



Perspectives on: Aerospace Supply Chain Standardization

January 14, 2021



SAE GROUP

Affiliate



Organizational Focused
Tailored Industry Support



Individual Focused
Charity & SDO Organization

Affiliate



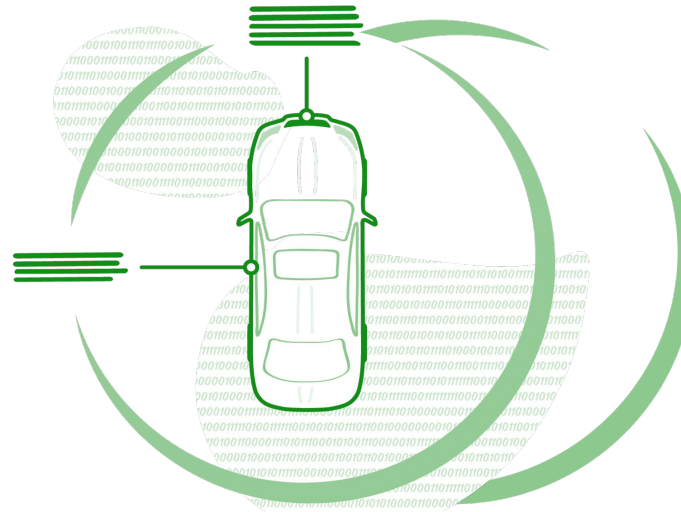
Organizational Focused
Process Auditing

SAE ITC

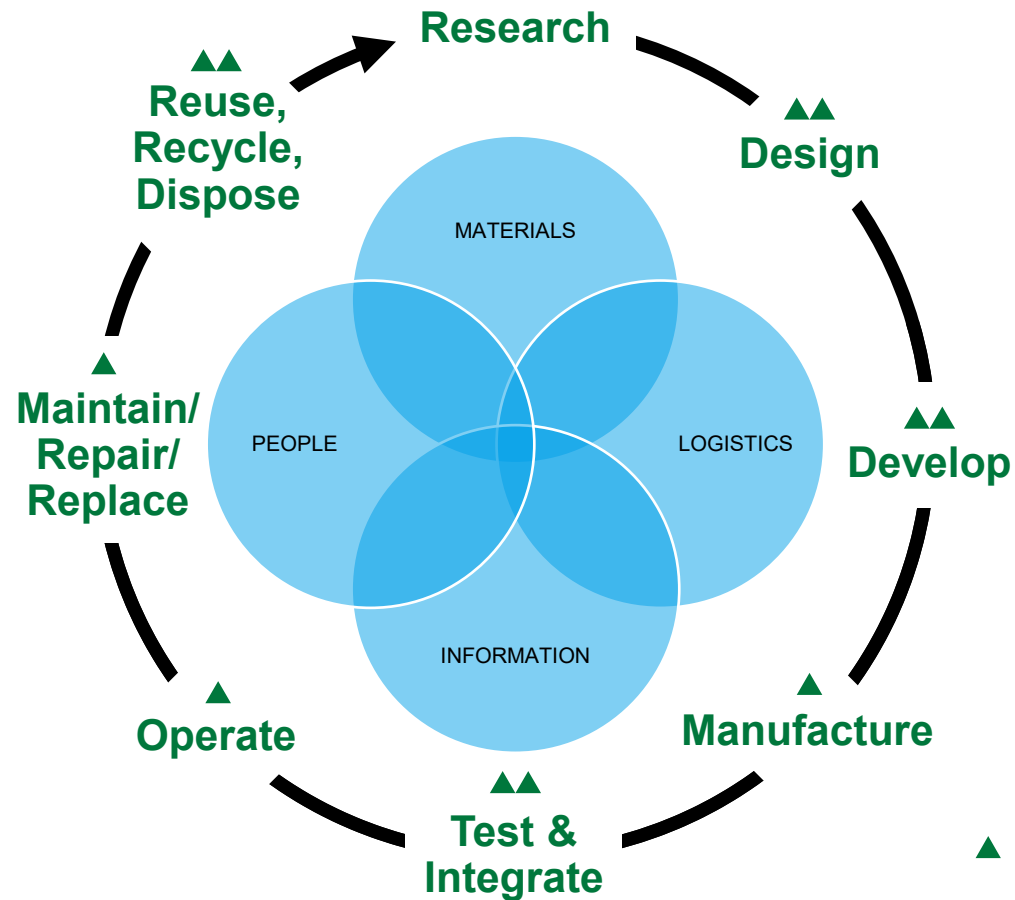
VISIONARY COLLABORATION
ADVANCING TECHNOLOGY

- 1 — Achieve mutual benefit for industry & community
- 2 — Solve a common problem
- 3 — Create business value

By **working together** more effectively than they could by working independently



INTEGRATED PRODUCT LIFE CYCLE



STAKEHOLDERS

- Regulatory
- Airline / Operator
- Airframer / Integrator
- OEM
- Sub Assembly Manufacturer
- Distributor
- Component / Part Manufacturer
- Standards Organization
- Industry Review Body
- Auditor / Mandated Body
- City/ State/ National Government
- Investors
- Consortia (e.g. SAE ITC)
- Registrar
- Maintenance
- Training Provider
- IT System and Software Tools Provider
- Data Aggregators and Analyzers
- Insurers
- Legal
- Access Authorizing Agent
- Research / Academics

▲ = Procurement facilitated by registries

▲▲ = Process facilitated by registries

Aerospace Supply Chain Challenges

Types of Challenges

- Compliance and Quality Management
- Product Lifecycles
- Customization
- Production Volumes

Streamlining Strategies

- Create a common means of engagement across manufacturing operation
- Plan for multi-mode manufacturing support
- Make new product development and launch a core strength
- Define and implement a scalable, enterprise-wide compliance and quality management program
- Integrate bidding and estimating activities from across the enterprise

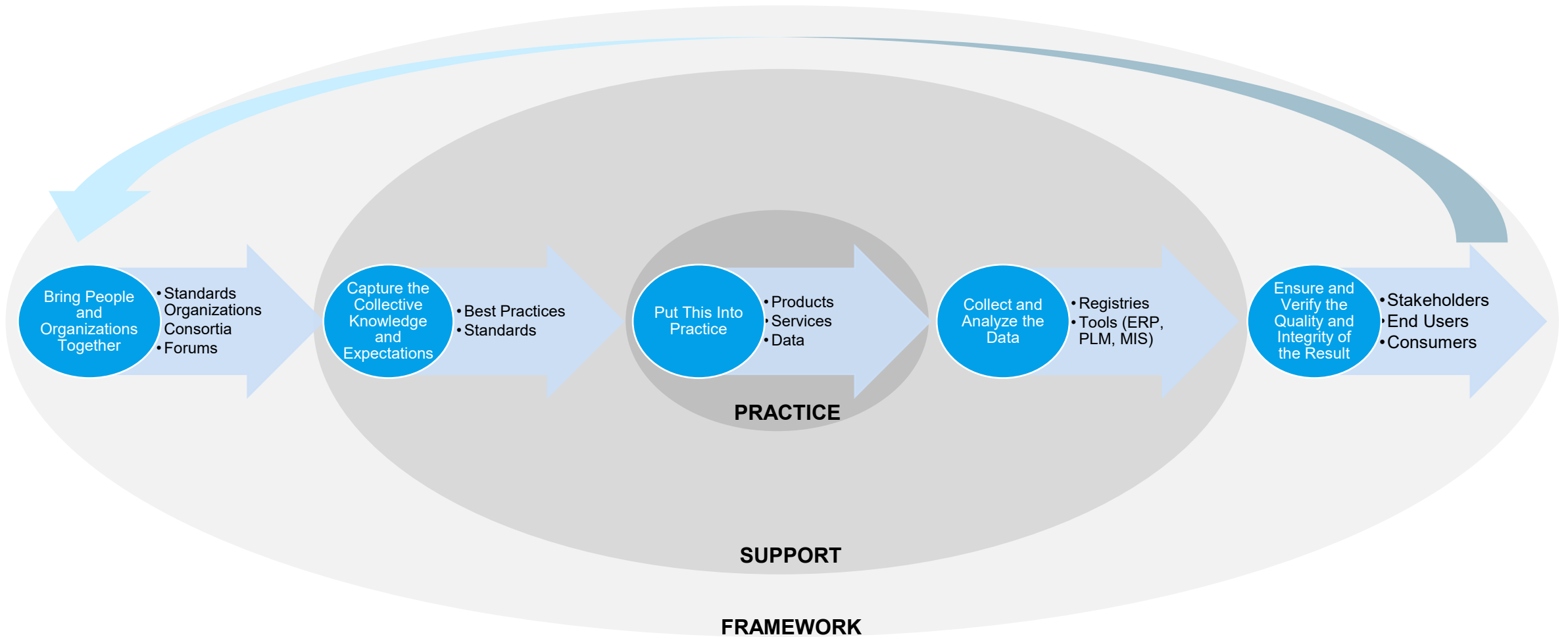
Columbus, L., "Five Strategies for Improving Aerospace Supply Chain Quality Management and Performance,"

SAE Technical Paper 2014-01-2231, 2014, doi:10.4271/2014-01-2231

Some Observations

- Organizations generally know what is needed in order to be effective and efficient, however, the industry as a whole
 - Is not collaborative but instead is highly competitive
 - Is not motivated toward commonality and re-purposing
 - Suffers due to lack of supply-chain wide interoperability
- Large OEMs can define their own supply chain ecosystems, however,
 - Lower tier organizations must become exclusive or carry the cost of multiple methodologies
 - Some challenges are too big for one organization to solve alone
- Digitization of data carries promise, however,
 - It requires interoperable processes, tools, management, and protection
 - People are still an integral element and key consideration
- Staffing and skilled workforce is at a premium
 - New skills, training and certification must be established as technologies, operations, and MRO matures
 - Development of new skills must occur with leveraging existing skills

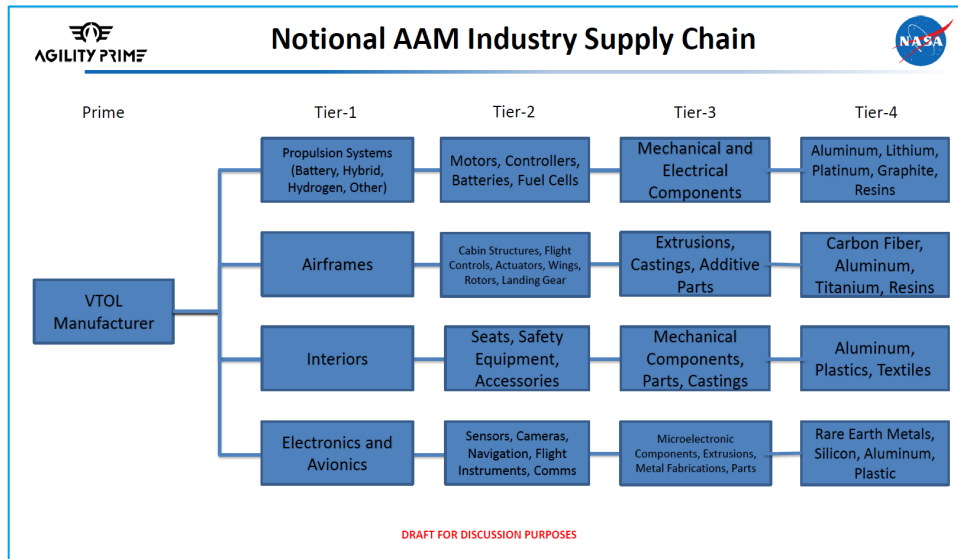
Question: How Does the Industry Move Forward?



Answer: Partner and Participate in Neutral Collaborations

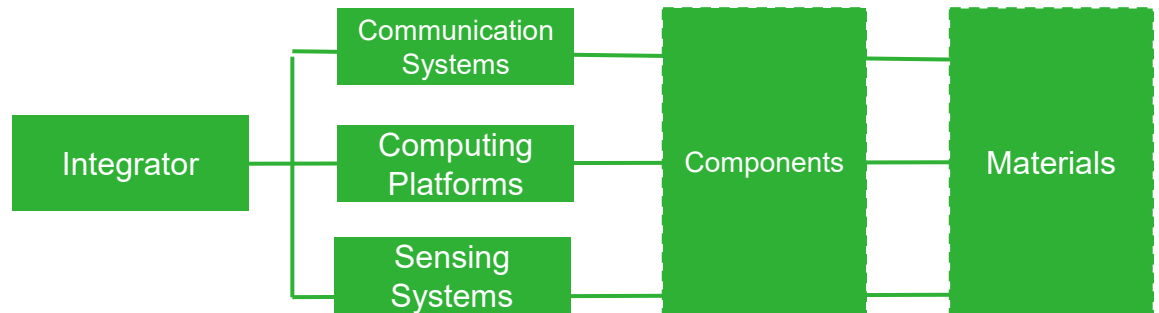
What Are the AAM Supply Chains?

Vehicle Development & Production



Airspace System Design & Implementation

Airspace & Fleet Operations



AAM is dependent on a Cooperative Collection of Intersecting Supply Chains.

AAM as an industry is:

- Fast Moving
- High Business Risk
- Realization of science fiction
- High potential pay-off
- Understaffed
- Exciting!

Making AAM work requires:

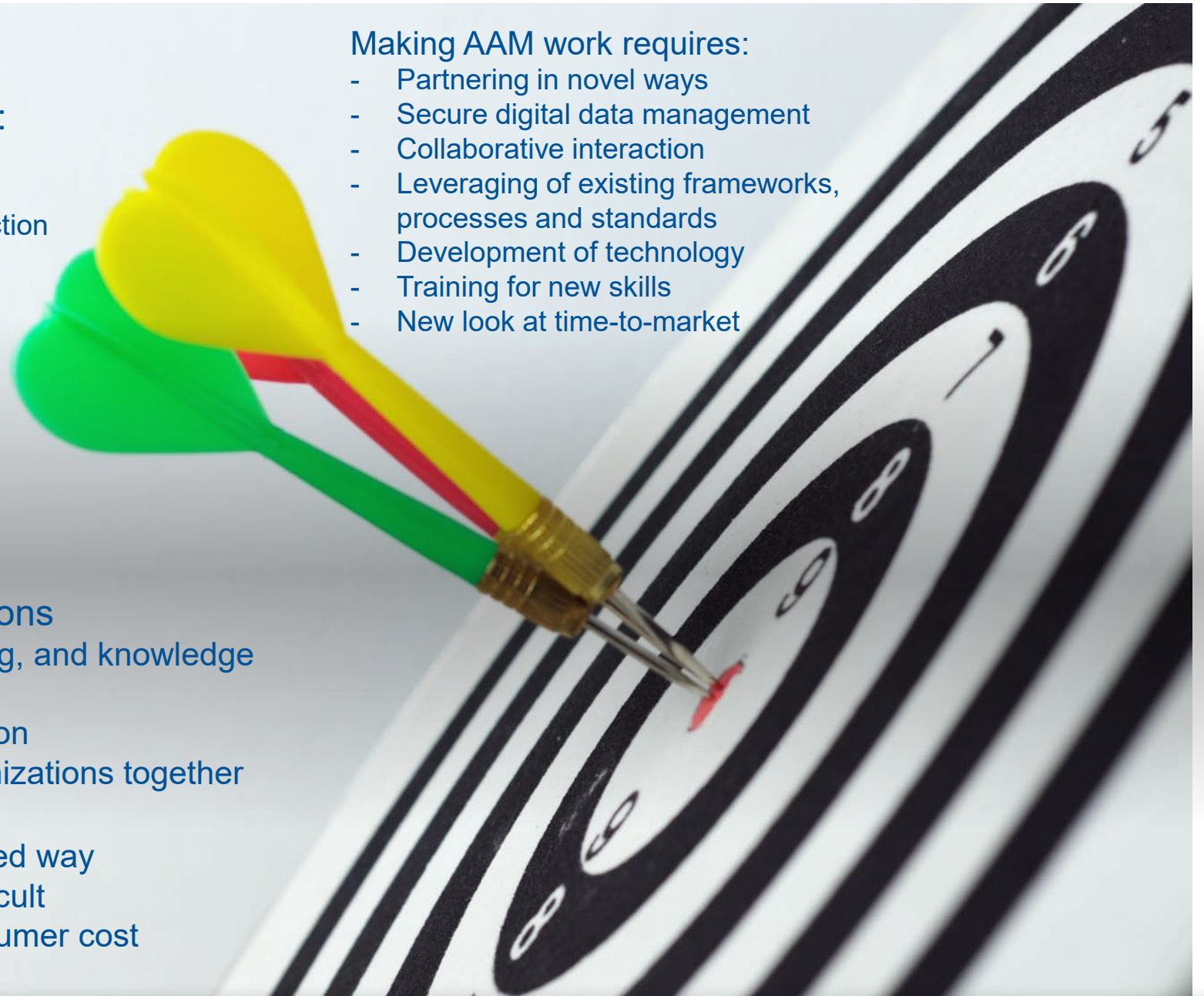
- Partnering in novel ways
- Secure digital data management
- Collaborative interaction
- Leveraging of existing frameworks, processes and standards
- Development of technology
- Training for new skills
- New look at time-to-market

Consortia and standards organizations

- Are the forums for partnering, sharing, and knowledge capture
- Provide neutral means of collaboration
- Know how to bring people and organizations together

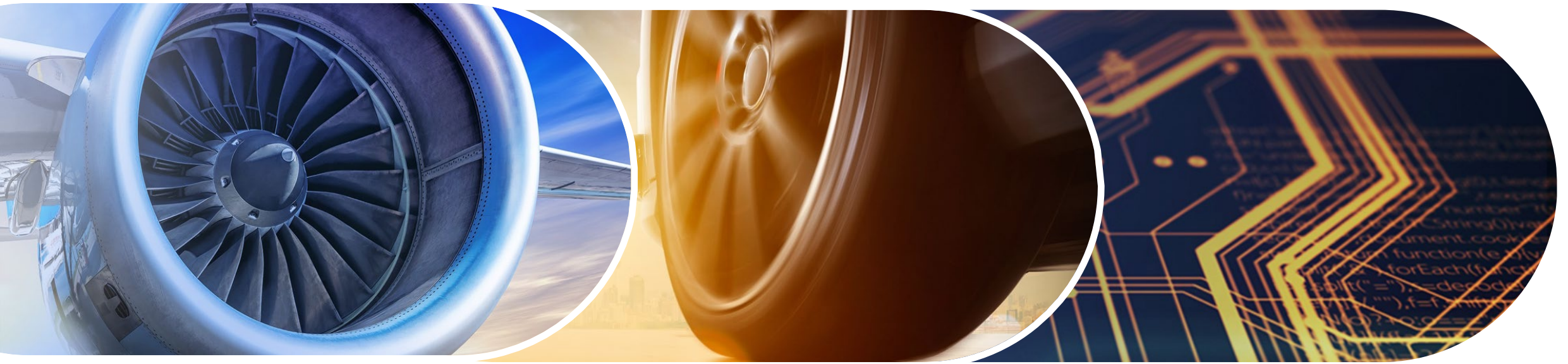
Otherwise,

- The industry develops in a fragmented way
- Holistic integration is even more difficult
- Individual ecosystems drive up consumer cost



What's the Bottom Line?

- Meeting ROI and Time to Market goals in a resource constrained environment requires collaborative partnerships.
 - Collaboration occurs in groups.
 - Partnerships need purpose, are based on trust, and provide mutual benefit.
- Successful supply chains are inherently collaborative and are based on partnerships.
 - Consortia can examine and address objectives across organizations
 - Standards groups can capture and specify desired processes, techniques, parts, materials, behaviors, etc.



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Mike McNair, Vice President - Aerospace
SAE Industry Technologies Consortia

michael.mcnaair@sae-itc.org
<https://www.sae-itc.org>

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