

# TEAM 10: VILYA

We recommend prioritizing the needs of the manufacturing, construction, and retail segments, charging freight for fastener products, granting district leaders with timely information through a scorecard to identify patterns of success and promote competitiveness, and following risk mitigation protocols to better respond to future challenges.



<b>Piper Doyle</b>	<b>Michael Jonelis</b>	<b>Alejandro Brillembourg Cuenca</b>	<b>Paul Chen</b>
<i>PiE-pehr DOy-le</i>	<i>MY-kuhl JO-neh-lis</i>	<i>Ah-leh-HAN-d-roh Bri-lem-bergh Coo-Ehn-cah</i>	<i>Pahwl SHEHN</i>
I am excited to compete with universities from around the country.	I am excited to make a real-world contribution to an important industry.	I am excited to collaborate with peers on an industrial business information problem.	I am thrilled to transform data into business value and make long-last impacts.

# Agenda

Strategy & Recommendation

Core Customer Identification

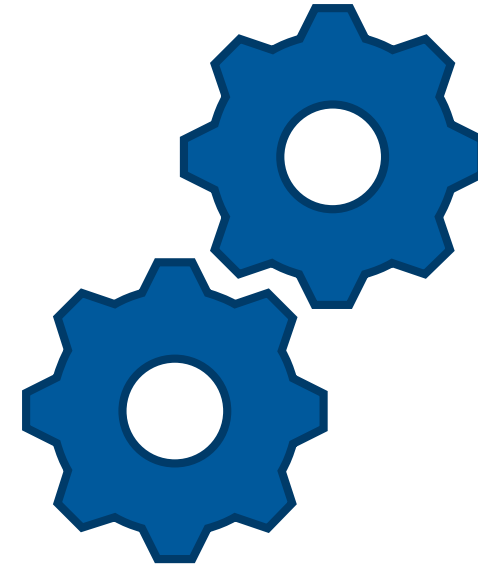
Performance Analysis

Sales Trend Marketing Segmentation

Scorecard Overview

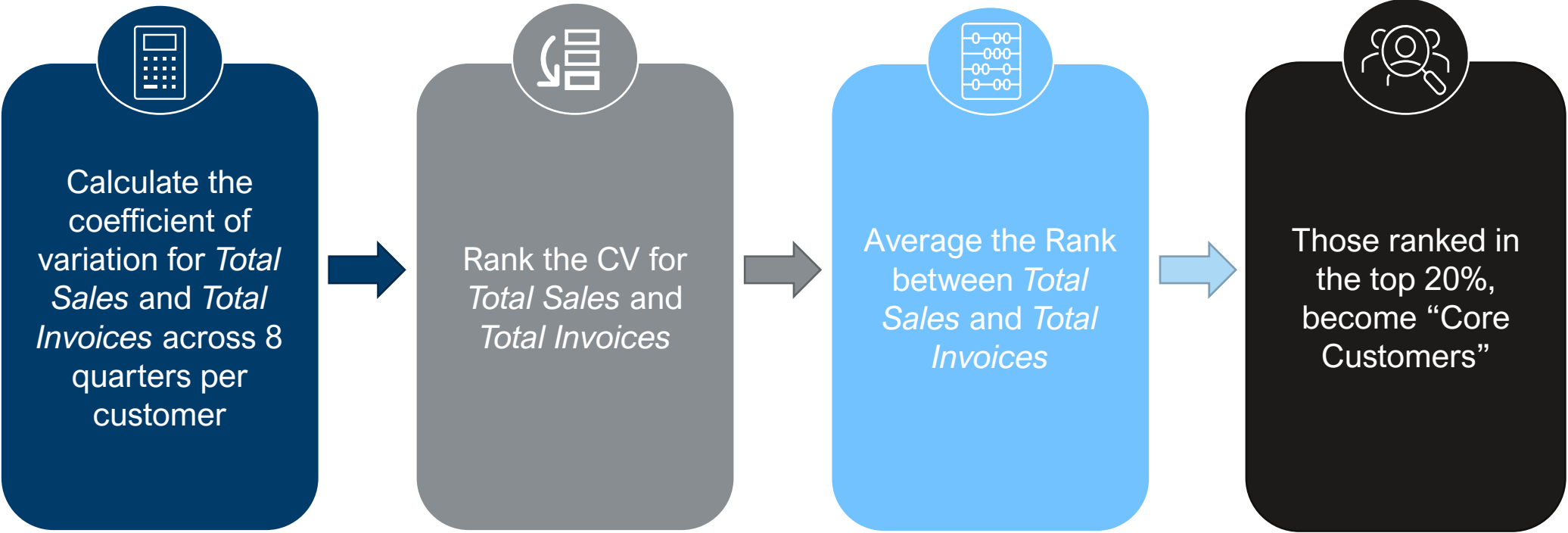
Industry Analysis

Conclusion

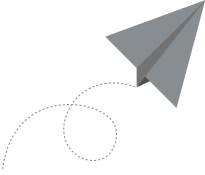
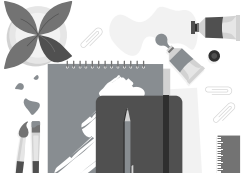



# Building the Model ~ Core Customer

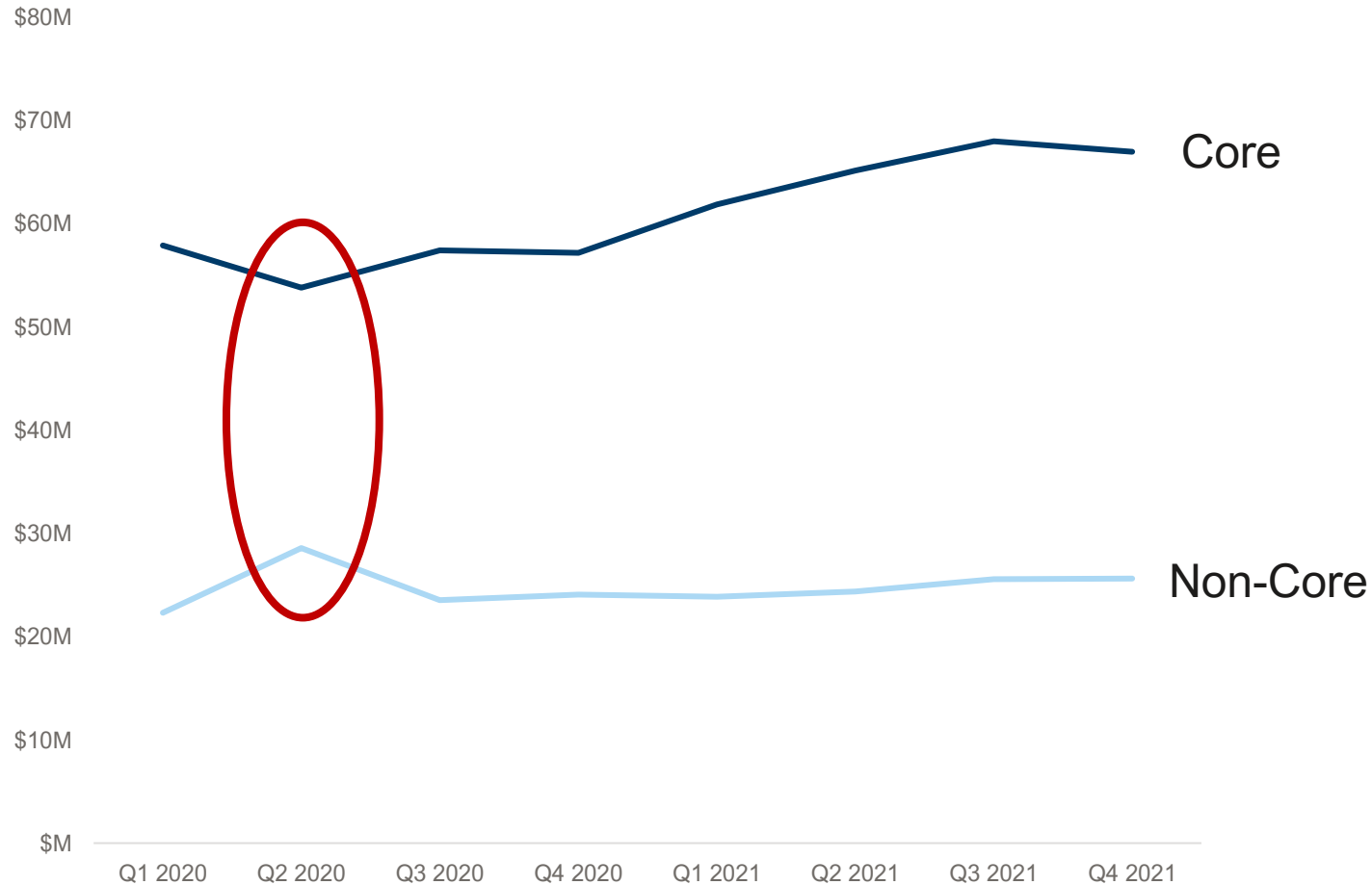
“The standard wisdom is that the core customers never usually constitute more than 20% of the total customer base of a company” – Oxford University



# Understanding Fastenal Customers

	<u>Manufacturing</u>	<u>Construction</u>	<u>Retail</u>
			
% of Core Customers	40%	23%	8%
% of Total Revenue	79%	8%	3%
% of Invoices	58%	19%	3%

# Sales by Customer Type



## Core

- There is a small dip in Core Revenue in Q2 2020.
- One explanation is that traditional customers halted purchases due to economic uncertainty created by the pandemic.
- Freight is around 3% of sales.

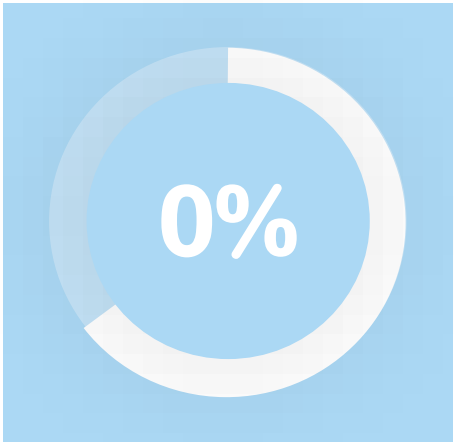
## Non-Core

- There is a small peak in Non-Core Revenue in Q2 2020.
- One explanation is that the new products were purchased to support the health sector.
- Freight is around 3% of sales.

# Freight Performance by Product



Freight is only being charged for **Non-Fastener** products



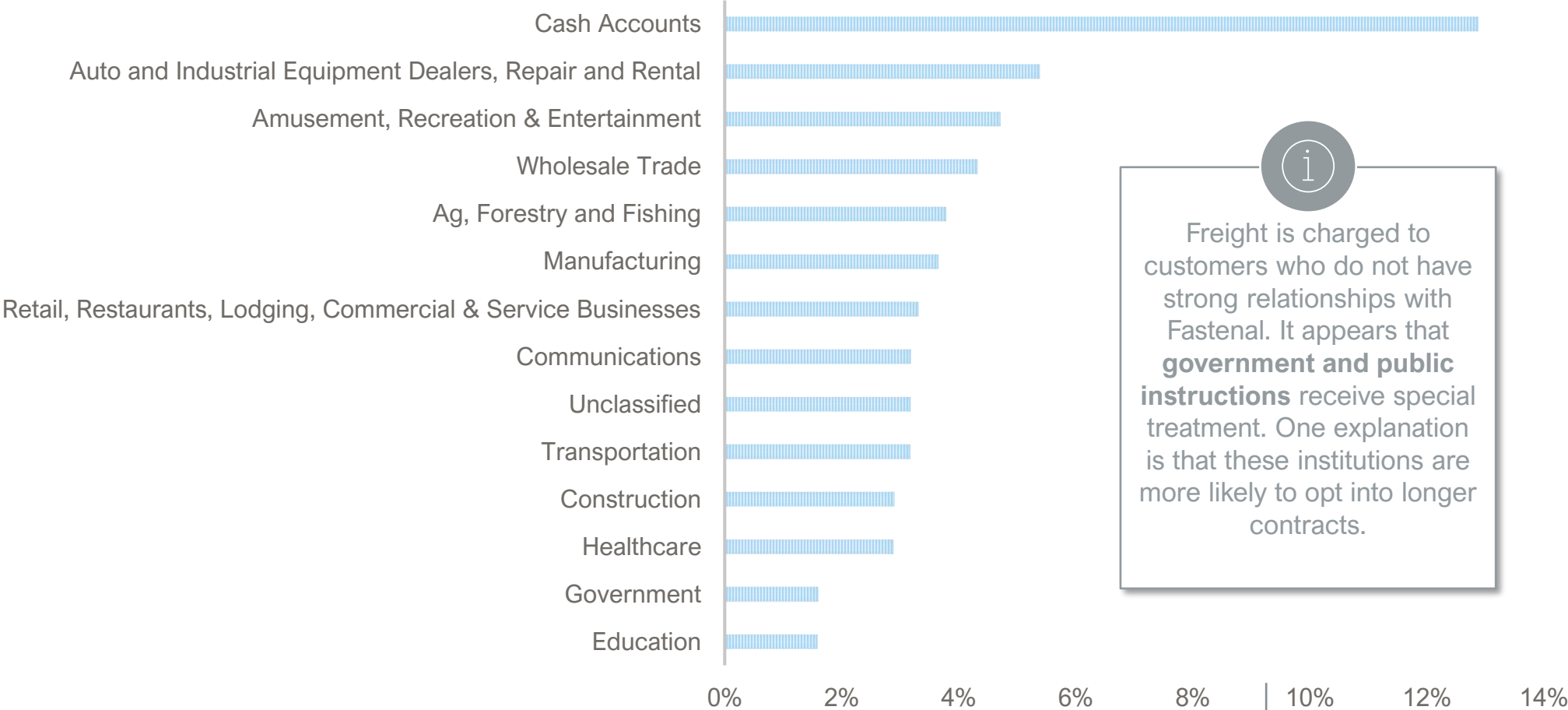
Fasteners (% of Sales)



Non-Fasteners (% of Sales)

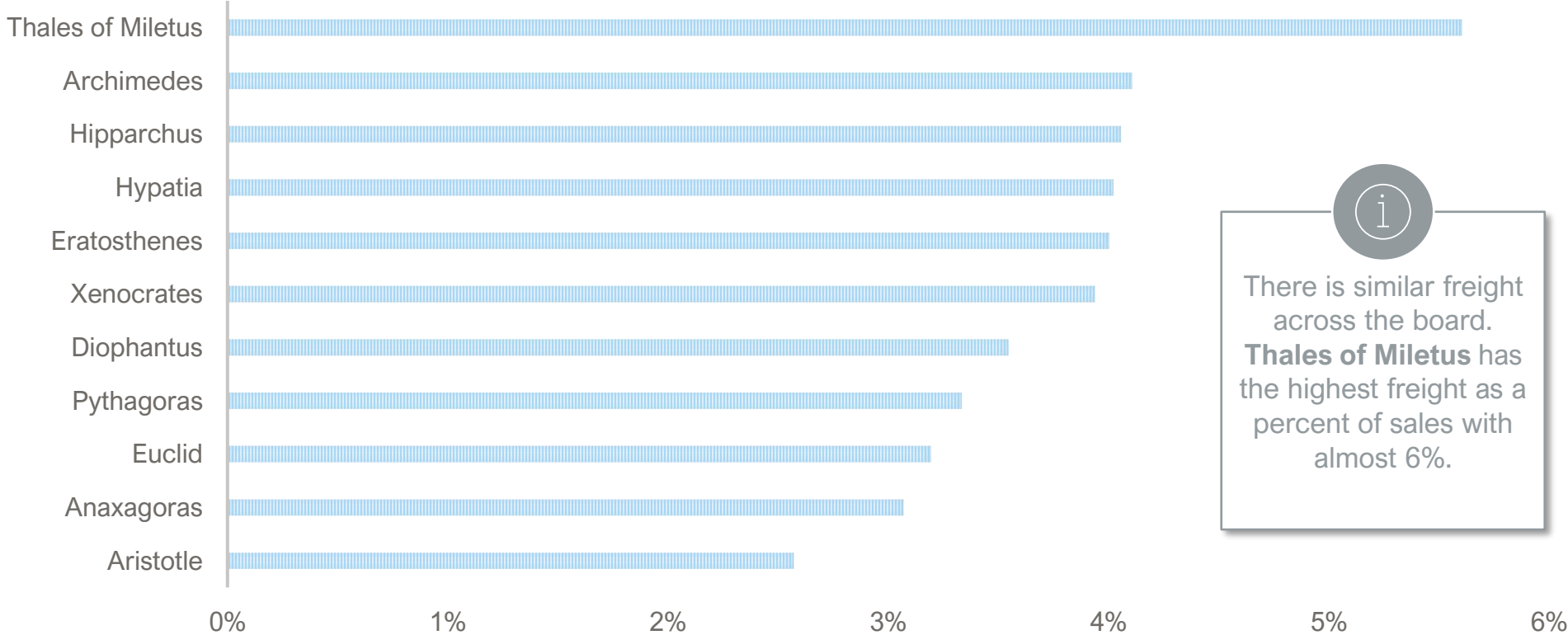
# Freight Performance by Market

## FREIGHT AS PERCENT OF SALES



# Freight Performance by District

FREIGHT AS PERCENT OF SALES

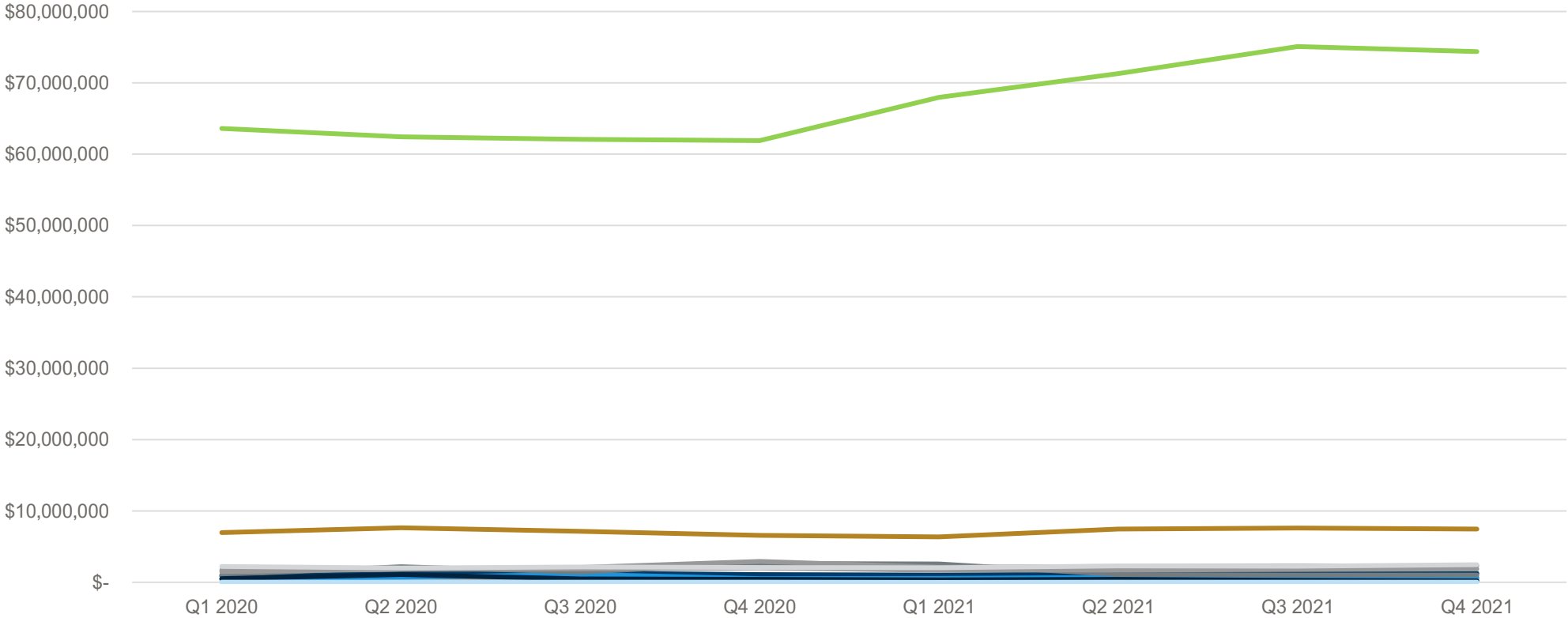


**i**  
There is similar freight across the board. **Thales of Miletus** has the highest freight as a percent of sales with almost 6%.



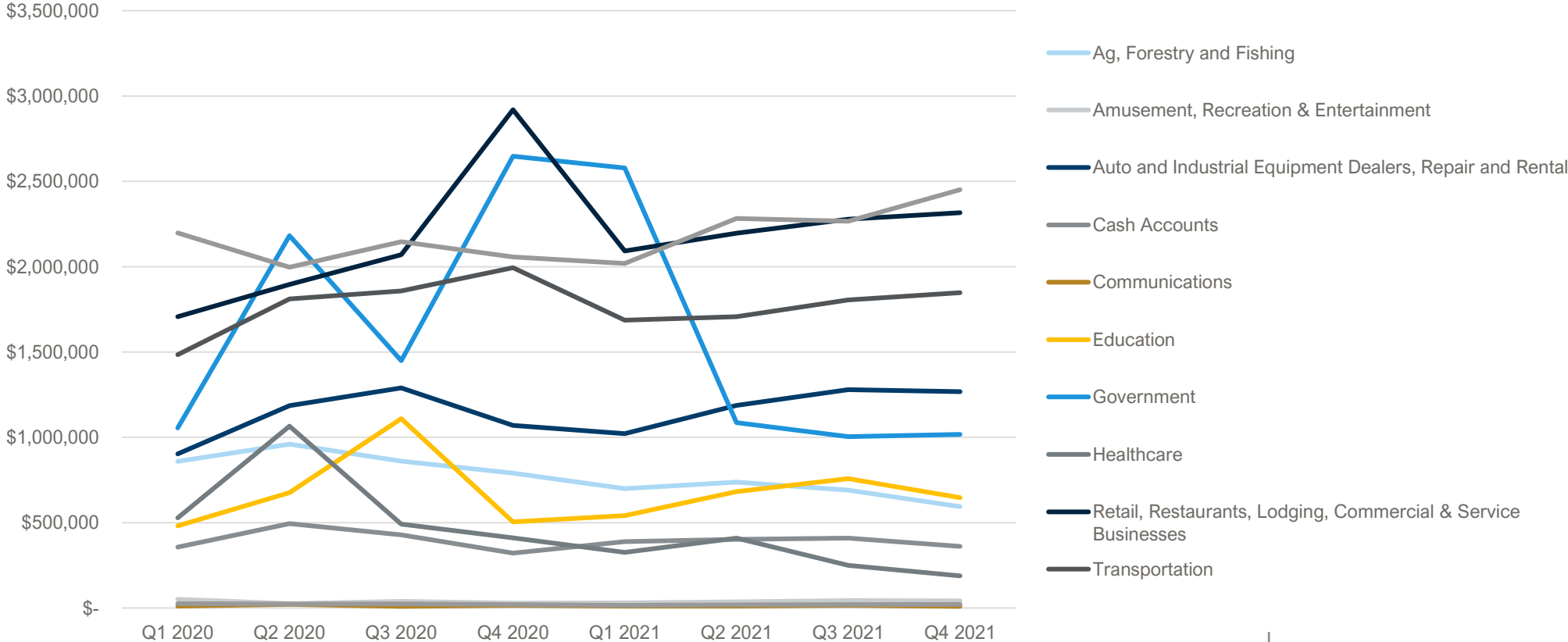
# Sales by Market

**Manufacturing** and **Construction** account for 87% of Fastenal's Sales.



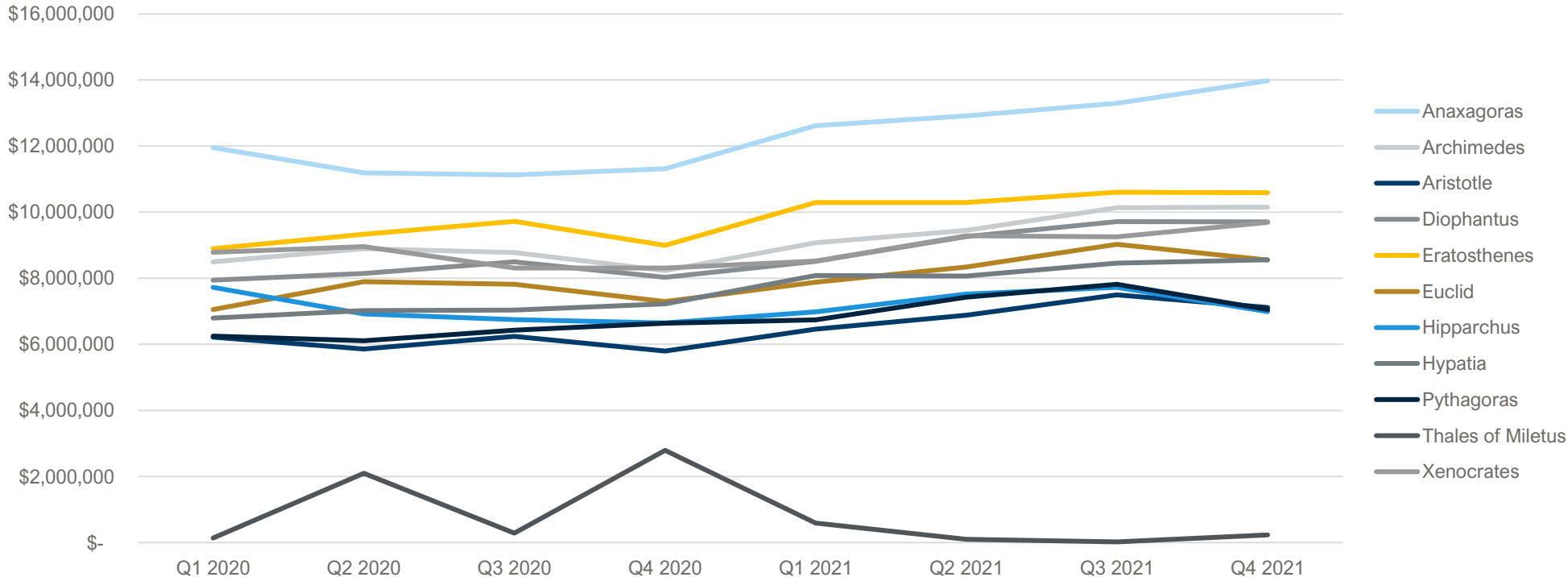
# Sales by Small Markets

After Manufacturing and Construction, **Retail** and **Cash** accounts have the largest sales. One possible explanation is that more money comes from transactions with fewer contract barriers. **Government** sales are the least predictable.

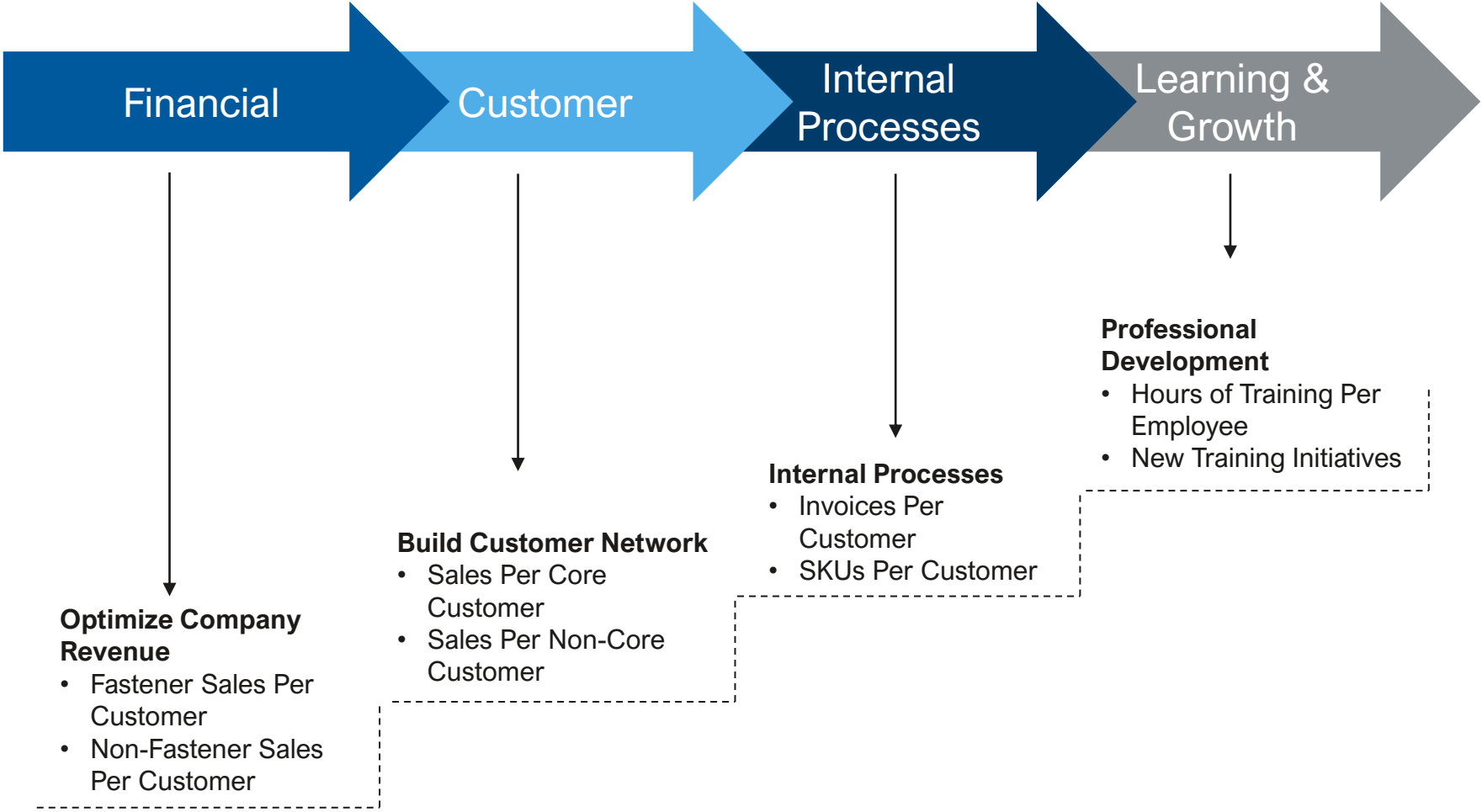


# Sales by District

The *Anaxagoras* district has the highest sales. *Thales of Miletus* is an outlier with a low number of invoices but a large revenue per invoice.



# Scorecard



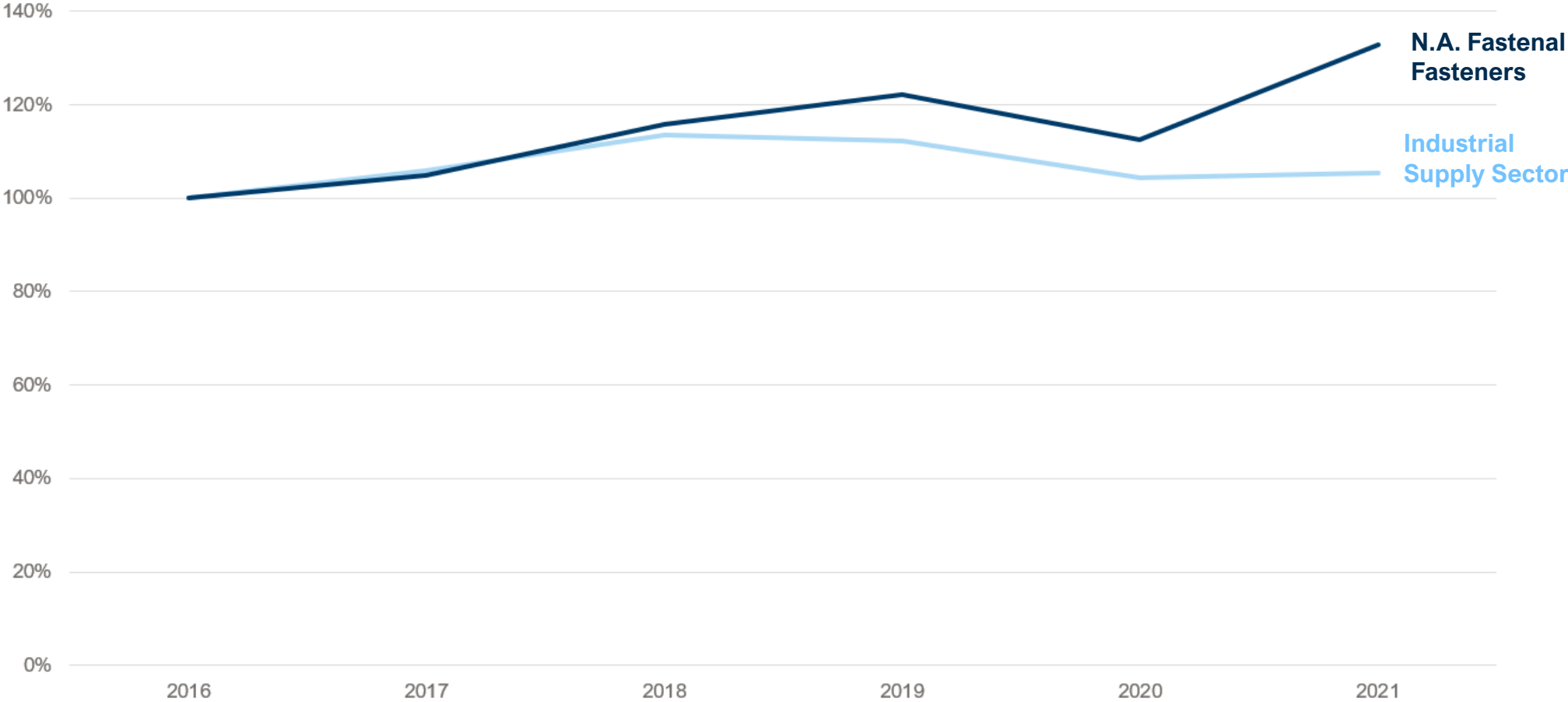
# Scorecard

Fastenal- Xenocrates						
	Strategic Objectives	Key Performance Indicators	Metrics (2021)			
			Q1	Q2	Q3	Q4
Financial	Optimize Company Revenue	Fastener Sales Per Customer	\$ 137	\$ 153	\$ 153	\$ 165
		Non-Fastener Sales Per Customer	\$ 424	\$ 459	\$ 457	\$ 473
		Total Sales	\$ 561	\$ 611	\$ 610	\$ 638
Customer	Build Customer Network	Sales Per Core Customer	\$ 6,592,193	\$ 7,033,497	\$ 7,142,560	\$ 7,367,983
		Sales Per Non-Core Customer	\$ 1,923,773	\$ 2,248,666	\$ 2,113,121	\$ 2,322,249
Internal Process	Increase Engagement	Invoices Per Customer	1.30	1.32	1.21	1.11
		SKUs Per Customer	4.24	4.17	4.04	4.05
Learning & Growth	Professional Development	Hours of Training Per Employee	184359	182161	189956	187686
		New Training Initiatives	66784	66715	66931	66921

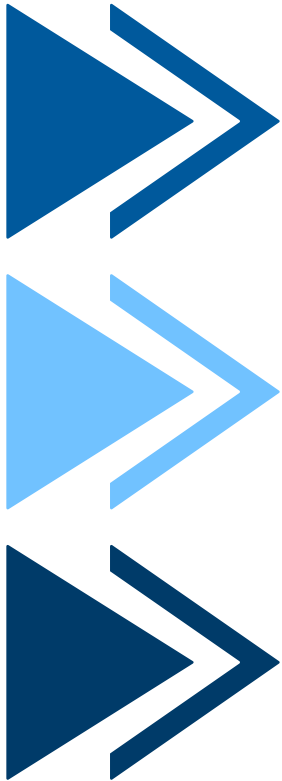
Above Average

Below Average

# COVID-19 Impact on Revenue



# COVID-19 Impact on Industrial Supply Sector

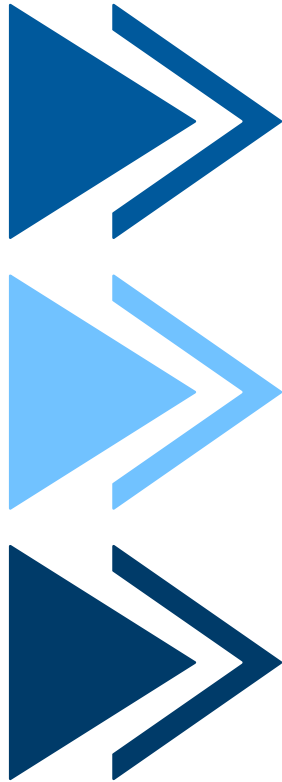


Industrial production slowed as protective measures, such as reducing labor capacity in production facilities, were put in place to ensure the safety of employees around the world

Increased demand for certain products such as PPE and medical parts forced the industrial supply sector to pivot to supply necessary items

Demand decreased for other products as consumer and corporate needs shifted due to the pandemic

# COVID-19 Impact on Fastenal



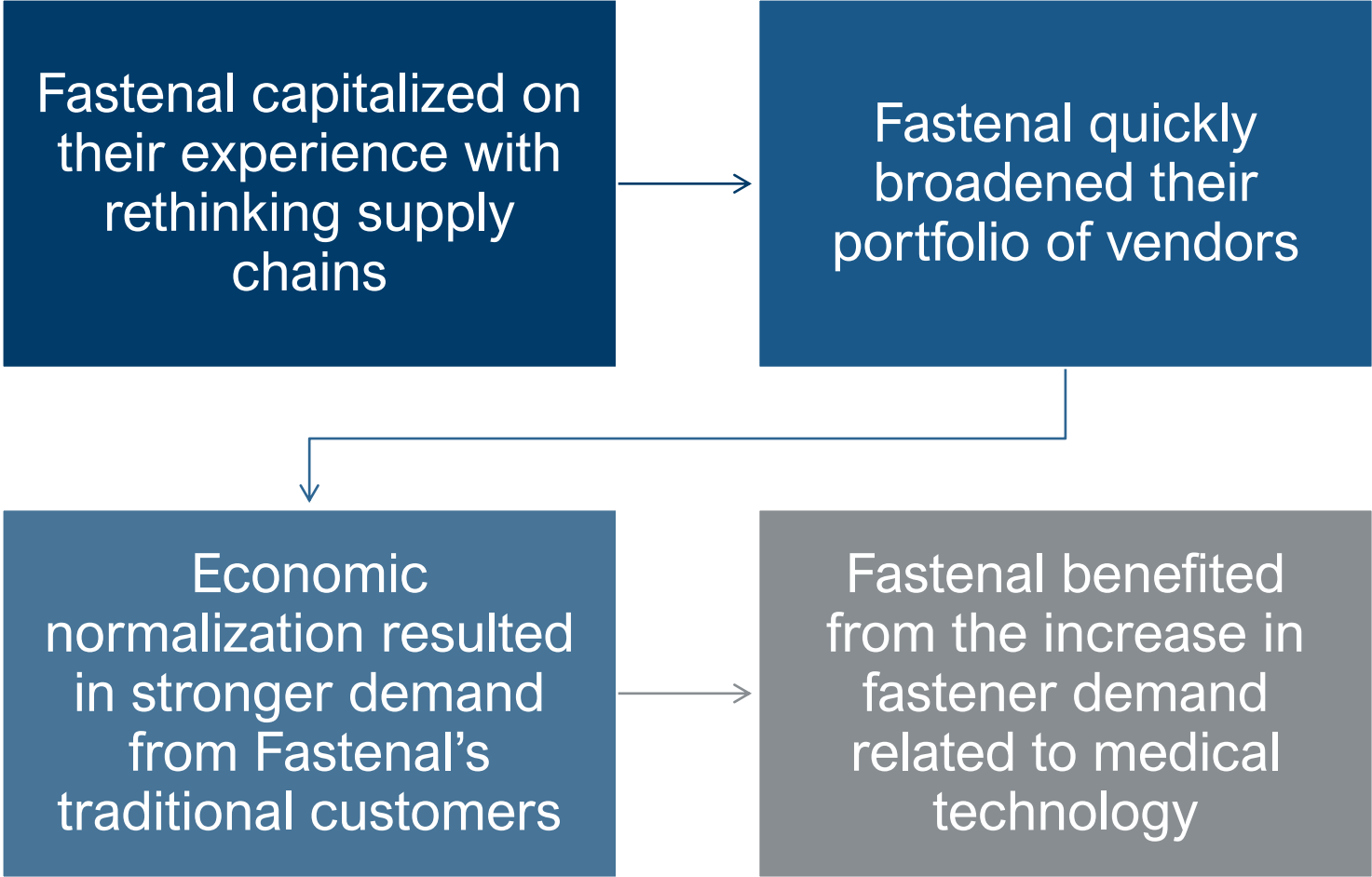
Fastenal immediately established protective measures such as canceling a large conference which deprived them of opportunities to ink new contracts for their services

Pressures on supply chain resulted in inventory challenges creating backorders for some products while demand from some traditional customers decreased

Fastenal bounced back quicker than the Industrial Supply Sector... Why?

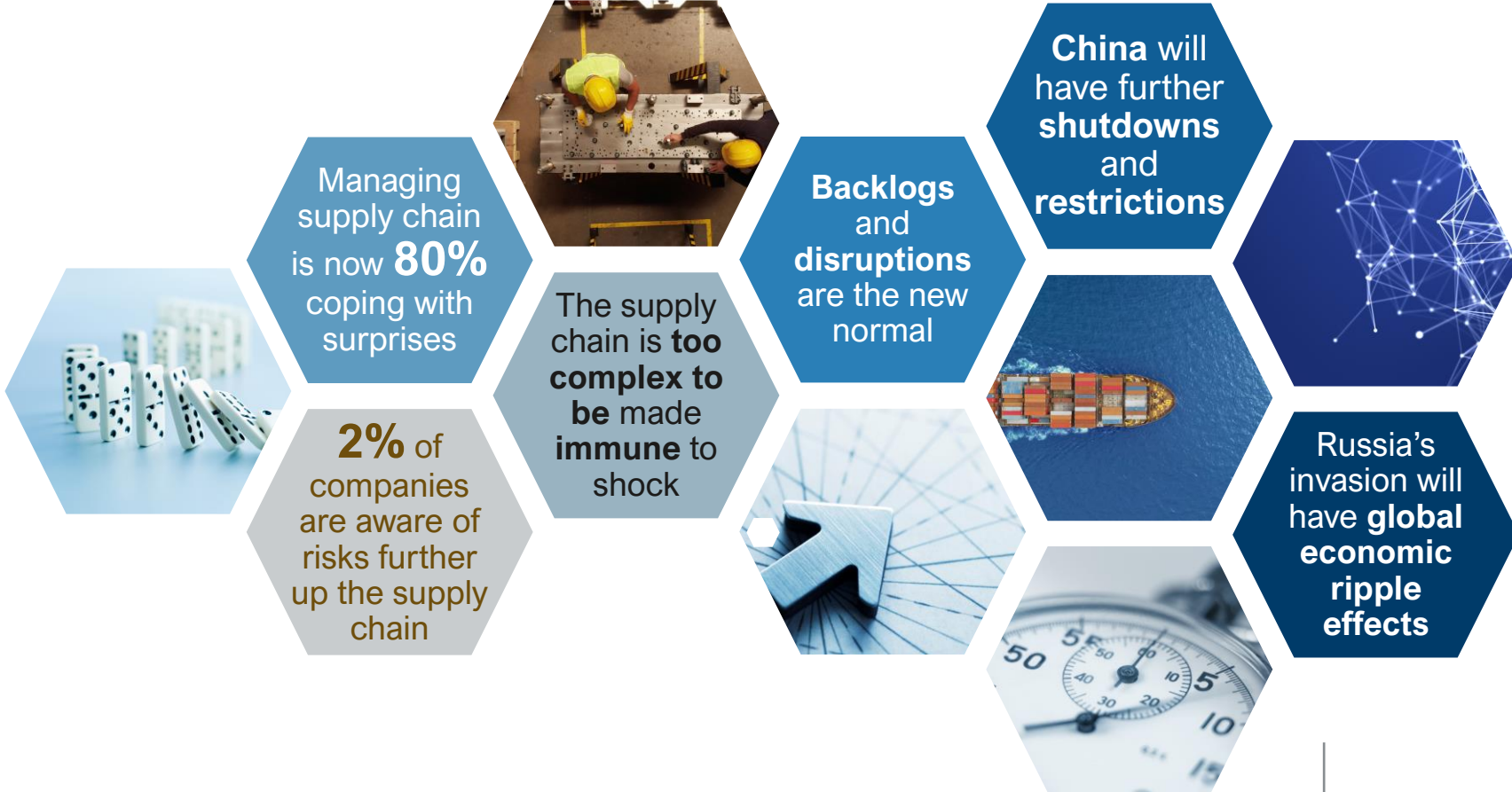


# Fastenal Bounces Back

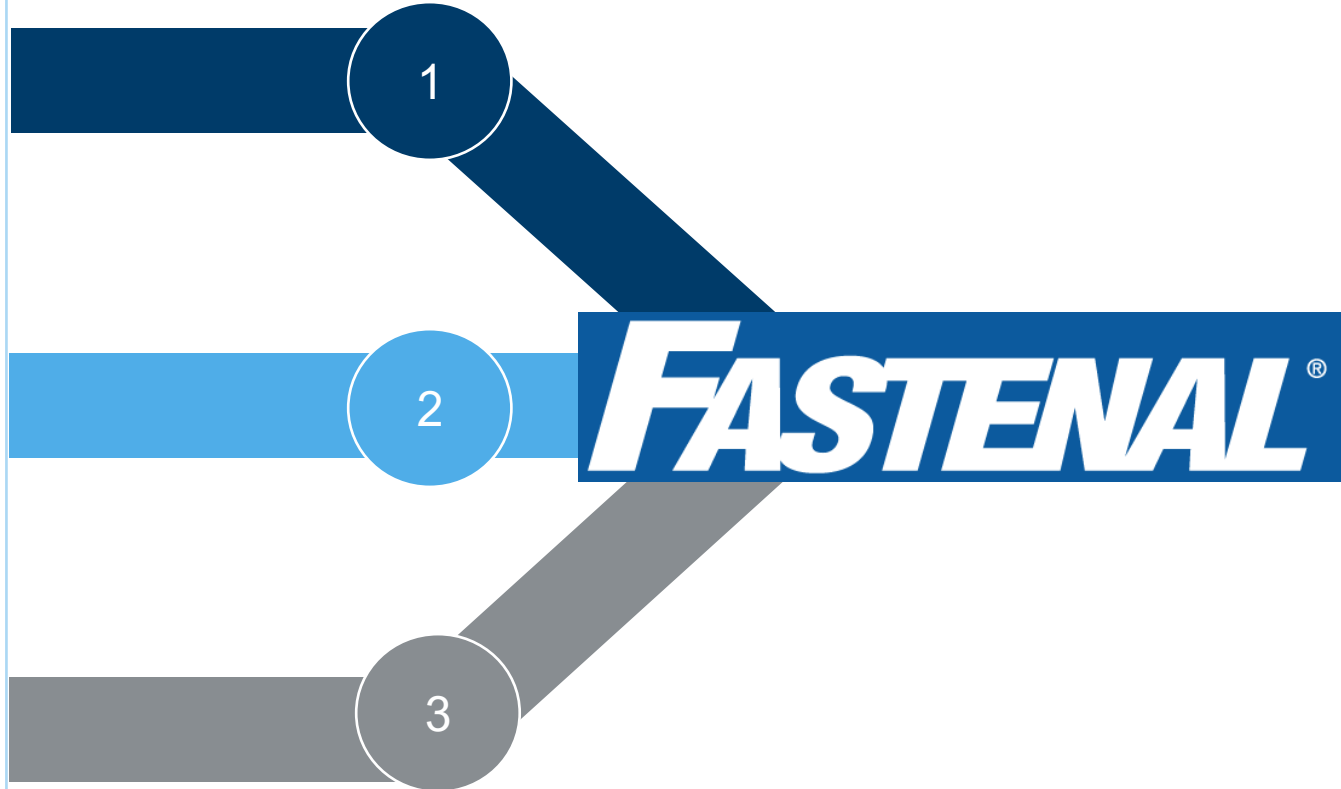


# Risk Identification

*“We used to occasionally have black swan events... The problem at the moment is we have a whole flock of black swans coming at us” – Richard Wilding, Professor of Supply Chain Strategy at Cranfield University in the UK*



# Risk Mitigation



Implement technology that allows for **clear communication** at all stages of the supply chain. When new information comes to light, everyone can prepare.

Continue to **diversify suppliers and manufacturing partners** with an emphasis on **local suppliers** to reduce the length of the supply chain.

Invest in **buffer stock** to increase **flexibility** and **adaptability** in case of catastrophe or unknown challenges

# Improving the Business Model



Prioritize the needs of **manufacturing, construction,** and **retail** customers as these three sectors account for most revenue and total invoices.



Charge **freight for fastener** products as their weight per unit is high which increases the cost of transportation.



Use the scorecard to identify **Anaxagoras's** success in sales. Once the conditions for success are identified, work to implement these conditions in additional districts.



Follow the identified **risk mitigation** process to prepare for future supply chain issues.



# *THANK YOU!*



# *QUESTIONS?*

## REFERENCES

BUILDING CORE CUSTOMER MODEL

SCORECARD COMPARISON

CORE CUSTOMERS

SALES BY CUSTOMER TYPE

FREIGHT BY MARKET

FREIGHT BY DISTRICT

SALES BY MARKET (ALL)

SALES BY MARKET (SMALL)

SALES BY DISTRICT

SCORECARD

INDUSTRY ANALYSIS

# REFERENCES

Fastenal, Tippie College of Business (2021). *2022 Iowa Graduate Business Analytics Case Competition Problem Statement*. Iowa University. <https://www.statista.com/statistics/1238085/united-states-semiconductor-incentive-program-gdp-by-channel/>

## Question 2

Train tracks. Pixabay.com

## Scorecard

Fastenal: Number of Employees 2010-2021. *Macrotrends*. <https://www.macrotrends.net/stocks/charts/FAST/fastenal/number-of-employees>

Hours of Training per employee in the training industry in the United States from 2017 to 2020, by company size. *Statista*. <https://www.statista.com/statistics/795813/hours-of-training-per-employee-by-company-size-us/>

Fastenal School of Business – Training Format (2020) <https://careers.fastenal.com/content/fastenal-school-of-business>

## Question 5

Curran, Jack. (2021) Industrial Supplies Wholesaling in the US. *IBIS World*. <https://my.ibisworld.com/us/en/industry/42384/industry-performance>

Harapoko, Sean. (2021) How COVID-19 Impacted Supply Chains and What Comes next. *EY*. <https://my.ibisworld.com/us/en/industry/42384/industry-performance>

GlobalData Healthcare. (2022) Medical Device Contract Manufacturing Demand Is Surging During the Covid-19 Pandemic. *Medical Device Network*. <https://www.medicaldevice-network.com/comment/medical-device-contract-manufacturing-demand/>

Guerrieri, Vernica & Lorenzoni, Guido & Straub, Ludwig & Werning Ivan. (2020) Macroeconomic Implications of Covid-19: Can Negative Supply Shocks Cause Demand Shortages? *National Bureau of Economic Research*. <https://www.nber.org/papers/w26918#:~:text=We%20present%20a%20theory%20of,exits%E2%80%94may%20have%20this%20feature.>

Sutherland, Brooke. (2020) Fastenal Is One Company That Got Pandemic Planning Right. *Bloomberg Quint*. <https://www.bloombergquint.com/gadfly/coronavirus-fastenal-got-pandemic-planning-right>

Fastenal Covid-19 Response. (2020) <https://www.fastenal.com/en/4610/covid-19-response>

Fastenal. *Manufacturing Today*. <https://manufacturing-today.com/news/fastenal/>

Fastenal 2021 Annual Report. <https://investor.fastenal.com/financial-results/annual-reports/default.aspx>


Lynn, Alex. (2020). Covid-19 Has Led to an Increase In Fastener Demand. *Electronic Specifier*. <https://www.electronicspecifier.com/products/component-management/covid-19-has-led-to-an-increase-in-fastener-demand>

Knight, Will. (2022). The Supply Chain Crisis Is About to Get a Lot Worse. *WIRED*. <https://www.wired.com/story/supply-chain-crisis-data/>

Ingram, Terry & Evans, Michael (2021). 5 Steps to Protect Your Business From Supply Chain Disruptions. *Forbes*. <https://www.forbes.com/sites/allbusiness/2021/06/29/5-steps-to-protect-your-business-from-supply-chain-disruptions/?sh=1e0c7dc33455>

# APPENDIX A

## Building the Model ~ Core Customer

  
Calculate the CV  
for *Total Sales*  
and *Total Invoices*  
across 8 quarters  
per customer



Coefficient of Variation  
(CV) shows the extent  
of variability in relation  
to the mean of the  
population



Calculating CV across  
8 quarters allows us to  
evaluate the  
consistency of  
purchases in 2 ways

CV of Quarterly Invoices  Rank CV of Invoices  CV of Quarterly Total Sales  Rank CV of Sales  avg rank  Rank  is core  Percent



# APPENDIX B

## Fastenal- Anaxagoras

	Strategic Objectives	Key Performance Indicators	Metrics (2021)			
			Q1	Q2	Q3	Q4
Financial	Optimize Company Revenue	Fastener Sales Per Customer	\$ 200	\$ 213	\$ 223	\$ 224
		Non-Fastener Sales Per Customer	\$ 504	\$ 507	\$ 518	\$ 555
		Total Sales Per Customer	\$ 704	\$ 720	\$ 741	\$ 779
Customer	Build Customer Network	Sales Per Core-Customer	\$ 9,341,060	\$ 9,681,779	\$ 9,934,498	\$ 10,071,504
		Sales Per Non-Core Customer	\$ 3,272,376	\$ 3,232,073	\$ 3,357,422	\$ 3,898,672
Internal Process	Increase Engagement	Invoices Per Customer	1.3	1.2	1.2	1.1
		SKUs Per Customer	4.6	3.7	3.7	3.6
Learning & Growth	Professional Development	Employees in Training	188562	168411	169729	174597
		New Training Initiatives	67260	67374	66968	67497

## Fastenal- Xenocrates

	Strategic Objectives	Key Performance Indicators	Metrics (2021)			
			Q1	Q2	Q3	Q4
Financial	Optimize Company Revenue	Fastener Sales Per Customer	\$ 137	\$ 153	\$ 153	\$ 165
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Internal Process	Increase Engagement	Invoices Per Customer	1.30	1.32	1.21	1.11
		SKUs Per Customer	4.24	4.17	4.04	4.05
Learning & Growth	Professional Development	Hours of Training Per Employee	166412	168740	175886	182756
		New Training Initiatives	66766	67444	67002	67136

## Fastenal- Comparison

	Key Performance Indicators	Metrics (2021)			
		Q1	Q2	Q3	Q4
Financial	Fastener Sales Per Customer	\$ 125	\$ 132	\$ 140	\$ 139
	Non-Fastener Sales Per Customer	\$ 554	\$ 429	\$ 423	\$ 476
	Total Sales	\$ 679	\$ 560	\$ 563	\$ 615
Customer	Sales Per Core Customer	\$ 6,186,197	\$ 6,514,838	\$ 6,797,761	\$ 6,698,451
	Sales Per Non-Core Customer	\$ 2,170,752	\$ 2,216,466	\$ 2,323,696	\$ 2,329,644
Internal Process	Invoices Per Customer	1.10	1.16	1.04	0.93
	SKUs Per Customer	3.68	3.65	3.14	2.92
Learning & Growth	Employees in Training	167288	174414.5	172012	178722
	New Training Initiatives	67004	67317	67372	67116