A WORLD OF BEST PRACTICES

FOR THE ELECTRONIC COMPONENTS INDUSTRY

2021

GIPC

ecia
Electronic Components Industry Association

Agenda:

1. ECIA Update – David Loftus, ECIA President and CEO
2. Top 50 Distributors Listing – Dale Ford, ECIA Chief Analyst
3. Design Registration Study Phase 2 – Don Elario
4. Workplace – Post Pandemic – How is it changing? Russ Dzielak
5. **P**roduct **C**hange **N**otification – Technology Advancements – Don E.
6. Environmental Compliance Advisors – Don E.
7. PIP 3.1, CA Prop 65, SCIP Database – Don E.
8. Growing the SME Pool
9. GIPC Succession Planning

**Global Industry
Practices Committee**

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Electronic Components Industry Association

ECIA

with

David Loftus

ECIA President and CEO

Global Industry Practices Committee

Top 50 Distributors Listing

with

Dale Ford

ECIA Chief Analyst

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Global Industry
Practices Committee
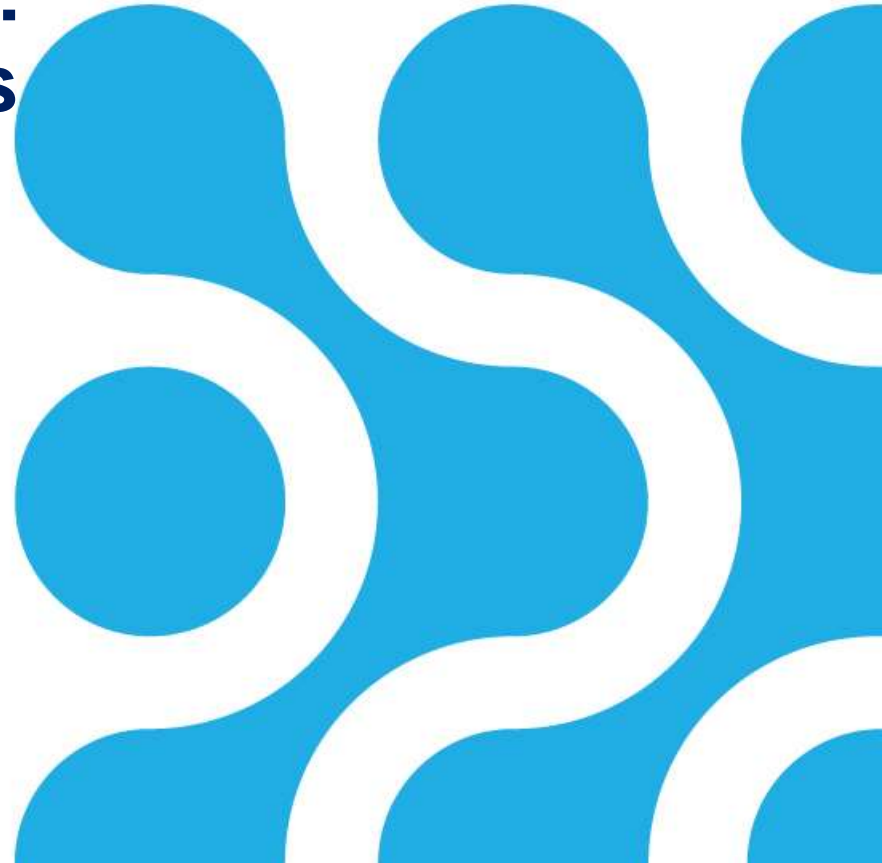
Top 50 North America Authorized Distributors - 2020
ECIA / Electronics Sourcing Partnership

ELECTRONICS sourcing

MAY 2021

TOP 50 NORTH AMERICA DISTRIBUTORS REPORT 2021

DISTRIBUTION STABILIZES SUPPLY CHAIN

SUPPLY CHAIN WINS AND OPPORTUNITIES | TOP 50 DISTRIBUTOR SURVEY RESULTS

Access to 11.8 Million+ Products Online

DIGIKEY.COM
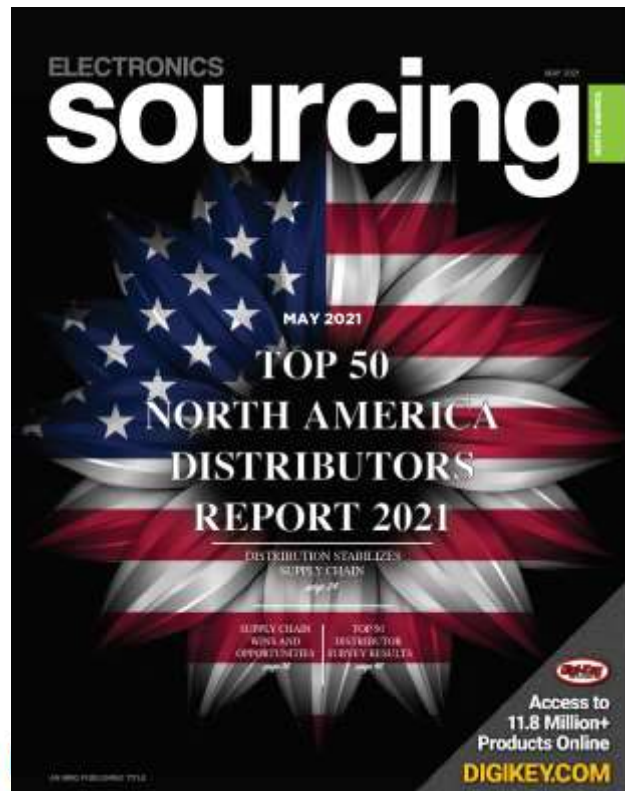
Distribution minimizes 2020 losses as it stabilizes supply chain

Amid pandemic turbulence North American distributors see revenues slide for second straight year but contain decline to -5.9% in volatile supply chain environment

The Top 50 North America Authorized Distributors

Rank 2020	Rank 2019	Company	2020 North America ($ Millions)	Growth 2020/2019 (%)	Share of Top 50 Total Sales (%)	North America Sales Share of Worldwide (%)	Type*	Active	Passive	Electro	Interconnect	Computer Products	Other	Total Employees	Sales per Employee ($ Millions)
								Sales Breakdown by Percent							
1	1	Arrow Electronics, Inc. (2)	6,183.1	-13.7	28.84	30.2	1	76.0	3.4	2.4	8.3	8.0	2.0	5,065	1.22
2	2	Avnet (includes Farnell) (2)	4,660.1	-6.2	21.74	26.1	1	76.0	5.1	3.4	11.5	2.5	1.5	3,869	1.20
3	3	Future Electronics (1)	2,000.0	-5.9	9.33	39.2	1	70.0	7.2	5.1	17.7	–	–	2,725	0.73
4	4	Digi-Key	1,700.1	-3.7	7.93	59.2	3	34.0	19.8	11.0	24.1	3.2	7.9	3,760	0.45
5	5	TTI	1,450.0	0.0	6.76	50.1	2	–	48.4	5.5	46.1	–	–	1,906	0.76
6	6	Mouser Electronics	942.5	7.2	4.40	46.4	3	45.0	17.0	11.0	22.0	–	5.0	1,850	0.51
7	7	DAC / Heilind	796.0	-4.4	3.71	82.7	2	–	–	15.8	84.2	–	–	735	1.08
8	8	Allied Electronics/RS Components	634.0	-5.9	2.96	26.5	1	0.7	0.8	33.0	22.1	8.7	34.7	800	0.79
9	9	Sager	313.0	-2.2	1.46	100.0	2	–	–	14.0	22.0	–	64.0	377	0.83
10	10	Master Electronics (1)	285.0	11.3	1.33	83.3	1	73.0	4.0	6.0	9.0	5.0	3.0	425	0.67

Industry growth drivers – Beyond technology

Securing the supply chain becomes a top priority

Supply chain imbalances and extending lead times

Shipping, logistics and freight – oh my!

The value of distribution highlighted

Reshaping markets in the near and long-term

Digital technology – Supply Chain wins and opportunities

Transformations in workplaces and workforce support

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The Top 50

Rank 2020	Rank 2019	Company	2020 North America ($ Millions)
1	1	Arrow Electronics, Inc. (2)	6,183.1
2	2	Avnet (Includes Farnell) (2)	4,660.1
3	3	Future Electronics (1)	2,000.0
4	4	Digi-Key	1,700.1
5	5	TTI	1,450.0
6	6	Mouser Electronics	942.6
7	7	DAC / Heilind	796.0
8	8	Allied Electronics/RS Components	634.0
9	9	Sager	313.0
10	10	Master Electronics (1)	285.0
11	11	Bisco Industries, Inc.	218.8
12	14	WPG Americas Inc.	200.0
13	12	Powell Electronics	190.0
14	13	PEI-Genesis (3)	180.0
15	15	Electro Enterprises	146.8
16	19	BJG Electronics, Inc.	123.6
17	18	RFMW	112.0
18	16	Carlton-Bates	100.0
19	17	Hughes Peters	90.0
20	20	Flame Enterprises	77.3
21	21	Steven Engineering	75.1
22	22	Peerless Electronics (1)	71.5
23	23	NEP Electronics (1)	65.8
24	24	Marsh Electronics, Inc.	58.5
25	25	Richardson Electronics (2)	58.2
26	26	Symmetry Electronics	55.0
27	32	Area51 Electronics	46.6
28	28	Edge Electronics (1)	46.2
29	27	SMD, Inc.	38.8
30	31	Falcon Electronics	38.5
31	29	Agility EMS (Gopher Electronics) (1)	36.5
32	30	Fuses Unlimited (1)	34.8
33	34	CDM Electronics (1)	34.0
34	35	Brevan Electronics	32.1
35	33	Beyond Components (1)	29.1
36	39	Diverse Electronics	26.3
37	37	Powertech Controls (1)	25.2
38	41	NASCO Aerospace & Electronics	25.0
39	36	PCX (1)	25.0
40	38	Masline Electronics (1)	24.7
41	47	Bluff City Electronics	22.7
42	40	Cumberland Electronics (1)	22.1
43	49	Flip Electronics	21.3
44	44	Microwave Components, LLC	19.5
45	42	Kensington Electronics	19.0
46	43	PUI (Projections Unlimited, Inc.)	18.8
47	45	Benchmark Connector Corporation	18.0
48	48	Sherburn	16.9
49	46	March Electronics (1)	15.8
50	50	East Coast Microwave (1)	14.8
TOTAL TOP 50			**21,438**

(1) ECIA Estimate for Total North America Sales and Sales Breakdown • (2) ECIA Estimate for Sales Breakdown • (3) ECIA Estimate for Total North America Sales
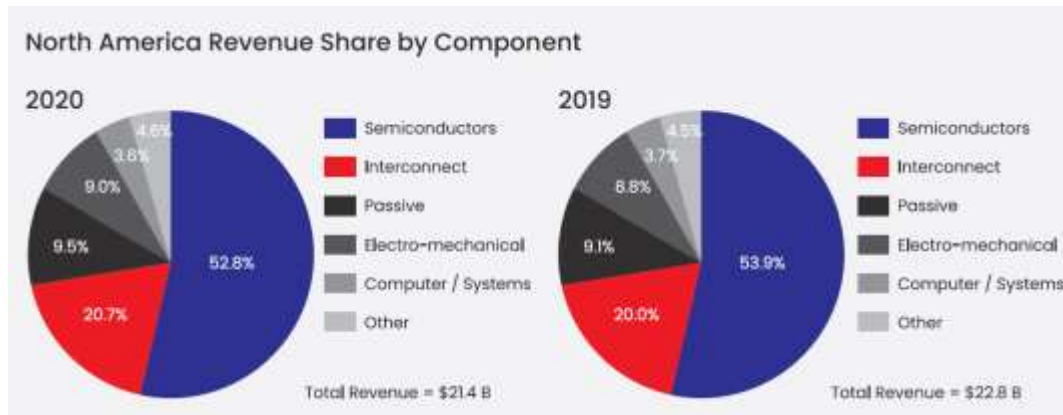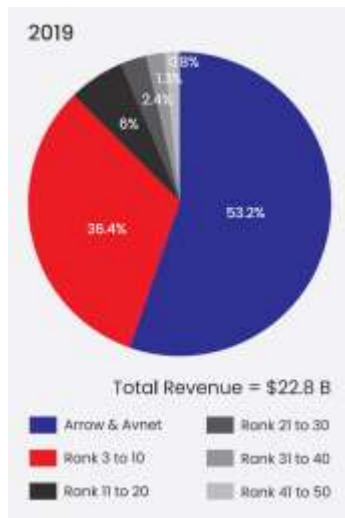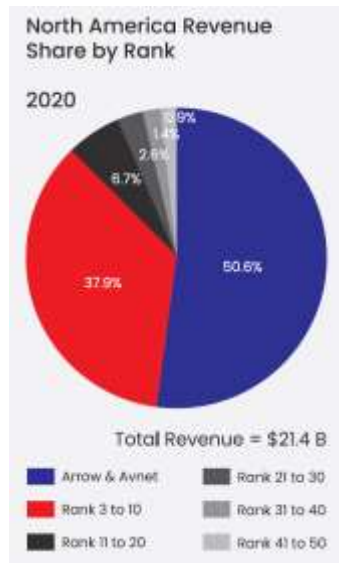
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Distribution Revenue Growth and Geographic Share

Top 50 Total Revenue Share by Region – 2020

- Americas 27.3%
- EMEA 20.3%
- Asia 52.4%

Total Revenue = $78.6 B

Top 50 Total Revenue Share by Region – 2019

- Americas 30.3%
- EMEA 22.6%
- Asia 47.2%

Total Revenue = $75.3 B

Total Revenue of Top 50 Authorized North America Distributors

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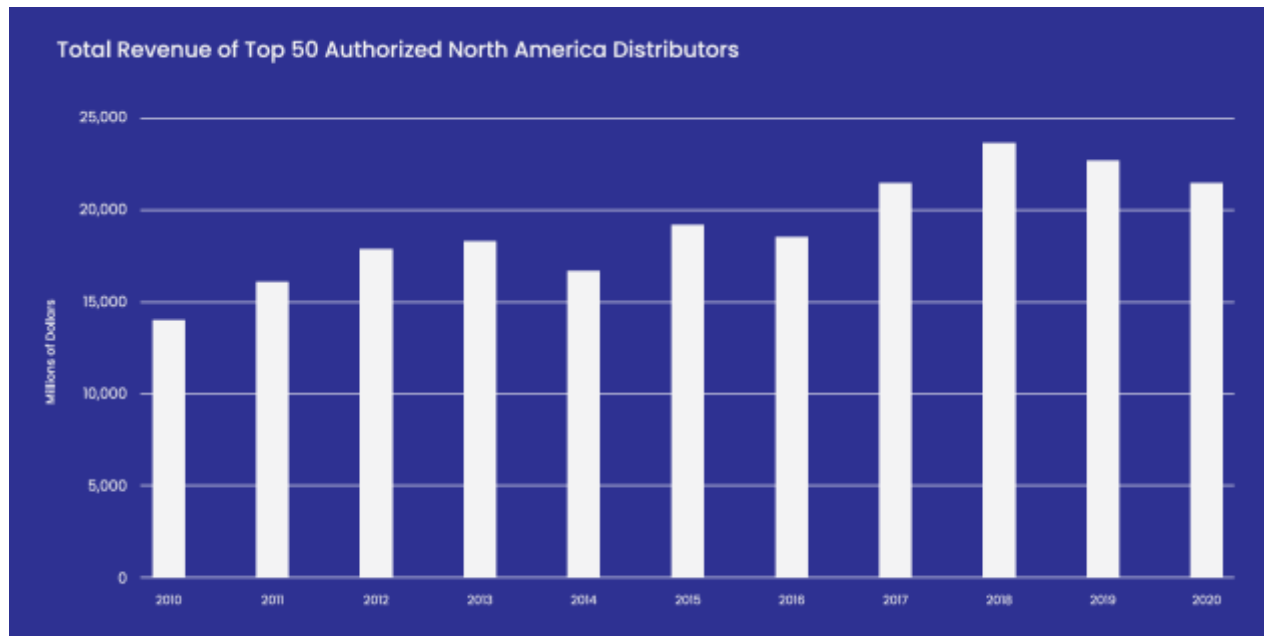
Revenue Share by Component and Rank

North America Revenue Share by Rank

2020

50.6%
37.9%
8.7%
2.6%
1.4%
0.9%

Total Revenue = $21.4 B

- Arrow & Avnet
- Rank 3 to 10
- Rank 11 to 20
- Rank 21 to 30
- Rank 31 to 40
- Rank 41 to 50

2019

53.2%
36.4%
6%
2.4%
1.3%
0.8%

Total Revenue = $22.8 B

- Arrow & Avnet
- Rank 3 to 10
- Rank 11 to 20
- Rank 21 to 30
- Rank 31 to 40
- Rank 41 to 50

North America Revenue Share by Component

2020

52.8%
20.7%
9.5%
9.0%
3.6%
4.6%

- Semiconductors
- Interconnect
- Passive
- Electro-mechanical
- Computer / Systems
- Other

Total Revenue = $21.4 B

2019

53.9%
20.0%
9.1%
8.8%
3.7%
4.5%

- Semiconductors
- Interconnect
- Passive
- Electro-mechanical
- Computer / Systems
- Other

Total Revenue = $22.8 B

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Revenue by Customer and End Market

North America Revenue by End Market – 2020

North America Customer Revenue Share – 2020

- OEM
- EMS/ODM
- Other

Total Revenue = $21.4 B

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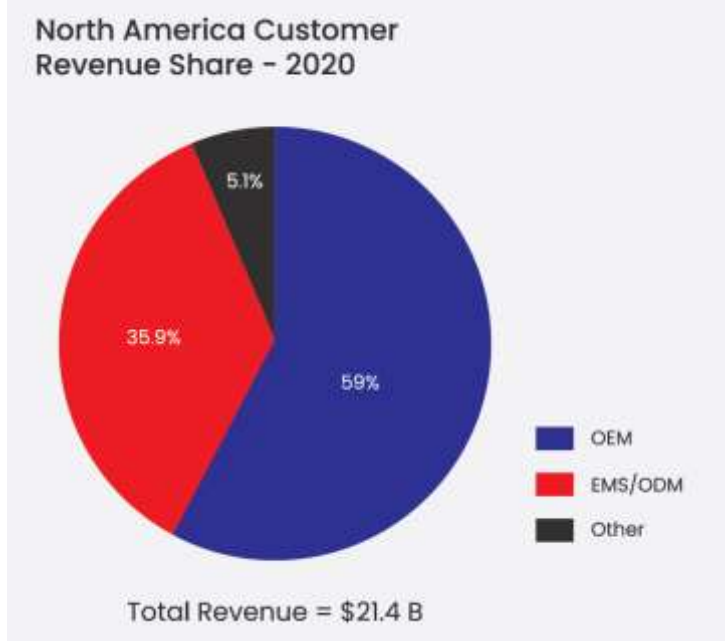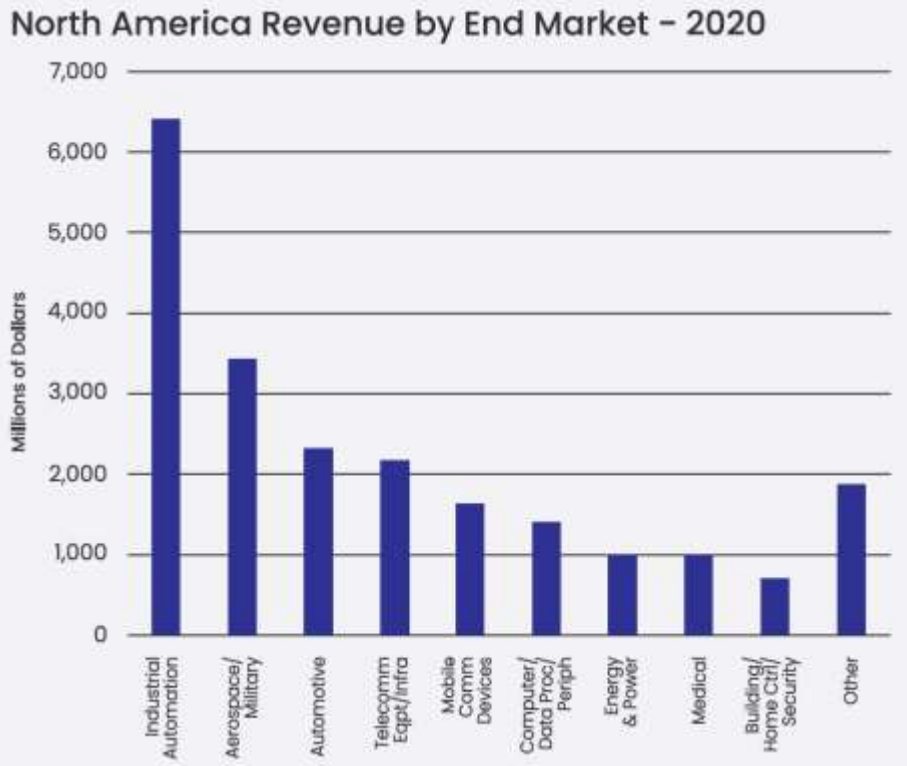
Electronic Component Distribution Growth Drivers

2021 Technology Sales Growth Driver Average Ratings

Average Rating (Range 0 to 10)

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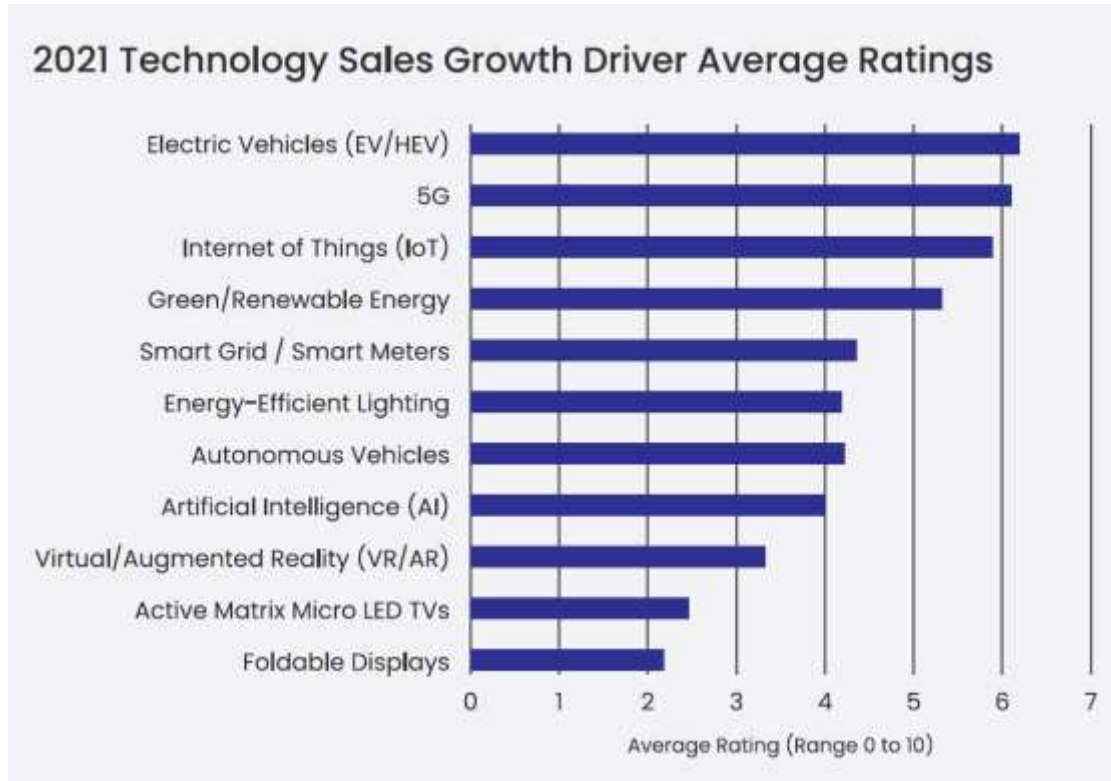
Top 25/50 Worldwide Authorized Distributors - 2020
Next ECIA / Electronics Sourcing Partnership

- Opportunity to leverage research from North America Top 50

- Planned publication in advance of EDS in Las Vegas

- Fills need for more complete worldwide view of distribution

- Top distributor research supports DTAM research efforts

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Sizing Americas DTAM by Region

~ Developing Research ~

Americas DTAM research initiatives

Americas DTAM segmented by major regions – 2020

- Effort to develop entirely new research area – builds on top 50 distributor research
  - Previous data developed by ERA many years ago and based primarily on top level estimates

- Regional data based on:
  - Americas Total DTAM estimate for major component markets from Top 50 research
  - Survey input analysis (12 to18 data points for every market in every region)
  - Comparison with Budde Marketing aggregated data for regions (mapped by zip codes)
  - Final estimates based on data sources above and balancing

- Decision by Board of Directors to deliver report to all ECIA members
  - Desire to promote visibility and enhance/improve future research

- Active feedback and discussions already taking place

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Western Canada

Eastern Canada

Manitoba   Ontario

New England

Upstate New York

North

Metro New York

Pacific Northwest

Rocky Mountain

South Jersey

Norcal

Central   Ohio Valley

Socal

Midwest

Mid Atlantic

Southwest

Southeast

South Central

Florida
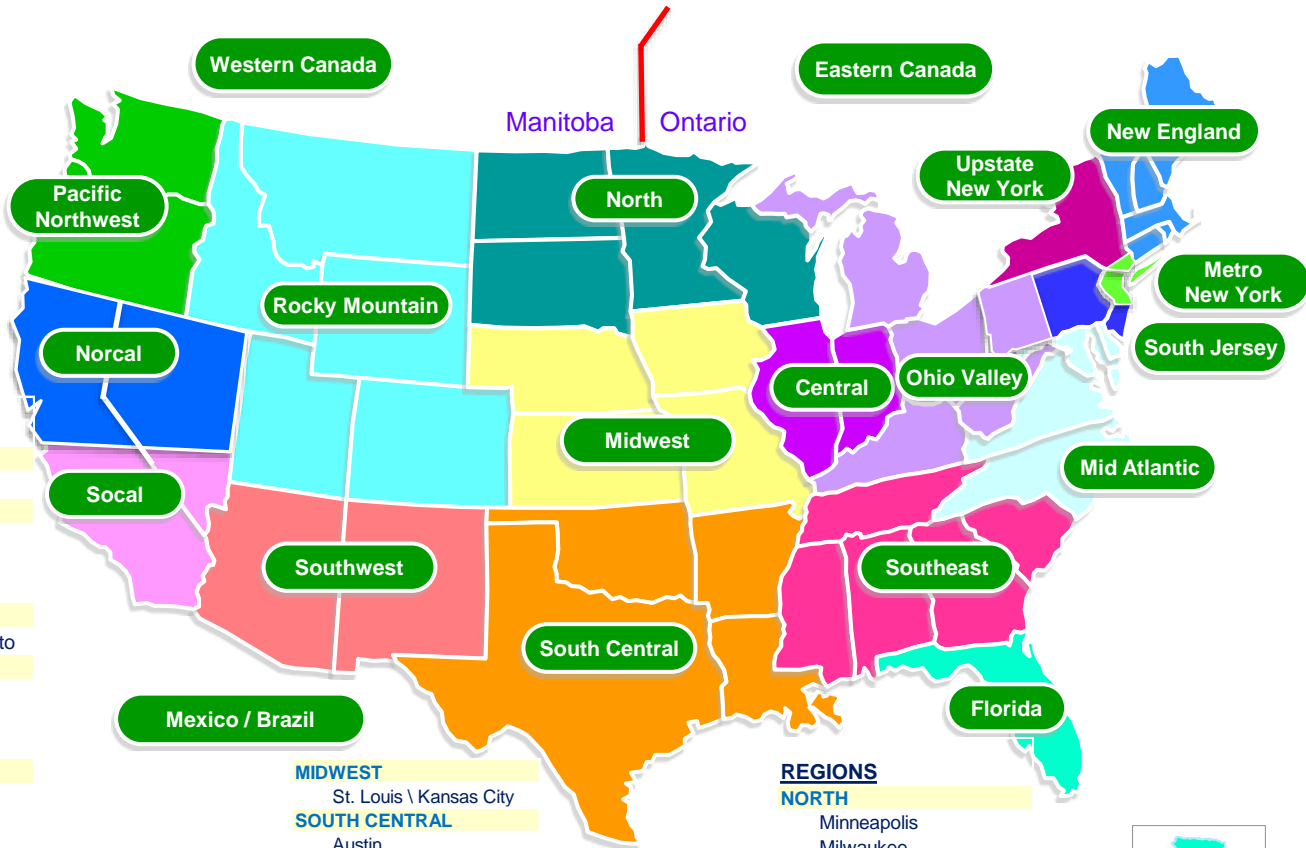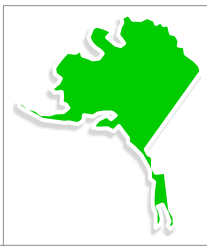
Mexico / Brazil

REGIONS

SOUTHWEST
Phoenix

SOCAL
Irvine
Los Angeles
San Diego

NORCAL
San Jose / Sacramento

PACIFIC NORTHWEST
Portland
Seattle

EASTERN CANADA
Ottawa
Montreal
Toronto

WESTERN CANADA
Vancouver / Calgary

MEXICO \ BRAZIL

MIDWEST
St. Louis \ Kansas City

SOUTH CENTRAL
Austin
Dallas \ Tulsa
Houston

ROCKY MOUNTAIN
Denver
Salt Lake City

REGIONS

NORTH
Minneapolis
Milwaukee

CENTRAL
Chicago

OHIO VALLEY
Cleveland
Dayton
Detroit
Indianapolis
Pittsburg

REGIONS

NEW ENGLAND
Boston
Connecticut

UPSTATE NEW YORK
Rochester

METRO NEW YORK
Long Island
North New Jersey

SOUTH JERSEY
South New Jersey

MID ATLANTIC
Baltimore / Washington
Raleigh

SOUTHEAST
Atlanta
Huntsville

FLORIDA
Florida
Puerto Rico

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# Americas DTAM Data Segmented by Major Regions

Americas Annual DTAM Share by Geographic Region for 2020

	Region	Semi-conductors	Passives	Interconnect/ Connector	Electro-Mechanical	Total DTAM
A	New England	-	-	-	-	-
B	Upstate New York	-	-	-	-	-
C	Metro New York	-	-	-	-	-
D	South Jersey	-	-	-	-	-
E	Mid Atlantic	-	-	-	-	-
F	Southeast	-	-	-	-	-
G	Florida	-	-	-	-	-
H	North	-	-	-	-	-
I	Central	-	-	-	-	-
J	Ohio Valley	-	-	-	-	-
K	Midwest	-	-	-	-	-
L	South Central	-	-	-	-	-
M	Rocky Mountain	-	-	-	-	-
N	Southwest	-	-	-	-	-
O	Socal	-	-	-	-	-
P	Norcal	-	-	-	-	-
Q	Pacific Northwest	-	-	-	-	-
R	Eastern Canada	-	-	-	-	-
S	Western Canada	-	-	-	-	-
T	Mexico \ Brazil	-	-	-	-	-
	TOTAL (FIXED)	11,350.0	2,065.0	4,450.0	2,090.0	19,955.0

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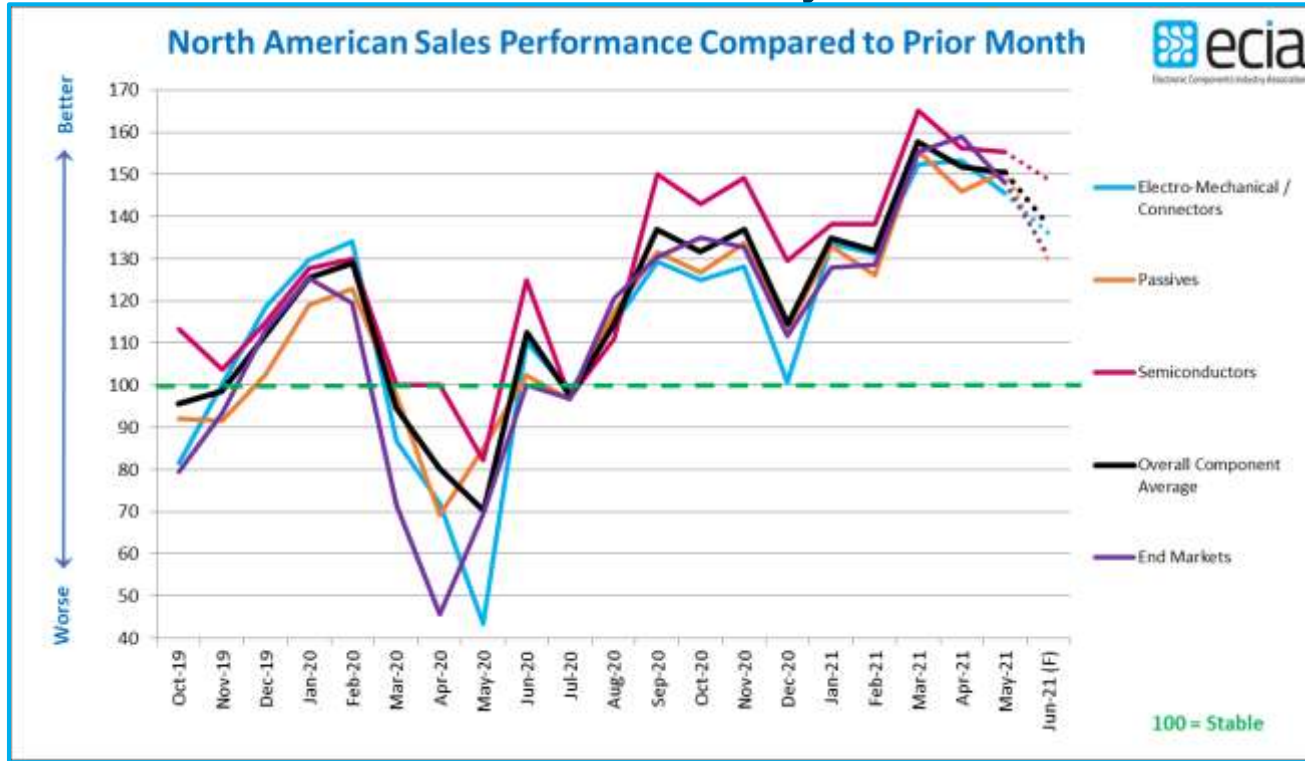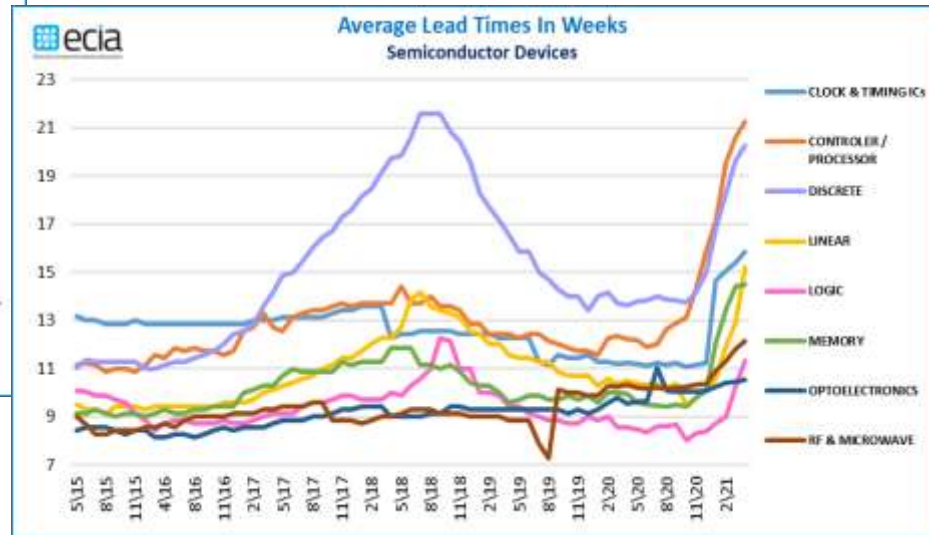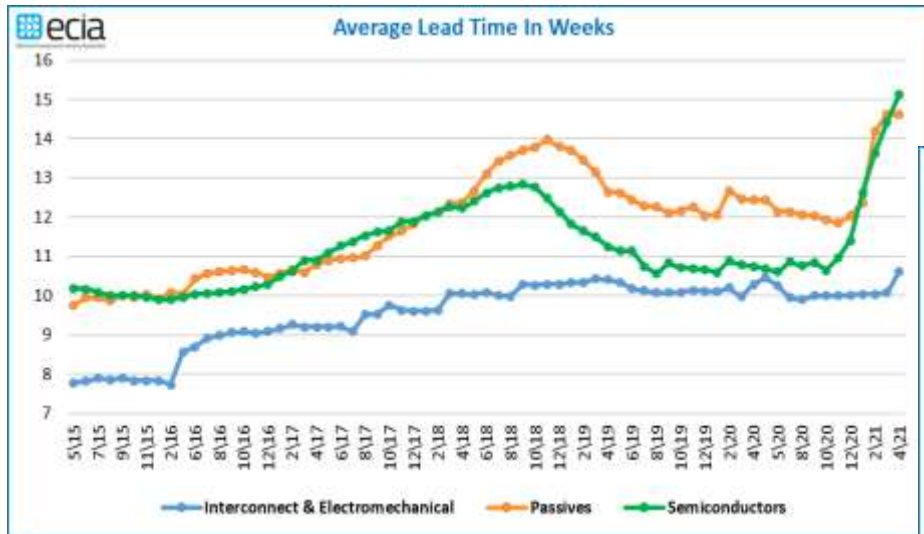
Market Status

~ Update ~
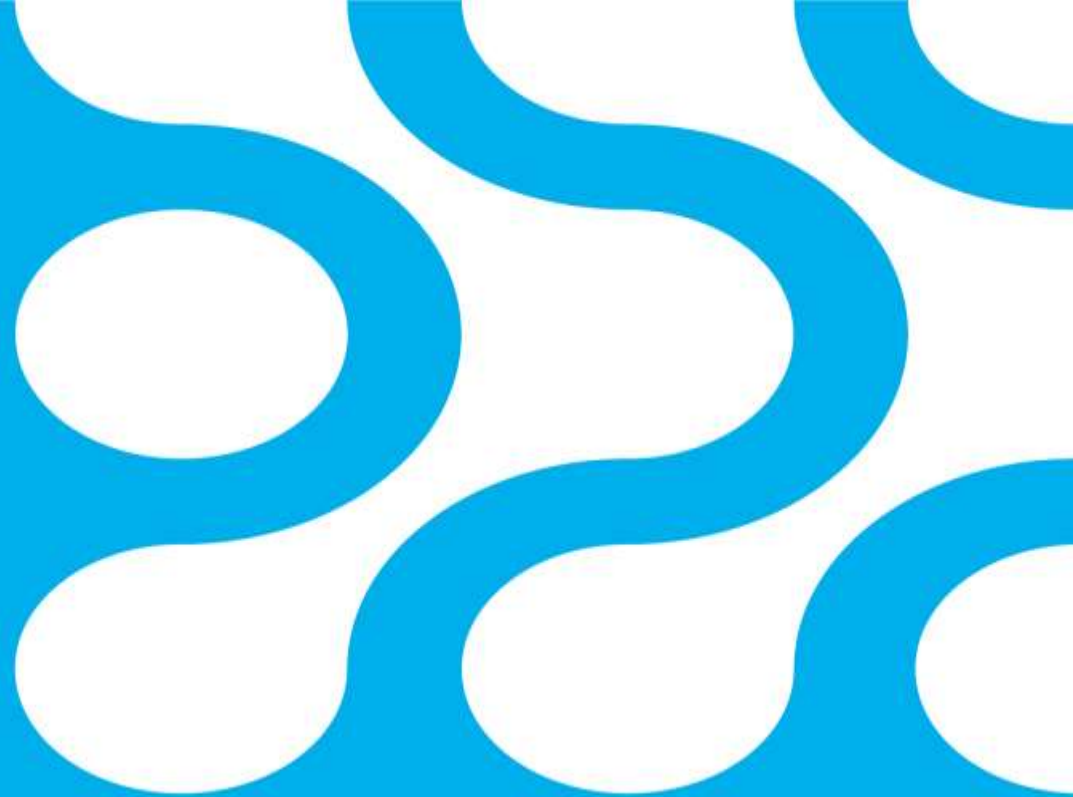
North America Sentiment Survey Trends

Source: ECIA Electronic Component Sales Trends Survey

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Record Setting Lead Time Pressure

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Record Setting Lead Time Pressure

Semiconductor Revenue Growth Cycle

- Quarter-over-Quarter growth surges toward 20% with no sign of weakness

- Annual revenue cycle trends up starting September 2019

- Annual revenue growth breaks positive in August 2020

- Memory pricing slump results in 6 month pause in growth trend

- Strong pent-up demand and technology drivers

- Accelerating growth in 2021

Worldwide Semiconductor Revenue Growth

Annual Growth — Qtr-over-Qtr Growth

Source – WSTS

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But What About the Americas?

- Counter-cyclical trend downward starting in summer 2020

- High memory mix in Americas contributes to weakness

- Automotive limitations also playing a role?

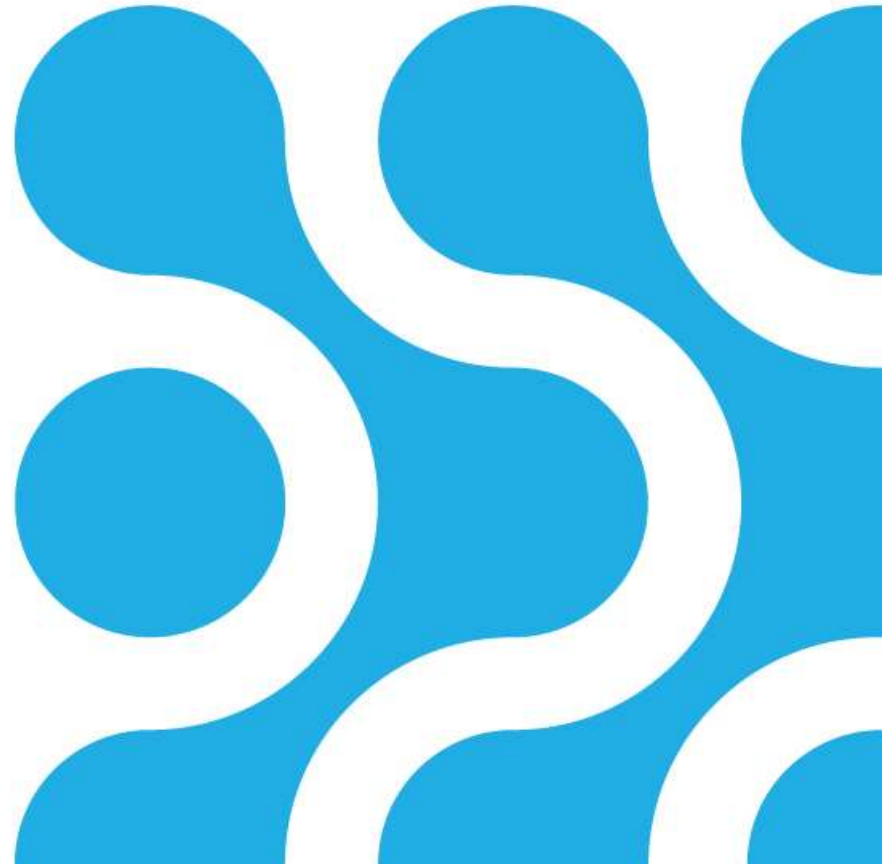- Slight indication of bottoming out in last month of data

Source – WSTS

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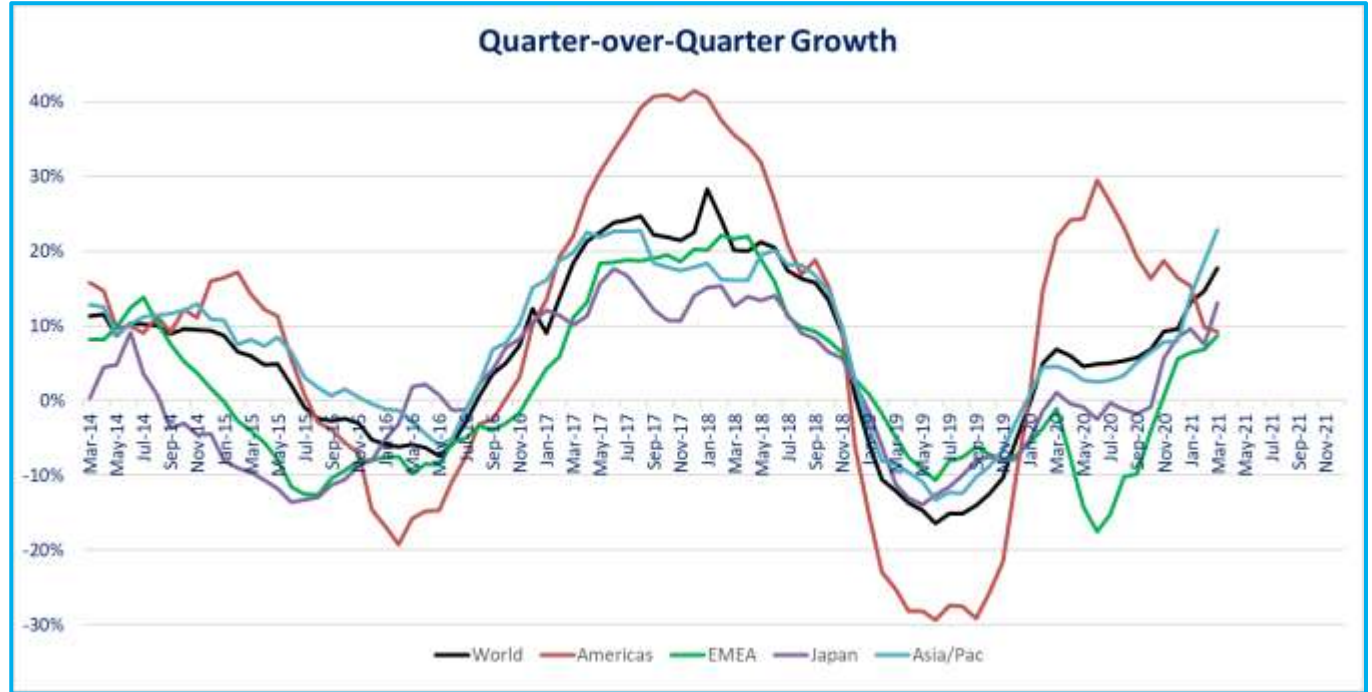
Thank you!

Dale Ford – Chief Analyst
dford@ecianow.org

Design Registration Study
Phase 2
Desired – Future State

Don Elario

VP Industry Practice

Electronic Components Industry Association

Global Industry
Practices Committee

Phase 2 SME Work Group

Sales Marketing

- Vienna Ding – ON Semiconductor
- Nicole Gruttadaurio – Luscombe Eng
- Corban Graham – Maxim Integrated
- Neil Hutchinson – Murata
- Joyce Nardone – Allegro
- Philippe Vauclair – Future
- Bob Ford – Trek-Tech

Sales and Marketing representatives who have worked with the design registration process in the field. Mix of knowledge with semiconductors, inter-connect and electro-mechanical and passive.

Business Operations

- Josh Kovalik – TE Connectivity
- Jaime Sharp – AVX
- Kaye Eicher – Vishay
- Chris Reginato – Avnet NA
- Simone Blumoser – EBV Avnet EU
- Josh Levine – RFMW
- Mark Howard – TTI
- Tobi Cornell – Kruvand

Business operations representatives who have both internal / external experience with process steps in the design registration process. Mix of knowledge with semiconductors, inter-connect and electro-mechanical and passive.
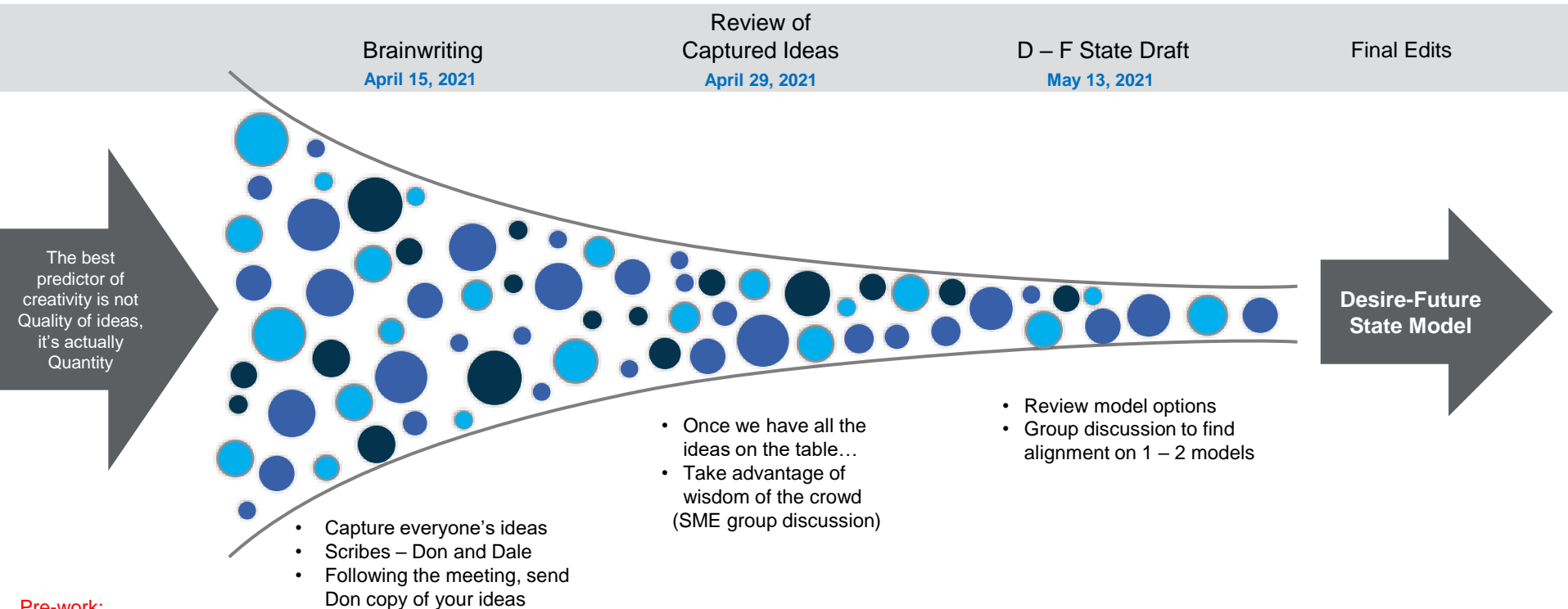
IT – Systems Development

- Manufacturer
- Distributor
- Additional individuals will be utilized on an as needed basis.

IT, systems development, technical representatives who have worked with and understanding the design registration process flow and system requirements. Knowledge of trending technologies that could support modernization.

- All subject matter experts should be open minded, creative, out-of-the-box thinkers, good listeners, ability to find compromise and have a proven track record of displaying these skills. Work group chemistry will be important to our success.

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Brainwriting	Review of Captured Ideas	D – F State Draft	Final Edits
April 15, 2021	April 29, 2021	May 13, 2021	

The best predictor of creativity is not Quality of ideas, it's actually Quantity

Desire-Future State Model

- Once we have all the ideas on the table…
- Take advantage of wisdom of the crowd (SME group discussion)

- Review model options
- Group discussion to find alignment on 1 – 2 models

- Capture everyone's ideas
- Scribes – Don and Dale
- Following the meeting, send Don copy of your ideas

Pre-work:
- Watch Adam Grant Video
- Let the work group come-up with ideas separately
- Write down 10-20 ideas for April 15 call

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API

What is an API?

Application Programming Interface (API)

A means of communication
- App to app
- Automated

A description of the communication methods allowed
- Requesting information
- Sending information
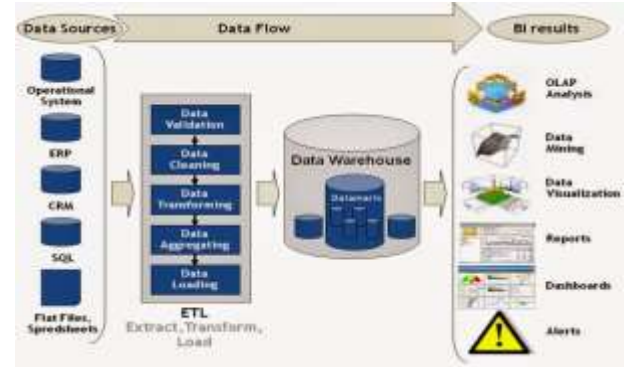- Updating information
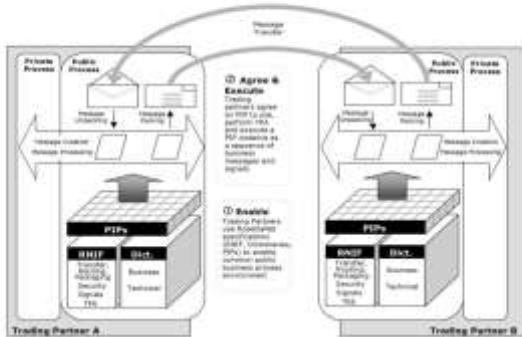
The mechanisms supporting those interactions

salesforce

28/34

ETL

NEURAL

Our Solutions
Lead The World In
Artificial Intelligence
Excellence.
Work(s) with SAP, Epic, Oracle,
Siemens, QAD, to name a few.
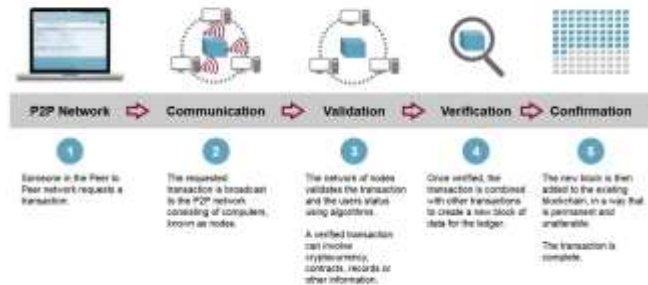We integrate with ERP, EHR, MRP, PLM,
HRM, MES, and CRM systems.

RosettaNet 구현을 위한 RNIF 규격

Blockchain Process Steps

P2P Network ⇒ Communication ⇒ Validation ⇒ Verification ⇒ Confirmation

IBM BLOCKCHAIN

Blockchain

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Design Registration Roadmap

2020

Q1 — **Introduction**
Manufacturing Council Discussions
Council Task Team
Scoping Document

Q2 — **Structure**
ECIA, GEDA, ERA
Executive Steering Committee
SME Work Group & Launch

Q3 — **Framework**
In/Out of Scope – Current State
Survey Questions
Part-1 Survey

Q4 — **Phase 1 End**
Part-2 Survey
Deliverables:
    Master Index – Survey Results
    Current State Assessment
    Executive Summary

2021

Q1 — **Phase 2 Start**
Deliverable Review, Publication
Adjustments to SME Work Group
Desired – Future State Model

Q2 — **Research**
D – F State Compatibility with
Trending Technologies

Q3 — **Research Cont'd**
D – F State Compatibility with
Trending Technologies

Q4 — **Phase 2 End**
Deliverable:
    D – F State Document
    Research Document
    Identify and display pros/cons
    on trending technologies.

2022

Q1 — **Phase 3**
Implementation

Q2

Q3

Q4

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Workplace – Post Pandemic
How is it changing?

Russ Dzielak

Director of Channel & Key Accounts,
Phoenix Contact

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Sales Interacting with Business Partners

and Customers during a Pandemic

has evolved to…

Workplace – Post Pandemic

How is it Changing?

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Sales Interacting with Business Partners and Customers during a Pandemic

Project Objective:

To provide areas for consideration and best practices for how manufacturers, distributors and manufacturer's representatives in the electronic component industry can safely and effectively adapt their selling organizations in response to the Covid-19 pandemic using a combination of remote customer engagement policies and strategies along with guidance regarding face to face selling activities and other external stakeholder meetings.

Work Group:

AVX
Catalyst Unity Solutions
Phoenix Contact
Sager Electric
TTI

Project Deliverables:

1. Best practices document highlighting "areas for consideration" published in **June 2020**

2. Work group continues to meet periodically to review and monitor the pandemic and ever-changing guidelines

3. Work group will determine the best time to publish a follow-up document

April			May			June – Ongoing…	

**Project Timeline
2020**

❑ Evolution of the working group towards broader Covid related disruption topics

❑ Impacts on shared business experiences range from:

- Return to work/office/field schedules
- Customer engagement protocols
- Observed impacts on productivity
- New challenges being faced by selling organizations
- And many more…

❑ Current plans include publishing a follow up document on Covid impacts within selling organizations

❑ Expanding the working group to broaden input and perspective

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PCN
(Product Change Notification)
Technology Advancements

Don Elario

VP Industry Practice

**Global Industry
Practices Committee**

ECIA Names GIPC Environmental Compliance Advisors

Atlanta – ECIA is pleased to announce that Carol Parnell, Littelfuse and Dan Carey, Farnell have been named the environmental compliance advisors to the Global Industry Practices Committee (GIPC). ECIA's GIPC recently established these advisory positions to enable ECIA members to gain better awareness about regulations that substantially affect the electronic components industry with the acceleration of global legislation to protect the environment.

Carol Parnell is the Global Director of EHS at Littelfuse and is responsible for the development and execution of the EHS strategy. Currently she is focused on the areas of safety culture, business continuity management, product environmental compliance, and sustainability.

Dan Carey is the Product Compliance Senior Manager at Farnell (dba Farnell, Newark, and element14). He is responsible for Farnell remaining compliant with various product compliance legislations globally and ensures that suppliers provide the required product compliance data.

"These two individuals are highly qualified to advise the GIPC on environmental compliance issues and I am extremely grateful they have stepped up to advise the Committee," Don Elario, ECIA Vice President of Industry Practices remarked. "The number of environmental regulations that impact the electronic components channel has increased exponentially and we are committed to keeping our members up to date."

PIP 3.1

CA Prop 65

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SCIP Database

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Subject Matter Expert Pool

Why *(Participate in the GIPC or a Subject Matter Expert?)*

➢ Opportunity to Influence

➢ Impact *Your Company's* Efficiencies and Standardization through Best Practice Awareness

➢ Collaborate on Common Challenges and Obstacles in *Your Area of Expertise*

➢ Industry Networking

➢ Take Advantage of this Talent Development Platform

SME Pool Now "96" Participants

➢ Join our Quarterly GIPC update webinars

➢ Receive group emails with news and project activity

Global Industry Practices Committee

Pete Shopp – SVP Business Operations, Mouser Electronics *Co Chair*
Russ Dzielak – Director of Channel & Key Accounts, Phoenix Contact *Co Chair*
Teri Ivaniszyn – VP Operational Excellence, Digi-Key *Past Chair*
Tom Griffin – President, Catalyst Unity Solutions
Dawn Manhart – Director Global Sales Operations, Littelfuse
Kimberly Appleton – SVP Global Sales Operations, ON Semi
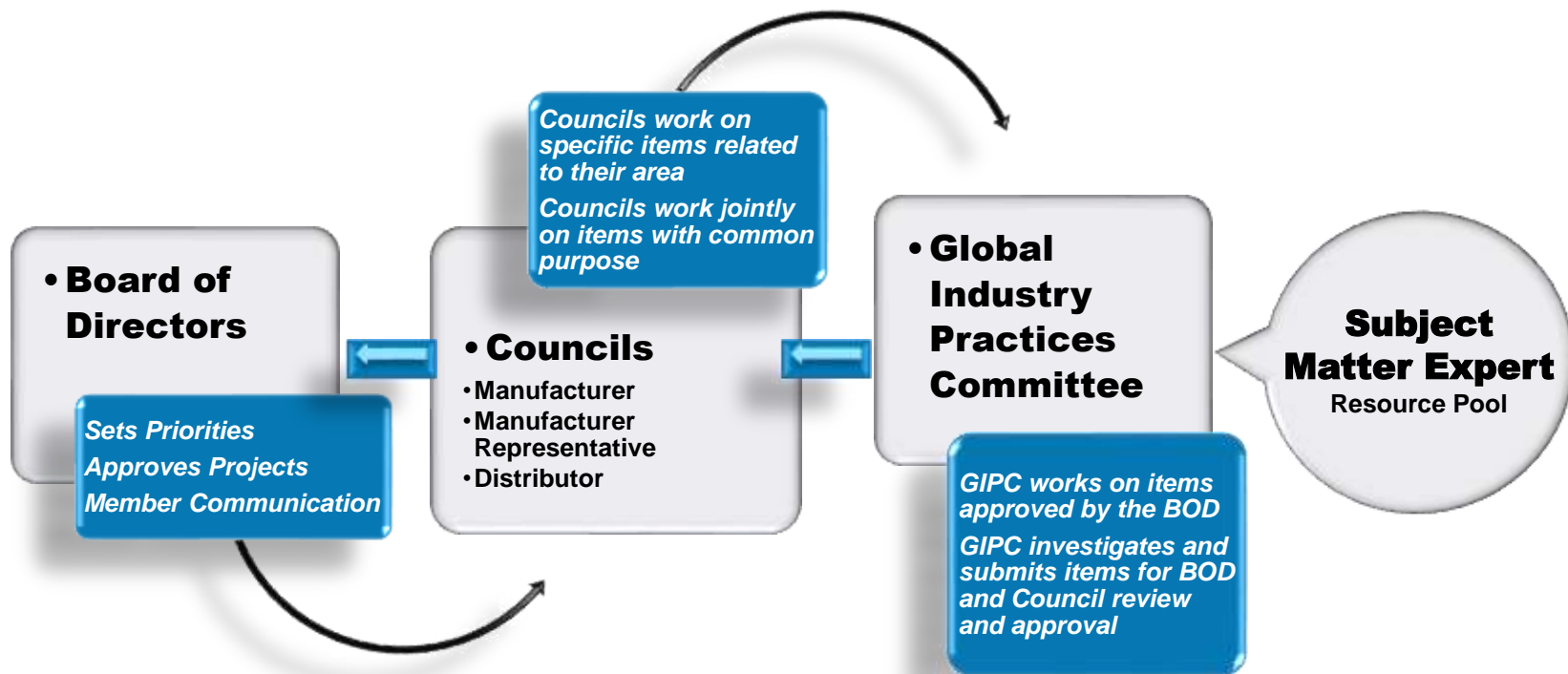**Melanie Pizzey** – VP Global Business Operations, TTI
Victor Meijers – SVP ECIA
Don Elario – VP Industry Practices ECIA

Subject Matter Expert Pool

| Technology Solutions | Business Operations | Environmental Compliance | International Trade Compliance | IT Security Privacy Standards | Logistics Services | Quality |

7 Areas of Focus

Global Industry Practices Committee (GIPC)

ecia
Electronic Components Industry Association

Service Partners and 3rd Party Relationships