Supply Chain Metrics That Matter: A Focus on Consumer Electronics

Using Financial Data from Corporate Annual Reports to Better Understand the Consumer Electronics Supply Chain

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Research

*Supply Chain Metrics That Matter* is a series of reports published throughout the year by Supply Chain Insights LLC. They are a deep focus on a specific industry.

These reports are based on data collected from financial balance sheets and income statements over the period of 2000-2011. In these reports, we analyze supply chain effectiveness to balance profitability, growth, complexity and cycles through the comparison of supply chain ratios by peer group.

Within the world of Supply Chain Management (SCM), each industry is unique. We believe that it is dangerous to list all industries in a spreadsheet and declare a supply chain leader. Instead, we believe that we have to evaluate change over time by peer group. In this series of reports, we analyze the potential of each supply chain peer group, share insights from industry leaders from each sector, and give recommendations based on general market trends.

Disclosure

Your trust is important to us. As such, we are open and transparent about our financial relationships and our research process. This independent research was 100% funded by Supply Chain Insights.

These reports are intended for you to read, share and use to improve your supply chain decisions. Please share this data freely within your company and across your industry. All we ask for in return is attribution when you use the materials in this report. We publish under the Creative Commons License Attribution-Noncommercial-Share Alike 3.0 United States and you will find our citation policy [here](#).

Research Methodology

The basis of this report is publicly available information from corporate annual reports from the period of 2000-2011 for publicly owned companies involved in the consumer electronics supply chain.

In picking companies for the *Supply Chain Metrics That Matter* report, we traditionally rely on companies recently listed in the Fortune Global 500. In choosing our peer group, we identify a limited amount of companies ranked in the 2011 Fortune Global 500 operating within the industry of focus. For the purposes of this specific report, all six consumer electronics companies were ranked on the 2011 Fortune Global 500 list.
The financial ratios used enable supply chain leaders to better understand where the industry is on the Supply Chain Effective Frontier. In this report, we share a metrics framework for supply chain excellence that balances growth, profitability, cycles and complexity. In each Supply Chain Metrics That Matter report, we share insights from each of these metrics categories. Due to the fact that the supply chain is a complex system that must be managed holistically, we share the trends on each of these dimensions over the course of the last decade.

We use the financial data to help readers learn from past trends, to better understand current operating environments, and we provide recommendations for the future. We augment the financial data analysis with information from our quantitative and qualitative research studies as well as our work with clients operating within the industry.

**Executive Overview**

Supply chain management is thirty years old. The year 2012 marked the end of the third decade of the evolution of supply chain practices. In the journey for supply chain excellence, each industry has progressed at their own rate based on their own set of opportunities and limitations including market drivers, industry factors and product cycles. No industry has had greater obstacles to overcome than consumer electronics, and no industry has made more progress.

Consumer electronics has led the pack in managing complexity, improving growth and margin performance, reducing inventory, and accelerating productivity in the face of complexity (revenue per employee). Was it an accident? No, we don’t think so. Instead, we see it as an advanced case study of supply chain excellence in action.

Ask any executive of the consumer electronics industry if supply chain matters and you will get a resounding “YES!” While other industries are more likely to define supply chain efforts as a departmental effort focused within silos—procurement, transportation/distribution or manufacturing—the consumer electronics sector is more likely to model the supply chain as a value network focused on end-to-end improvement. They are also more likely to value the planning function and excel at it, as well as understand how to integrate new product launch efforts with value chain design.

For most companies, the consumer electronics industry offers a lot of lessons and insights for supply chain leaders. It is for this reason that we share this report.
Setting the Stage

Over the course of the last decade, the consumer electronics industry has outperformed most other industries in four significant areas: growth, profitability, cycle management, and complexity. Balancing these four categories of metrics is what we term the Supply Chain Effective Frontier, further profiled in our recent report: Conquering the Supply Chain Effective Frontier.

Figure 1. Balancing Four Categories of Metrics on the Effective Frontier

These results, and the relative performance against other industries, are shown in table 1.

Table 1. Comparison of Industries for Average Financial Metrics (2000-2011)

<table>
<thead>
<tr>
<th>Industry</th>
<th>SG&amp;A Margin</th>
<th>Year-over-Year Sales Growth</th>
<th>Operating Margin</th>
<th>Days of Inventory</th>
<th>Return on Assets</th>
<th>Revenue per Employee (K$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical</td>
<td>0.88</td>
<td>9%</td>
<td>0.07</td>
<td>71</td>
<td>5%</td>
<td>833</td>
</tr>
<tr>
<td>Consumer Electronics</td>
<td>0.86</td>
<td>22%</td>
<td>0.07</td>
<td>41</td>
<td>8%</td>
<td>721</td>
</tr>
<tr>
<td>Consumer Packaged Goods</td>
<td>0.74</td>
<td>6%</td>
<td>0.16</td>
<td>60</td>
<td>11%</td>
<td>443</td>
</tr>
<tr>
<td>Food</td>
<td>0.71</td>
<td>7%</td>
<td>0.15</td>
<td>58</td>
<td>8%</td>
<td>336</td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td>0.69</td>
<td>9%</td>
<td>0.23</td>
<td>186</td>
<td>11%</td>
<td>411</td>
</tr>
</tbody>
</table>

Source: Supply Chain Insights LLC, Corporate Annual Reports 2000-2011


Days of Inventory: (average inventory / cost of goods sold) * 365

Operating Margin: (operating income / revenue)

Return on Assets: (net income / total assets)

Revenue per Employee: (revenue / employee count)

SG&A Margin: 1 – (SG&A / revenue)

Year-over-Year Sales Growth = (revenue year y – revenue year x) / (revenue year x)
Revenue per employee for consumer electronics companies, as shown in figure 2, outpaced other industries by a significant margin. There were two drivers: greater dependency on supply chain outsourcing and improvements in front office productivity. Traditional customer relationship management (CRM) models were a better fit for the consumer electronics industry, rather than process industries such as chemical, consumer packaged goods, oil and gas, and pharmaceutical manufacturers.

**Table 2. Comparison of Revenue per Employee Performance Across Industries (1980-2012)**

<table>
<thead>
<tr>
<th>Revenue per Employee (K$)</th>
<th>1990-1999</th>
<th>2000-2009</th>
<th>2010-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical</td>
<td>328</td>
<td>627</td>
<td>825</td>
</tr>
<tr>
<td>Consumer Electronics</td>
<td>530</td>
<td>597</td>
<td>720</td>
</tr>
<tr>
<td>Consumer Packaged Goods</td>
<td>226</td>
<td>345</td>
<td>464</td>
</tr>
<tr>
<td>Food</td>
<td>394</td>
<td>357</td>
<td>423</td>
</tr>
</tbody>
</table>

In the now 30-year history of supply chain management, leadership from the consumer electronics sector has been fundamental to their success. These companies were some of the first to use supply chain processes as a core differentiator. The examples are many and include Dell’s direct ship model, IBM’s remanufacturing program, HP’s reclamation of printer cartridges and Apple’s utilization of daily data daily from retail stores to better understand and model demand. These companies invented remanufacturing processes (breaking down a product at the end of its life cycle into sub-components for socially responsible recycling) to ensure that they could reclaim critical metals and machine parts to meet zero waste goals and accelerate aftermarket service. In short, they have done a better job of using the supply chain as a business model to drive growth.

One of the best case studies of supply chain turnaround was **Cisco Systems, Inc**. The two quotes below, pulled directly from corporate annual reports, illustrate the progress made over the decade in regards to inventory management for Cisco.

- **2001:** "On April 16, 2001, due to macroeconomic and capital spending issues affecting the networking industry, we announced a restructuring program to prioritize our initiatives around high-growth areas of our business, focus on profit contribution, reduce expenses, and improve efficiency. This restructuring program includes a worldwide workforce reduction, consolidation of excess facilities, and restructuring of certain business functions."
As a result of the restructuring program and decline in forecasted revenue, we recorded restructuring costs and other special charges of $1.17 billion classified as operating expenses and an additional excess inventory charge classified as cost of sales. The excess inventory charge recorded in the third quarter of fiscal 2001 was $2.25 billion. This excess inventory charge was subsequently reduced in the fourth quarter of fiscal 2001 by a $187 million benefit primarily related to lower settlement charges for purchase commitments. As a result of the restructuring program, we expect pretax savings in operating expenses will be slightly more than $1 billion on an annualized basis.¹

• **2012:** “Our provision for inventory was $115 million, $196 million, and $94 million for fiscal 2012, 2011, and 2010, respectively. The provision for the liability related to purchase commitments with contract manufacturers and suppliers was $151 million, $114 million, and $8 million in fiscal 2012, 2011, and 2010, respectively. On a combined basis, the $44 million decline in our provisions for inventory and purchase commitments with contract manufacturers and suppliers for fiscal 2012 was primarily due to the absence in the current fiscal year of charges we recorded in connection with the restructuring and realignment of our consumer business during fiscal 2011. If there were to be a sudden and significant decrease in demand for our products, or if there were a higher incidence of inventory obsolescence because of rapidly changing technology and customer requirements, we could be required to increase our inventory write-downs, and our liability for purchase commitments with contract manufacturers and suppliers, and accordingly our profitability could be adversely affected. We regularly evaluate our exposure for inventory write-downs and the adequacy of our liability for purchase commitments. Inventory and supply chain management remain areas of focus as we balance the need to maintain supply chain flexibility to help ensure competitive lead times with the risk of inventory obsolescence, particularly in light of current macroeconomic uncertainties and conditions and the resulting potential for changes in future demand forecast.”²

**Shifting Business Model**

In consumer electronics, product change is blistering. Life cycles are short and the integration of the supply chain to new product launch is a baseline requirement. In the words of one consumer electronics industry executive, “Today, the life cycle of the product in the market is 30% shorter than the time that it takes us to bring a new product to market which is 35% shorter than the length of our supply chain to supply a finished unit to the market. Shortening cycles and

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¹ Cisco Systems, Inc. 2001 Annual Report, page 17
² Cisco Systems, Inc. 2012 Annual Report, page 45
alignment of cross-functional processes was critical to drive revenue, we needed to redesign the value network outside-in and rethink conventional processes. “

One of the changes to spur time to market was the dependency on manufacturing outsourcing. It was also a strong driver of consumer electronics companies' productivity. In table 3, we show the evolution and progress of the manufacturing outsourcing companies that supported the rise of the consumer electronics industry over the last decade.

Table 3. Outsource Manufacturing Average Financial Metrics (2000-2011)

<table>
<thead>
<tr>
<th>Category</th>
<th>Growth</th>
<th>Profitability</th>
<th>Cycle</th>
<th>Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SG&amp;A Margin</td>
<td>Year-over-Year Sales Growth</td>
<td>Operating Margin</td>
<td>Days of Inventory</td>
</tr>
<tr>
<td>Celestica Inc.</td>
<td>0.96</td>
<td>-2%</td>
<td>-0.01</td>
<td>49</td>
</tr>
<tr>
<td>Flextronics International Ltd.</td>
<td>0.97</td>
<td>16%</td>
<td>-0.01</td>
<td>46</td>
</tr>
<tr>
<td>Hon Hai Precision Industry Co., Ltd. (Foxconn)</td>
<td>0.95</td>
<td>41%</td>
<td>0.06</td>
<td>41</td>
</tr>
<tr>
<td>Jabil Circuit, Inc.</td>
<td>0.96</td>
<td>16%</td>
<td>0.02</td>
<td>48</td>
</tr>
</tbody>
</table>

Three of the four manufacturing outsourcing companies have averaged levels of growth in the double digits, but have low levels of profitability as seen in the average operating margin values shown in table 3. To a large degree, the success of consumer electronics was possible because of the lower profitability of the outsourcing manufacturing infrastructure providers.

**Growth: The Race for Innovation**

The growth rate in the consumer electronics peer group has outpaced other industries. While the driver of growth in many process industries was global expansion, the primary growth factor for this industry was innovation.

Not all companies performed equally. As shown in table 4, Apple, LG Electronics, Research in Motion (RIM) and Samsung outperformed competitors. No longer is this a story of Japanese supremacy. There has been a shift in leadership from Japanese to Korean global conglomerates.
Table 4. Year-over-Year Sales Growth (2000-2011)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple Inc.</td>
<td>30%</td>
<td>-6%</td>
<td>42%</td>
<td>46%</td>
</tr>
<tr>
<td>Dell Inc.</td>
<td>7%</td>
<td>6%</td>
<td>13%</td>
<td>2%</td>
</tr>
<tr>
<td>LG Electronics</td>
<td>14%</td>
<td>17%</td>
<td>18%</td>
<td>0%</td>
</tr>
<tr>
<td>Motorola Inc.</td>
<td>-8%</td>
<td>-10%</td>
<td>13%</td>
<td>-29%</td>
</tr>
<tr>
<td>Research in Motion Ltd.</td>
<td>70%</td>
<td>66%</td>
<td>80%</td>
<td>63%</td>
</tr>
<tr>
<td>Samsung Electronics Co., Ltd.</td>
<td>13%</td>
<td>13%</td>
<td>18%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Source: Supply Chain Insights LLC, Corporate Annual Reports 2000-2011

The consumer electronics industry is a very competitive space and it is difficult to maintain market domination long-term. Table 4 demonstrates that RIM dominated the competition over the past decade with a growth rate more than double their nearest competitor, Apple. However, RIM is no longer the name to beat with Apple’s meteoric rise. Many smart people within the supply chain space, and the financial world, are now expecting Apple’s industry dominance to come to an end.

Overall, we expect growth to continue within the space, but very possibly at reduced levels. There are millions of citizens in developed, and especially developing, countries with new-found access to discretionary income to be spent on cellphones and other technology offerings. However, the opportunities are not endless and innovation will be required to get people to continue opening their wallet for new products.

**Profitability: Building Resilient Supply Chains**

At the dawn of the decade, growth was high, but margins were stalled and inventory write-offs were more common. Over the course of the last decade, no industry has done better at maximizing margin than consumer electronics. The results are shown in table 5.
Table 5. Operating Margin (2000-2011)

The consumer electronics industry struggled through the recession of 2001. As a result, they built more resilient supply chain systems and were the only industry to regain profitability as rapidly after the Great Recession. The reason is three-fold: a focus on the end-to-end value chain; better use of market data; and the building of excellence in global planning processes. As an industry, they are the most successful at supply chain design.

As a result, not only are consumer electronics companies retaining their margins, but in fact, some companies have seen a significant increase over the twelve year period as shown in table 6. Companies with a specific focus on new markets, especially mobile, have seen a greater increase than companies with a more diverse portfolio or those focused primarily on old PC technology. To see this in the numbers, compare the performance of **Apple Inc.** with **Dell Inc.**

Table 6. Operating Margin (2000-2011) Year-over-Year Results

![Table 5: Consumer Electronics Operating Margin (2000-2011)](table5.png)

![Table 6: Operating Margin (2000-2011) Year-over-Year Results](table6.png)
Continued progress will require consumer electronics companies to invest in their contract manufacturing network to improve profitability. In order to ensure continued success, contract manufacturers will need to be more profitable and share greater gains in the value chain.

Tight margin drives supply chain excellence. The consumer electronics industry has streamlined processes, people and technology and driven increasing margins over the past twelve years. However, as prices continue to fall, and disruptive innovation emerges, the bar is rising for the consumer electronics industry. The heightened operating margins shown are unlikely to be the “new normal.” By using this opportunity to refine supply chain processes, and invest in the business, they will be stronger as a network to weather the next storm.

**Cycle: Real Progress**

Cycle metrics portray the idea of balance—balancing a supply chain between different financial metrics and balancing the inventory, payables, or receivables schedule—to maximize the benefit to all parties. Some of the most popular cycle metrics—days of inventory, inventory turns, or the cash-to-cash cycle—involve inventory management. Inventory is no longer a simple “right place, right time” equation, especially in the consumer electronics space.

![Figure 2. Cash-to-Cash Cycle (2000-2011)](image)

The relationship between inventory, price and margin in this industry dictates strong inventory practices. As inventories age, the value in the market diminishes. As a result, it is advantageous
for the consumer electronics manufacturer to move inventory quickly. The companies have matured inventory practices for multi-tier inventory management, postponement, data sharing and supply chain visibility.

In our previous report, Supply Chain Metrics That Matter: The Cash-to-Cash Cycle, we examined the performance of several industries, including consumer electronics and high-tech, on improving their cash-to-cash (C2C) cycle over the past decade. Consumer electronics led the pack with improving inventory stores and by steering away from increasing payables as a destructive way to improve C2C but hurt upstream suppliers’ cash flow. The cash-to-cash cycle for consumer electronics versus other peer groups is shown in figure 2.

Two companies (Apple and Dell) recorded negative C2C values and the remainder showed a generally falling trend over the decade. Even companies that started the decade with negative values have been able to gradually push the metric lower over the period. One of the key differentiators setting consumer electronics apart from other industries is their accomplishments in terms of inventory management.

Table 7. Days of Inventory (2000-2011)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple Inc.</td>
<td>6</td>
<td>3</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Dell Inc.</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>LG Electronics</td>
<td>59</td>
<td>62</td>
<td>62</td>
<td>46</td>
</tr>
<tr>
<td>Motorola Inc.</td>
<td>48</td>
<td>63</td>
<td>40</td>
<td>41</td>
</tr>
<tr>
<td>Research in Motion Ltd.</td>
<td>85</td>
<td>155</td>
<td>61</td>
<td>40</td>
</tr>
<tr>
<td>Samsung Electronics Co., Ltd.</td>
<td>46</td>
<td>49</td>
<td>46</td>
<td>43</td>
</tr>
</tbody>
</table>

Through our research, we find too often that supply chain leaders have exaggerated and oversold inventory improvement. A project-based approach has failed us as temporary improvement often leads to a misguided sense of permanency. The consumer electronics industry has largely bucked this trend simply because the speed at which the industry operates makes excess inventory obsolete at a much faster pace than other industries. The results for the industry are shown in table 7.
Two of the companies demonstrate single-digit inventory throughout the decade and little room for improvement. The remaining four have each reduced days of inventory (DOI) ranging from 6 days for Samsung to 115 days for Research in Motion. Although we see evidence of a trend headed in the right direction, there is clearly room for improvement. Due to the speed at which the supply chain moves, upwards of 40 days of inventory is still excessive for most consumer electronics companies.

**Complexity: Leading the Pack**

Complexity reigns in the modern supply chain. Not only should a supply chain be modeled as a complex system, but that system is composed of individual, but complementary, complex processes. Revenue per employee is one of our preferred complexity metrics as it grounds the discussion in a very basic metric that is meaningful across the entire enterprise.

Here again, consumer electronics companies have generally outperformed other industries over the past decade. We believe this is for several reasons. These include the rise of manufactured outsourcing as well as the implementation of Enterprise Resource Planning (ERP), Advanced Planning Systems (APS) and a more advanced understanding of what it means to be demand driven.

**Table 8. Revenue per Employee (K$) (2000-2011)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple Inc.</td>
<td>1062</td>
<td>566</td>
<td>968</td>
<td>1404</td>
</tr>
<tr>
<td>Dell Inc.</td>
<td>773</td>
<td>905</td>
<td>834</td>
<td>678</td>
</tr>
<tr>
<td>LG Electronics</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Unavailable</td>
</tr>
<tr>
<td>Motorola Inc.</td>
<td>428</td>
<td>252</td>
<td>538</td>
<td>405</td>
</tr>
<tr>
<td>Research in Motion Ltd.</td>
<td>617</td>
<td>157</td>
<td>401</td>
<td>949</td>
</tr>
<tr>
<td>Samsung Electronics Co., Ltd.</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Unavailable</td>
</tr>
</tbody>
</table>

Source: Supply Chain Insights LLC, Corporate Annual Reports 2000-2011

Although data is unavailable for two of the companies, three of the four with data exhibit increasing revenue per employee. The lone exception is Dell Inc. which has struggled in recent
years with the rise of mobile devices and tablets pushing down demand for traditional desktop and laptop configurations.

Manufactured outsourcing means that many employees involved in the more hands-on aspect of building products are no longer directly on the company’s payroll, leading to a decrease in internal employees along with climbing revenue values. The result is simple to calculate and presented above in stark terms: especially for Apple.

The implementation of technology and software tools to increase business possibilities has been a driver of revenue per employee since the go-go days of tech at the turn of the century. These tools have enabled the historic rise in revenue per employee, but their utility is limited. We believe future analytics tools are not based upon upgrades to existing systems, but rather a redefinition of the supply chain from the customer’s customer to the supplier’s supplier. In short, previous success is not a guarantee, or even an indicator, of future achievement.

Finally, we believe that the companies that will succeed in the future world of Supply Chain 2020 are those most attuned with consumers’ demand signals. So far, consumer electronics has done the best job of understanding those demand signals and building the supply chain around a pull-based model. This transition has been possible through improved utilization of new technologies, demand planning, structured and unstructured data and listening posts as well as tried-and-true techniques in the form of postponement and collaborative inventory and management with partners.

**Recommendations**

Consumer electronics has outpaced other industries in the evolution of supply chain practices. However, with the pace of change, the industry cannot rest on its laurels. We believe that due to the youth of supply chain management as a discipline, there are no “best practices”; instead, today, we believe that supply chains operate in a world of evolving practices.

Here are our recommendations to continue the evolution:

- **Past Success Does Not Guarantee Future Success.** The consumer electronics industry in general has had an astounding decade. However, we do not believe that past achievements equate perfectly to future success. The systems and processes that drove success on the Supply Chain Effective Frontier, to this point, are not the same ones that will enable the winners in the coming decade. The consumer electronics industry will have to get serious about the definition of outside-in processes based on advanced
analytics. More advice on that transition is available in the Supply Chain Insights report: The Art of the Possible.

- **Aggressively Build the Sustainable Supply Chain.** The consumer electronics value network is one of the most complicated and extensive in the industry. As legislation escalates for safe and secure supply chains, the industry will have to contend more and more with legislation like the recent “Disclosures on Conflict Materials in or Near the Democratic Republic of the Congo” in the Dodd-Frank Wall Street Reform and Consumer Protection Act. The shorter life cycles of consumer electronics, and the tightening of material supply, will necessitate the building of extensive networks for remanufacturing. In addition, as profit pressures mount and contract manufacturers struggle more and more with margin, the industry will have to form tough policies on fair labor and ethical factories. The pressures will increase, not decrease.

- **Margin Awareness.** For some consumer electronics companies, operating margin has seen a significant increase over the past decade. Large margins have historically enabled companies to neglect ownership for the extended supply chain. We would encourage consumer electronics companies to invest in the design and management of the entire supply chain to drive value.

- **Drive Orchestration Through Advanced Analytics.** Conventional APS, ERP and CRM systems are not sufficient to drive the next generation of productivity and cost opportunities. To drive progress, supply chain teams will have to get serious on the design of demand-driven and market-driven value network levers. This requires the building of outside-in processes, bidirectional flows in horizontal processes, and the improvement of demand and supply sensing. The primary levers for demand-driven and market-driven value networks are shown below. (For more on market-driven value networks, reference our recent report: Building Market-driven Value Networks.)

Figure 3. Orchestrating Market-driven Orchestration and Demand-shaping Levers

<table>
<thead>
<tr>
<th>Market-driven Orchestration Levers</th>
<th>Demand-shaping Levers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price to Price Orchestration</td>
<td>New Product Launch</td>
</tr>
<tr>
<td>Alternate Bill of Materials</td>
<td>Marketing</td>
</tr>
<tr>
<td>Alternate Sourcing</td>
<td>Sales Incentives</td>
</tr>
<tr>
<td>Change in Assortment</td>
<td>Trade Promotions</td>
</tr>
<tr>
<td>Orchestration of Product Mix (Incent products with less commodity variability)</td>
<td>Distributor Incentives</td>
</tr>
<tr>
<td>Changes in Demand Shaping Strategies</td>
<td>Assortment</td>
</tr>
<tr>
<td>Commodity Hedging</td>
<td>Price</td>
</tr>
<tr>
<td></td>
<td>Run-out of obsolescence or mark-down strategies</td>
</tr>
</tbody>
</table>
Conclusion

Consumer electronics has made the most of an extremely well-aligned decade. It is often classified by peers as the leading industry in terms of defining supply chain processes and maturity. The financial metrics indicate that the industry has experienced a very successful decade with high growth, increasing margin and revenue per employee, and declining inventory. We recommend using current successes to position for the future, which very well may see a harder path forward and an increase in complexity in the operating environment.
Appendix

Company Profiles

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple Inc.</td>
<td>NASDAQ: AAPL</td>
<td>108.2</td>
<td>60.4</td>
<td>USA (California)</td>
</tr>
<tr>
<td>Dell Inc.</td>
<td>NASDAQ: DELL</td>
<td>61.5</td>
<td>100.3</td>
<td>USA (Texas)</td>
</tr>
<tr>
<td>LG Electronics</td>
<td>LSE: LGLD</td>
<td>≈ 49.0</td>
<td>91.5</td>
<td>South Korea</td>
</tr>
<tr>
<td>Motorola Solutions, Inc.</td>
<td>NYSE: MSI</td>
<td>8.2</td>
<td>23.0</td>
<td>USA (Illinois)</td>
</tr>
<tr>
<td>Research in Motion Ltd.</td>
<td>NASDAQ: RIMM</td>
<td>19.9</td>
<td>17.5</td>
<td>Canada (Ontario)</td>
</tr>
<tr>
<td>Samsung Electronics Co., Ltd.</td>
<td>LSE: SMSN</td>
<td>≈ 143.1</td>
<td>102.0</td>
<td>South Korea</td>
</tr>
</tbody>
</table>

Source: Supply Chain Insights LLC, Corporate Annual Reports 2011

Other Reports in This Series:

Supply Chain Metrics That Matter: A Focus on Retail
Published by Supply Chain Insights in August 2012.

Supply Chain Metrics That Matter: A Focus on Consumer Products
Published by Supply Chain Insights in September 2012.

Supply Chain Metrics That Matter: A Focus on the Chemical Industry
Published by Supply Chain Insights in November 2012

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Published by Supply Chain Insights in February 2013
About Supply Chain Insights LLC

Supply Chain Insights LLC is a research and advisory firm intent on reinventing the analyst model. The services of the company are designed to help supply chain teams improve value-based outcomes through research-based Advisory Services, a dedicated Supply Chain Community and public/in-house training. Supply Chain Insights is focused on delivering **independent, actionable and objective advice for supply chain leaders**. A company dedicated to research, turn to us when you want the latest insights on supply chain trends, technologies to know and metrics that matter.

About Abby Mayer

Abby Mayer (twitter ID [@indexgirl](https://twitter.com/indexgirl)), Research Associate, is one of the original members of the Supply Chain Insights LLC team. She is also the author of the newly-founded blog, Supply Chain Index. Her supply chain interests include connecting financial performance and supply chain excellence, as well as talent management issues, and emerging markets.

Abby has a B.A. in International Politics and Economics from Middlebury College and a M.S. in International Supply Chain Management from Plymouth University in the United Kingdom. She has also completed a thru-hike of Vermont's 272 mile Long Trail, the oldest long distance hiking trail in the United States. As part of the planning and food prep process, she became interested in supply chain management when she was asked to predict hunger pangs for the entire three-week trip before departure. If that isn’t advanced demand planning, what is?!?!