2021 Semiconductor Market Analysis & Outlook

SIA Roundtable

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September 28, 2021
Where Are We Going?

- Status As We Look Toward Q4 2021
- Driving Demand
- The Changing Workplace
- What About the Electronics & Components Supply Chain?
Status As We Look Toward Q4 2021
Electronic Component Revenue Growth

Source: World Semiconductor Trade Statistics (WSTS), World Passive Trade Statistics (WPTS)

Semiconductor Revenue Growth Cycle

- Quarter-over-Quarter growth surges to highest level in over a decade
- Pause or peak in Q-over-Q growth?
- Annual revenue cycle appears to have legs through 2022
- Annual revenue growth breaks positive in August 2020
- Strong demand and technology drivers
- Boost from shift in consumer spending? Durable?

Source – WSTS
Strong Start to Current Cycle

Most cycles last about four years

Note: Low point in current cycle is -12.7 in Nov ‘19
ECIA North America Sales Sentiment Survey Trends

North American Sales Performance Compared to Prior Quarter

Q3 - EM / Connectors
Q4 - EM / Connectors
Q3 - Passives
Q4 - Passives
Q3 - Semiconductors
Q4 - Semiconductors
Q3 - Overall Average
Q4 - Overall Average

Source: ECIA Electronic Component Sales Trends Survey

ECIA North America Sales Sentiment Survey Trends

OVERALL MARKET
Market Status and Outlook

Source: ECIA Electronic Component Sales Trends Survey

Driving Demand
Best Industries Getting Better, Worst Getting Worse

Average economic profit by industry, $ billion (n = 2,562)

- Semiconductors
- Pharmaceuticals
- Personal products
- Software
- Technology hardware
- Media
- Telecommunication
- Healthcare equipment
- Consumer durables/apparel
- Consumer services
- Food/beverage/tobacco
- Retailing
- Professional services
- Food retailing
- Automobiles
- Materials

Total change

Top 6 industries
- Transportation
- Capital goods
- Insurance
- Banks
- Diversified financial
- Utilities

Middle industries

Bottom 6 industries
- Energy

Largest nonfinancial companies by revenue in 2018 with data for 2003–18 available. Source: Corporate Performance Analytics by McKinsey

McKinsey & Company


Electronic Components Industry Association
Data Creation, Communication, Storage & Analysis

COVID19 has accelerated the fourth industrial revolution, expanding the digitization of human interaction, e-commerce, on-line education and remote work.

“+25 million terabytes of data are being created every day and 90% of all data in history has been generated in the last two years, 80% of that is unstructured, and <2% is being analyzed.”

Lip-Bu Tan, CEO Cadence
Americas Technology Sales Growth Driver Average Ratings
2021

- Electric Vehicles (EV / HEV)
- 5G
- Internet of Things (IoT)
- Green/Renewable Energy
- Smart Grid / Smart Meters
- Energy-Efficient Lighting
- Autonomous Vehicles
- Artificial Intelligence (AI)
- Virtual/Augmented Reality (VR/AR)
- Active Matrix Micro LED TVs
- Foldable Displays

Average Rating (Range 0 to 10)
The Changing Workplace
Expected Timeline for Employee Return

Percent of Employees Returned to Company Facilities - Manufacturer

Currently  | September 2021  | October 2021  | Q4 2021  | Q1 2022  | Q2 2022 and Beyond
---|---|---|---|---|---
100% | 90% | 75% | 50% | 25% | 0%


Electronic Components Industry Association
What About the Electronics & Components Supply Chain?

~ Worldwide / Americas~
Supply Chain Disruptors

- Climate
- Politics
- Shipping
- Pandemic
- Trade Wars
- Raw Materials
- Labor Scarcity
- Growing Demand


Electronic Components Industry Association
North America Lead Times – Record Shattering

Average Lead Time In Days
Semiconductor Devices

CONNECT. INFLUENCE. OPTIMIZE.

ECIA
Electronic Components Industry Association
Worldwide Semiconductor Unit Shipments

Source: WSTS

Increase From: | Previous Peak | Recovery Start |
---|---|---|
Discretes | 8.4% | 34.0% |
Analog ICs | 15.7% | 40.6% |
Logic ICs | 27.4% | 49.1% |
Worldwide Annualized Semiconductor Revenue

Growth Swings
• Jun ‘16 to Nov ‘18
  o 29 Months
  o +$146B; +45%
• Nov ‘18 to Nov ‘19
  o 12 Months
  o -$60B; -13%
• Nov ‘19 to Jul ‘21
  o 20 Months
  o +$88B; +21%

^Volatility = ^Risk
^Risk = ^Required ROI

Source: WSTS

Shipping and Logistics Challenges
Supply Chain Challenges Abound

One example – Shenzhen Port a Major Bottleneck
Pressure At Every Stage

Overwhelming Demand
Total Intermodal Container Traffic | Top Five US Ports

- Sea Shipment
- Air Shipment
- Railroad
- Trucking
- Ports
- Storage

International air travel 89% down, domestic falling, though cargo strong
Cargo tonne km (CTK) and passenger km (RPK), Jan 2020 = 100


Source: IATA Economics using data from IATA Monthly Statistics. Data is adjusted for seasonality.
Thank you!

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