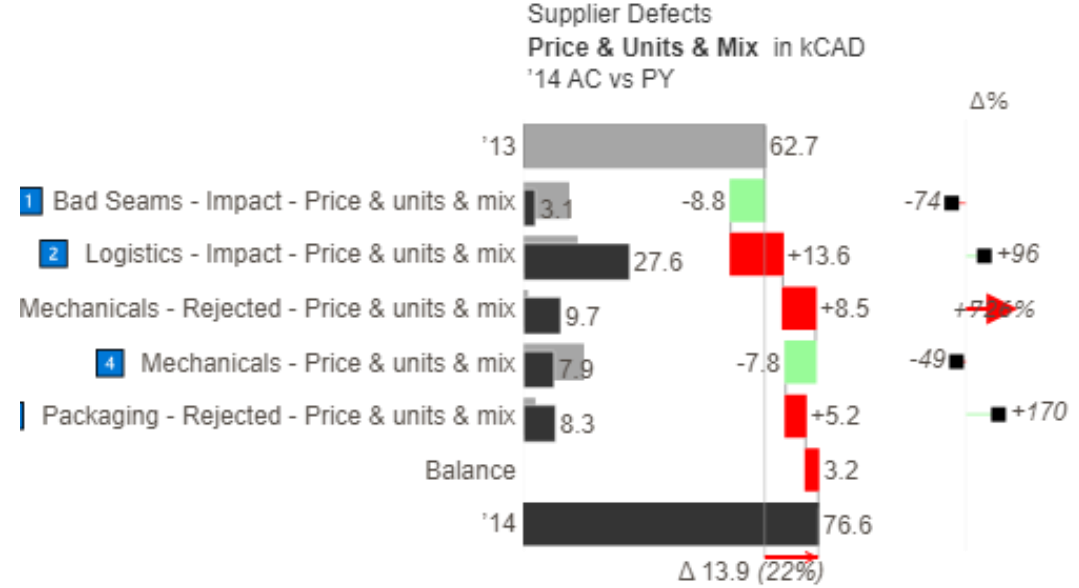


From 2013 to 2014, the company saw mixed supplier defect costs dynamic across material types. Controllers, Raw Materials, and Others grew, but Carton and Composites declined significantly due to negative Units & Mix variance. Corrugate was stable, with positive Units & Mix nearly offsetting negative defect cost variance.

Supplier Defects
 Price, Units & Mix in kCAD by Material_Type
 '14 AC vs PY

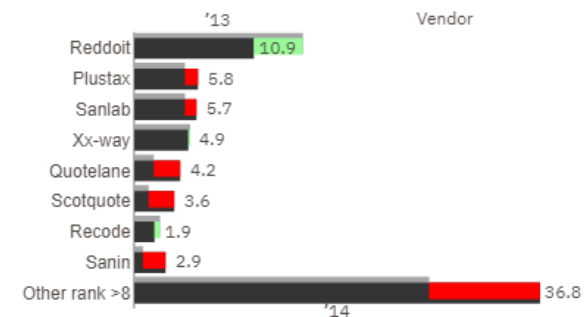
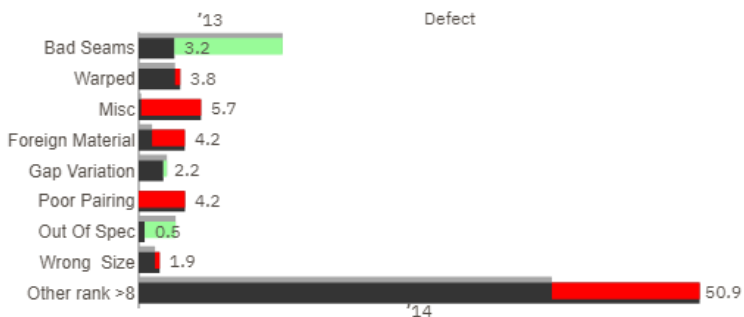
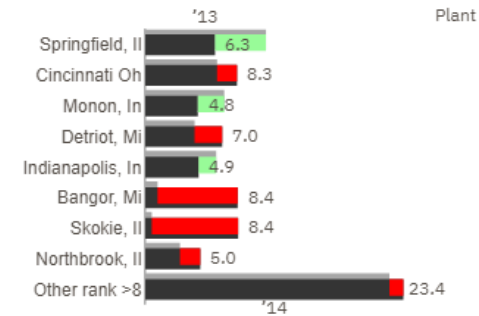
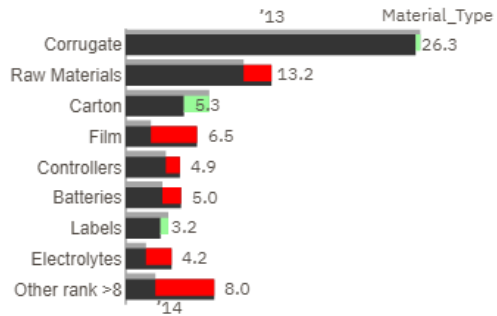
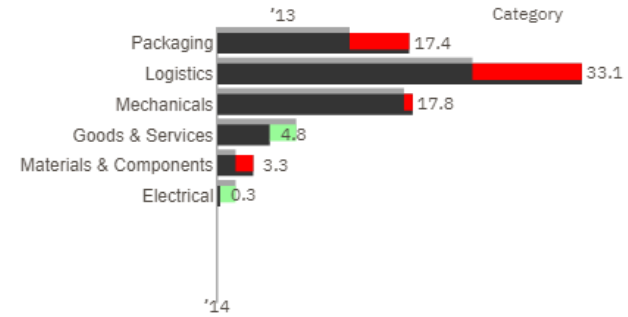
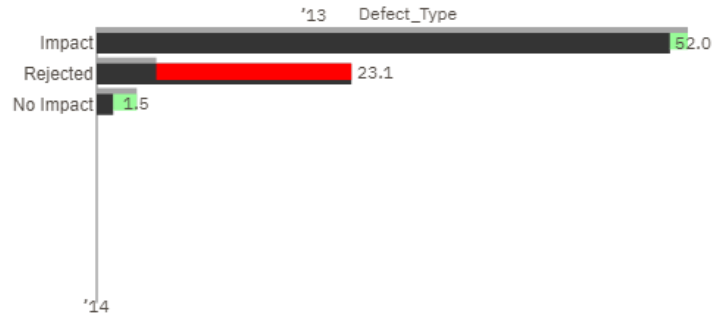


Despite defects in bad seams (-\$8.8 million) and some mechanical issues (-\$7.8 million), the company experienced a net supplier defect costs increase from 2013 to 2014. High supplier defect costs in logistics (+\$13.6 million), some mechanical aspects (+\$8.5 million), and packaging (+\$5.2 million) drove this increase, highlighting effective management and operational adaptability.

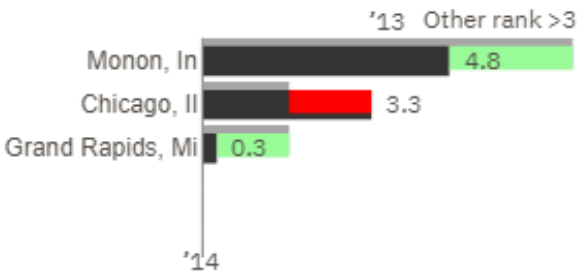
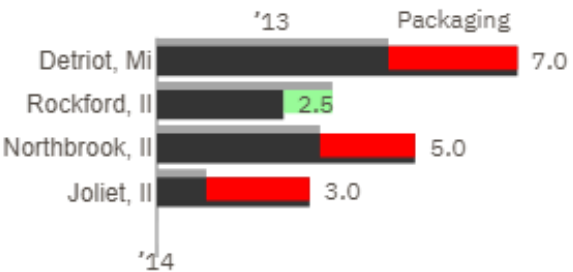
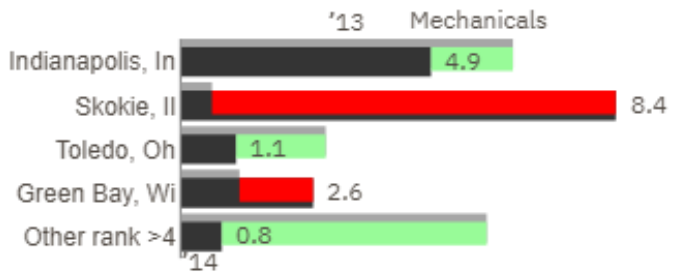
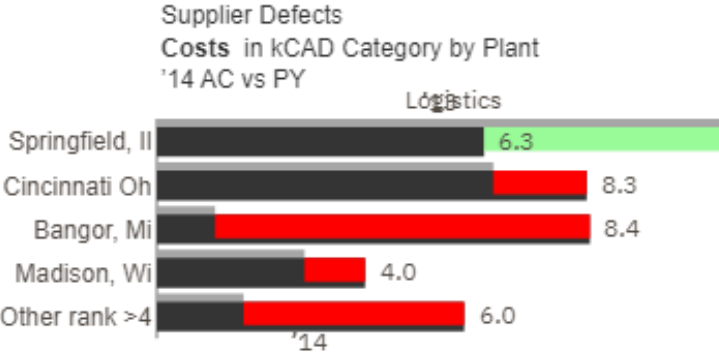


From 2013 to 2014, the company saw mixed results in supplier defects costs. No Impact Defects fell 59%, Electrical dropped 83%, and Bad Seams decreased 75%. However, Rejected surged 327%, Film jumped 182%, and Misc defects skyrocketed 2,368%. Skokie, IL and Bangor, MI plants, along with Scotquote and Quotelane vendors, experienced dramatic increases, possibly due to operational problems or changes in reliance.

Supplier Defects
Costs in kCAD by dimension
'14 AC vs PY



Supplier defects costs varied significantly across categories and plant locations from 2013 to 2014. Logistics defects increased by 643% at Bangor, MI and 254% at Other rank >4, but decreased by 42% in Springfield, IL. Mechanicals faced a massive 1,284% increase at Skokie, IL, contrasting with 62% and 25% decreases in Toledo, OH and Indianapolis, IN respectively. Packaging defects grew, especially in Joliet, IL (+209%) and Detroit, MI (+56%). The variability suggests different operational or market conditions at each plant and potential areas for best practice sharing.



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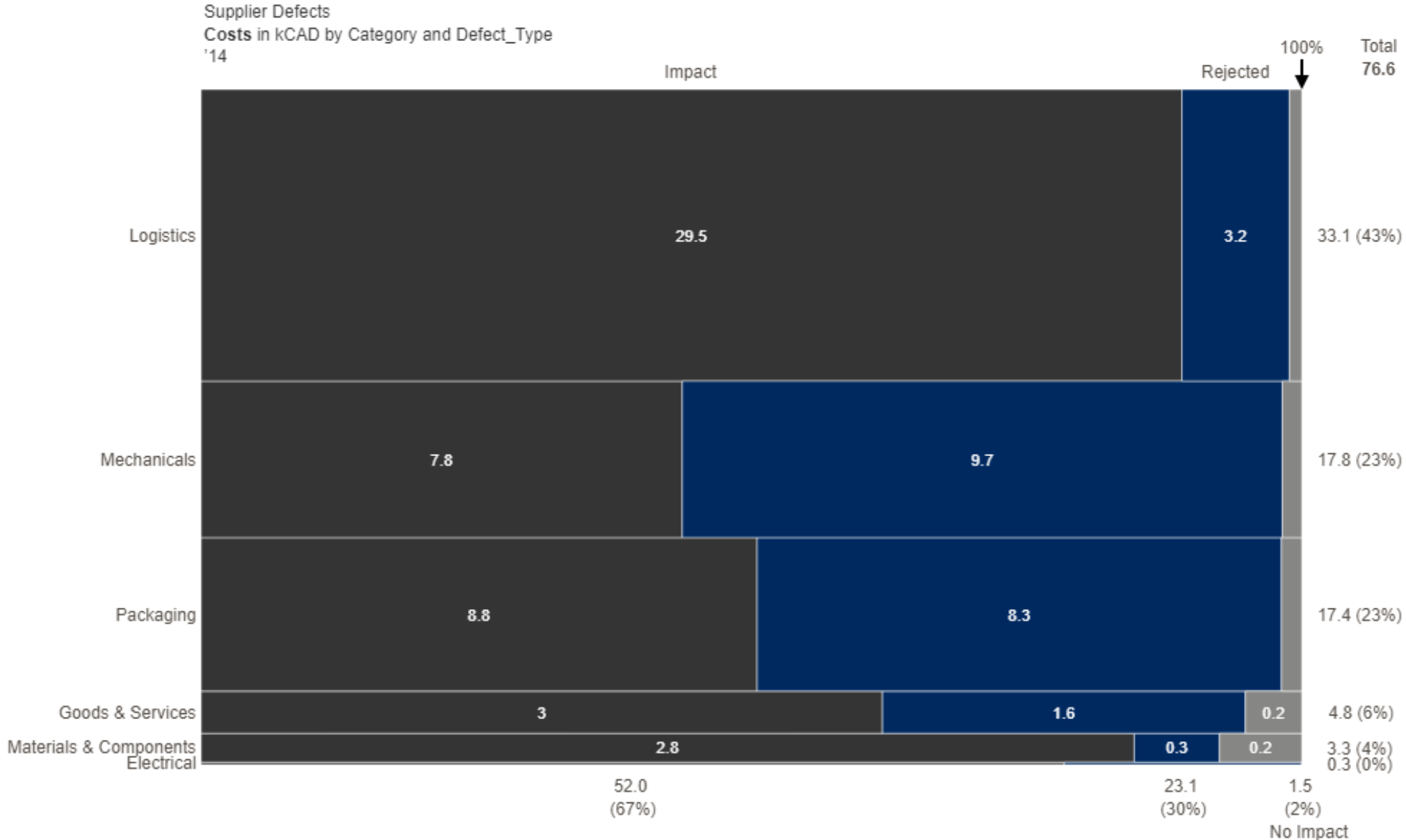
Backup

The Logistics category had the highest supplier defects costs in 2014 at 33.1 million CAD, with 89% attributed to impactful defects, suggesting frequent and severe issues (p.17). Bangor, MI, and Cincinnati, OH, both focusing on Logistics, show a very high proportion of costs associated with Impact defects (97% and 98% respectively), indicating a potential area for operational improvements (p.18). Logistics also experienced a 926.0% increase in Rejected defects and a 34.0% increase in Impact defects in 2014, the only positive increase in this category (p.19).

Packaging has the highest number of defective units across all defect types, with a particularly high 2.9 million rejected units, suggesting significant quality issues (p.20). The 'Other rank >3' plant, handling various categories, has significantly higher defect units across all categories, with an exceptionally high 3.0 million rejected units in the Packaging category (p.21).

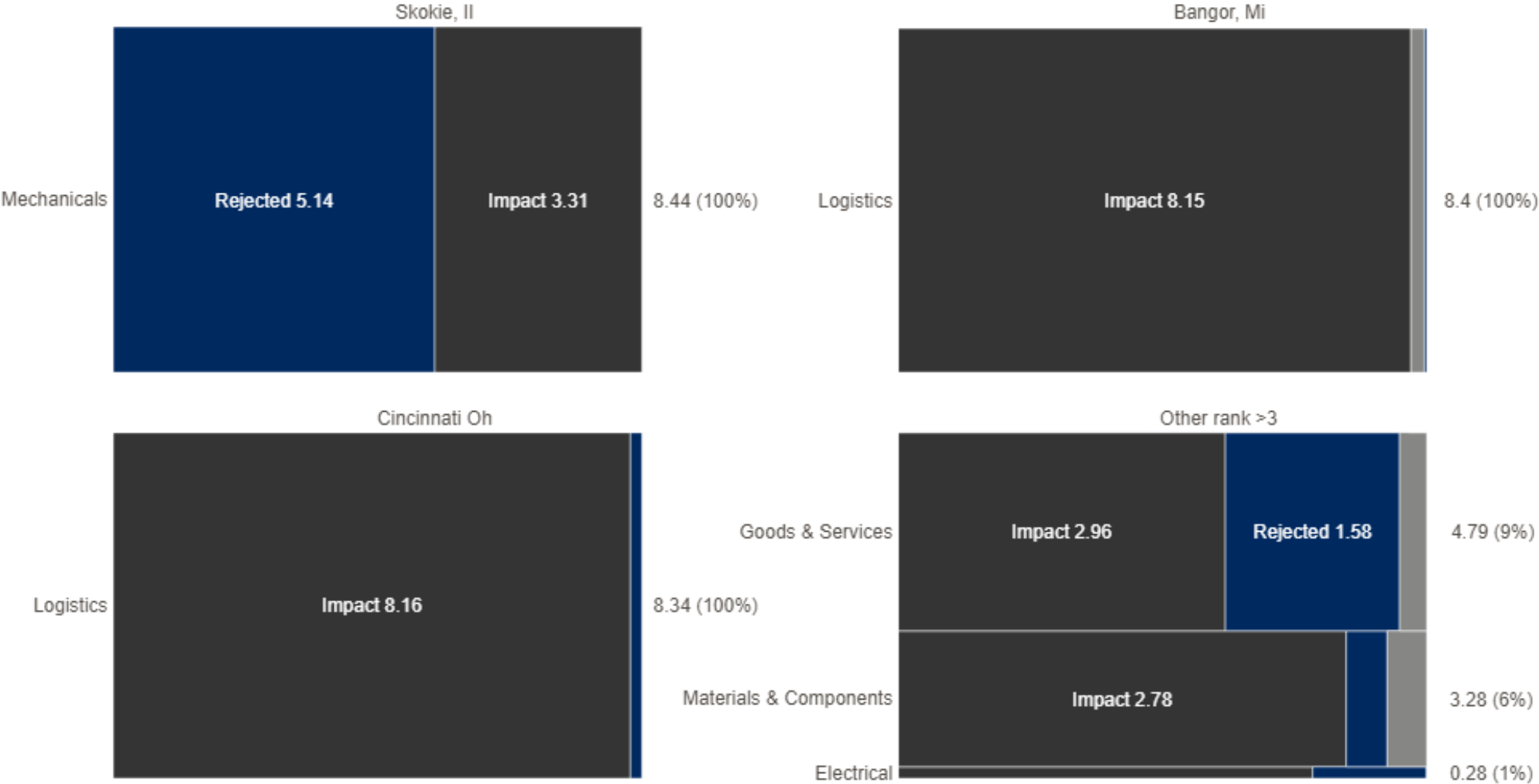
Logistics shows the highest supplier defect costs volume at 33.1 million CAD, with 3.4 million number of defects, suggesting strong demand or effective supplier defect costs strategies (p.22). Packaging has the lowest defect unit cost at 0.003 CAD but still has significant supplier defect costs of 17.4 million CAD, driven by over 5 million unit defects, the highest among all categories (p.22). The Packaging category at 'Other rank >3' experienced over 5.0 million units at the lowest defect unit cost of 0.003 kCAD, generating the highest supplier defect costs at 17.4 kCAD (p.23).

Logistics had the highest supplier defects costs in 2014 at 33.1 million CAD, with 89% due to impactful defects. This suggests frequent and severe issues, potentially indicating systemic problems or critical process failures. Mechanicals and Packaging followed at 17.8 million CAD and 17.4 million CAD respectively, with a more balanced distribution between Impact and Rejected defects.

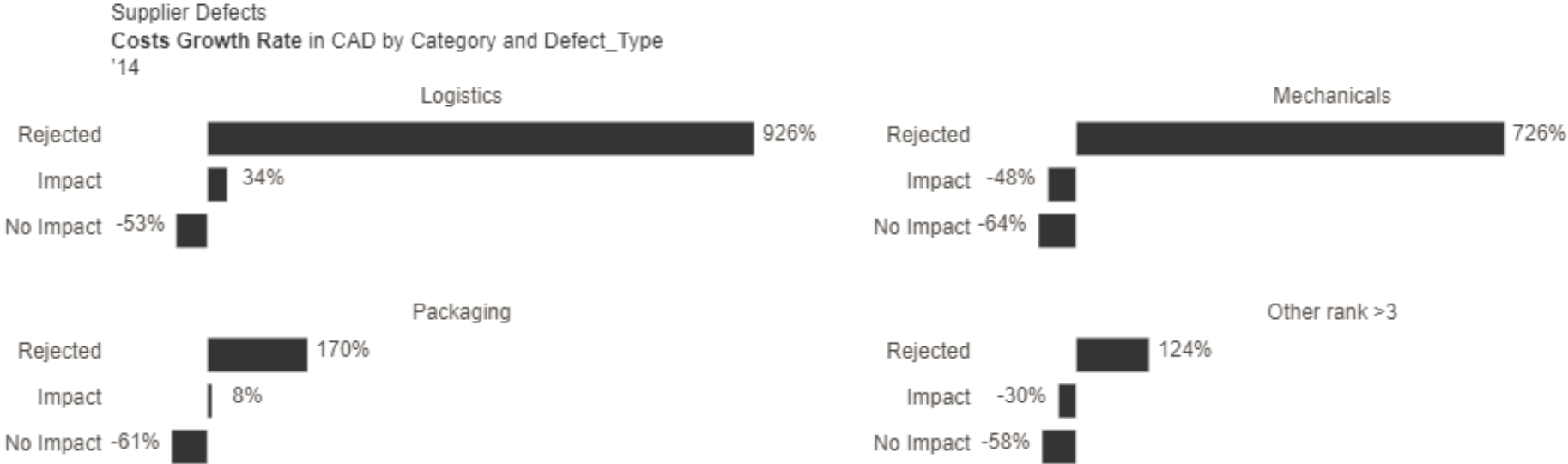


Skokie, IL, focusing solely on Mechanicals, has a balanced distribution between Rejected (61%) and Impact (39%) defects. Bangor, MI, and Cincinnati, OH, both focusing on Logistics, show a very high proportion of costs associated with Impact defects (97% and 98% respectively), indicating a possible area for operational improvements. The 'Other' category, encompassing multiple plants, shows a diverse range of defect costs across various categories, suggesting a more complex scenario that might require detailed individual analysis for optimization.

Supplier Defects
 Costs in kCAD by Plant, Category and Defect_Type
 '14



Supplier defect costs increase rates for 2014 show costs decreasing for non-impactful defects but increasing for significant defects (Impact or Rejected), especially in Logistics and Mechanicals. Logistics had a 926.0% increase in Rejected defects and a 34.0% increase in Impact defects, the only positive increase in this category. Mechanicals had the next highest increase at 726.0% for Rejected defects. This may reflect changes in quality control priorities or supplier dynamic.

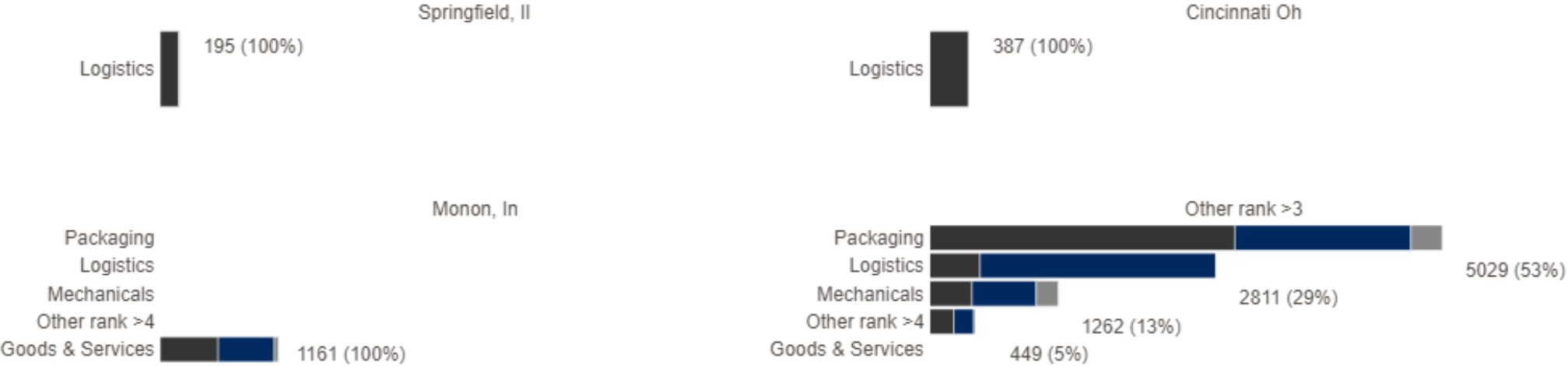


Packaging has the highest number of defective units across all defect types, with a particularly high 2.9 million rejected units, suggesting significant quality issues. Logistics shows a disproportionately high 2.8 million units under Impact, indicating that defects in this category significantly affect operations or use of the units, potentially leading to substantial disruptions or customer dissatisfaction.



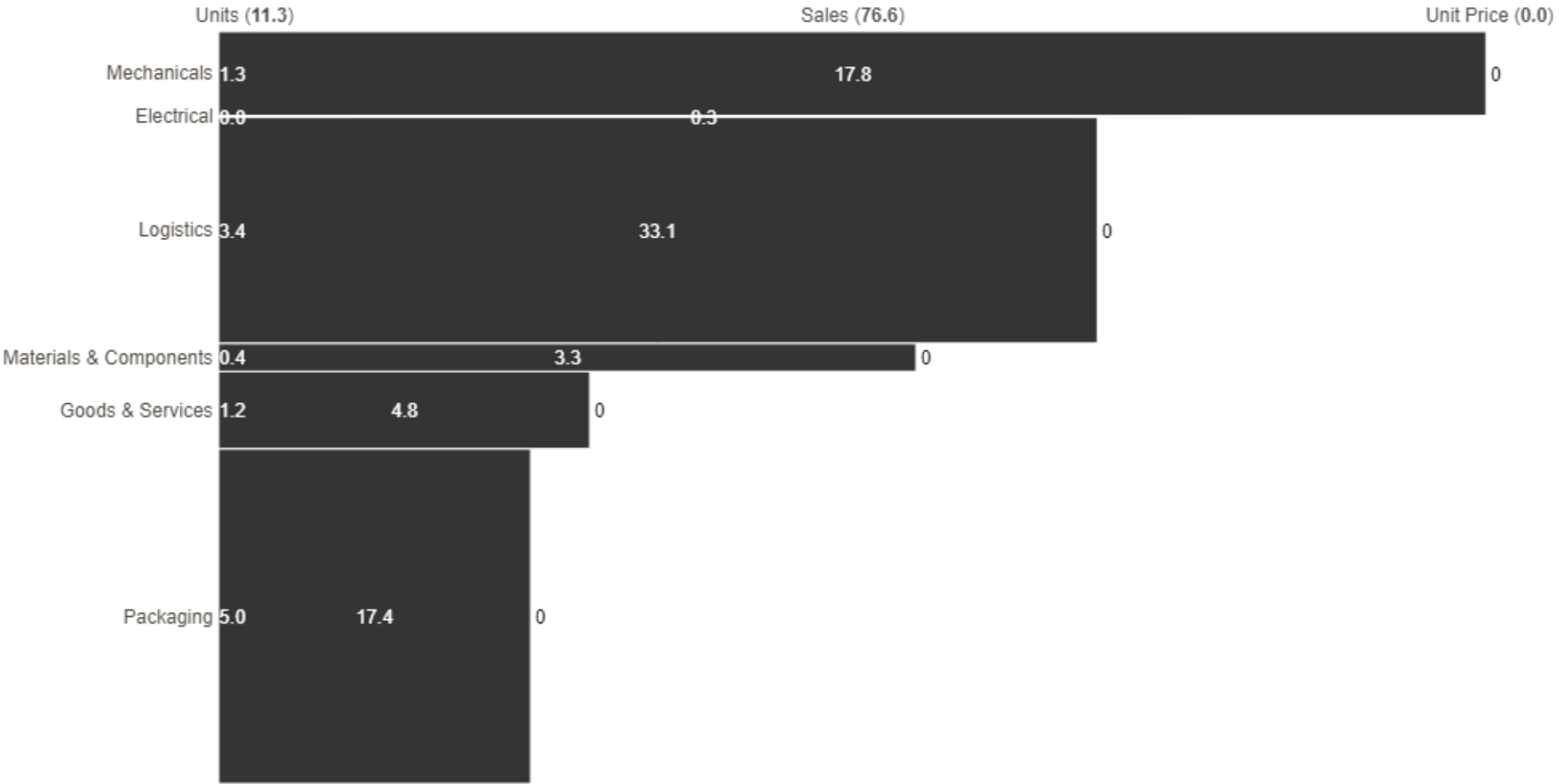
The 'Other rank >3' plant, handling Mechanicals, Logistics, Packaging, and Other rank >4 categories, has significantly higher defect units across all categories, likely due to a larger volume of operations or operational challenges. The Packaging category in this plant has an exceptionally high 3.0 million rejected units, substantially higher than its impact and no impact defects, possibly indicating quality control issues or supplier problems specific to packaging.

Supplier Defects
Units in k by Plant, Category and Defect_Type
'14

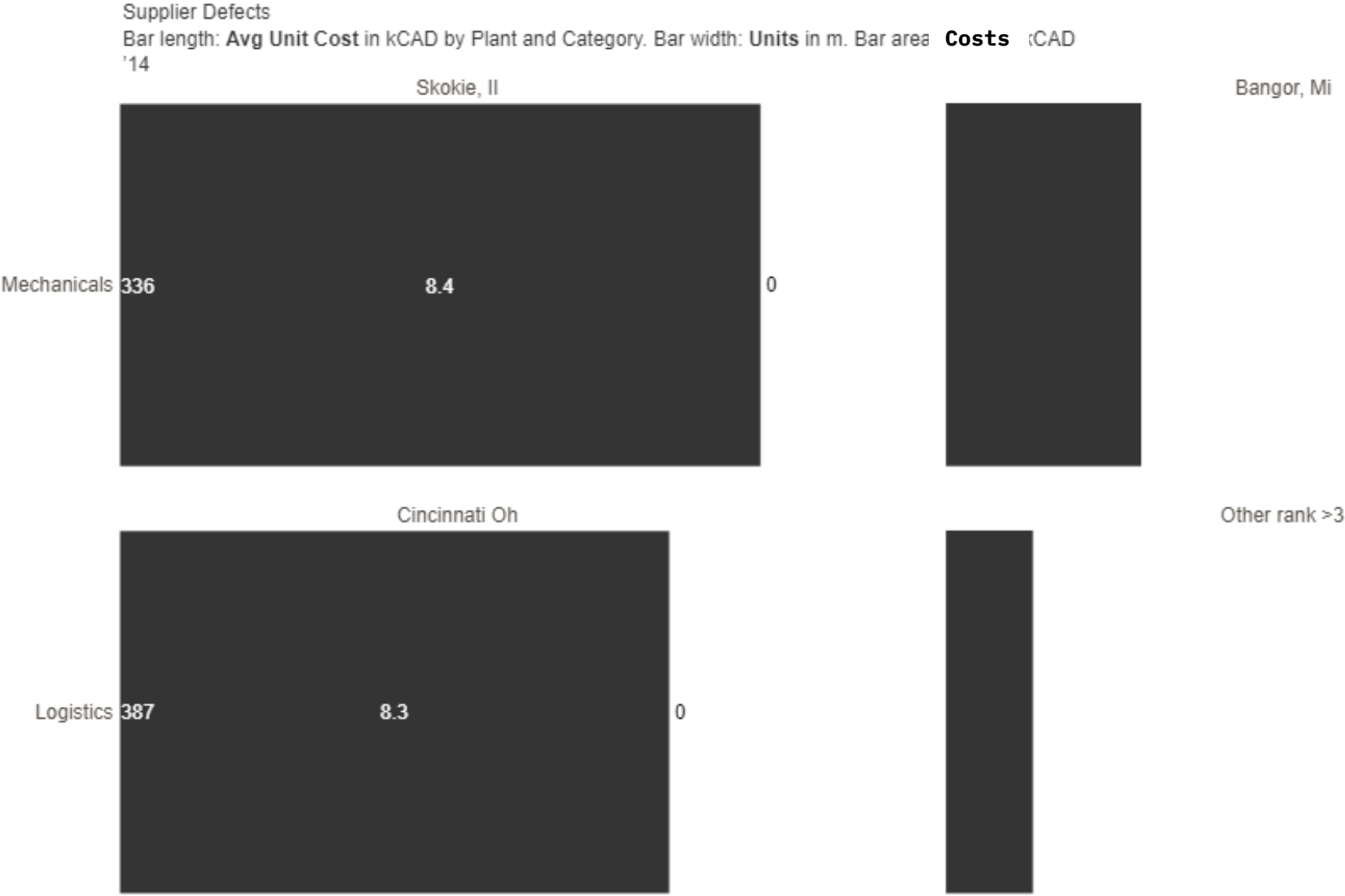


Logistics shows the highest supplier defect costs volume at 33.1 million CAD, with 3.4 million number of defects, suggesting strong demand or effective supplier defect costs strategies. Packaging has the lowest defect unit cost at 0.003 CAD but still has significant supplier defect costs of 17.4 million CAD, driven by selling over 5 million units, the highest among all categories. This indicates that selling high quantities of lower-unit defect cost items can substantially contribute to total supplier defect costs.

Supplier Defects
 Bar length: Avg Unit Cost in kCAD by Category. Bar width: Units in m. Bar area **Costs** CAD
 '14



The Packaging category at 'Other rank >3' experienced over 5.0 million units at the lowest defect unit cost of 0.003 kCAD, generating the highest supplier defect costs at 17.4 kCAD. Logistics appears in three different plants with varying defect unit costs and supplier defect costs, suggesting its critical role across multiple locations and differing operational efficiencies or market conditions.



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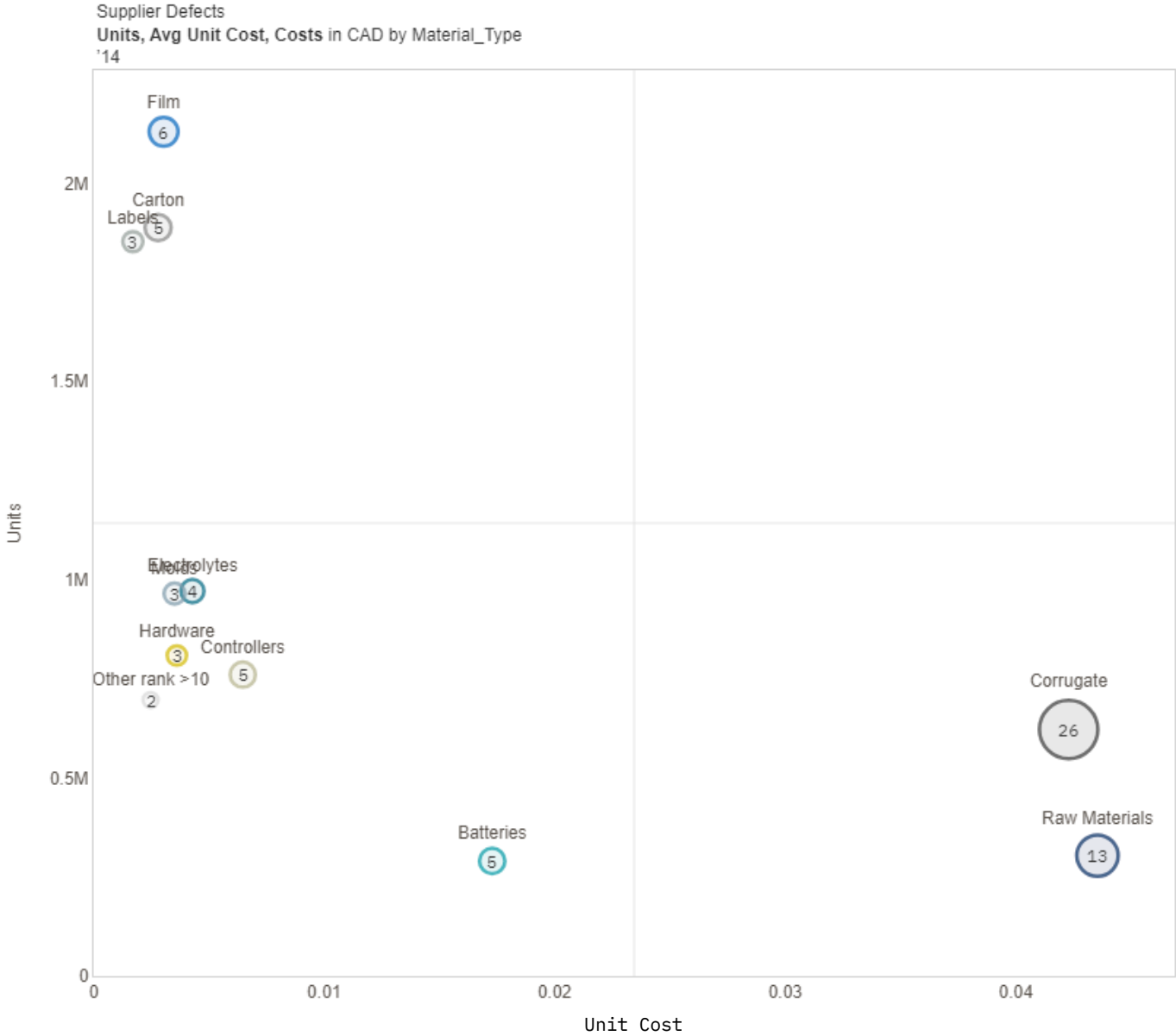
The company's supplier defect costs is primarily driven by Corrugate and Raw Materials, despite lower number of defects compared to Film and Carton, indicating a high unit defect costs for certain materials (p.26). The company could focus on high-volume, low-cost materials like Film and Carton for volume-driven strategies, or on high-cost materials like Corrugate and Raw Materials for value-driven strategies, depending on their business model and market conditions (p.26).

Supplier defects vary across material types and categories, with Raw Materials in Logistics and Mechanicals having high defect unit costs, indicating costly defects (p.27). Labels and Carton across categories show high units, suggesting commonly used materials where small defects could lead to significant costs (p.27). Class A accounts for 79.9% of supplier defect costs but only 24.4% of defects, while Class C contributes just 5.1% to supplier defect costs yet has a staggering 47% defect rate, calling for an investigation and overhaul of Class C's production and quality control (p.28).

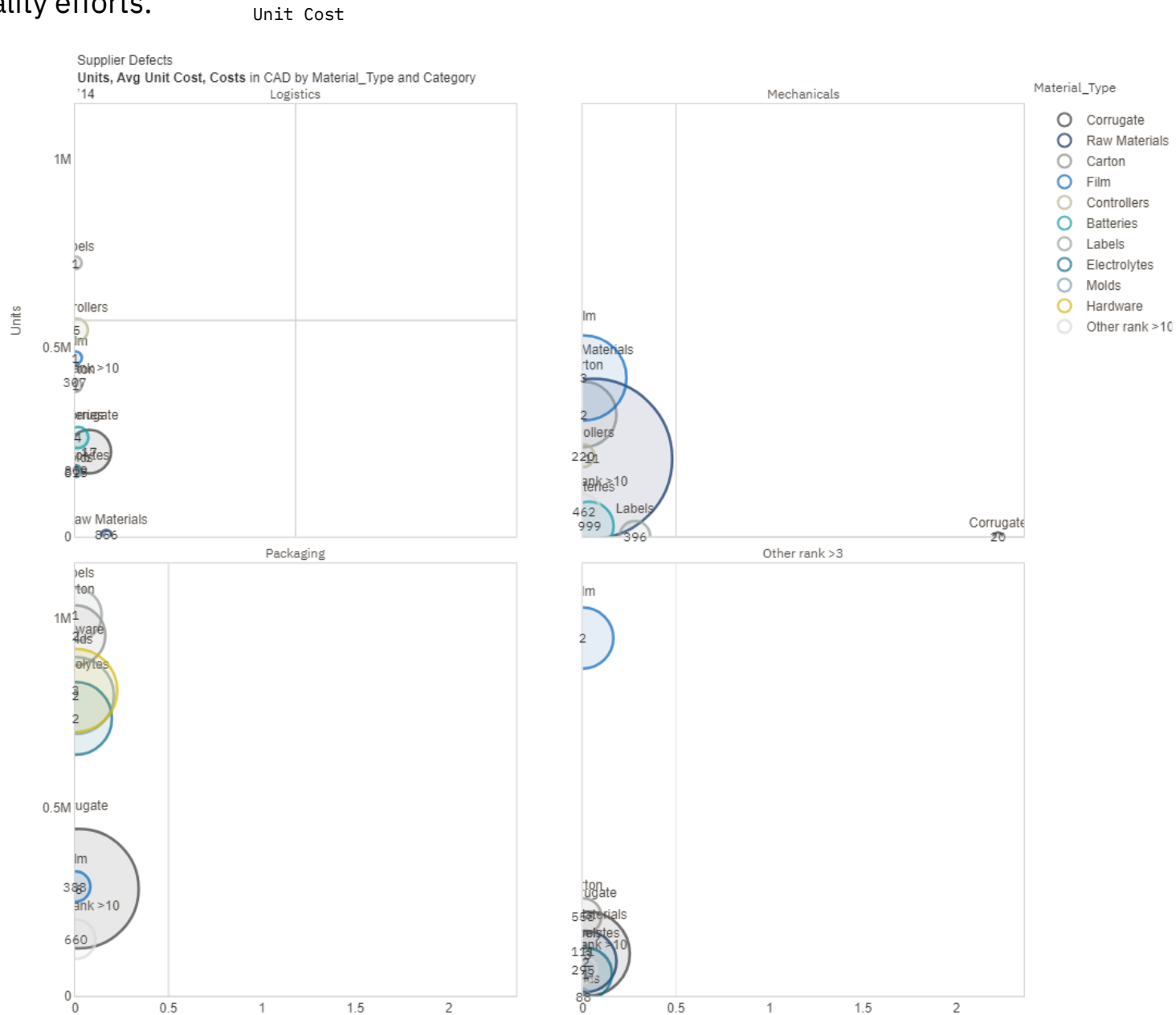
Most defects occur with low unit costs and moderate to high quantities, with few defects linked to higher unit defect costs, suggesting areas to improve cost efficiency (p.29). Logistics and Packaging defects cluster in the low to moderate defect unit cost range, while Mechanical defects distribute more widely across defect unit costs, indicating varied cost impacts and a need for targeted improvements (p.30).

Supplier defect costs are more concentrated in top defects than units, suggesting some high-value defects may not be high-volume movers, impacting inventory and production planning (p.31). The uneven unit and supplier defect costs distribution among lower-ranked defects highlights the need for a balanced supply chain approach, considering both supplier defect costs value and unit volume (p.31). Focus on high-impact A class defects to maximize supplier defect costs, but don't neglect B and C classes for efficient resource use and inventory management based on unit contributions (p.31).

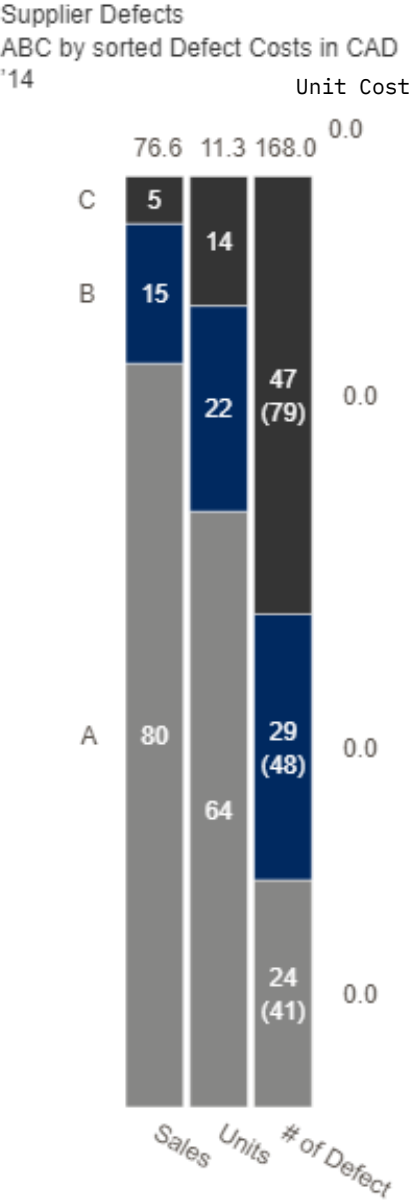
Corrugate and Raw Materials generate the highest supplier defect costs for the company, despite lower number of defects compared to Film and Carton. This suggests a high defect gravity for certain materials. The company could focus on high-volume, low-cost materials like Film and Carton for volume-driven strategies, or on high-cost materials like Corrugate and Raw Materials for value-driven strategies, depending on their overall business model and market conditions.



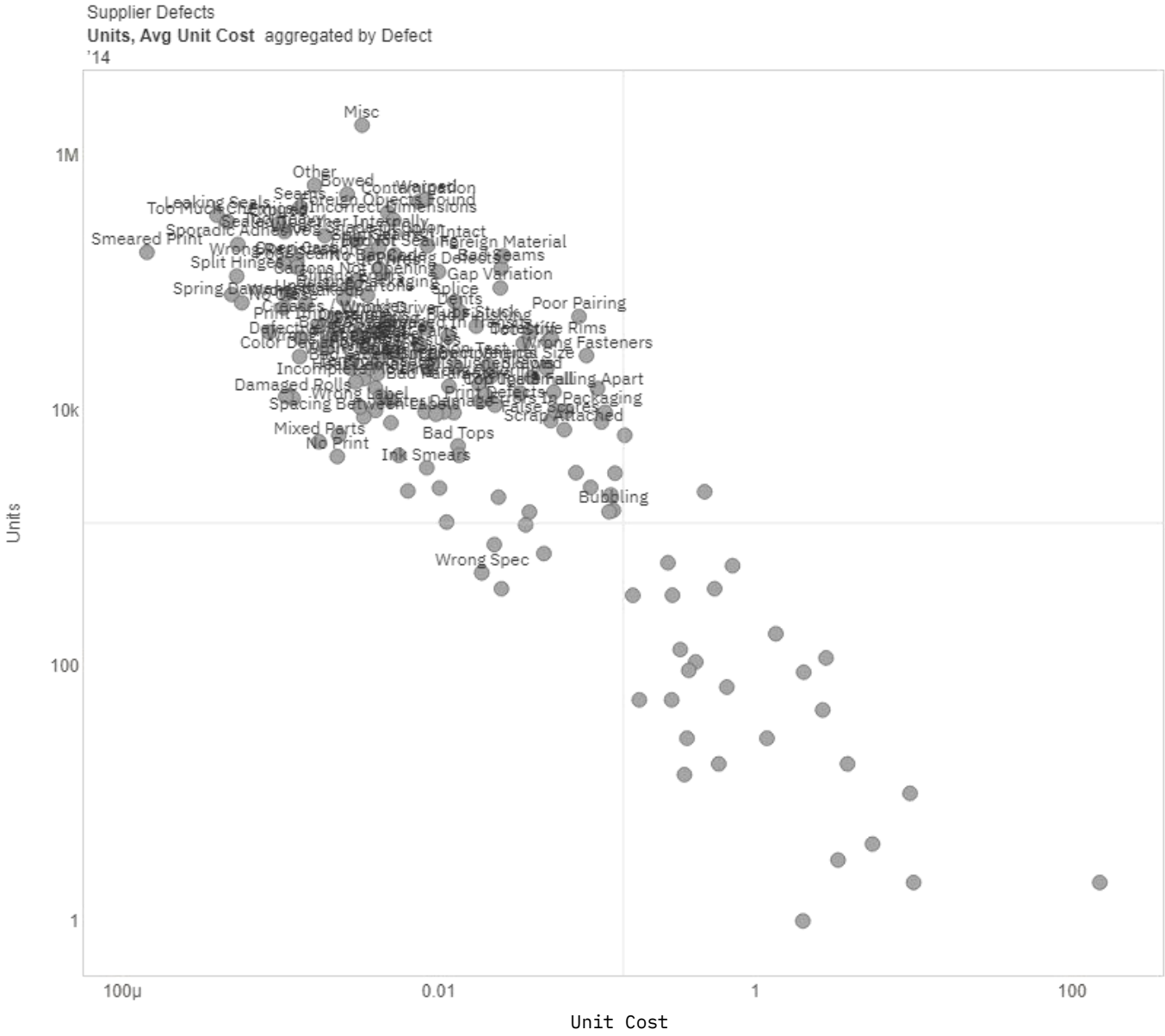
Supplier defects vary across material types and categories. Raw Materials in Logistics and Mechanicals have high defect unit costs, indicating costly defects. Labels and Carton across categories show high units, suggesting commonly used materials where small defects could lead to significant costs. Each category has unique trends in which materials have the most defects, guiding targeted quality efforts.



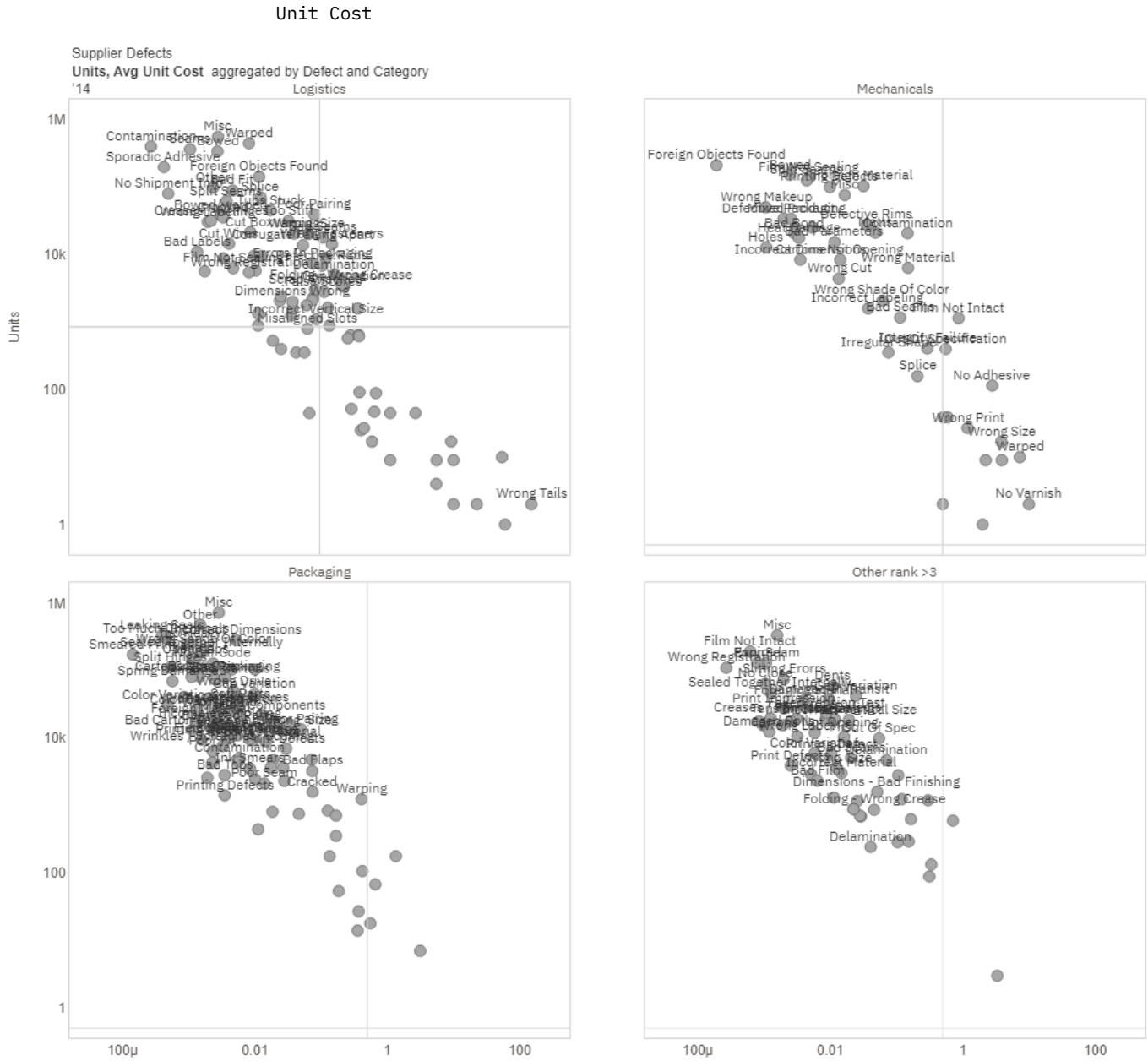
Class A accounts for 79.9% of supplier defect costs but only 24.4% of defects. In contrast, Class C contributes just 5.1% to supplier defect costs yet has a staggering 47% defect rate. This disproportionate distribution calls for an investigation and overhaul of Class C's production and quality control to improve quality and customer satisfaction.



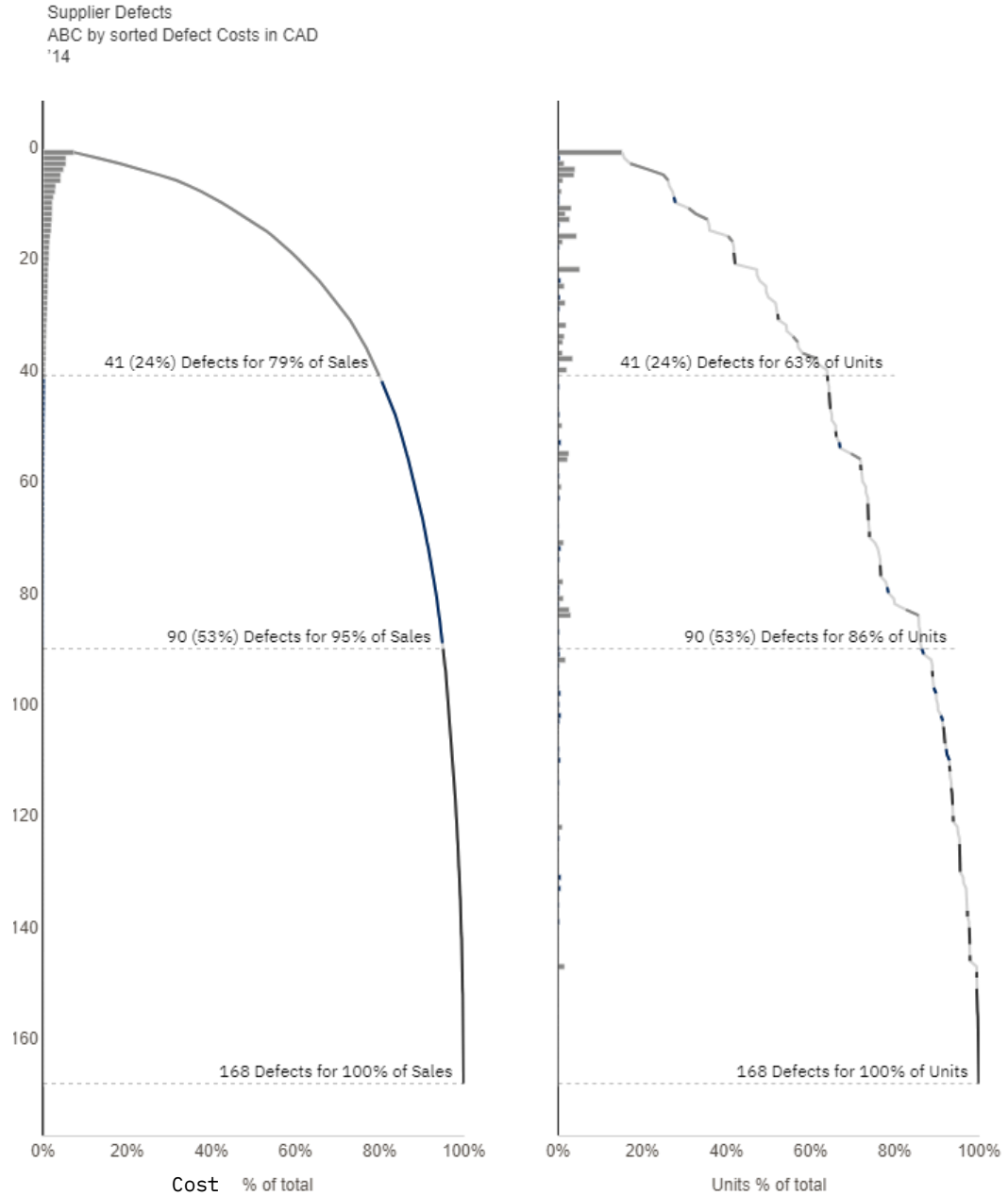
The scatter chart shows most defects occur with low unit costs and moderate to high quantities. Few defects are linked to higher unit defect costs, suggesting areas to improve cost efficiency. The concentration of low-cost, high-quantity defects points to opportunities for standardized quality processes. Analyzing costly defects can guide pricing decisions or pinpoint areas needing tech or process upgrades.



Scatter plots reveal distinct patterns in supplier defects across categories. Logistics and Packaging defects cluster in the low to moderate defect unit cost range, with some high-impact Logistics defects. Mechanical defects distribute more widely across defect unit costs, suggesting varied cost impacts and a need for targeted improvements. Identifying common and costly defects can help prioritize quality control and guide process improvements.



Supplier defect costs are more concentrated in top defects than units, suggesting some high-value defects may not be high-volume movers. This impacts inventory and production planning. The uneven unit and supplier defect costs distribution among lower-ranked defects highlights the need for a balanced supply chain approach, considering both supplier defect costs value and unit volume. Focus on high-impact A class defects to maximize supplier defect costs, but don't neglect B and C classes for efficient resource use and inventory management based on unit contributions.



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The company experienced a significant increase in defect costs from 2013 to 2014, with a CAGR of 22.2%, while number of defects only grew by 1.9%, suggesting declining efficiency and potential quality issues (p.34). The cost increases were not uniform across categories, with Electrical and Goods & Services costs falling, while Logistics, Materials & Components, and Packaging costs rose substantially, indicating varying operational efficiencies, market conditions, or strategic resource allocation shifts (p.35).

The expanding operational scale or increasing unit defect cost pressures, as evidenced by the 4.0% year-over-year increase in the '13 cohort's costs and the substantial addition from the new '14 cohort, highlight the need for strategic financial planning and vendor management (p.36). The company's costs from active vendors grew 40.5% year-over-year from 2013 to 2014, with minimal impact from vendor loss in 2013 and no costs from lost vendors in 2014, suggesting better vendor retention or missing data (p.37).

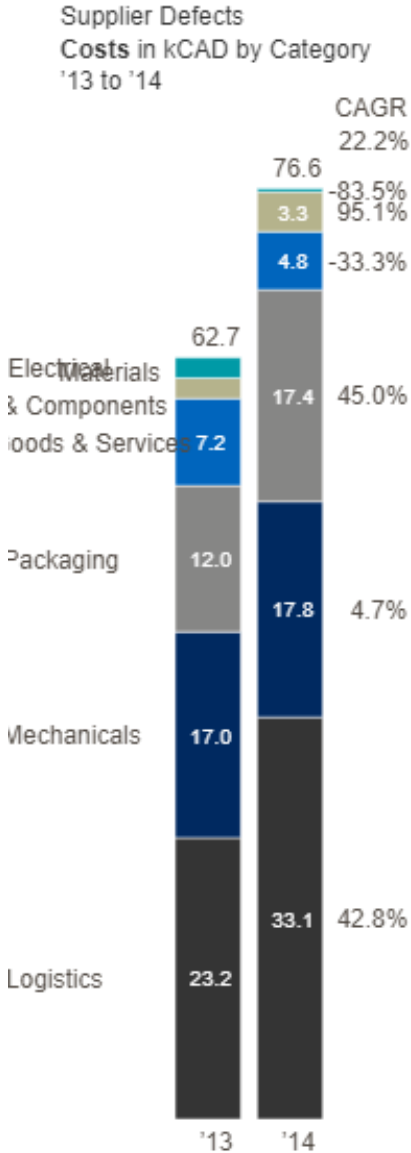
Despite significant reductions in Electrical and Goods & Services costs, the company faced a generally inflationary cost environment, with an overall CAGR of 19.6% across all categories (p.38). Supplier defects costs jumped 23% from 2013 to 2014, with steep increases in certain months, pointing to potential issues in the supply chain or production process that require closer examination (p.39).

Logistics supplier defects costs showed the highest increase year-over-year, followed by Packaging, while Mechanicals had a modest increase overall with significant fluctuations throughout the year (p.40). The consistent increases in Logistics and the extreme variability in Mechanicals suggest potential areas of concern that require targeted interventions (p.40).

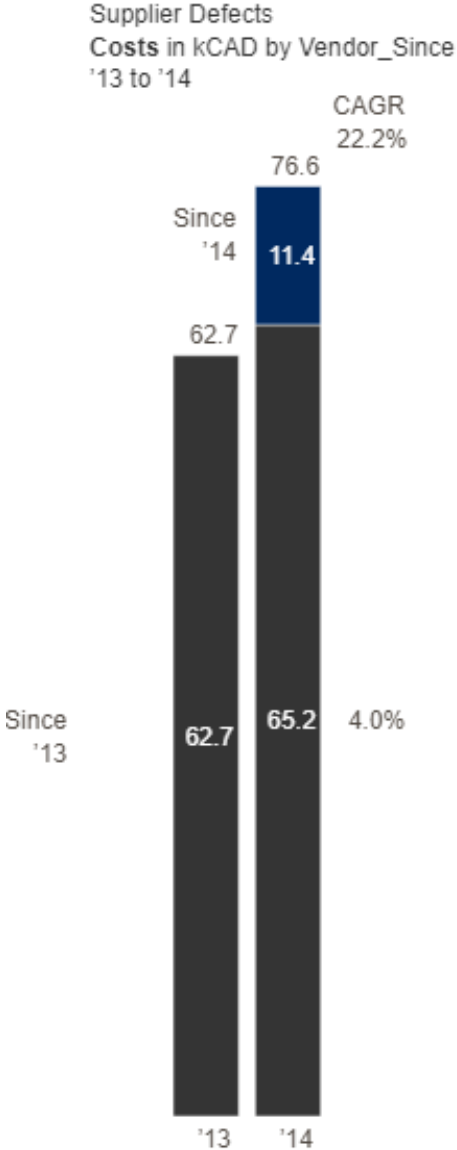
From 2013 to 2014, costs increased significantly with a CAGR of 22.2%, while number of defects only grew by 1.9%. This suggests the company is becoming less cost-efficient, potentially impacting quality if not addressed.



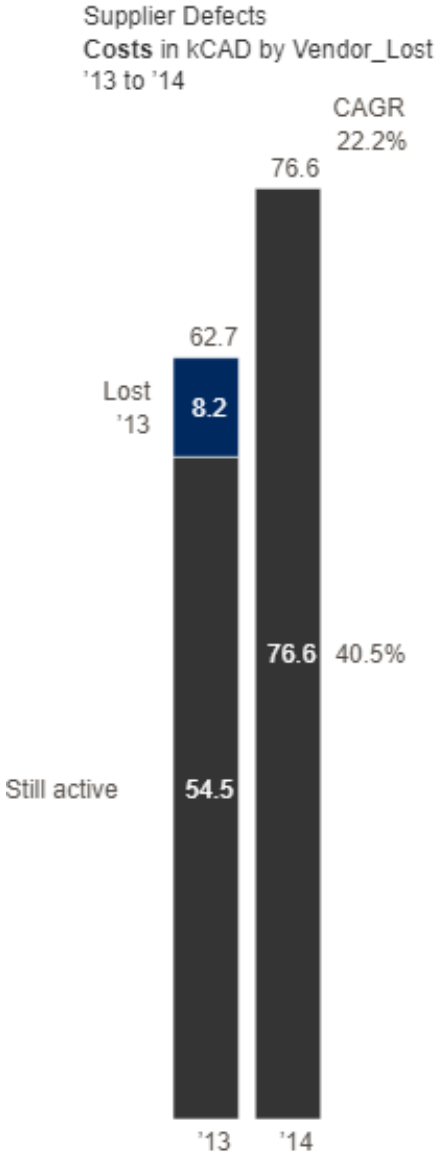
From 2013 to 2014, costs across categories showed mixed results. Electrical and Goods & Services costs fell significantly, but Logistics, Materials & Components, and Packaging costs rose substantially. The variation points to differences in operational efficiencies, market conditions, or strategic resource allocation shifts between categories.



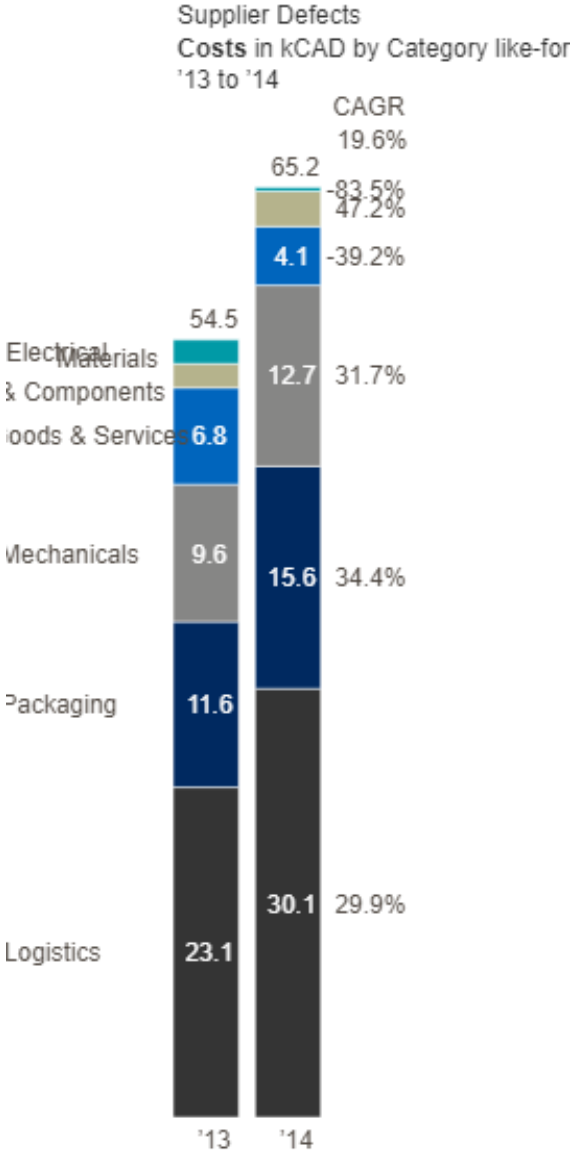
The '13 cohort's costs grew 4.0% year-over-year, while the new '14 cohort added substantially in their first year. With an overall CAGR of 22.2%, the expanding operational scale or increasing cost pressures suggest a need for strategic financial planning and vendor management.



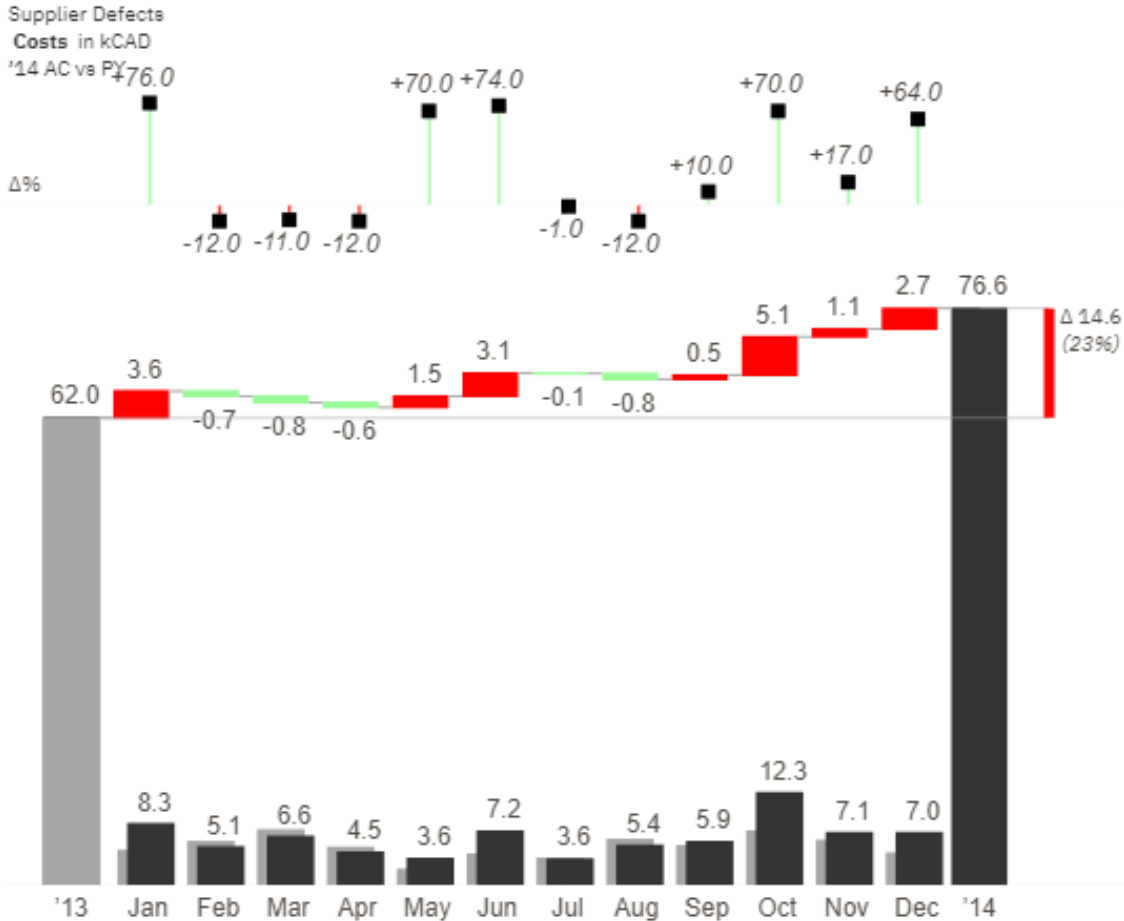
The company's costs from active vendors grew 40.5% year-over-year from 2013 to 2014. Vendor loss in 2013 had minimal impact on total vendor costs. The overall CAGR of 22.2% points to rising vendor expenditure.



From 2013 to 2014, the company faced mixed but generally increasing cost dynamics, with an overall CAGR of 19.6% across all categories. Despite significant reductions in Electrical and Goods & Services costs, the increases in Logistics, Materials & Components, Mechanicals, and Packaging more than offset these decreases.

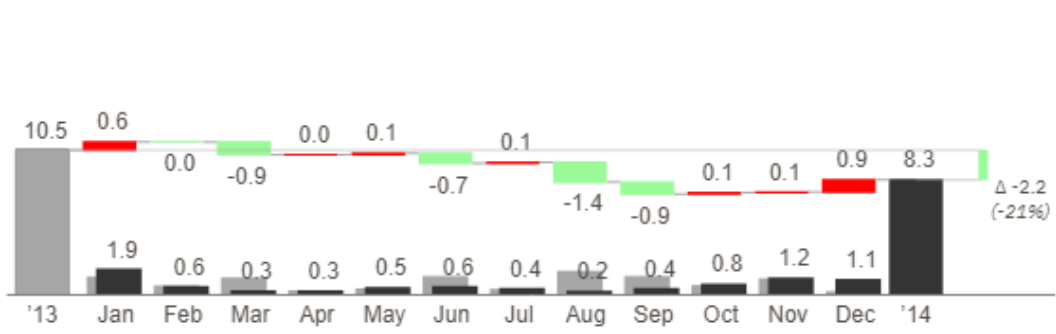
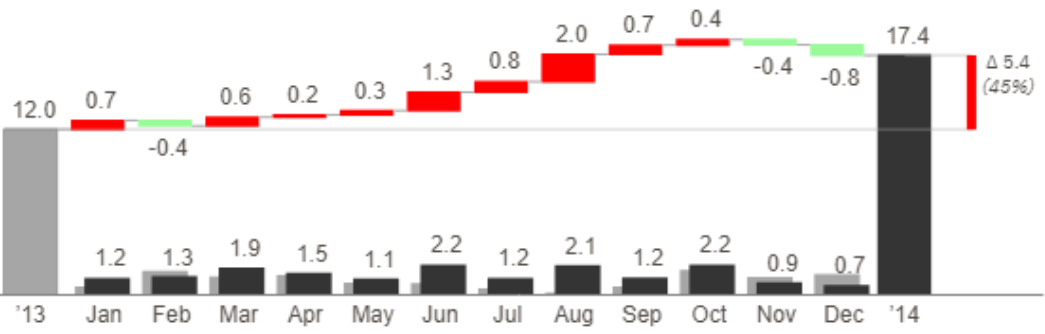
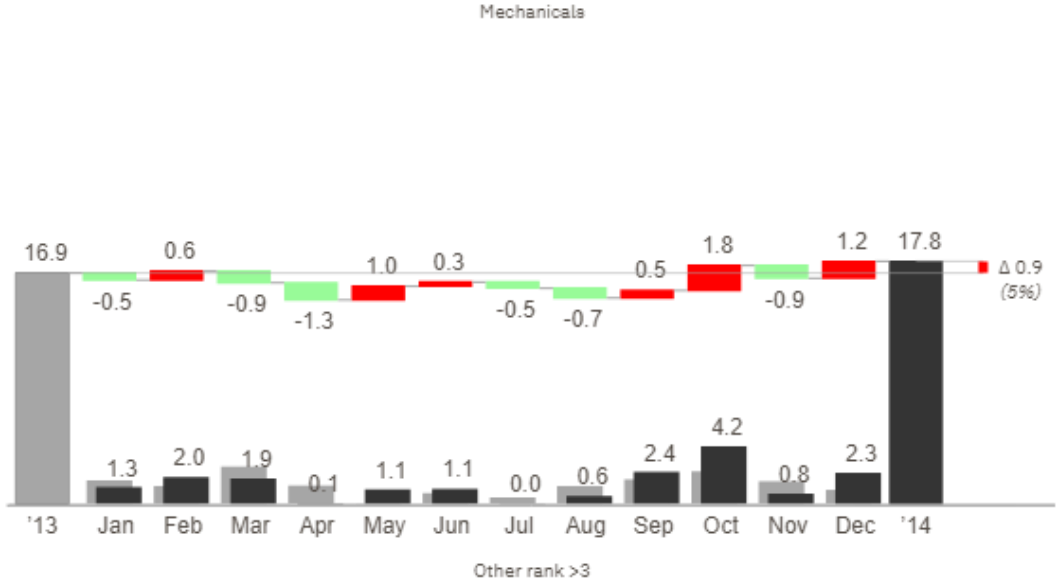
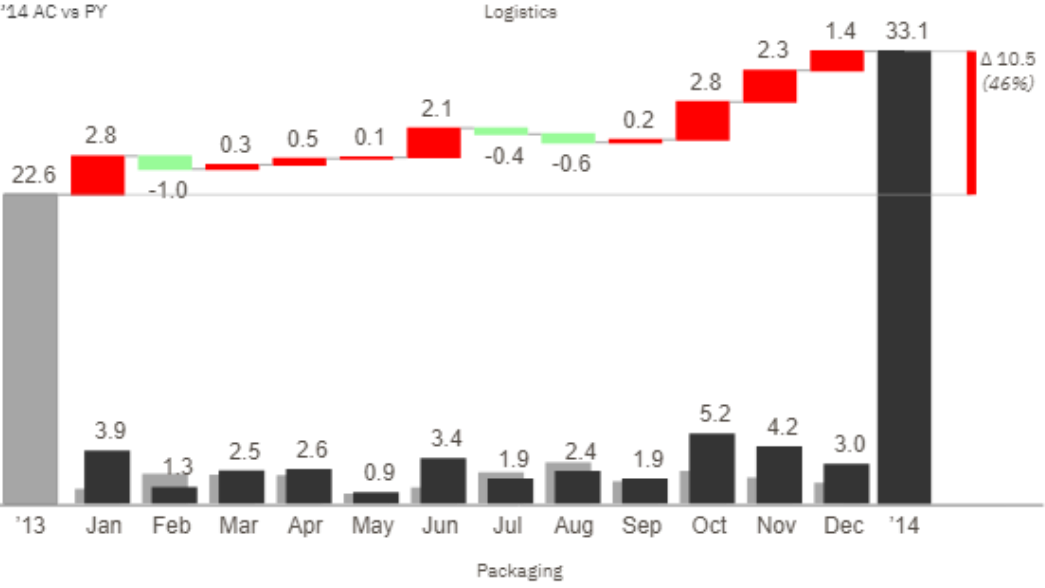


The company saw a 23% jump in supplier defects costs from 2013 to 2014, hinting at growing problems. Monthly costs swung wildly, with steep increases in January, May, June, October, and December. This points to potential issues in the supply chain or production process. The high variability and seasonal trends call for a closer look to get to the bottom of these high defect costs.



Logistics supplier defects costs showed the highest increase year-over-year, followed by Packaging. Mechanicals had a modest increase overall, with significant fluctuations throughout the year. The Other rank >3 category experienced a decrease in costs. The consistent increases in Logistics and the extreme variability in Mechanicals suggest potential areas of concern that require targeted interventions.

Supplier Defects Costs in kCAD by Category '14 AC vs PY



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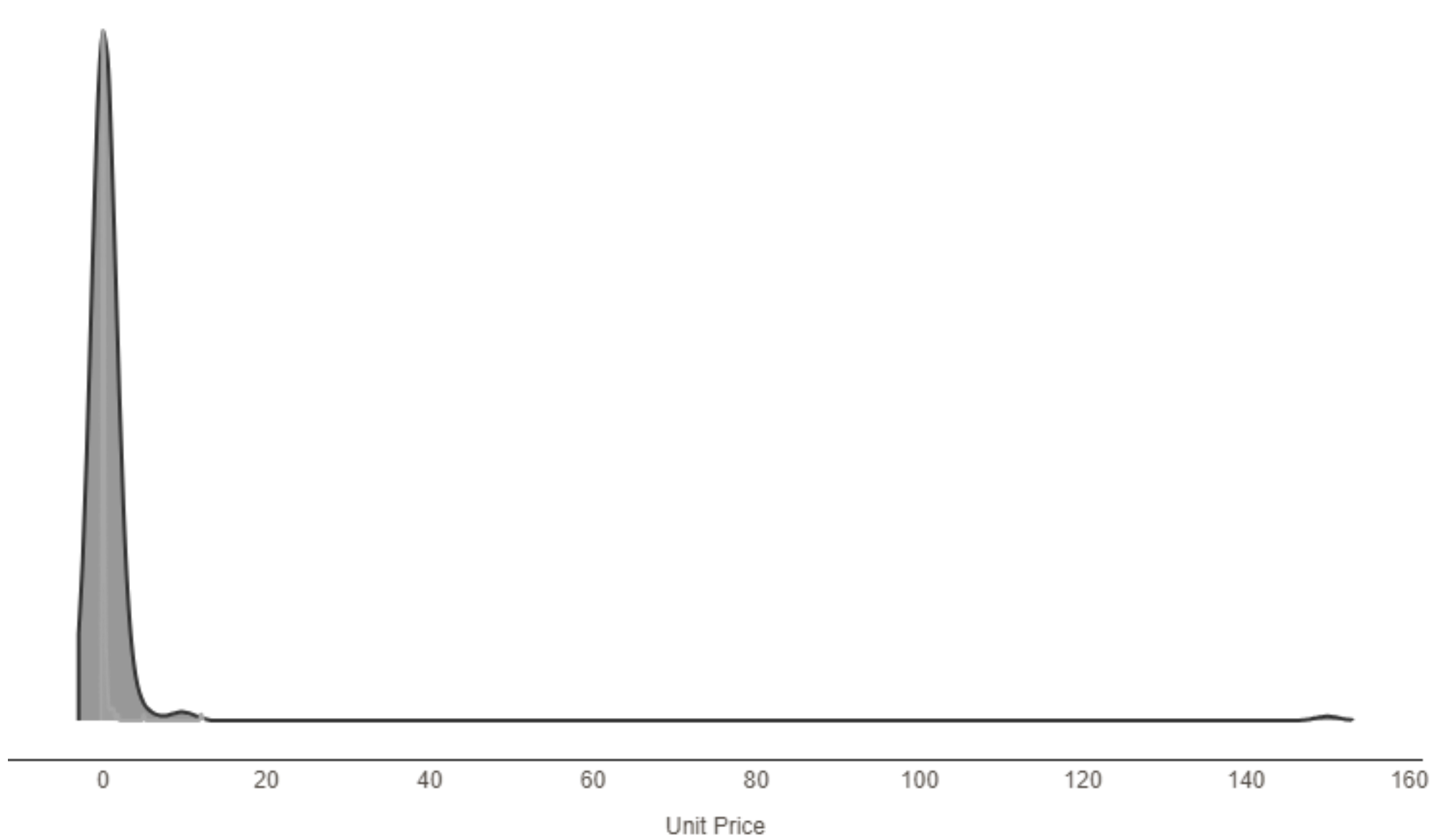
Supplier Defects
Costs Growth Rate in CAD by Defect_Type
'14



Supplier Defects
Costs by Vendor in kCAD
'13 to '14
CAGR
-14.3%



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

