

Supply Chains To Admire™

2021



Supply Chain Insights™

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JULY 2021



Table of Contents

- Disclosure 4
- Executive Summary 5
- Having The Right Stuff 6
- Driving Progress by Conquering The Effective Frontier 7
- Trends and Insights 9
- Results by Industry 10
- What Drives Value? 12
- Comparison of Methodologies 13
- Recommendations 15
- Conclusion 16
- Analysis by Industry 18
 - Retail Overview 18
 - Discrete Industry Overview 25
 - Process Industry Overview 40
- Research Methodology. 51
- Calculations. 51
- The Criteria 53
- Prior Reports in This Series 54
- About Supply Chain Insights LLC 55
- About Lora Cecere 55
- Figures & Tables 56

Executive Summary

Business leaders are action-oriented and competitive. Executive teams strive to drive significant improvement in supply chain results; yet, only four percent of public companies succeed.

The Supply Chains to Admire™ evaluates the progress of public companies in the longest-ever economic expansion. The methodology includes over six hundred public companies within twenty-six industry sectors. There are many goals:

1. Guide supply chain leaders in setting realistic supply chain goals.
2. Provide industry benchmarks by industry peer group.
3. Reward companies that are achieving higher levels of supply chain excellence.
4. Provide a clear definition of supply chain excellence for the Supply Chain Insights research. The analysis enables an explicit objective function for correlation to better how choices made by supply chain leaders tie to value.
5. Gain an understanding of what is possible in multi-year roadmaps.

In the 2021 analysis, twenty companies met the **Supply Chains to Admire Award** criteria. The winners include *Apple, AbbVie Inc., Air Products & Chemicals, Assa Abloy AB, Broadcom, Celestica, Dollar General, Ecolab Inc., Intuitive Surgical, Inditex, Lockheed Martin Corporation, Nike Inc., Nvidia, PACCAR Inc, Ross Stores, Sleep Number, Taiwan Semiconductor Manufacturing (TSMC) Company, Tempur Sealy, TJX Companies, and Western Digital*. No company met the criteria in seventeen of the twenty-six industry sectors studied.

While Schneider Electric does not qualify as a winner, its performance shows marked improvement and notable achievement; as a result, it is worth a mention.

The list of Supply Chain to Admire Award Winners is a stark comparison to the conventional wisdom of industry leaders. While the performance of some like Apple and Nike are commonly accepted supply chain leaders, the performance and recognition of other companies on the list are not. Since the Supply Chains to Admire is a data-driven analysis, it is less subject to industry bias. As a result, the Supply Chains to Admire methodology is a valuable assessment tool for companies of all sizes globally. ✨

Figure 1. Supply Chains to Admire Winners for 2021



Having The Right Stuff

Supply chain excellence is more comfortable to say than to explain. The *Supply Chains to Admire* methodology identifies companies within industry peer groups that drove **higher levels of improvement, better performance, and a superior level of value in public markets** during the 2011-2020 time period. The analysis tracks year-over-year progress on the metrics: year-over-year growth, operating margin, Inventory turns, and return on invested capital.

While the companies, over the nine years of the analysis, vary by year, the win rate remains constant at 4%. The path to excellence for supply chain leaders takes four to five years, and the most critical factor is leadership. In our research, we find no correlation to technology or consultant selection. Leaders drive higher levels of improvement by focusing on cross-functional process development and organizational alignment.

Historically, the focus has been on building efficient processes for sell, deliver, make, and sourcing organizations. From our research, it is clear that efficient organizational silos do not deliver superior balance sheet performance. We also find that large organizations focused on functional metrics throw the supply chain out of balance and do not make it into the Winner's Circle.

Supply chain leaders quickly find that it is easier to drive improvement than sustaining performance. Progress requires patience and building capabilities to manage the supply chain as a complex nonlinear system based on a multi-year roadmap. To accomplish this goal, there are many barriers.

Smaller innovative and newer companies focusing on customer value tend to win the Supply Chains to Admire award. All of the retail winners drove excellence through constant change and business model innovation. Examples of smaller innovative manufacturing companies winning the award include AbbVie, Intuitive Surgical, and Sleep Number.

Companies following traditional supply chain practices focused on transactional efficiency do not make the cut to place in the Winner's Circle. The use of functional metrics and close coupling of the supply chain to the budget is a barrier to improving balance sheet improvement. (For winners, the budget is input but not a constraint.) A worst-case scenario is defining the supply chain as another function within a rigid set of silos. The creation of the supply chain as a function is a more significant issue in Europe than in the Americas. ❄️

Figure 2. The Approach: Balanced Scorecard Analysis



Driving Progress by Conquering The Effective Frontier

The supply chain is a complex, nonlinear system. Globalization increased both complexity and non-linearity. In 2012, Supply Chain Insights worked with Arizona State University to determine the most appropriate set of metrics to correlate to Market Capitalization. Based on the correlation of data from over 150 metrics for the period of 2006-2012 for more than five hundred companies, we selected the parameters of growth, operating margin, Inventory turns, and Return on Invested Capital (ROIC) for the balanced scorecard analysis. We call this balanced scorecard, as shown in Figure 2, the Effective Frontier.

While we wish to include customer service in the analysis, there is no industry standard to enable the comparison. Likewise, while we strongly believe in corporate sustainability, we do not feel that any of the current sustainability indexes, due to dependency on self-reported data, are accurate reflections of company performance.

A test of a true leader is the ability to drive higher levels of performance within a peer group and sustain a competitive advantage over time. Using the Supply Chains to Admire analysis, in Table 1, we show consecutive year winners.

Table 1. Winners Over Time

Company	Frequency	This Year
Apple	7	Y
L'Oréal	6	N
Dollar General	5	Y
TJX	5	Y
Broadcom	5	Y
TSMC	5	Y
Dollar Tree	4	N
Nike	4	Y
Eastman	4	N
Paccar	4	Y

Over the eight years of analysis, the methodology favors more discrete manufacturers, with fewer process manufacturers qualifying for the Supply Chains to Admire recognition. Our observation is that discrete manufacturers are smaller and more agile and less likely to struggle with product complexity and the traditional bias for functional excellence. In contrast, process industries tied to conventional marketing practices introduced complexity through product proliferation. These marketing programs, in addition, tend to shift and distort demand versus shaping demand by improving market potential

METHODOLOGY OVERVIEW

Supply Chain Insights completes the Supply Chains To Admire™ of supply chain excellence annually. Now in its eighth year, the methodology measures industry sector performance for the period of 2011-2020. Within each peer group, we track the year-over-year patterns for 600 publicly-held companies in the three areas of improvement, performance, and value.

(baseline lift). Shifting demand decimates margin. The more significant the alignment gap between operational and commercial teams, the lower a company places within a sector.

Marketing-driven organizations handicap process companies, which are no substitute for market-driven planning capabilities. In the decade, M&A activity was more significant in process-based companies. Within process-based companies, manufacturing processes became more global, increasing logistics complexity and burgeoning in-transit inventories. The average company entered the pandemic of 2020 with twenty more days of Inventory than at the beginning of the great recession in 2007.

Table 2. Consecutive Year Winners for the Supply Chains to Admire Year-over-Year

Supply Chains to Admire Award Winners								
Year	2014	2015	2016	2017	2018	2019	2020	2021
Retail	2	6	6	4	9	5	3	3
Process	4	5	3	4	11	6	5	4
Discrete	6	12	7	16	11	14	14	13
	12	23	16	24	31	25	22	20

In Table 2, we share the elite list for retailers throughout the study. Retailers brave enough to launch and operate new business models rise to the top of the list. (This includes discount broad-line retailers, dollar stores, and healthy eating format grocers.)

The giant e-commerce providers of Amazon and Alibaba are conspicuously absent from the list. While we recognize them as supply chain leaders, the Supply Chains to Admire methodology requires a peer group comparison. There are too few companies to drive a good peer group for comparison, and thus eliminates the inclusion in the analysis. ❁



Trends and Insights

We found commonalities and similar patterns in our prior interviews with companies making the Supply Chains to Admire list. Leaders have five characteristics. We share these in Table 3.

Table 3. Characteristics of Supply Chains to Admire Leaders

Laggards	Leaders
Focus on Functional Metrics	Focus on Horizontal Processes
Driving Singular Metric Strategies	Building of Balanced Scorecards
Changing Leadership	Consistency of Leadership and Culture
Focus Solely on Transactional Processes	Strong Planning and Network Design
Changing Focus. Adoption of Fads.	Clarity of Supply Chain Excellence.

Winning companies have longer tenure of their leadership teams with a focus on driving long-term outcomes. There is an avoidance of supply chain fads and multiple consulting-based projects, with a constant emphasis on supply chain excellence.

Complexity throws the supply chain out of balance. In business, there is both good and bad complexity. It is analogous to cholesterol. Good complexity increases market share and drives

growth with a minimal impact on margin, while bad complexity does not improve share but has a significant detrimental effect on margin. Leaders actively manage complexity through robust horizontal processes: a focus on revenue management, Sales and Operations Planning (S&OP), new product launch/ innovation (NPI), Corporate Social Responsibility, and Supplier Development. These cross-functional programs align strategy with execution. Through the processes, there is a conscious choice to manage and actively reduce bad complexity through cross-functional processes.

The gap in performance between process-based and discrete industries widened over the last decade. Retail companies' performance improved, while process-based company performance declined in aggregate. While retailers start the decade as laggards growing more robust over time, the discrete industries started strong and developed even stronger supply chain practices in the face of declining margins. The strongest S&OP, NPI, and supplier development processes are in discrete industries. We feel this is one of the reasons many process-based companies are regressing on the Supply Chain Metrics That Matter. ❁

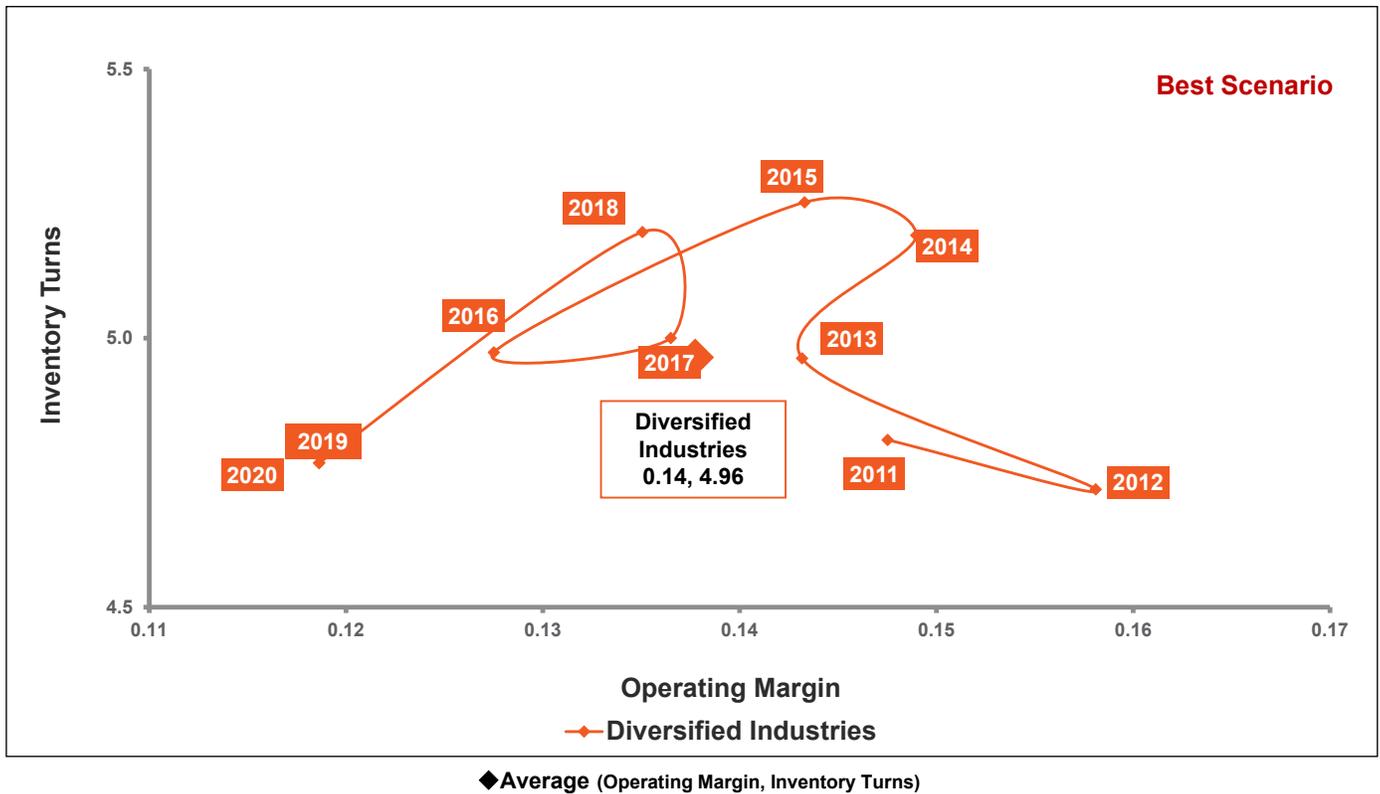


Results by Industry

To prepare this report, we start by mapping industry trends in orbit charts. In an orbit chart, we map year-over-year trends at the intersection of two metrics.

In this analysis, we find while supply chain practices grew in importance, the margins of 85% of the industry sectors regressed over the last decade. Without the redesign of the supply chain, companies are unable to drive progress using traditional process paradigms. The Diversified Industry sector, as shown in Figure 3, is an example. The average margin for the sector is 14% with 4.96 inventory turns. In this case, both margin and inventory turns declined.

Figure 3. Aggregate Trend for Diversified Industries at the Intersection of Operating Margin and Inventory Turns from 2011 through 2020



Source: Supply Chain Insights LLC, Corporate Annual Reports 2011-2020 from YCharts

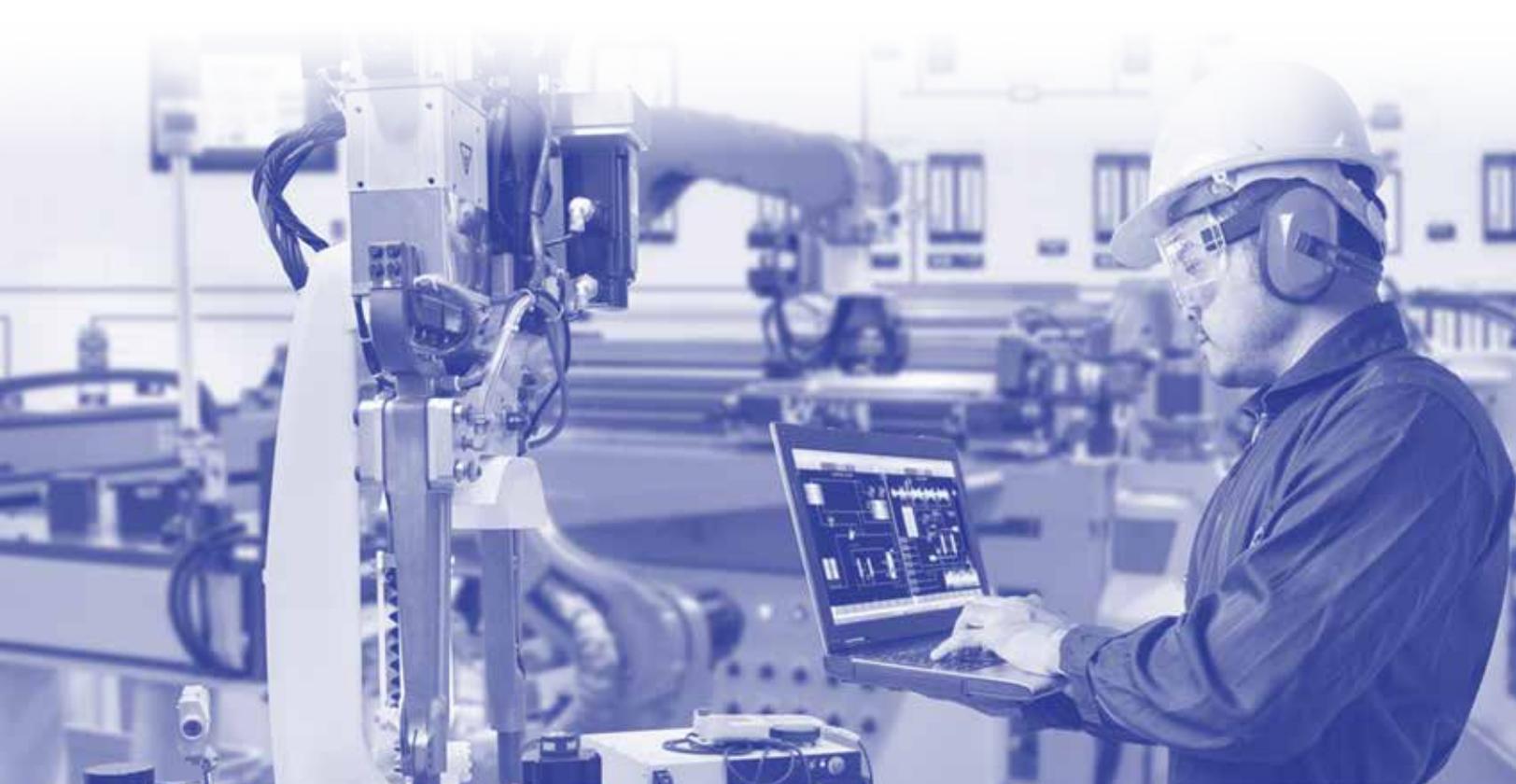
Inventory is a sticky wicket—a political hot potato—in many organizations. Inventory levels at the end of 2019 were significantly higher across industries than pre-recession levels in 2007. The lack of performance in inventory optimization is a significant factor in determining the winners in the Supply Chains to Admire Award process.

Table 4. Inventory Levels by Industry Sector Across Time Periods

Days of Inventory by Industry: Comparison Across Time Periods						
Industries	Years				Difference (2014-2019 vs. 2004-2006) Periods	
	(2004-2006)	(2007-2008)	(2009-2013)	(2014-2019)		
Beverage	108	115	133	184	76	
Pharmaceuticals	151	164	173	202	51	
Medical Device	107	123	142	152	45	
Semiconductor	60	69	79	92	32	
Beauty	117	127	132	141	24	
Automotive Parts	47	52	61	67	20	
Chemical	63	62	67	81	18	
Household Products	56	53	57	74	18	
Aerospace & Defense	94	89	99	107	13	
Automotive	45	51	53	55	10	
Food	5	51	59	60	10	
Broadline Retail	71	76	74	79	8	
Apparel Retail	74	77	77	81	7	

While over 82% of manufacturers greater than 5B\$ in annual revenue own an advanced planning solution, the most often used technology is a spreadsheet. There is a significant gap in inventory performance between companies that use advanced optimization versus those dependent on spreadsheets.

When we started this analysis, we believed the analysis would favor the iconic brands of Procter & Gamble, Unilever, or Walmart. While each company contributed significantly to supply chain process improvement, in this study, each company struggled to outperform its peer group on the balanced scorecard selected for this analysis. ❁



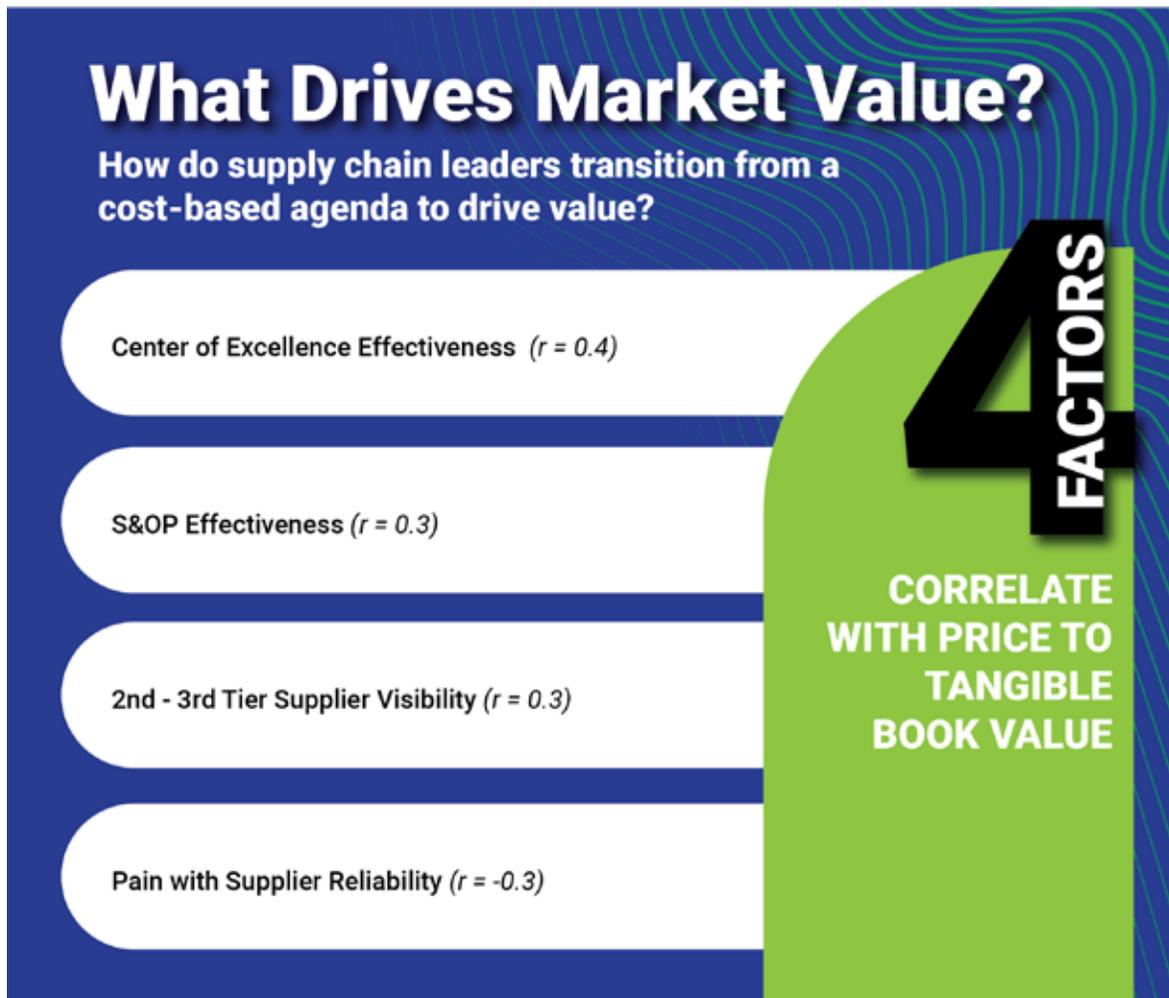
What Drives Value?

When I wrote the book [Bricks Matter](#), one of the reviewers asked, “How do you define value?” I struggled to answer the question.

The focus of the traditional supply chain organization is cost. Saving money does not drive value. Improving cost does not necessarily improve margin. So, as a part of this analysis, our goal was to answer the questions, “What drives value?” and “What steps should companies take to improve Price to Book Value?”

The definition is: $Price\ to\ Book\ Value = Market\ Share\ Price / Book\ Value / Share\ Outstanding$

Figure 4. Driving Market Value



Our research finds that companies with a Supply Chain Center of Excellence, an effective S&OP process, and operational supplier development programs to drive supplier reliability are more likely to improve value. These processes become even more critical to managing the supply chain through the pandemic. ❁

Comparison of Methodologies

Client requests initiated the development of the Supply Chains to Admire methodology. The industry was frustrated with the Gartner Top 25 approach. Companies wanted more than a popularity contest. The request was for a data-driven analysis based on corporate financials, which allowed the comparisons of large and small companies across currencies. The goal was to understand the relative positions of companies within industry peer groups. Shown in Table 5 is a comparison of the two approaches.

Table 5. Comparison of the Gartner Top 25 to the Supply Chains to Admire

Comparison of Methodologies		
Comparison	Gartner Top 25	Supply Chains to Admire™
Focus	Fortune Global 500 and Forbes 2000 lists. 15\$B minimum annual revenue. (roughly 300 companies)	All public companies analyzed by industry peer groups. 600 companies by 26 peer groups. No revenue minimum. No limit on the number of winners peer group. Likewise, there may be no winner by industry.
Analysis	2018-2020	2011-2020
Calculation	<p>50% Opinion: (Equally split between analyst and peer voting)</p> <p>50% Quantitative Analysis:</p> <ol style="list-style-type: none"> Return on Plant Assets (ROPA): $\frac{2020 \text{ operating income}}{2020 \text{ net property, plant, equipment} + \text{year-end inventory}} \times 50\%$ + $\left\{ \frac{2019 \text{ operating income}}{2019 \text{ net property, plant, equipment} + \text{year-end inventory}} \times 30\% \right\}$ + $\left\{ \frac{2018 \text{ operating income}}{2018 \text{ net property, plant, equipment} + \text{year-end inventory}} \times 20\% \right\}$ Inventory (Average for 2018-2020) 5% Revenue Growth: $\left(\frac{\text{change in revenue 2020-2019}}{\text{revenue 2019-2018}} \times 50\% \right)$ + $\left(\frac{\text{change in revenue 2019-2018}}{\text{revenue 2018-2017}} \times 30\% \right)$ + $\left(\frac{\text{change in revenue 2018-2017}}{\text{revenue 2017-2016}} \times 20\% \right)$ (10%) ESG Component Score: Index of third-party environmental, social, and governance easures of commitment, transparency, and performance 	<p>Improvement: Top 2/3 ranking on the Supply Chain Index.</p> <p>↓</p> <p>Performance: At or above the industry mean for:</p> <ul style="list-style-type: none"> • Year-over-year revenue growth. • Operating margin. • Inventory turns. • Return on Invested Capital (ROIC). <p>↓</p> <p>Value: At or above the mean for Price-to-Tangible Book or Market Capitalization.</p> <p><small>Index Calculations: https://www.slideshare.net/oracecere/sci-summit-2014-math-behind-sc-index?qid=27326733-0325-4ee7-aacd-e2627bd216de&v=&b=&from_search=11</small></p>
History	17 th Year	8 th Year



For the 2020 analysis, AbbVie, Apple, Inditex, and Nike are the only four companies that meet the criteria for these two very different comparisons. As shown in Table 4, The Gartner methodology biases underperforming companies on growth. ❁

Table 6. Comparison of the Gartner Top 25 to the Supply Chains to Admire

Difference Between Peer Group and Company Averages for the Period of 2011-2020					
COMPANY	GARTNER RATING	GROWTH	OPERATING MARGIN	INVENTORY TURNS	ROIC
P&G	Master	-3%	4%	1.25	-2%
Unilever	Master	-1%	0%	1.68	4%
Apple	Master	14%	23%	51.43	7%
Amazon	Master	2%	14%	-20.31	40%
Cisco	1	-4%	12%	2.05	3%
Colgate Palmolive	2	-2%	8%	0.14	16%
J&J	3	-3%	5%	0.88	5%
Schneider Electric	4	-2%	0%	0.18	-3%
Nestle	5	-4%	5%	-1.59	5%
Intel	6	-4%	13%	-0.32	7%
PepsiCo	7	-3%	-2%	4.02	4%
Walmart	8	-2%	-2%	3.34	-3%
L'Oreal	9	-1%	1%	1.49	1%
Alibaba	10	2%	15%	-22.99	17%
Abbvie	11	6%	9%	2.16	8%
Inditex	13	1%	7%	1.09	12%
HP	15	-9%	2%	3.24	30%
Lenovo	16	10%	-3%	7.92	6%
Diageo	17	-5%	12%	-4.27	2%
Coca-Cola	18	-5%	9%	0.06	1%
BMW	20	-1%	4%	-0.89	2%
Pfizer	21	-10%	4%	-0.56	0%
Starbucks	22	4%	1%	-69.33	0%
General Mills	23	-3%	7%	0.77	4%
Bristol Myers Squibb	24	4%	-4%	4.28	-1%
3M	25	-1%	7%	-0.76	11%

Recommendations

When benchmarking a supply chain, companies need to look at performance and improvement (together) within a peer group of companies over time. There are trade-offs. Companies operating with higher performance levels will struggle with improvement, while companies with a lower level of performance will drive faster rates of progress.

Continuous improvement processes do not always drive value. Why? The average global multinational has more than a thousand improvement initiatives¹. Many are overlapping and conflicting. As a result, there is a need to define a multi-year plan reinforced by cross-functional metrics to drive progress against a strategy.

As supply chain leaders develop strategies and focus on driving balance sheet improvement, we recommend that supply chain teams consider these seven recommendations:

1. **Build a Guiding Coalition to Drive Improvement Based on Industry-Specific Data.** To maximize potential and to set goals, organizations should benchmark against companies within their industry sector. Each industry has unique rhythms and cycles. As a result, supply chain excellence analysis needs to be an industry-specific comparison.
2. **Understand the Supply Chain Potential and Orchestrate Trade-offs.** Balanced metrics portfolios drive higher levels of value for the Company. The metrics are nonlinear and tightly coupled. Managing them as a group in a balanced portfolio requires system thinking. Companies with higher performance use advanced analytics to plan outcomes and design the supply chain.
3. **Drive Horizontal Alignment.** We find that those who have the best performance on the Effective Frontier align teams to focus on supply chain finance and translate supply chain processes and strategies into balance sheet results. Holistic organizational thinking is a marked departure from traditional functional thinking, shifting the need for new forms of analytics and reporting. For example, today, while most organizations can easily access functional costs, only 24% of companies quickly access total costs across source, make and deliver together. As a result, it is tough for operational teams to make trade-offs.
4. **Make the Supply Chain an Engine for Growth.** When we present this data to many supply chain teams, there is a pushback. Many do not understand how their work can drive growth. Unfortunately, companies stuck in a cost-focused paradigm with significant gaps in horizontal organizational alignment between operations and commercial teams struggle. To break the cycle, use this report to shine a light on the opportunity, and take steps to drive growth.
5. **Effectively Manage Complexity.** When we interviewed the leaders in past reports, we heard a consistent theme. Product and customer complexity increases degrade value. In an organization, there is good complexity and bad complexity. Good complexity drives growth with minimal impact on the performance factors on the Effective Frontier, while bad complexity degrades performance. Maximize the growth opportunity with good complexity and eliminate bad complexity.
6. **Focus on Building Value Networks.** While many of the companies in this report could leverage power in the network to be a powerbroker in the industry to redefine outside-in processes and build effective value chains, 95% of companies accept the limitations of the inside-out supply chain. Over the last decade, only TSMC and Walmart successfully executed value network strategies. In this decade, only Maersk successfully built a value network. The efforts are far and few between. The next frontier of supply chain effectiveness lies in bi-directional orchestration of process flows with trading partners.
7. **Learn from Other Industries. Use a Steady Hand and Focused Leadership to Drive Improvement.** Over the years, when we have interviewed the Supply Chain to Admire winners and asked, "What do you think drove improvement?" they responded, "The avoidance of fads and a steady focus on supply chain strategy."

The Story of Supply Chains to Admire award winners is not a story of consultants driving a project for change transformation. Nor is it a story of technology implementation. Instead, it is a story of supply chain leadership, driven by a focused internal team over many years. ✨

¹ <https://www.slideshare.net/loracecere/driving-supply-chain-excellence18june2015final>

Conclusion

Supply chain excellence does not just *"happen."* Progress requires moving past the buzzwords of *"end-to-end supply chain excellence"* and driving cross-functional programs focused on balance sheet improvements.

Success requires focus by teams over many years based on a multi-year roadmap with a clear definition of supply chain strategy. Higher levels of performance require leadership, patience, and organizational alignment.

This report aims to provide feedback to leadership teams to help them better align supply chain programs with corporate finance efforts to drive improved value for shareholders. This report recognizes the 4% of companies creating value while improving and outperforming on the Supply Chain Metrics That Matter against their industry peer group. Please join us in celebrating these achievements. 🌟



The image is a blue-tinted photograph of an industrial or port setting. In the foreground, a worker wearing a white hard hat, safety glasses, and a high-visibility vest stands with their back to the camera, looking at a clipboard. To the left, a line of white trucks is parked. To the right, a train is visible. In the background, a large crane is lifting a dark container, and a large airplane is suspended in the air. The sky is filled with clouds, and the overall scene is overlaid with a pattern of green concentric lines that curve across the top right portion of the image.

Appendix

Analysis by Industry

Here we share the individual analyses by industry peer groups to help the reader understand the data behind this report. The companies are listed in alphabetical order by sector. Winners are indicated in blue.

Retail Overview

In this analysis, we evaluate 80 companies in five retail sectors. In the report, three companies—Dollar General, Ross Stores, and TJX—qualify for the Winner's Circle. There are no winners in the other retail sectors.

Table 7. Retail Overview

	Number of Companies	Number of 2021 Winners	Index-Cut-off	Average Revenue (M\$)	Year-over-Year Growth	Inventory Turns	Operating Margin	Return on Invested Capital	Price to Book Value
RETAIL				Average for 2011-2020					
Restaurants	19		13	\$4,923	4.9%	4.6	9.5%	16.6%	4.7
Apparel	20	2	13	\$8,522	4.5%	4.6	9.5%	16.6%	4.7
Broadline	17	1	11	\$60,499	4.8%	5.0	7.1%	14.2%	3.9
Drug	7		5	\$63,924	8.9%	6.8	7.0%	14.1%	5.7
Home Improvement	7		5	\$27,413	6.7%	5.8	6.8%	9.5%	5.3
Grocery	10		7	\$45,838	2.7%	12.7	3.5%	11.6%	2.3



Apparel Retail

The overall industry performance declined. The operating margin fell 80% over the decade while inventory values remained relatively flat. TJX a 2020 Supply Chains to Admire Winner for the fifth consecutive year. The company operates a novel business model driving differentiated value for the consumer.

Ross Stores also joins the winner circle. The Company is an award winner for three out of eight years of analysis. Shown in Table 8 are the industry averages along with the Supply Chain Index measurement of improvement.

Table 8. Retail Sector Averages for Apparel Retail for the Period of 2010-2019

INDUSTRY: Retail Apparel								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAP
2011 - 2020								
Abercrombie & Fitch Company	\$3,623	16	3%	3.19	0.04	4%	1.43	2,000
American Eagle Outfitters	\$4,308	2	4%	6.45	0.09	14%	2.55	3,081
ASOS PLC	\$4,147	7	35%	2.71	0.05	18%	13.79	4,533
Carter's Incorporated	\$3,024	12	6%	3.64	0.11	15%	4.99	4,125
Chico's FAS	\$2,038	19	2%	5.85	0.07	9%	1.96	1,623
Designer Brands Incorporated	\$3,493	5	8%	3.91	0.08	12%	2.41	2,128
Dick's Sporting Goods Incorporated	\$8,751	9	7%	3.43	0.07	17%	2.77	4,870
Foot Locker	\$8,005	1	5%	3.86	0.10	17%	2.43	6,081
Gap Incorporated	\$16,383	18	1%	5.23	0.10	22%	3.96	11,533
Guess?	\$2,678	17	3%	4.29	0.08	11%	2.00	1,787
J.Jill Incorporated	\$691	10	5%	1.29	0.04	0%	0.40	66
L Brands Incorporated	\$12,914	13	4%	6.25	0.14	18%	2.30	15,479
Lululemon Athletica Incorporated	\$3,979	8	25%	4.02	0.23	30%	11.51	15,264
Marks and Spencer Group Plc	\$12,949	5	-1%	7.39	0.07	6%	2.05	8,371
Nordstrom	\$15,524	14	6%	5.20	0.09	13%	8.27	9,260
Ross Stores Incorporated	\$16,039	4	8%	5.89	0.13	41%	9.84	25,336
Stein Mart	\$1,236	14	0%	3.56	0.02	5%	1.81	258
Tapestry Fashion Company	\$4,961	20	4%	2.74	0.19	24%	4.73	11,668
TJX Companies Incorporated	\$41,717	3	7%	6.14	0.11	40%	10.95	50,330
Urban Outfitters	\$3,984	11	8%	6.50	0.11	16%	2.91	3,838
MEAN WITH OUTLIERS			7%	4.58	0.10	17%	4.65	9,082
MEAN WITHOUT OUTLIERS	\$8,522		4%	4.58	0.10	17%	4.65	6,911

Broadline Retail

For retail broadline retailers, profit decreased by 57% in the past decade, margin performance decreased 29%, while inventory performance improved by 17%. The Supply Chains to Admire Award Winner for 2021 is Dollar General. In the analysis, the Company places in the winner circle for five out of eight years. (Note that Dollar General barely misses the inventory average for the peer group but is within the .5 allowance given in the analysis.)

A close competitor, Dollar Tree, makes the performance goal but misses the improvement ranking. Dollar Tree is a Supply Chains to Admire award winner for five of the eight years. Of note, Walmart and Target, winners in 2016 and 2015, no longer lead their peer groups. Each fail due to the focus on singular metrics.

Table 9. Broadline Retail Sector Averages for 2011-2020

INDUSTRY: Retail Broadline								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAP
2011 - 2020								
Bed Bath & Beyond Incorporated	\$11,159	17	4%	2.81	0.10	15%	2.51	8,090
Best Buy Company	\$43,638	4	-1%	5.96	0.04	14%	3.78	14,632
Big Lots	\$5,323	15	1%	3.57	0.05	19%	2.72	1,853
Burlington Stores Incorporated	\$7,286	1	7%	3.40	0.06	14%	15.57	6,692
Costco Wholesale	\$166,761	3	8%	11.61	0.03	14%	6.22	80,357
Dillard's Incorporated	\$6,343	16	1%	3.04	0.06	9%	1.47	2,666
Dollar General Corporation	\$27,754	9	9%	4.63	0.09	14%	4.38	25,562
Dollar Tree Stores	\$23,611	13	18%	4.75	0.10	17%	5.63	17,628
Kohl's	\$19,974	11	2%	3.35	0.09	10%	1.77	9,909
Macy's	\$25,331	10	1%	3.01	0.08	9%	2.45	11,883
Office Depot Incorporated	\$9,710	6	-2%	7.01	0.03	1%	1.28	2,090
Pricesmart Incorporated	\$3,329	12	9%	8.58	0.05	12%	4.28	2,511
Target	\$78,112	5	2%	6.06	0.07	9%	3.56	46,988
The Michaels Companies Incorporated	\$5,072	2	2%	2.35	0.13	23%	0.01	2,349
Tractor Supply Company	\$10,620	7	11%	3.39	0.10	27%	7.22	10,107
WalMart	\$523,964	8	3%	8.36	0.05	11%	3.56	268,120
Williams-Sonoma Incorporated		14	7%	3.49	0.09	22%	0.29	5,210
MEAN WITH OUTLIERS			5%	5.02	0.07	14%	3.92	30,391
MEAN WITHOUT OUTLIERS	\$60,499		5%	5.02	0.07	14%	3.92	11,211

Drug Retail

For 2020, there are no Drug Retail Supply Chains to Admire Winners. Prior award winners included CVS and Sun Drug.

Companies subconsciously traded margin for cash. Over the last decade, the overall industry performance declined. The Operating Margin fell 20%, while Inventory turns decreased 48%.

Table 10. Drug Retail Sector Averages for the Period of 2011-2020

INDUSTRY: Retail Drug								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2019 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
CVS Pharmacy	\$268,706	4	11%	9.98	6.0%	7%	1.97	84,341
PetMed Express	\$284	1	2%	6.94	13.7%	25%	4.58	442
Raia Drogasil	\$3,932	1	16%	3.77	4.6%	10%	16.42	15,351
Rite-Aid Pharmacy	\$21,928	6	-1%	7.36	1.6%	4%	3.51	3,609
Sundrug Company Ltd	\$5,684	7	7%	6.51	6.8%	15%	2.62	3,281
Ulta Beauty Incorporated	\$7,398	3	20%	3.78	12.1%	27%	8.26	11,117
Walgreens Boots Alliance	\$139,537	5	8%	9.26	4.3%	10%	2.53	59,474
MEAN WITH OUTLIERS			9%	6.80	7.0%	14%	5.70	25,374
MEAN WITHOUT OUTLIERS	\$63,924		9%	6.80	7.0%	14%	5.70	25,374



Grocery Retail

For 2021, no grocery retailer earns a place in the Winner's Circle for the Supply Chains to Admire. In 2020, Ahold was a winner. In Grocery Retail, companies subconsciously traded margin for cash.

During the last decade, the overall industry performance declined. The operating margin fell 70 % during the decade while inventory turns decreased 7%.

Table 11. Grocery Retail Sector Averages for the Period of 2011-2020

INDUSTRY: Retail Food								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Carrefour	\$82,397	10	-2%	9.44	2.8%	2%	1.70	18,038
Dairy Farm International	\$10,269	8	3%	8.03	4.2%	23%	5.48	7,098
Koninklijke Ahold Delhaize N.V.	\$85,351	4	9%	15.17	3.7%	12%	2.10	22,651
Metro AG	\$17,998	5	5%	11.86	6.0%	14%	2.42	8,710
Pick N Pay	\$6,215	2	1%	12.56	1.9%	22%	3.11	600
Sainsbury	\$36,873	8	2%	19.78	2.7%	5%	0.78	8,049
Shoprite Supermarkets	\$10,104	5	2%	6.96	5.4%	18%	3.48	5,533
Tesco PLC	\$82,777	1	-1%	20.37	2.6%	2%	1.76	31,057
The Kroger Company	\$122,286	7	5%	14.01	2.5%	10%	3.96	24,604
Weis Markets Incorporated	\$4,113	2	5%	8.96	3.3%	9%	1.39	1,259
MEAN WITH OUTLIERS			3%	12.71	3.5%	12%	2.62	12,760
MEAN WITHOUT OUTLIERS	\$45,838		3%	12.71	3.5%	12%	2.30	12,760



Home Improvement Retail

For 2020, there are no Home Improvement Retail Supply Chains to Admire Winners. During the last decade, turbulence reigned in this industry. Margin fell by 80%.

Table 12. Home Improvement Retail Sector Averages for the Period

INDUSTRY: Retail Home Improvement								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
American Woodmark Corporation	\$1,650	6	15%	16.33	5.0%	7%	3.20	1,098
Calloway's Nursery	\$5,700	3	4%	8.32	6.6%	12%	1.88	34
Haverty	\$748	6	2%	3.50	4.5%	9%	1.62	454
Lowe's Companies Inc	\$72,148	4	4%	3.94	7.9%	12%	12.61	68,263
Lumber Liquidators Hldgs	\$1,098	5	6%	2.43	1.9%	2%	3.89	979
The Home Depot Inc	\$110,225	1	5%	4.81	12.4%	25%	50.21	168,216
Tile Shop Holdings	\$325	2	10%	1.05	9.7%	-1%	8.44	520
MEAN WITH OUTLIERS			7%	5.77	6.8%	10%	11.69	34,223
MEAN WITHOUT OUTLIERS	\$27,413		7%	5.77	6.8%	10%	5.27	514.07



Restaurants

For 2020, there are no Supply Chains To Admire Winner in the Restaurant Industry.

The industry is recovering from significant revenue loss in the pandemic. Over the decade, through digitalization and consolidation/maturity of franchises, the industry matured.

Table 13. Restaurant Sector Averages for the Period

INDUSTRY: Restaurants								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
BJ's Restaurants Incorporated	\$779	10	5%	84.18	4%	7%	3.07	48,371
Brinker International Incorporated	\$3,079	13	1%	59.25	8%	17%	79.00	52,385
Cheesecake Factory Incorporated	\$1,983	8	2%	33.56	6%	14%	3.97	56,336
Chipotle's Mexican Grill Incorporated	\$5,985	12	13%	191.98	11%	19%	10.10	74,070
Cracker Barrel Old Country Store Incorporated	\$2,523	6	1%	12.32	8%	16%	5.72	39,454
Darden Restaurants Incorporated	\$7,807	5	2%	25.60	8%	13%	4.47	39,695
Denny's Corporation	\$289	17	-4%	143.78	11%	30%	140.76	63,093
Domino's Pizza Enterprises Ltd	\$4,117	1	10%	41.27	17%	62%	0.01	213,584
Jack in the Box Incorporated	\$1,022	19	-6.8%	204.54	15%	14%	19.17	88,595
McDonald's Corporation	\$19,208	14	-2.0%	177.11	34%	19%	4.16	74,830
Nathan's Famous Incorporated	\$103	16	7.9%	87.32	22%	16%	1.88	454,622
Papa John's International	\$1,813	2	5.0%	45.18	6%	27%	12.42	81,282
Post Holdings incorporated	\$5,699	4	25.3%	6.73	11%	-2%	1.40	449,502
Red Robin Gourmet Burgers Inc.	\$869	10	1.0%	26.82	2%	-3%	1.97	44,416
Restaurant Brands International	\$4,968	7	22.4%	17.22	35%	2%	4.84	539,967
Starbucks Corporation	\$23,518	3	8.4%	10.56	15%	29%	14.94	85,994
Texas Roadhouse Incorporated	\$2,398	9	9.4%	98.27	8%	13%	3.91	37,668
Wendy's Company	\$1,734	18	-2.1%	221.33	14%	4%	4.73	78,207
Yum Brands Incorporated	\$5,652	15	-4.9%	30.86	24%	34%	6.98	64,907
MEAN WITH OUTLIERS			4.9%	79.89	14%	18%	17.03	136,157
MEAN WITHOUT OUTLIERS	\$4,923		4.9%	79.89	14%	18%	6.10	61,953

Discrete Industry Overview

Peer groups within the discrete industry are configure-to-order, make-to-order, or assemble-to-order businesses. The focus is on assembly and material management, while discussions focus on work-in-process inventories and backorder management. These industries have a strong dependency on outsourced manufacturing, buoying ROIC. In these industries, historically, supply chain leadership focused on sourcing excellence. Table 14 shows the cut-off for each industry for the Supply Chain Index and details of progress in the discrete industries.

Table 14. Overview of the Discrete Industry

	Number of Companies	Number of 2021 Winners	Index-Cut-off	Average Revenue (M\$)	Year-over-Year Growth	Inventory Turns	Operating Margin	Return on Invested Capital	Price to Book
DISCRETE				Average for 2011-2020					
Medical Device	29	1	19	\$6,079	6.91%	2.9	17.5%	10.88%	4.7
Semiconductor	32	3	21	\$11,261	10.0%	4.5	15.5%	9.8%	3.8
Diversified Industries	28		19	\$12,702	3.0%	5.0	14.0%	9.7%	2.8
Telecommunications	18		12	\$16,839	6.4%	10.2	11.7%	9.1%	1.8
Apparel	27	2	18	\$8,767	6.1%	3.0	11.1%	13.6%	3.9
Automotive Aftermarket	35		23	\$10,726	4.9%	7.5	10.0%	9.1%	2.4
Contract Manufacturing	11		7	\$7,756	5.7%	6.5	10.0%	7.0%	3.8
Consumer Durables	17	1	11	\$14,465	1.8%	4.5	9.5%	9.4%	2.3
Tires	5		3	\$16,568	-1.7%	4.4	9.4%	9.3%	1.6
Aerospace & Defense	26	1	17	\$16,475	2.9%	7.2	8.8%	10.9%	3.2
Trucks and Heavy Equipment	17	1	11	\$14,778	2.5%	4.3	8.1%	7.2%	2.0
Furniture	16	2	11	\$1,807	4.3%	5.9	7.0%	9.8%	2.4
Automotive	21		14	\$80,590	3.7%	7.0	5.7%	6.1%	1.3
B2B Technologies	28	2	19	\$30,912	3.3%	6.6	4.5%	5.5%	2.3

Aerospace and Defense Industry

For 2021, Lockheed Martin places in the winner circle for the third consecutive year.

With many ups and downs, margin decline of 50% while Inventory turns improvement is 25%. The industry transformed by Performance-Based Logistics continues to move from selling aircraft to providing service to fly.

Table 15. Industry Averages for the Aerospace Sector for the Period

INDUSTRY: Aerospace & Defense								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
AAR Corporation	\$2,072	18	6%	3.27	4%	3%	1.24	1,131
AIRBUS Group	\$57,001	24	1%	2.15	3%	9%	6.85	61,143
Astronics	\$503	22	14%	3.85	9%	8%	3.72	895
BAE Systems	\$24,741	6	-2%	8.95	8%	12%	4.43	21,680
BOEING	\$58,158	26	0%	1.47	4%	28%	79.93	116,453
Bombadier	\$6,487	21	-7%	2.42	3%	-17%	2.24	4,709
BWX Technologies	\$2,124	2	1%	16.72	12%	20%	11.40	3,782
Ducommun	\$629	8	6%	4.19	6%	1%	1.30	332
Embraer	\$3,771	25	3%	1.91	4%	0%	1.25	4,466
General Dynamics	\$37,925	11	2%	4.18	12%	14%	3.42	42,323
Heico	\$1,787	14	12%	2.92	20%	12%	5.16	6,050
Hexcel Corporation	\$1,502	20	4%	4.94	15%	12%	3.49	4,312
Huntington Ingalls Industries	\$9,361	1	3%	29.11	9%	14%	4.21	6,376
Kaman Aircraft	\$784	16	-2%	3.07	7%	7%	2.21	1,290
L3 Technologies	\$18,194	3	17%	6.11	15%	7%	3.50	16,418
Lear Corporation	\$17,046	13	4%	16.59	6%	17%	2.27	7,871
Leonardo	\$15,315	19	-4%	3.26	4%	1%	1.07	5,368
Lockheed Martin	\$65,398	4	4%	13.54	12%	33%	99.72	67,827
Magellan Aerospace Corporation	\$744	9	1%	4.17	10%	9%	1.18	694
National Presto Industries	\$353	12	-3%	2.93	16%	12%	1.80	614
Northrop Grumman	\$36,799	5	3%	30.47	12%	14%	4.74	36,468
Raytheon	\$56,587	9	3%	4.47	12%	9%	1.87	64,000
Spirit AeroSystems Holdings	\$3,405	22	1%	3.64	4%	7%	3.80	5,976
TAT Technologies	\$75	6	1%	1.94	2%	0%	0.68	59
TransDigm Group	\$5,103	17	21%	2.10	40%	7%	1.78	15,229
Woodward	\$2,496	15	6%	3.41	12%	9%	3.13	4,334
MEAN WITH OUTLIERS			4%	6.99	10%	10%	9.86	19,223
MEAN WITHOUT OUTLIERS	\$16,475		3%	7.19	9%	11%	3.20	15,334

Apparel

For 2021, Inditex (parent of Zara) and Nike place in the Winner's Circle. The apparel industry lost ground chasing the lower cost of labor and global sourcing strategies.

Table 16. Apparel Sector Evaluation for the Period

INDUSTRY: Apparel								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Adidas	\$22,662	18	4.0%	2.82	8.1%	12.3%	4.64	34,265
Bosideng International	\$1,750	8	9.1%	2.44	12.7%	8.3%	1.27	1,653
Capri Holdings LTD	\$5,551	8	29.7%	2.71	21.6%	28.7%	6.60	8,862
Colombia Sportswear	\$2,502	22	5.9%	2.67	9.7%	10.9%	2.60	3,998
Cross	\$1,386	4	6.2%	3.62	6.5%	16.5%	6.64	1,602
Deckers Outdoors	\$2,133	2	8.4%	2.91	11.2%	15.2%	3.21	3,277
Fossil Group	\$1,613	26	-1.1%	2.54	8.5%	6.6%	2.80	2,774
Gildan Activewear	\$1,981	24	5.4%	2.31	12.3%	11.8%	3.17	5,776
Hanes Brands	\$6,664	11	5.0%	2.25	10.2%	9.0%	5.84	6,608
Hennes & Mauritz AB	\$20,216	19	3.4%	2.78	12.5%	28.9%	6.48	43,244
Hugo Boss	\$2,222	27	0.7%	1.71	12.5%	22.2%	4.35	4,422
Inditex	\$28,285	1	7.3%	4.09	17.9%	26.0%	5.12	61,124
Interface Inc	\$1,103	16	3.0%	3.77	9.7%	5.8%	3.24	1,077
Moët Louis Vuitton	\$50,976	20	7.1%	1.23	19.9%	12.3%	3.87	135,675
Moncler	\$1,645	10	12.0%	1.69	28.1%	24.5%	5.74	5,474
Nike	\$37,403	16	7.1%	3.79	12.7%	22.4%	9.70	103,368
Puma	\$5,978	23	5.6%	2.79	5.2%	6.8%	2.47	4,976
PVH	\$9,909	6	17.8%	2.97	8.2%	5.8%	1.81	7,941
Ralph Lauren	\$6,160	14	2.5%	3.23	12.2%	11.9%	3.02	10,787
Skechers	\$4,597	20	9.9%	2.85	6.3%	8.4%	2.20	3,604
Steve Madden	\$1,202	11	8.5%	9.08	11.9%	16.2%	3.36	2,381
Under Armour	\$4,475	25	16.7%	2.71	7.5%	6.4%	2.02	3,960
Unifirst	\$1,804	7	5.9%	4.00	12.2%	9.6%	1.94	2,609
Vera Bradley	\$495	14	6.3%	1.95	11.6%	18.9%	3.43	654
VF Corporation	\$10,489	3	4.0%	3.36	11.9%	13.1%	5.93	26,922
Wacoal Holdings Corporation	\$1,718	5	0.0%	2.06	5.8%	3.4%	0.70	1,405
Wolverine World Wide	\$1,791	13	5.6%	3.92	8.7%	6.3%	3.13	2,532
MEAN WITH OUTLIERS			7.3%	3.0	11.7%	13.6%	3.90	18,184.09
MEAN WITHOUT OUTLIERS	\$8,767		6.1%	3.0	11.1%	13.6%	3.90	3,925.99

Automotive

For 2021, there is no winner in the automotive sector. Audi and BWI won in a prior year.

With a religious vigor for lean manufacturing and plant automation, the automotive industry largely squandered the opportunities for digital consumer automation. The sector did poorly in the 2007 recession giving the industry a chance to rebound in the growing economy. No company is a leader in building a value network and supplier relationships.

Table 17. Automotive Sector Evaluation for the Period

INDUSTRY: Automotive								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Audi AG	\$47,649	5	3%	6.93	10.4%	18%	1.19	32,982
Bayerische Motoren Werke AG	\$113,049	17	3%	6.09	9.6%	8%	1.22	61,961
BYD - Build Your Dream	\$22,692	3	13%	4.77	5.1%	3%	2.89	18,805
Daimler AG	\$176,225	18	3%	4.96	6.5%	5%	1.20	73,581
Ferrari NV	\$3,951	1	4%	3.18	17.5%	12%	15.89	17,395
Ford Motor Company	\$127,144	15	0%	14.35	2.9%	5%	2.31	47,424
General Motors Company	\$122,485	10	-1%	10.73	3.5%	7%	1.31	50,698
Honda Motor Company Ltd	\$137,377	13	4%	7.41	5.0%	4%	0.90	56,495
Isuzu Motors Ltd	\$19,137	7	6%	7.35	8.1%	10%	1.45	9,688
Mazda Motor Corporation	\$31,561	13	3%	6.93	3.3%	3%	1.13	8,471
Mitsubishi Motors Corporation	\$20,888	5	0%	7.64	3.5%	4%	0.93	5,347
Nissan Motor Company Ltd	\$90,894	21	2%	7.45	4.9%	3%	0.84	34,667
Renault SA	\$49,648	16	0%	8.27	4.0%	2%	0.45	14,959
Stellantis	\$98,986	12	10%	7.94	3.9%	5%	0.54	13,474
Subaru	\$30,768	7	7%	7.05	9.6%	15%	1.95	20,358
Suzuki Motor Corporation	\$32,096	10	2%	7.72	6.6%	6%	0.46	6,425
Tata Motors Ltd	\$36,531	19	8%	5.63	0.1%	5%	2.09	16,868
Tesla Inc	\$31,536	4	92%	3.80	-26.3%	-21%	20.62	98,224
Toyota Motor Corporation	\$275,380	2	3%	10.62	7.1%	5%	1.15	179,344
Volkswagen AG	\$220,577	19	3%	4.87	-4.7%	6%	0.81	92,489
Yamaha Motors	\$3,811	7	-1%	2.92	7.6%	7%	0.94	3,149
MEAN WITH OUTLIERS			8%	6.98	4.2%	5%	2.87	41,086
MEAN WITHOUT OUTLIERS	\$80,590		4%	6.98	5.7%	6%	1.25	41,086

Automotive Parts

For 2021, there is no winner in the Automotive Parts Sector. Prior winners included BorgWarner and Continental.

Tethered to large brand owners with a diligent focus on cost-cutting and inadequate supplier development programs, only the tough survive in the Automotive Parts industry. Margins declined 42%, and Inventory Turns improved 18% from 2010-2019.

Table 18. Automotive Parts Sector Evaluation for the Period

INDUSTRY: Auto Parts								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Advance Auto Parts	10,106	7	6%	1.30	8%	16%	4.25	9,407
Aisin Seiki Co Ltd	34,821	22	5%	11.49	6%	5%	0.57	6,116
Allison Transmission Holdings Inc	2,081	5	2%	7.28	26%	10%	5.25	4,710
American Axle & Manufacturing	4,711	15	9%	13.26	8%	9%	6.68	1,305
Autoliv Inc	7,447	24	1%	9.70	9%	10%	2.21	6,570
BorgWarner Inc	10,165	5	6%	10.81	12%	11%	2.54	9,453
Commercial Vehicle Group	718	33	3%	8.38	4%	4%	5.12	211
Continental AG	43,080	32	3%	8.09	9%	9%	2.43	34,570
Cooper-Standard Holdings Inc	2,375	30	3%	17.23	5%	5%	1.45	1,004
Dana Inc	7,106	24	3%	7.55	6%	9%	2.51	2,741
Danaher Corporation	22,284	8	7%	4.39	17%	9%	2.43	64,398
Denso Corporation	47,416	27	4%	8.05	7%	6%	1.24	35,807
Dorman Products Inc	1,093	17	10%	2.56	17%	18%	3.61	2,019
Douglas Dynamics	480	34	13%	4.36	16%	6%	3.06	662
Gentex Corporation	1,688	8	8%	5.05	27%	18%	3.32	5,412
Gentherm Inc	913	2	33%	6.46	10%	11%	3.48	1,204
Hella KGaA Hueck & Company	6,450	34	1%	6.69	6%	8%	0.82	2,215
Johnson Controls	22,317	1	-1%	9.76	7%	7%	1.77	27,157
JTEKT Corporation	13,055	30	5%	6.61	4%	4%	0.53	2,273
Koito Manufacturing Company Ltd	7,369	3	5%	10.25	10%	11%	1.01	4,041
LKQ Corporation	11,629	18	17%	2.71	10%	8%	2.78	8,932
Mabuchi Motor Company Ltd	1,091	26	2%	3.14	12%	6%	0.75	1,587
Magan International	32,647	13	4%	10.57	6%	14%	1.68	16,613
Meritor Inc	3,044	10	0%	8.06	6%	48%	2.16	1,290
Motorcar Parts of America	536	18	14%	2.79	12%	2%	1.87	374
Nexteer Automotive Group Ltd	3,032	4	4%	10.62	7%	11%	0.49	870
NGK Spark Plug Company Ltd	2,790	18	1%	2.93	13%	8%	0.31	1,159
O'Reilly Automotive	11,604	10	8%	1.42	18%	28%	47.47	21,763
PT Astra International Tbk	12,073	14	1%	9.19	10%	10%	2.58	20,650
Stanley Electric Co Ltd	3,603	16	4%	10.47	11%	8%	0.74	2,271
Tenneco Inc	15,379	29	11%	8.87	5%	7%	6.35	2,407
The Timken Company	3,513	22	0%	3.35	12%	11%	2.00	3,558
Toyoda Gosei Company Ltd	7,480	12	4%	11.08	5%	5%	0.27	873
Valeo SA	18,770	27	4%	10.24	6%	8%	2.38	9,324
Visteon Corporation	2,548	21	-4%	13.52	5%	17%	4.40	3,283
MEAN WITH OUTLIERS			6%	7.66	10%	11%	3.73	9,035
MEAN WITHOUT OUTLIERS	\$10,726		5%	7.45	10%	9%	2.43	5,519

B2B Technology

For 2021, Apple and Western Digital place in the Winner's Circle. Both are prior winners.

Sourcing and contract manufacturing relationships tethered to new product launch programs drove supply chain success in this industry. As prices for goods sold, margins declined 17% and Inventory turns declined 29%.

Table 19. B2B Technology Sector Evaluation for the Period

INDUSTRY: B2B Technology								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Alps Electric Company Ltd	\$7,458	23	4%	7.07	5.1%	5%	1.64	3,456
Ambarella	\$229	28	14%	4.82	10.1%	13%	4.49	1,470
Apple Incorporated	\$274,515	9	17%	58.06	28.4%	30%	8.81	834,053
Bang & Olufsen A/S	\$2,036	22	-1%	3.09	-5.3%	-1%	1.55	398
Dell Technologies, Inc	\$92,154	1	6%	10.45	-0.6%	1%	4.26	12,796
Eastman Kodak Company	\$1,029	25	-15%	4.44	-4.1%	-31%	2.65	461
EnerSys manufactures	\$3,088	16	7%	4.81	10.4%	9%	2.32	2,795
Funai Electric Company Ltd	\$814	27	-13%	4.63	-2.5%	-9%	0.09	56
GoPro Inc	\$892	11	22%	4.33	-0.2%	-4%	3.33	1,552
Hewlett Packard	\$56,639	4	-6%	9.87	7.4%	35%	0.41	26,762
JVC Kenwood Corporation	\$2,680	20	-4%	5.68	2.3%	1%	0.19	107
Lenovo Group	\$50,716	4	13%	14.55	1.8%	11%	2.84	9,402
LG Display Company Ltd	\$20,437	12	0%	9.89	2.3%	1%	0.78	8,081
LG Electronics	\$53,358	13	1%	8.05	3.0%	2%	0.00	100
Logitech International	\$2,976	8	5%	5.87	7.0%	13%	4.15	4,843
LSI Industries	\$306	20	2%	5.25	2.3%	1%	1.32	188
NCR	\$6,207	26	3%	6.39	7.2%	3%	4.47	4,183
Nintendo Company Ltd	\$12,039	2	3%	5.49	7.9%	6%	2.29	30,096
Samsung	\$199,734	4	5%	3.76	15.5%	14%	0.01	100
Seagate	\$10,509	4	0%	9.30	12.6%	22%	7.35	13,537
Seiko Epson Corporation	\$9,602	19	-1%	3.51	6.0%	8%	0.11	542
Sharp Corporation	\$20,897	3	-3%	7.56	0.3%	-9%	2.44	7,378
Sony Corporation	\$7,405	10	0%	8.03	4.4%	2%	1.45	46,372
Super Micro Computer Inc	\$3,339	24	17%	3.64	4.2%	9%	1.65	1,044
Truly International Holdings Limited	\$2,094	13	13%	8.70	6.4%	6%	0.63	582
Universal Electronics Inc	\$615	13	7%	3.76	4.6%	6%	2.24	633
Western Digital Corporation	\$16,736	17	7%	6.89	10.3%	7%	1.76	16,669
Xerox	\$7,022	18	-10%	9.12	9.6%	4%	0.87	6,981
MEAN WITH OUTLIERS			3%	8.46	5.6%	5%	2.29	36,951
MEAN WITHOUT OUTLIERS	\$30,912		3%	6.63	4.5%	5%	2.29	7,429

Consumer Durables

Asso Abloy is the Winner in the 2021 Supply Chains to Admire analysis for the durable consumer industry for the second consecutive year. Prior winners include iRobot and Toro.

With an average margin of 9% and an ever-changing product portfolio, effective supply chain management is essential for this industry. Over the last decade, this sector is one of the few where margin increased (13%), but increased by 25%, but Inventory turns declined by 10%.

Table 20. Consumer Durable Technology Sector Evaluation for the Period

INDUSTRY: Household - Durable								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Armstrong World Industries	\$937	1	-7%	7.35	14.2%	7%	6.66	2,858
Assa Abloy AB	\$9,574	5	7%	4.95	14.8%	11%	3.85	20,167
Breville Group	\$639	4	6%	3.75	12.3%	21%	1.84	457
Canon	\$29,608	14	-3%	3.57	8.0%	7%	0.71	19,117
Compagnie de Saint-Gobain SA	\$43,543	13	-2%	5.11	6.9%	3%	0.80	16,812
Electrolux AB	\$12,666	16	-1%	6.75	4.1%	10%	3.22	7,111
Hamilton Beach Brands Holding Company	\$604	17	-2%	1.89	3.3%	5%	2.68	118
Husqvarna AB	\$4,581	10	1%	2.94	7.1%	8%	2.29	4,134
iRobot Corporation	\$1,430	14	14%	5.48	8.7%	13%	3.20	1,414
Koninklijke Philips	\$22,309	11	-2%	3.61	6.4%	4%	2.24	31,677
Panasonic Corporation	\$68,920	9	-1%	6.90	3.7%	0%	1.41	24,044
Ryobi Ltd	\$1,602	8	3%	4.45	3.9%	3%	0.13	143
SKF AB	\$8,176	18	1%	3.62	10.5%	11%	2.94	9,620
Snap-on Incorporated	\$3,942	11	4%	3.37	20.6%	14%	3.01	7,830
Stanley Black and Decker Incorporated	\$14,535	3	7%	4.42	12.7%	8%	2.57	18,230
Toro Company	\$3,379	2	1%	3.35	11.8%	11%	2.00	3,558
Whirlpool Corporation	\$19,456	7	7%	4.69	12.2%	25%	9.24	5,311
MEAN WITH OUTLIERS			2%	4.48	9.5%	9%	2.87	10,153
MEAN WITHOUT OUTLIERS	\$14,465		2%	4.48	9.5%	9%	2.27	10,153

Contract Manufacturers

There are no Supply Chains to Admire Award Winner from the contract manufacturing sector in 2021. Celestica won in a prior year.

Supply chain management in contract manufacturing is a challenging world. Over the last decade, the margin is down 17%, and Inventory turns declined 13%.

Table 21. Contract Manufacturing Sector Evaluation for the Period

INDUSTRY: Contract Manufacturers								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Benchmark Electronics Inc	\$2,053	2	-1%	6.42	3.1%	4%	0.95	1,139
Celestica Inc	\$5,748	9	-1%	6.75	2.6%	7%	6.98	1,493
Flex Ltd	\$24,210	10	1%	7.03	2.1%	8%	7.21	6,195
Ibiden Company, Ltd	\$2,723	6	0%	6.20	5.9%	1%	6.54	1,085
IEC Electronics	\$183	8	8%	5.01	3.3%	2%	5.37	61
IEH Corporation	\$32	7	11%	1.79	17.4%	16%	1.93	21
Jabil Circuit Inc	\$27,266	5	8%	6.94	2.9%	7%	6.73	4,581
Kimball International	\$728	1	-1%	8.65	4.1%	12%	8.34	474
Plexus Corporation	\$3,390	4	6%	4.13	4.5%	8%	4.10	1,581
Sigmatron International	\$281	11	9%	3.24	1.4%	1%	3.24	23
TTM Technologies Inc	\$2,105	3	8%	10.19	6.0%	2%	10.20	1,066
MEAN WITH OUTLIERS			4%	6.03	4.9%	6%	5.60	1,611
MEAN WITHOUT OUTLIERS	\$6,247		4%	6.03	3.6%	6%	5.60	1,152



Diversified Industries

Diversified industries are discrete conglomerates. In 2021, no company makes it to the Winner's Circle in the diversified industrial sector. Prior winners include Honeywell and Rockwell Automation. Schneider Electric is driving substantial improvement and is poised to be a future Supply Chain Leader.

Chasing the lower cost of labor, dependent on outsourced manufacturing, and building global sourcing relationships, Industry Margins fell 20%, and Inventory Turns declined 1% from 2011-2020.

Table 22. Diversified Sector Evaluation for the Period of 2010-2019

INDUSTRY: Diversified Industries								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
3M	\$32,184	17	2%	4.20	21.5%	20%	7.80	97,017
ABB Ltd	\$26,134	20	-1%	4.65	9.1%	11%	3.21	48,955
AMETEK Inc	\$4,540	22	7%	5.22	22.1%	12%	3.94	14,821
Avery Dennison Corporation	\$6,972	4	2%	8.52	9.2%	12%	5.83	6,961
Dover Corporation	\$6,684	12	1%	5.52	14.0%	11%	3.34	12,569
Eaton	\$17,858	15	3%	5.77	11.3%	9%	2.08	31,307
Emerson Electric	\$16,785	14	-1%	6.20	17.5%	14%	4.54	40,731
Enerpack Tool Company	\$493	21	-6%	4.47	11.4%	-1%	2.64	1,659
Fanuc Corporation	\$4,676	24	11%	2.91	33.6%	12%	2.89	35,267
Flowserve Corporation	\$3,728	23	-1%	3.34	10.2%	9%	3.57	6,489
Fortive Corporation	\$4,634	1	-1%	3.53	15.7%	11%	2.06	10,085
Generac Holdings	\$2,485	11	16%	2.81	17.7%	12%	6.51	4,267
General Electric Company	\$79,619	12	-6%	4.33	16.6%	1%	2.34	185,762
Hillenbrand Incorporated	\$2,517	9	14%	6.30	12.2%	8%	3.15	2,181
Honeywell	\$32,637	5	0%	6.22	14.7%	15%	5.05	88,850
Hubbell Incorporated	\$4,186	18	5%	5.03	14.1%	12%	2.97	5,442
Ingersoll-Rand, PLC	\$4,910	2	10%	1.55	7.5%	1%	1.38	3,730
Legrand SA	\$6,966	27	3%	3.52	19.0%	10%	2.00	10,087
MDU Resources Group Incorporated	\$5,533	3	4%	13.30	9.1%	3%	1.83	4,876
Morgan Advanced Materials	\$1,169	28	-3%	1.85	11.3%	9%	1.82	450
MSC Industrial Direct Company Inc.	\$3,192	26	7%	3.34	14.0%	16%	3.76	4,679
Parker Hannifin	\$13,696	6	4%	6.80	12.1%	12%	3.49	20,100
Regal Beloit Corporation	\$2,907	16	3%	3.55	9.6%	5%	1.55	3,255
Rockwell Automation Incorporated	\$6,330	6	3%	6.36	17.7%	23%	11.38	18,031
Schneider Electric	\$28,732	8	1%	5.14	13.8%	7%	1.93	44,988
Toshiba	\$31,190	18	-7%	5.67	1.8%	3%	1.53	14,541
Trinity Industries Incorporated	\$1,999	24	6%	4.37	13.9%	5%	1.37	3,574
Valmont Industries Incorporated	\$2,895	10	5%	5.44	9.9%	9%	2.78	3,184
MEAN WITH OUTLIERS			3%	5.00	14.0%	9.7%	3.45	25,852
MEAN WITHOUT OUTLIERS	\$12,702		3%	5.00	14.0%	9.7%	2.78	20,382

Furniture

For 2021, Sleep Number and Tempur Sealy place in the Winner's Circle. Sleep Number wins for a third consecutive year.

Chasing the lower cost of labor, furniture manufacturers outsourced manufacturing and secured global sourcing relationships. As labor prices shifted, margins declined 80%, and Inventory Turns declined 4% from 2011-2019. Laggards in managing the global supply chain, regional players outpaced those with a more global presence.

Table 23. Furniture Sector Evaluation for the Period of 2010-2019

INDUSTRY: Furniture								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Bassett Furniture Industry	386	13	6%	2.86	0.04	9%	1.25	217
Ethan Allen Interiors	590	16	0%	2.23	0.07	8%	2.03	727
Flexsteel Industries	367	17	2%	3.72	0.04	5%	1.30	247
Herman Miller	2,487	3	7%	12.39	0.07	12%	3.70	1,822
HNI Corporation	1,955	5	2%	11.14	0.06	11%	3.50	1,689
Hooker Furniture	611	1	17%	4.57	0.06	8%	1.51	285
Howden Joinery Group	1,986	2	5%	2.69	0.16	58%	3.14	2,118
Hunter Douglas	3,543	5	4%	2.76	0.07	9%	0.58	906
Knoll Inc	1,236	15	5%	5.23	0.09	11%	3.51	958
La-Z-Boy	1,704	4	4%	5.58	0.07	12%	2.31	1,319
Leggett & Platt	4,280	7	3%	5.72	0.10	11%	4.33	5,303
NACCO Industries	128	9	-9%	3.08	-0.17	10%	0.63	159
Natuzzi	375	11	-6%	3.41	-0.04	-11%	0.53	96
Sleep Number	1,857	14	12%	7.96	0.08	74%	5.44	1,351
Steelcase	3,724	9	5%	12.63	0.06	9%	2.36	1,806
Tempur Sealy	3,677	8	15%	7.85	0.13	12%	28.08	3,618
MEAN WITH OUTLIERS			4%	5.86	0.06	16%	4.01	1,414
MEAN WITHOUT OUTLIERS	1,807		4%	5.86	0.07	10%	2.41	1,414

Medical Device

For 2021, Intuitive Surgical places in the Winner's Circle for the second time in five years. Prior winners include ResMed and Medtronic.

With high margins, the Medical Device industry is slow to build supply chain processes, and no company stepped up to be an industry leader in the building of value chains. Over the decade, operating margins were flat while Inventory Turns declined 14%.

Table 24. Medical Device Sector Evaluation for the Period

INDUSTRY: Medical Devices								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Abiomed Incorporated	\$841	23	26%	2.15	14%	15%	9.81	5,787
Ansell Ltd	\$1,578	13	4%	3.00	13%	11%	1.26	1,598
Becton Dickinson and Company	\$17,117	19	10%	3.20	16%	8%	3.86	40,643
Bio-Rad Laboratories Incorporated	\$2,546	11	3%	1.88	10%	12%	1.78	6,470
Boston Scientific	\$9,913	18	3%	2.43	14%	1%	3.34	30,043
Bruker Corporation	\$1,988	15	5%	1.85	11%	10%	5.54	4,471
Charles River Laboratories International Incorporated	\$2,924	4	10%	9.54	14%	8%	4.29	4,660
Coloplast	\$2,785	9	5%	3.18	31%	42%	15.66	12,668
ConvaTec Group PLC	\$1,894	1	1%	2.19	10%	0%	1.27	1,961
Dentsply	\$3,342	27	5%	3.33	13%	2%	2.48	9,424
Edwards Lifesciences	\$4,386	14	12%	1.74	25%	20%	8.00	23,774
Hill-Rom Holdings Incorporated	\$2,881	10	7%	5.76	11%	7%	3.33	4,115
Hologic Incorporated	\$3,776	3	9%	4.13	15%	2%	4.14	10,194
Intuitive Surgical Incorporated	\$4,358	15	12%	3.77	33%	17%	6.69	37,739
Medtronic	\$28,913	11	7%	2.37	24%	8%	2.63	95,738
Mettler-Toledo International Incorporated	\$3,085	7	5%	4.86	21%	28%	26.50	12,224
MicroPort Scientific Corporation	\$649	26	24%	1.27	9%	3%	2.15	1,534
PerkinElmer Incorporated	\$3,783	2	9%	4.15	13%	6%	2.80	7,079
ResMed Incorporated	\$2,957	6	11%	3.23	24%	15%	5.96	12,217
Smith and Nephew	\$4,560	28	2%	1.01	19%	12%	3.47	14,866
Stryker	\$14,351	24	7%	1.91	20%	10%	4.49	47,086
Teleflex Incorporated	\$2,537	22	6%	2.57	17%	6%	3.43	8,637
Terumo Corporation	\$5,786	17	6%	2.40	16%	8%	5.83	30,097
The Cooper Companies Incorporated	\$2,431	25	8%	1.76	18%	7%	3.10	9,341
Thermo Fisher Scientific Incorporated	\$32,218	5	12%	4.59	15%	7%	2.87	72,315
Varian Medical Systems Incorporated	\$3,168	20	3%	3.32	18%	18%	5.42	9,214
Waters Corporation	\$2,365	21	4%	3.32	28%	18%	24.19	11,298
West Pharmaceutical Services Incorporated	\$2,147	7	7%	5.20	14%	11%	5.10	6,765
Zimmer Biomet Holdings	\$7,025	29	6%	1.04	20%	5%	2.27	20,596
MEAN WITH OUTLIERS			8%	3.14	17%	11%	5.92	19,054
MEAN WITHOUT OUTLIERS	\$6,079		7%	2.91	17%	11%	4.65	16,315

Telecommunications

For 2021, there are no winners in the telecommunications sector for the Supply Chains to Admire analysis.

With intense market pressure, short-lifecycles, and sourcing cost increases, the industry used supply chain practices to improve resilience; margins fell 8% while Inventory turns declined 37%.

Table 25. Telecommunications Sector Evaluation for the Period

INDUSTRY: Telecommunications								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Adtran	\$507	18	-1%	3.25	4.6%	4%	1.95	1,041
Avnet	\$17,634	16	1%	7.16	3.2%	6%	1.10	4,884
Belden	\$1,863	17	2%	6.06	8.8%	3%	2.56	2,437
Cisco Systems Incorporated	\$49,301	4	2%	12.29	24.4%	12%	3.15	152,992
EchoStar Group	\$1,888	10	0%	17.84	7.2%	1%	0.89	3,208
Ericsson	\$25,384	7	-1%	5.31	5.1%	2%	2.17	31,444
Fabrinet	\$1,642	15	14%	5.17	7.3%	12%	1.99	1,284
Juniper Networks	\$4,445	1	1%	22.12	13.6%	5%	1.84	9,821
Motorola Solutions	\$7,414	5	0%	9.09	17.6%	16%	1.73	17,778
Nokia Oyj	\$24,956	12	-2%	5.91	4.9%	-1%	1.83	24,964
Rogers Communications Inc.	\$10,386	12	-1%	25.06	23.0%	8%	1.55	9,677
Skyworth Digital Holdings Ltd	\$5,810	8	7%	4.93	4.3%	8%	0.10	230
TELUS Corporation	\$15,341	8	5%	15.37	18.6%	7%	2.90	25,462
T-Mobile US Incorporated	\$68,397	11	54%	17.38	9.0%	-14%	1.93	47,647
Ubiquiti Networks	\$1,285	2	28%	9.41	33.4%	54%	11.64	5,909
Vodafone Group PLC	\$49,990	2	-3%	58.95	11.3%	6%	0.93	92,906
Vtech	\$2,166	14	4%	4.47	11.0%	32%	5.30	2,802
ZTE	\$14,701	6	4%	3.21	4.1%	2%	2.23	9,425
MEAN WITH OUTLIERS			6%	12.94	11.7%	9%	2.54	24,662
MEAN WITHOUT OUTLIERS	\$16,839		6%	10.24	11.7%	9%	1.80	12,376

Semiconductor Industry

Solid supply chain practices are a baseline requirement for a semiconductor company sitting three and four levels back in the supply chain. The semiconductor industry met and exceeded this challenge. In this industry, Broadcom wins the Supply Chains to Admire award for four consecutive years, while Taiwan Semiconductor (TSMC) returns to the Winner's Circle for the fifth time. Nvidia is a newcomer posting impressive results.

Table 26. Semiconductor Sector Evaluation for the Period of 2010-2019

INDUSTRY: Advanced Semiconductor								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Advanced Semiconductor	\$16,216	5	11%	5.68	8.9%	7%	0.46	3,250
Advanced Micro Devices	\$9,763	2	6%	5.05	0.9%	-2%	12.06	21,632
Analog Devices	\$5,603	31	9%	3.22	29.1%	11%	3.49	25,904
Applied Materials Incorporated	\$17,202	13	7%	3.06	19.9%	16%	4.26	35,547
Applied Optoelectronics	\$235	11	23%	2.24	-1.2%	1%	1.32	254
AXT	\$95	26	1%	1.44	5.7%	3%	1.08	173
Broadcom	\$23,888	7	31%	7.04	19.3%	13%	5.30	67,685
Cabot Microelectronics	\$1,116	15	12%	3.57	19.0%	10%	3.12	2,055
ChipMOS Technologies	\$22,273	1	1%	7.67	10.6%	7%	1.20	688
Cirrus Logic	\$1,281	21	23%	4.25	17.7%	20%	2.79	2,607
Cree	\$904	30	4%	3.63	1.6%	-3%	2.11	4,784
DAQO New Energy	\$676	9	20%	7.95	11.8%	3%	1.37	661
Diodes	\$1,229	28	8%	3.20	8.6%	5%	1.83	1,559
Infineon Technologies AG	\$9,600	26	8%	3.64	13.0%	13%	2.89	20,910
Intel	\$77,867	20	6%	4.18	28.7%	17%	2.71	174,840
Lam Research Corporation	\$10,045	23	19%	3.39	19.2%	15%	4.15	22,125
Marvell Technology Products	\$2,699	23	1%	5.45	10.0%	6%	1.86	10,908
Maxim Integrated Products	\$2,191	19	1%	3.55	26.8%	15%	6.04	12,379
Microchip Technology Incorporated	\$5,274	32	21%	3.22	19.6%	9%	4.58	15,456
Micron Technology Incorporated	\$21,435	4	15%	3.51	16.9%	12%	1.74	33,893
NVIDIA Corporation	\$10,918	3	14%	4.68	20.2%	19%	8.42	77,734
NXP Semiconductor	\$8,612	21	8%	3.63	8.3%	6%	7.31	24,402
ON Semiconductor Corporation	\$5,255	17	10%	3.06	9.2%	5%	2.84	6,324
Qualcomm	\$23,531	15	9%	6.19	24.4%	14%	8.64	105,524
Ricoh	\$18,481	13	-1%	6.38	3.7%	1%	1.93	18,655
Semtech	\$548	29	8%	3.56	10.7%	5%	3.67	2,389
Silicon Laboratories Incorporated	\$887	33	6%	4.80	9.1%	5%	3.35	2,995
Skyworks Solutions Incorporated	\$3,356	10	13%	3.99	27.2%	21%	3.73	12,967
Taiwan Semiconductor	\$45,530	6	13%	7.02	37.5%	22%	4.30	189,331
Texas Instruments	\$14,461	11	1%	3.06	34.8%	24%	7.77	76,207
Tower Semiconductor	\$1,266	8	12%	6.98	5.2%	3%	2.19	1,446
United Microelectronics	\$6,011	17	4%	6.84	5.4%	4%	0.93	6,727
Xilinx	\$3,163	23	6%	3.33	30.1%	16%	6.26	16,618
MEAN WITH OUTLIERS			10%	4.50	15.5%	10%	3.81	30,261
MEAN WITHOUT OUTLIERS	\$11,261		10%	4.50	15.5%	10%	3.81	21,149

Tires

Over the last decade, the tire industry chased cost. Inventory turns declined. For the period, in this analysis, there are no Supply Chains to Admire winners for the tire industry. In prior years, Cooper Tires was a winner in 2016 and Bridgestone in 2017. Each Company has a unique definition of supply chain strategy; each has pursued technology and process excellence projects over the last decade, attempting to drive differentiation. Supply chain excellence remains elusive.

Table 27. Tire Sector Evaluation for the Period of 2010-2019

INDUSTRY: Tires								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Bridgestone	\$28,055	3	-1%	3.93	10%	9%	1.40	26,302
Cooper Tire & Ruber	\$2,521	1	-2%	5.65	9%	12%	1.75	1,712
Goodyear Tire & Rubber	\$12,321	4	-4%	4.72	7%	5%	2.37	5,609
Michelin	\$23,376	2	0%	3.37	11%	11%	0.99	12,678
MEAN WITH OUTLIERS			-2%	4.42	9%	9%	1.63	11,575
MEAN WITHOUT OUTLIERS	\$16,568		-2%	4.42	9%	9%	1.63	11,575



Trucks and Heavy Equipment

For 2021, Paccar is a Supply Chains to Admire Award winner in the Trucks and Heavy Equipment sector. As a clear industry leader, Paccar wins for four consecutive years. Prior winners included Cummins, John Deere, and United Tractors.

From 2011 to 2020, Operating Margins declined 19%, and Inventory Turns decreased by 12%.

Table 28. Trucks and Heavy Equipment Sector Evaluation for the Period of 2010-2019

INDUSTRY: Trucks & Heavy Equipment								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Agco Corporation	\$9,150	11	4%	4.00	6.2%	8%	1.64	5,067
Caterpillar	\$41,748	16	2%	3.20	10.6%	7%	4.30	67,190
Cummins	\$19,811	12	5%	5.17	10.4%	18%	3.31	23,948
Deere & Company	\$35,259	14	4%	5.24	11.4%	6%	4.56	42,340
Hitachi Construction	\$8,569	2	5%	2.61	7.8%	4%	0.46	2,021
Hyster-Yale Materials Handling Inc	\$2,812	1	5%	5.36	3.1%	10%	2.03	988
Komatsu	\$22,495	9	5%	2.39	11.9%	8%	1.26	18,294
Konecranes Oyj	\$3,624	4	7%	2.82	5.9%	8%	1.06	1,251
Kubota	\$17,363	9	7%	3.48	11.0%	6%	1.80	18,794
Manitowoc	\$1,443	6	-6%	3.41	4.4%	-1%	0.95	625
Navistar	\$7,503	8	-3%	7.80	2.0%	-14%	0.00	2,755
Oshkosh Truck	\$6,857	5	-3%	5.79	7.1%	11%	1.99	4,368
PACCAR Inc	\$18,729	3	8%	17.91	10.4%	9%	2.86	21,562
Terex Corporation	\$3,076	17	-2%	3.63	5.2%	3%	1.87	2,792
Textron Inc	\$11,651	15	1%	3.06	7.3%	7%	2.19	10,547
United Tractors	\$4,162	7	5%	5.90	15.9%	15%	2.12	6,745
Volvo AB	\$36,969	13	1%	5.22	7.3%	7%	0.98	14,391
MEAN WITH OUTLIERS			4%	5.12	8.1%	7%	1.96	14,334
MEAN WITHOUT OUTLIERS	\$14,778		2%	4.32	8.1%	7%	1.96	11,031

Process Industry Overview

Peer groups within the process industry manage flows. The most severe degradation of results occurred in the process industry over the last decade. The reason why? These industries have a strong dependency on oil and other commodities showing extreme volatility over the decade.

Process industries tend to be large (greater than 15B\$ in annual revenue) with a historical focus on manufacturing excellence. Table 29 shows the cut-off for each sector for the Supply Chain Index, along with details of progress in the process industries.

Table 29. Overview of the Process Industry

	Number of Companies	Number of 2021 Winners	Index-Cut-off	Average Revenue (M\$)	Year-over-Year Growth	Inventory Turns	Operating Margin	Return on Invested Capital	Price to Book Value
PROCESS	Average for 2011-2020								
Pharmaceuticals	32	1	21	\$23,984	5.7%	2.2	22.2%	11.1%	5.2
Beverages	21		14	\$13,264	4.9%	5.3	17.4%	10.4%	4.3
Consumer Nondurables	12		8	\$19,490	2.7%	4.9	16.1%	15.2%	32.6
Personal Products	14		9	\$8,165	3.4%	2.8	11.3%	10.9%	4.0
Chemical	40	3	27	\$9,030	1.3%	4.9	10.5%	8.1%	2.9
Oil & Gas	39		26	\$28,821	1.9%	12.1	10.1%	2.3%	1.7
Containers and Packaging	19		13	\$7,756	5.7%	6.5	10.0%	7.0%	3.8
Food Manufacturing	32		21	\$15,455	4.6%	6.3	9.9%	6.7%	2.7



Beverages

Beverage companies are in intense competition for a “share of the throat.” For 2021, there are no Supply Chains to Admire Award Winners in this sector. Prior winners include Boston Beer, Coca-Cola, and Monster Beverages. In general, small companies outperform larger, global multinationals.

Overall profitability of the beverage industry increased over the last year, but this did not translate into overall performance increases. The companies struggle to manage a balanced scorecard.

Table 30. Beverage Industry Performance and Sector Evaluation for the Period of 2010-2019

INDUSTRY: Beverages								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Anheuser-Busch InBev	\$46,881.00	18	3%	5.60	30.8%	6.0%	3.30	163,732
Boston Beer Company	\$1,736.43	3	15%	7.22	14.8%	24.2%	7.45	3,636
Brown-Forman	\$3,363.00	17	3%	0.97	32.6%	22.3%	11.94	21,224
Carlsberg	\$8,969.69	12	-1%	7.52	14.2%	4.8%	2.03	15,692
Coca-Cola	\$33,014.00	13	0%	5.32	25.6%	10.9%	8.09	192,208
Davide Campari-Milano	\$1,772.00	2	2%	1.56	13.0%	4.1%	1.49	4,032
Diageo	\$14,816.60	20	0%	0.99	28.6%	12.7%	7.25	78,452
Heineken NV	\$21,769.00	6	5%	7.94	21.5%	6.8%	2.86	44,465
Keurig Dr Pepper	\$11,618.00	8	8%	10.56	19.6%	10.8%	4.73	21,451
Kirin Holdings	\$17,328.16	13	-3%	5.61	7.3%	4.9%	1.91	15,484
Lassonde Industries Inc	\$1,980.93	1	15%	4.40	7.7%	7.7%	2.18	1,076
Molson Coors Brewing	\$9,654.00	11	16%	9.83	12.0%	4.1%	1.35	12,931
Monster Beverage	\$4,598.64	4	14%	5.58	31.0%	29.6%	9.38	24,720
PepsiCo	\$70,372.00	9	2%	9.28	15.0%	14.2%	9.83	149,262
Pernod Ricard	\$9,342.99	20	0%	0.65	25.9%	5.5%	2.22	35,497
Primo Water Company	\$1,953.50	6	4%	7.81	4.2%	1.6%	1.58	1,411
Remy Cointreau	\$1,139.10	19	0%	0.37	19.3%	7.1%	2.33	3,572
Thai Beverage	\$8,127.55	13	9%	3.57	13.4%	12.9%	3.62	12,183
Tsingtao Brewery	\$4,022.50	9	4%	6.29	7.1%	10.4%	3.39	8,298
United Breweries	\$2,352.63	16	6%	3.69	13.6%	11.4%	2.74	4,257
Yakult Honsha Company	\$3,735.56	5	2%	5.62	9.3%	5.9%	1.48	4,577
MEAN WITH OUTLIERS			5%	5.26	17.4%	10.4%	4.34	38,960
MEAN WITHOUT OUTLIERS	\$13,264.16		5%	5.26	0.17	10.4%	4.34	17,387

Chemical

Supply chain management is essential to a chemical company's success when sitting three and four levels back in the value chain. Ecolab is the Winner for 2019. No chemical company has sustained the Supply Chains to Admire winning status.

Table 31. Chemical Industry Performance and Sector Evaluation for the Period

INDUSTRY: Chemical								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Air Products and Chemicals Inc.	\$8,856	1	1%	13.24	19%	11%	3.63	32,374
Akzo Nobel	\$9,741	5	-6%	5.06	8%	10%	2.26	17,883
Albemarle Corporation	\$3,129	35	3%	3.70	19%	9%	2.89	8,161
Arkema SA	\$9,004	40	4%	0.00	10%	6%	1.57	6,930
Asahi Kasei Corporation	\$19,797	24	3%	4.02	8%	7%	1.19	12,427
Ashland Global Holdings	\$2,326	7	-7%	4.06	4%	2%	1.10	3,789
Axalta Coating Systems, Ltd.	\$3,738	12	-1%	4.53	9%	1%	3.76	4,611
BASF	\$67,550	29	-1%	4.70	9%	10%	2.19	78,834
Cabot	\$2,614	37	1%	5.58	9%	3%	2.11	2,800
Celanese Corporation	\$5,655	2	1%	5.89	13%	14%	4.29	10,863
Chemours Company	\$4,969	9	-4%	4.27	11%	6%	4.40	2,612
Covestro	\$12,227	9	-1%	4.54	8%	12%	1.16	6,438
Dow Incorporated	\$20,397	16	1%	4.57	8%	6%	1.42	49,571
Eastman Chemical	\$8,473	29	4%	5.03	15%	10%	2.63	10,838
Ecolab	\$11,790	20	9%	5.26	14%	6%	5.45	36,401
Evonik Industries	\$13,932	34	-2%	5.26	10%	13%	0.63	6,006
FMC	\$4,642	18	6%	2.79	15%	11%	4.23	8,585
Givaudan	\$6,743	12	5%	3.15	16%	11%	5.34	19,221
H.B. Fuller	\$2,790	18	9%	6.40	8%	6%	2.24	2,220
Huntsman Corporation	\$6,018	14	-3%	5.40	8%	7%	2.35	4,830
International Flavors & Fragrances	\$5,084	36	7%	2.86	16%	11%	4.29	9,557
Johnson Matthey PLC	\$18,539	5	5%	13.17	4%	12%	1.57	4,552
K+S	\$2,778	33	-6%	4.00	5%	1%	1.14	5,053
Kansai Paint Company, Ltd.	\$3,744	23	5%	4.98	9%	6%	0.63	1,588
Koninklijke	\$5,507	17	-1%	3.38	9%	7%	2.25	12,704
Kraton Performance Polymers	\$1,563	38	5%	3.27	6%	1%	1.51	812

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INDUSTRY: Chemical (Continued from previous page)								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Lanxess	\$6,971	25	-2%	4.35	7%	6%	1.28	3,682
LyondellBasell	\$27,753	26	-3%	6.97	13%	21%	4.08	34,423
Mitsui Chemicals Incorporated	\$6,818	4	1%	4.53	5%	3%	0.39	2,269
Nippon Kayaku	\$1,611	27	1%	2.65	13%	7%	0.38	722
Nitto Denko	\$7,410	28	1%	6.45	12%	10%	1.14	5,236
PPG	\$9,257	39	2%	4.58	12%	16%	4.98	25,788
RPM International Incorporated	\$1,870	8	5%	4.36	10%	8%	4.42	5,994
Sensient Technologies	\$4,020	21	1%	2.15	12%	7%	3.13	4,161
Solvay	\$1,332	2	6%	4.83	9%	4%	0.78	5,194
Stepan Company	\$11,094	15	2%	8.80	7%	8%	2.23	2,557
Symrise AG	\$5,359	31	6%	2.80	13%	9%	4.37	7,903
W.R. Grace	\$1,730	9	-3%	4.91	17%	9%	16.81	4,625
Wacker Chemie	\$5,359	31	-1%	5.01	7%	6%	1.67	4,730
MEAN WITH OUTLIERS			1%	4.91	10%	8%	2.87	11,973
MEAN WITHOUT OUTLIERS	\$9,030		1%	4.91	10%	8%	2.87	11,973



Consumer Non-Durables

In the post-recession period, the acquisition strategies of consumer non-durables companies failed to yield scale. The sizeable traditional consumer products companies of Colgate, Kimberly-Clark, P&G, and Unilever struggled to drive growth as smaller and more agile companies made progress.

Large global multinational cross-functional alignment issues grew over the decade, driving a schism between operations and commercial teams.

Table 32. Consumer Non-Durables Industry Performance

INDUSTRY: Household Non-Durable								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Church & Dwight Company	\$4,896	3	7%	6.64	19.5%	14%	5.32	12,360
Clorox	\$6,721	8	3%	7.64	17.9%	24%	54.82	15,942
Colgate-Palmolive	\$16,471	8	1%	5.02	23.7%	31%	95.82	58,312
Energizer Holdings Incorporated	\$2,745	1	4%	1.58	13.1%	6%	8.68	1,681
Henkel AG & Company	\$21,984	10	1%	6.49	14.2%	21%	132.10	40,083
Kimberly-Clark	\$19,140	6	6%	4.39	10.1%	1%	3.06	10,382
Newell Rubbermaid	\$9,385	10	-1%	6.52	19.6%	12%	4.31	238,959
Procter & Gamble	\$70,950	3	4%	4.69	25.7%	17%	4.76	53,244
Reckitt Benckiser Group	\$17,959	7	3%	3.81	9.3%	2%	2.88	2,396
Spectrum Brands Holdings	\$3,964	2	-2%	2.76	14.3%	14%	9.37	2,678
Tupperware Brands	\$1,740	10	1%	5.49	16.0%	20%	7.47	127,970
Unilever PLC	\$57,928	3	7%	3.49	9.4%	22%	62.57	5,210
MEAN WITH OUTLIERS			3%	4.88	16.1%	15%	32.60	47,435
MEAN WITHOUT OUTLIERS	\$19,490		3%	4.88	16.1%	15%	32.60	36,398

Containers and Packaging

For 2021, there are no winners in the containers and packaging sector. PCA is the only company in this sector to ever make it to the Winners Circle in the Supply Chains to Admire analysis.

Margin improvement of 17% and a 5% improvement in Inventory Turns helped the industry. Starting the decade with maturing processes, the gradual sophistication in supply chain processes helped the industry.

Table 33. Containers and Packaging Industry Performance and Sector Evaluation

INDUSTRY: Containers & Packaging								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Amcor	\$12,468	4	6%	5.71	7.8%	8%	7.75	12,509
AptarGroup	\$2,929	17	4%	5.03	12.7%	9%	3.69	5,188
Ball Corporation	\$11,781	12	5%	6.65	10.0%	6%	6.16	13,277
Berry Plastics Group	\$11,709	1	11%	6.42	8.8%	3%	4.57	4,630
CCL Industries	\$5,242	6	17%	8.59	13.3%	10%	3.40	6,567
Crown Holdings	\$11,575	16	4%	5.66	10.9%	8%	167.36	7,451
Graphic Packaging Holding	\$6,560	8	5%	6.00	8.8%	6%	3.12	3,693
GREIF	\$4,515	7	3%	9.80	8.6%	5%	2.44	2,709
International Paper	\$20,580	18	-2%	6.59	10.1%	6%	3.26	18,942
Intertape Polymer Group	\$1,626	3	8%	5.25	8.3%	10%	3.43	989
Orora Ltd	\$2,394	5	1%	4.48	2.9%	5%	1.11	1,136
Owens-Illinois	\$6,091	19	-3%	5.50	9.2%	2%	5.51	3,139
Packaging Corporation of American	\$6,658	14	12%	6.76	14.0%	12%	4.06	7,717
Sealed Air	\$4,903	2	3%	6.00	12.3%	5%	10.13	6,739
Silgan Holdings	\$4,922	12	5%	5.64	9.1%	8%	4.05	3,144
Smurfit Kappa Group, PLC	\$9,741	9	1%	7.45	9.8%	4%	1.69	5,222
Sonoco Products	\$5,237	11	3%	9.54	8.5%	8%	2.83	4,706
Westrock	\$17,579	9	22%	6.99	7.9%	4%	0.66	7,150
Wipak	\$852	15	4%	5.20	16.8%	13%	0.99	894
MEAN WITH OUTLIERS			6%	6.49	10.0%	0.07	12.43	6,095
MEAN WITHOUT OUTLIERS	\$7,756		6%	6.49	10.0%	0.07	3.82	6,095

Food

In the Supply Chains to Admire 2021 analysis, there are no winners in the food industry. While there were prior winners in the Food Industry—Ingredion in 2018, Hershey in 2017, and General Mills in 2014—there is no consistent performer. The issue? There were significant shifts in the food industry, but no company was equal to the challenge. Changes included the growth of generic products by retailers, a rise in commodity prices, and shifts to natural and organic food products.

Table 34. Food Manufacturing Sector Evaluation

INDUSTRY: Food								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Archer Daniel Midland	\$64,355	4	-3%	6.17	2.7%	6%	1.31	24,613
B&G Foods	\$1,968	13	15%	3.57	17.0%	5%	3.52	1,816
Bunge Ltd	\$41,404	4	0%	8.52	1.7%	2%	1.41	9,845
Campbell Soup	\$8,691	29	2%	5.45	16.0%	13%	9.39	13,779
Charoen Pokaphan Foods PLC	\$18,854	23	14%	4.95	4.0%	5%	0.88	3,796
ConAgra Foods	\$11,054	6	0%	5.14	10.0%	5%	2.58	13,213
Danone SA	\$26,975	21	2%	8.02	13.9%	7%	2.77	43,759
Dean Foods	\$7,329	17	-4%	22.6	-28%	-8%	2.18	1,114
Ebro Foods SA	\$3,304	2	4%	2.89	100%	6%	0.81	1,883
Flowers Foods Inc	\$4,388	13	6%	12.00	7.1%	9%	3.56	4,034
Fresh Del Monte Produce Inc	\$4,202	32	2%	7.19	3.6%	4%	1.03	1,802
Freshpet	\$319	1	23%	7.36	-7.0%	-12%	5.78	1,092
General Mills	\$17,627	10	2%	7.09	16.5%	11%	5.37	31,092
Glanbia	\$4,366	15	5%	5.74	7.0%	11%	1.67	2,332
Golden Agri-Resources	\$7,078	26	9%	6.21	6.7%	3%	0.48	2,568
Grupo Nutresa SA	\$3,029	7	9%	6.72	10.5%	6%	0.35	875
Hershey	\$8,150	18	4%	5.42	19.6%	21%	18.08	22,492
Hormel Foods	\$9,608	23	3%	7.48	11.0%	17%	3.86	17,228
Ingredion Incorporated	\$5,987	22	3%	6.35	11.3%	10%	2.57	6,361
Kellogg Company	\$13,770	16	1%	6.92	11.4%	10%	9.00	22,331
Maple Leaf Foods	\$3,212	10	-3%	8.17	3.3%	9%	1.40	2,094
McCormick	\$5,601	18	5%	3.66	15.7%	12%	5.70	13,611
Mondelez	\$26,581	8	-1%	5.98	13.0%	7%	2.29	65,527

continued on next page

INDUSTRY: Food (Continued from previous page)								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Nestle	\$90,323	28	1%	5.13	16.3%	12%	4.08	247052
Orkla ASA	\$5,015	20	1%	3.31	10.9%	7%	1.57	6,755
Pilgrim's Pride Corporation	\$12,092	30	6%	8.54	6.3%	12%	3.18	5,066
Post Holdings Incorporated	\$5,699	25	25%	6.73	11.3%	-2%	1.40	3,919
Smucker's	\$7,801	12	6%	4.49	16.4%	6%	1.80	11,859
The Hain Celestial Group Incorporated	\$2,054	31	10%	5.16	8.3%	2%	2.38	3,541
The Kraft Heinz Company	\$26,185	3	5%	5.78	18.9%	5%	0.76	42,346
Tree House Food Inc	\$4,350	26	12%	5.03	6.5%	0%	1.64	2,865
Tyson Foods Inc	\$43,185	9	4%	10.88	5.7%	9%	1.84	18,841
MEAN WITH OUTLIERS			5%	6.83	11.5%	7%	3.27	20,297
MEAN WITHOUT OUTLIERS	\$15,455		5%	6.32	9.9%	7%	2.71	12,819



Personal Products

Nine years after the end of the recession, margins in this industry are flat, but there are increasing product complexity and shifts in the channel. L'Oréal, the Supply Chains to Admire Award Winner for five consecutive years, stumbles on growth and falls out of the Winner's Circle. Estee Lauder was a winner in 2015.

Table 35. Personal Products Sector Evaluation for the Period

INDUSTRY: Personal Products								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAPITALIZATION
2011 - 2020								
Beiersdorf	\$8,022.7	4	1%	3.31	13.5%	13%	2.07	12,603
Coty	\$4,717.8	3	6%	2.62	4.9%	-4%	9.63	6,913
Estee Lauder	\$14,294.0	11	6%	1.77	15.5%	19%	10.29	42,813
Henkel AG & Company	\$21,984.0	4	1%	5.30	13.6%	11%	2.90	45,637
Herbalife Ltd	\$5,541.8	10	8%	2.48	13.2%	29%	9.67	5,675
Inter Parfums	\$539.0	7	3%	1.71	13.0%	10%	2.92	1,240
Kao Corporation	\$12,947.8	2	-1%	4.29	11.6%	13%	2.05	15,084
L'Oréal	\$31,967.7	8	2%	2.88	17.6%	14%	4.02	117,021
Natures Sunshine Products	\$385.2	9	1%	2.13	5.0%	9%	1.94	234
Nu Skin Enterprises	\$2,581.9	6	7%	2.06	12.7%	19%	4.22	3,269
Ocean Bio-Chem Incorporated	\$55.6	1	9%	2.57	10.0%	11%	1.52	38
PZ Cussons, PLC	\$741.1	13	-5%	3.25	12.4%	8%	1.20	737
Revlon Incorporated	\$1,904.3	13	5%	3.05	8.6%	-4%	0.00	1,195
Shiseido Company, Ltd	\$8,627.7	11	4%	1.91	6.2%	4%	3.68	14,377
MEAN WITH OUTLIERS			3%	2.8	11.3%	11%	4.01	19,060
MEAN WITHOUT OUTLIERS	\$8,165.0		3%	2.8	11.3%	11%	4.01	11,524

Pharmaceuticals

The pharmaceutical industry stalled post-recession, accelerated improvement in the period of 2014-2018. AbbVie pharmaceutical, a biologics manufacturer, places into the Winner's Circle for the third consecutive year. The Company is a spin-off of Abbott Labs.

In general, sector margins continue to grow, but supply chain competency lags other process sectors. Despite the pandemic, no pharmaceutical company steps up to the plate to redefine healthcare to improve drug delivery.

Table 36. Pharmaceuticals Sector Evaluation for the Period

INDUSTRY: Pharmaceutical								
COMPANY INFORMATION		IMPROVEMENT	PERFORMANCE				VALUE	
NAME	2020 REVENUE	SUPPLY CHAIN INDEX	GROWTH (Year Over Year Revenue)	INVENTORY TURNS	OPERATING MARGIN	RETURN ON INVESTED CAPITAL	PRICE TO BOOK	MARKET CAP
2011 - 2020								
Abbott Laboratories	\$34,608	10	1%	3.23	11.4%	8%	3.30	91,459
AbbVie Incorporated	\$45,804	4	12%	4.20	30.3%	18%	17.20	104,988
Alexion Pharmaceuticals Inc orporated	\$6,070	17	28%	0.92	35.2%	10%	6.28	27,164
Amgen	\$25,424	7	5%	1.39	36.8%	12%	6.49	108,418
Aspen Pharmacare Holdings Ltd	\$2,490	25	9%	1.79	25.2%	8%	1.26	4,047
Astellas Pharma Incorporated	\$11,969	5	1%	2.24	15.6%	12%	3.18	38,388
AstraZeneca plc	\$26,617	8	-2%	2.15	14.4%	11%	5.52	88,393
Baxter International Incorporated	\$11,673	8	0%	3.39	11.2%	14%	3.33	27,388
Bayer	\$47,280	30	1%	2.13	10.9%	7%	2.77	85,392
Biogen Idec Incorporated	\$13,445	15	12%	1.61	41.3%	22%	5.08	52,495
Biomarin Pharmaceutical Inc.	\$1,860	32	18%	0.60	-16.1%	-4%	5.94	12,684
Bristol-Myers Squibb Company	\$42,518	6	10%	3.78	18.3%	10%	5.33	97,506
Catalent Incorporated	\$3,094	1	8%	6.09	12.9%	3%	3.57	4,586
Daiichi Sankyo Company Ltd	\$9,033	23	-1%	2.01	11.9%	7%	4.85	53,649
Eli Lilly and Company	\$24,540	13	1%	1.59	22.5%	18%	12.24	91,531
Gilead Sciences	\$24,689	3	17%	3.13	49.2%	22%	5.89	91,039
GlaxoSmithKline	\$43,765	24	1%	1.94	20.4%	16%	67.25	104,055
Ipsen SA	\$3,068	2	7%	2.52	20.1%	12%	3.44	5,687
Johnson & Johnson	\$82,584	21	3%	2.92	26.1%	15%	4.57	303,814
Mallinckrodt PLC	\$2,213	33	4%	0.01	8.6%	-4%	0.82	3,173
Merck and Company	\$47,994	14	1%	2.68	18.8%	10%	4.62	164,503
Novartis AG	\$49,898	17	1%	2.48	19.4%	11%	2.79	190,867
Novo Nordisk A/S	\$19,451	20	6%	1.26	40.9%	67%	15.36	116,338
Perrigo Co PLC	\$5,063	26	12%	3.31	13.8%	2%	2.40	12,606
Pfizer Incorporated	\$41,908	30	-4%	1.48	25.2%	11%	2.84	192,852
Regeneron Pharmaceuticals Inc	\$8,497	28	42%	1.14	27.0%	21%	9.98	36,095
Roche Holding	\$62,209	15	3%	2.27	29.5%	23%	10.12	222,116
Sanofi S.A.	\$42,676	26	0%	1.62	20.5%	7%	1.68	116,741
Santen Pharmaceutical Company Ltd	\$2,223	22	7%	2.62	22.2%	12%	2.88	6,315
Teva Pharmaceutical Industries Limited	\$16,658	29	1%	2.02	19.9%	-1%	1.37	30,439
United Therapeutics Corporation	\$1,483	17	10%	1.68	40.7%	21%	3.04	5,225
Zoetis Incorporated	\$6,675	11	7%	1.29	25.4%	12%	15.34	30,591
MEAN WITH OUTLIERS			7%	2.23	22.2%	13%	7.52	78,767
MEAN WITHOUT OUTLIERS	\$23,984		6%	2.23	22.2%	11%	5.21	78,767



Research Methodology

Year-over-year, the Supply Chains to Admire methodology continues to evolve. Each year we review and refine the process based on feedback from supply chain business leaders. This year, there were intense discussions on which period to use. We decided to focus on the period of 2011-2019 to help companies see the pattern of the entire decade. ❁

Calculations

The methodology used to define the 2021 winners outlined in this report is as follows:

1. **Determine Industry Peer Groups.** We started by placing companies into industry peer groups (based on prior work, we found NAICS and SIC codes inadequate). After much debate, we defined 26 peer groups, assigned companies to their respective industry sectors, and started analyzing 600 public companies. There is no such thing as a perfect peer group.
2. **Define Timeframe.** The next step was to determine the appropriate period. Since it takes at least three years for supply chain leaders to translate strategy to balance sheet results, and project outputs are often hard to sustain, we selected the 2011-2019 time period. Our goal was to understand post-recessionary trends.
3. **Identify the Metrics for Comparison.** The third step was to identify the metrics to be collected and analyzed. In this analysis, we selected two value metrics (Market Capitalization and Price to Tangible Book Value (PTBV)) and four performance metrics (Growth, Operating Margin, Inventory Turns, and Return on Invested Capital (ROIC)). Our goal to move supply chain leaders from a cost to value focus. We know that the performance metrics selected have the highest correlation to market capitalization from our work with Arizona State University based on prior research.
4. **Start the Analysis.** To complete the analysis, we collected publicly available data from balance sheets and income statements. We used YCharts, a syndicated data provider of the balance sheet, and income statement data for this analysis. We only included companies that had at least one data point across all of the metrics in the period selected.
5. **Defining Improvement.** The base principle of this analysis is that supply chain winners drive improvement while also outperforming their peer group. As will be seen, this is hard to do. Our first calculation was defining improvement on balance sheet performance as compared to the peer group. To accomplish this goal, we calculated each Company's Supply Chain Index Ranking, a measurement of supply chain improvement based on balance, strength, and resiliency². Companies are then stack ranked within a peer group and assigned an overall ranking based on the relative level of improvement. The lower the rank number, the higher the level of maturity. When companies tied, each Company received the same ranking.
6. **Analyzing Performance.** For each metric chosen, we calculated the mean, adjusted for outliers, and then analyzed the pattern over the period. We then compared each Company's statistical mean to that of the industry peer group.
7. **Define Winners.** Our final step was to determine winners based on the criteria of improvement, value, and

² Supply Chain Index, published by Supply Chain Insights, <http://supplychaininsights.com/research>, July 12, 2017

performance, as will be explained in detail in this report.

To understand the methodology completely, it is essential to note what the methodology does not include:

- This analysis does not include private companies or companies trading only on Chinese and Korean stock exchanges.
- Companies with issues on reporting during the period (M&A), or public offerings, are excluded from the analysis.
- We excluded companies that did not have at least one data

point for each metric across the time period studied.

- The research is a focused look at the retail, distribution, and manufacturing companies. The work does not include financial, insurance, or service sectors.
- Within each industry, there are metrics we consider to be essential but feel that there is no good source of data. An example is customer service. While we firmly believe that the analysis should include customer service in the performance metrics, we cannot find a reliable data source. ❁



The Criteria

Connecting supply chain performance to balance sheet information can be gnarly and confusing. We detail the steps in Figures 5 and 6 to help the reader better understand the process.

Figure 5. The Supply Chains to Admire Analysis Criteria



As with most comparisons, the devil is in the details:

Figure 6. Calculation Example

COMPANY INFORMATION	IMPROVEMENT	VALUE		PERFORMANCE			RESULTS	
NAME	SUPPLY CHAIN INDEX RANK	MARKET CAP	PRICE TO TANGIBLE BOOK VALUE	GROWTH	OPERATING MARGIN	INVENTORY TURNS		ROIC
Co A	7 (max=18)	\$5,267	6.5	16.7%	0.12	6.9	11.3%	WINNER
Co B	13	\$3,960	0.2	4.3%	0.08	9.8	8.8%	
Co C	6	\$2,658	2.5	6.7%	0.06	6.2	1.5%	
... and so on								
MEAN	5.9%	\$4,227	3.4	5.9%	0.09	6.7	7.0%	
Allowable % from mean (within the margin of error)	NA	-12.6%	-26.5%	-13.0%	-7.3%	-18.6%	-8.7%	
GREEN - meeting requirement to qualify as a winner								

- Winner Analysis:** The methodology is not limited to the best Company in the peer group. Within a peer group, there can be multiple winners. There is also a possibility of the peer group having no winners. In this year’s analysis, there are no winners for seventeen of the 28 industries.
- Peer Group Analysis:** The analysis is within single industry peer groups only. There is no stacked ranking across multiple peer groups. We believe that comparison across industries is “fools play” because the sectors are so different. Industry Peer Group Means:

In calculating the industry peer group mean for the value metrics (Market Capitalization and Price to Book Value), we removed outliers.

- **Margin of Error:** To determine the allowable distances from the industry peer group mean for the value and performance metrics (Market Capitalization, Price to Book Value, Growth, Inventory Turns, Operating Margin and Return on Invested Capital), we calculated the margin of error (at a 95% level of confidence, excluding outliers) for each metric among all companies in the analysis. We then allowed “winners” to be within the equivalent of one margin of error of the mean.
- **Supply Chain Index:** The Supply Chain Index is a ranking within an industry peer group across three measurements:
 1. **Balance** - vector analysis of the rate of change at the intersection of Return on Invested Capital & Revenue Growth for the period
 2. **Strength** - vector analysis of the rate of change at the intersection of Inventory Turns & Operating Margin)
 3. **Resiliency** - the tightness of the pattern at the intersection of Inventory Turns & Operating Margin as measured by the mean distance of years on an orbit chart. ✨

Prior Reports in This Series

In the eight years of the history of Supply Chain Insights, we have been zealous in figuring out what drives value in supply chains. As we learn, we improve our methodology. On our website, you can track our progress and find industry-specific information published by [Supply Chain Insights](#). ✨



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Founded in February 2012, [Supply Chain Insights LLC](#) delivers independent, actionable, and objective advice for supply chain leaders. The company provides open-content research to help companies gain a first-mover advantage. ✨



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Figures & Tables

Figure 1. Supply Chains to Admire Winners for 2021.	5
Figure 2. The Approach: Balanced Scorecard Analysis	6
Table 1. Winners Over Time	7
Table 2. Consecutive Year Winners for the Supply Chains to Admire Year-over-Year	8
Table 3. Characteristics of Supply Chains to Admire Leaders	9
Figure 3. Aggregate Trend for Diversified Industries...Inventory Turns from 2011- 2020	10
Table 4. Inventory Levels by Industry Sector Across Time Periods	11
Figure 4. Driving Market Value	12
Table 5. Comparison of the Gartner Top 25 to the Supply Chains to Admire.	13
Table 6. Comparison of the Gartner Top 25 to the Supply Chains to Admire	14
Table 7. Retail Overview	18
Table 8. Retail Sector Averages for Apparel Retail for the Period of 2010-2019	19
Table 9. Broadline Retail Sector Averages for 2011-2020	20
Table 10. Drug Retail Sector Averages for the Period of 2011-2020	21
Table 11. Grocery Retail Sector Averages for the Period of 2011-2020	22
Table 12. Home Improvement Retail Sector Averages for the Period	23
Table 13. Restaurant Sector Averages for the Period	24
Table 14. Overview of the Discrete Industry	25
Table 15. Industry Averages for the Aerospace Sector for the Period	26
Table 16. Apparel Sector Evaluation for the Period	27
Table 17. Automotive Sector Evaluation for the Period	28
Table 18. Automotive Parts Sector Evaluation for the Period	29
Table 19. B2B Technology Sector Evaluation for the Period	30
Table 20. Consumer Durable Technology Sector Evaluation for the Period	31
Table 21. Contract Manufacturing Sector Evaluation for the Period	32
Table 22. Diversified Sector Evaluation for the Period of 2010-2019	33
Table 23. Furniture Sector Evaluation for the Period of 2010-2019	34
Table 24. Medical Device Sector Evaluation for the Period	35
Table 25. Telecommunications Sector Evaluation for the Period	36
Table 26. Semiconductor Sector Evaluation for the Period of 2010-2019	37
Table 27. Tire Sector Evaluation for the Period of 2010-2019	38
Table 28. Trucks and Heavy Equipment Sector Evaluation for the Period of 2010-2019	39
Table 29. Overview of the Discrete Industry	40
Table 30. Beverage Industry Performance and Sector Evaluation for the Period of 2010-2019	41
Table 31. Chemical Industry Performance and Sector Evaluation for the Period	42
Table 32. Consumer Non-Durables Industry Performance	44
Table 33. Containers and Packaging Industry Performance and Sector Evaluation	45
Table 34. Food Manufacturing Sector Evaluation	46
Table 35. Personal Products Sector Evaluation for the Period	48
Table 36. Pharmaceuticals Sector Evaluation for the Period	49
Figure 5. The Supply Chains to Admire Analysis Criteria	53
Figure 6. Calculation Example	53



Congratulations to the 2021 Supply Chains to Admire Winners



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