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PARALLEL PATHS OF ENGAGEMENT

AUTOMOTIVE INDUSTRY OUTLOOK

CENTER FOR AUTOMOTIVE RESEARCH 2020 AUTOMOTIVE OUTLOOK WEBINAR

APRIL 30, 2020

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Mike Jackson

Executive Director, Strategy and Research

Original Equipment Suppliers Association (OESA)

Mike Jackson serves as Executive Director, Strategy and Research of the Original Equipment Suppliers Association (OESA). Jackson has more than 20 years of progressive experience in market forecasting, strategic planning and management consulting. Jackson is a recognized global industry expert, thought leader and public speaker on light vehicle sales and production, manufacturer strategies and OEM product planning. Jackson assists an extensive membership of automotive suppliers, affiliate members and industry stakeholders to anticipate market dynamics, enhance competitiveness and mitigate risk to achieve business success.

Jackson is a highly sought after public speaker, regularly presenting to executive leadership teams and industry conferences throughout North America and around the world. He is frequently quoted by leading print, radio and television media on the industry and light vehicle sales and production dynamics while also serving to represent the voice of automotive supplier community.

Mike Jackson previously directed the North American Vehicle Production forecasting practice at IHS Markit for more than 15 years. As a global product planning and strategy expert in the automotive/mobility sector, Jackson served as subject matter expert on the North American market for a global client base of automakers and all levels of the supply chain with a deep knowledge of the industry and global markets.

Jackson previously held senior strategy roles for electrical system supplier Alcoa Fujikura, Ltd. (AFL) and French-based automotive interior supplier, Faurecia. Jackson gained international experience during a multi-year stay, living and working in Germany, developing language fluency. Jackson holds a degree in management strategy from Eastern Michigan University and also earned his M.B.A. in international marketing from Wayne State University. Jackson is also a member of the Federal Reserve Bank of Chicago's Automotive Roundtable.

Championing the business interests of the automotive OE supplier community:

Founded in 1998, the Original Equipment Suppliers Association (OESA), serves as the voice of the automotive supplier and a valuable resource for member organizations. Throughout the supply chain and on legislative and regulatory issues, **OESA represents the collective voice of suppliers.**

Exclusively for automotive suppliers:

Supplier membership is exclusive to original equipment automotive suppliers that directly provide components, tools, materials and services to the OE light vehicle industry.

Strength in numbers:

Membership is comprised of over 500 member firms, including over 400 Tier 1,2, and 3 automotive suppliers with North American OE sales that range from $10 million to $5 billion. Another 100 Affiliate member firms support the supplier community with thought leadership and vital industry analysis.

Led By supplier industry executives:

OESA's interests are guided by a board of directors consisting of CEOs from member companies of all sizes.

Trusted Forums for industry executives eager to lead well:

OESA conducts an extensive range of curated member events and councils designed to bring expert insights from thought leaders, access to decision makers and informed discussions from executive peer group councils to foster your success.

Staff that works for members:

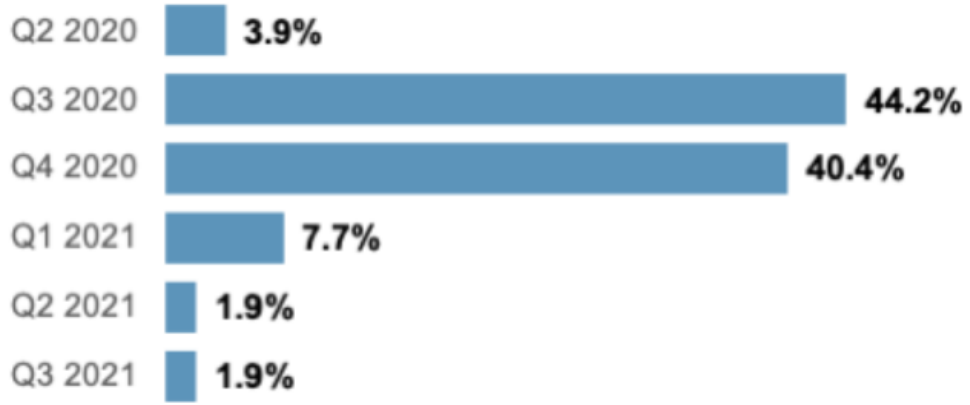
Members enjoy direct access to a staff of dedicated association employees in Detroit and Washington, D.C.

Roadmap

- Market Outlook
- Industry In Transition
- Takeaways

Economic Recovery Outlook

When Do You Expect the Economic Recovery to Start?



WSJ Economic Survey, April 2020

Economic Recovery Outlook

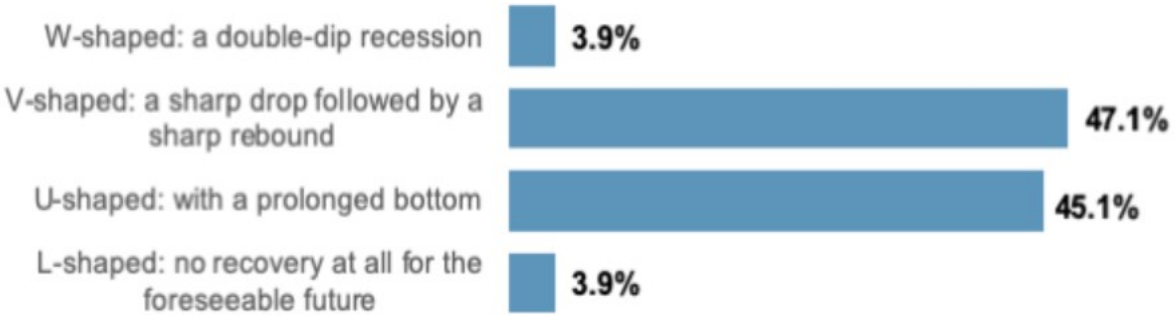
"W" recovery

- Near-term rebound derailed as outbreak returns in Fall
- Double down on more robust, far reaching efforts to recoup

"V" recovery

- Quick rebound despite wide-spread impact
- Less intrusive plans needed to course correct and restart

What Will an Economic Recovery Look Like and What will Determine its Shape?



"U" recovery

- Downturn is deeper and impact is extended
- Scope of needed actions grows

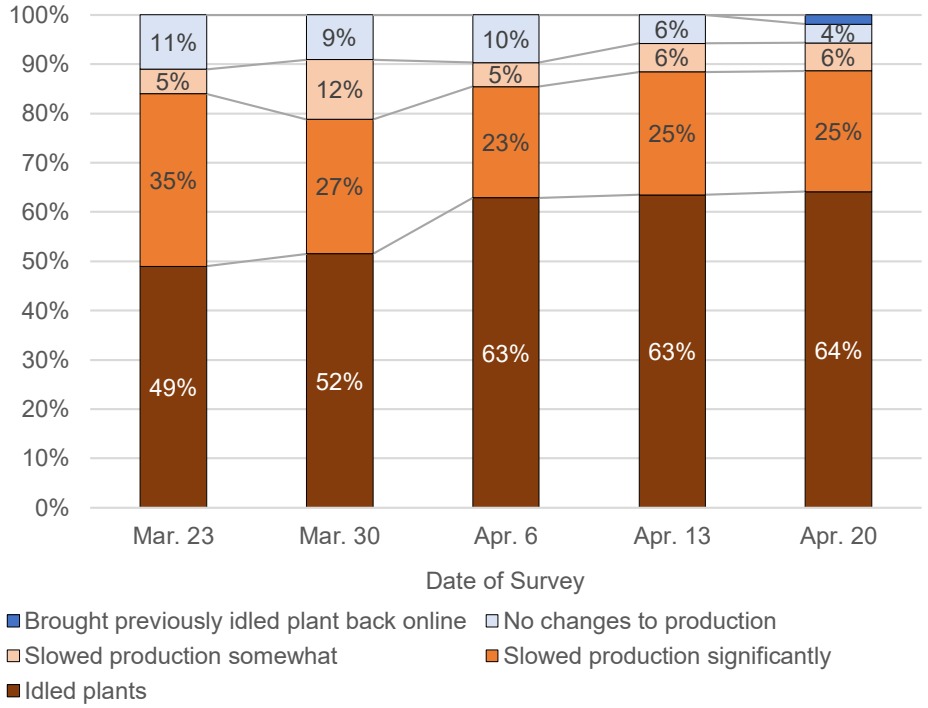
"L" recovery

- Downturn persists, recovery stalls
- Requires long-term strategies to retrench

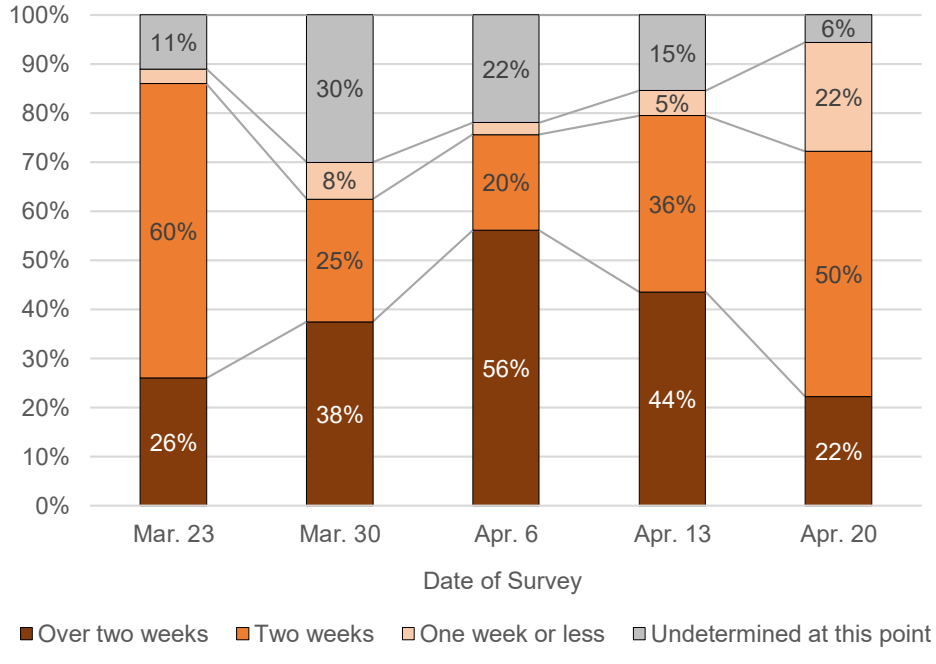
WSJ Economic Survey, April 2020

COVID-19 Pandemic Global Production Impact: U.S.

How have you changed your production in response to the announced OEM shutdowns and/or decreased demand?



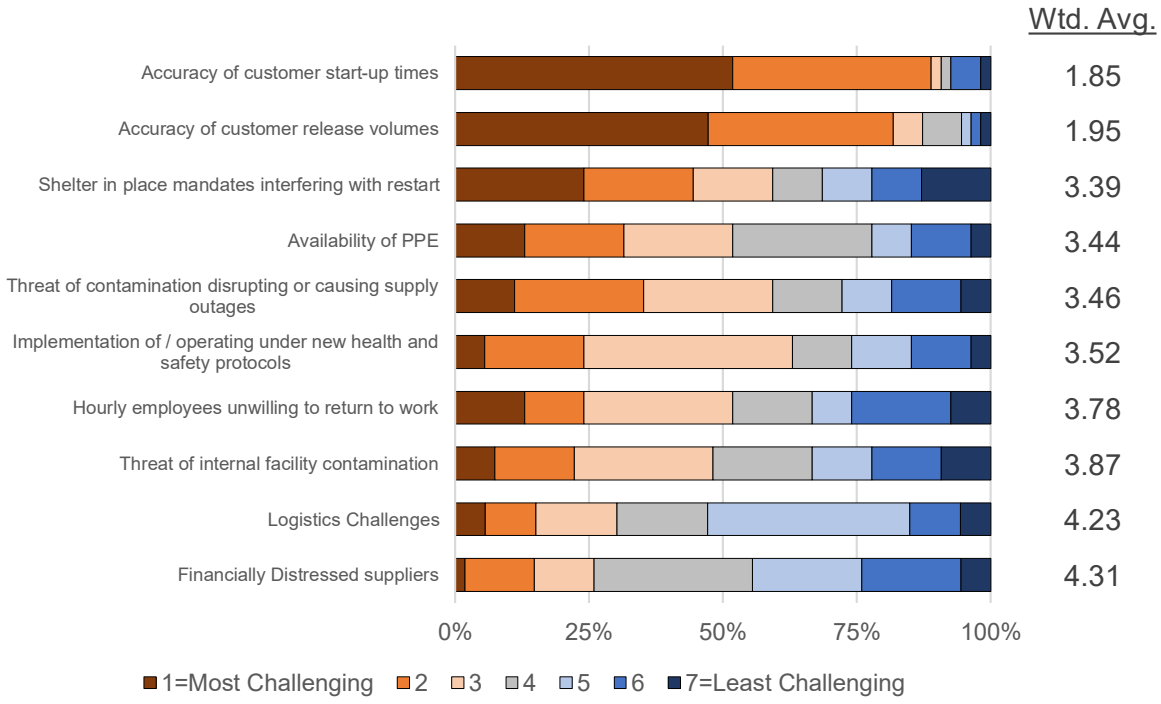
For operations affected, from today how long are you planning on idling for?



56 Total Responses

Return to Production Challenges

What are your biggest challenges heading into the restart of operations?

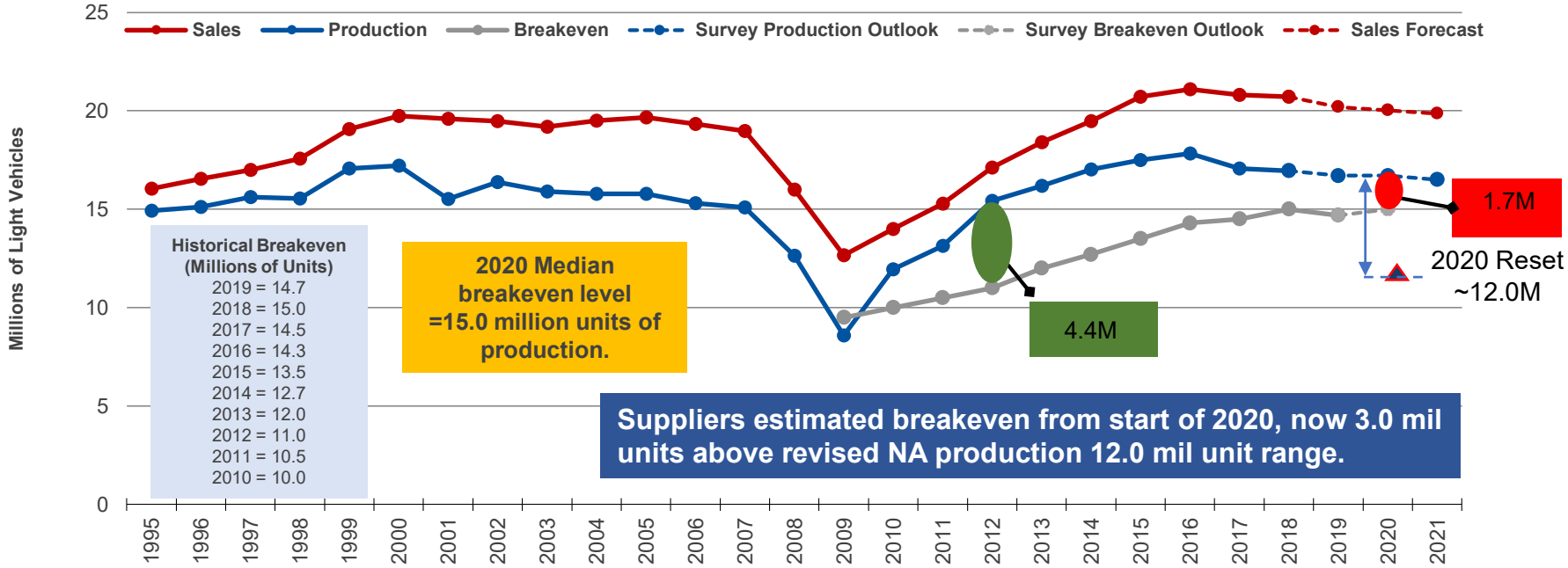


Comments:

- Many hourly deferred to stay home to collect unemployment based on new stimulus proposal rather than coming to work....
- Using paid volunteers for now.
- We have procedures in place to operate safely according to guidelines. To date no supplier has indicated an issue to supply us. Major disruption is the customers release schedules. Other concerns are disruptions due to unknowns

Production Planning: Breakeven and Year-End Estimates

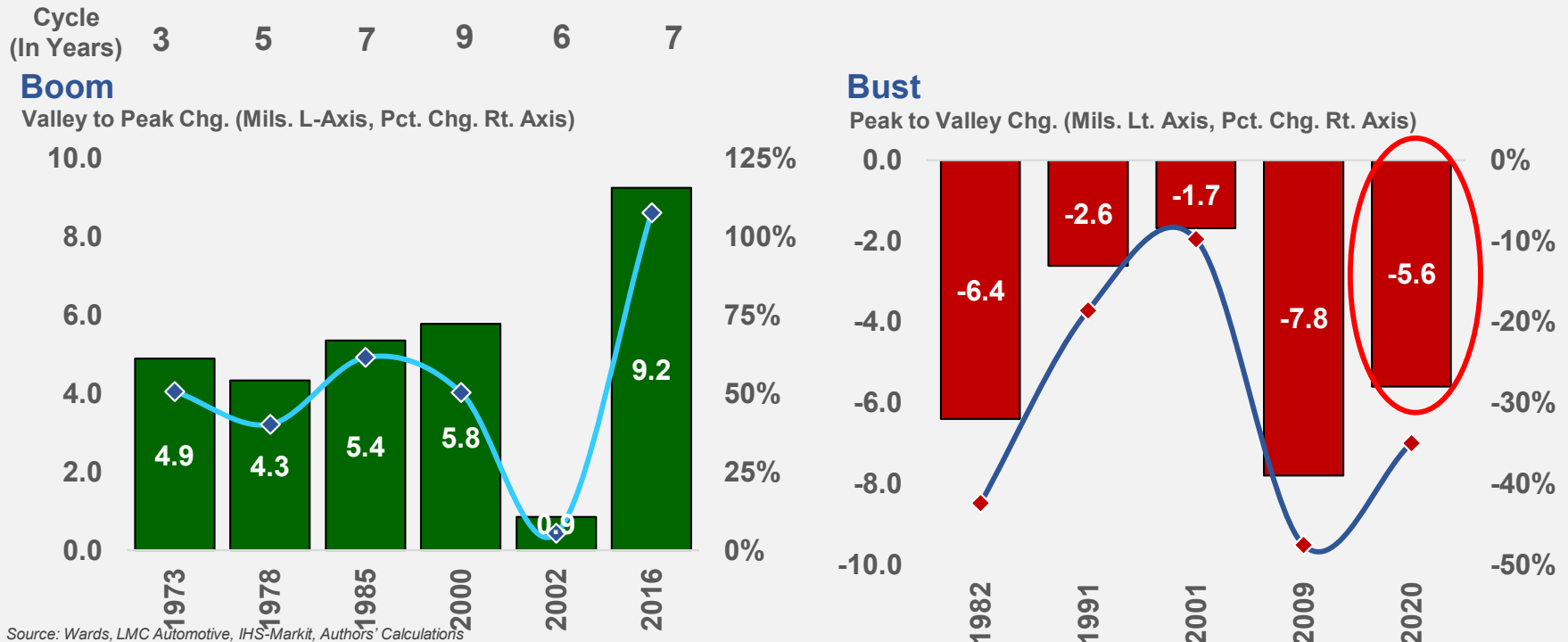
Considering North America light duty vehicle production, estimate the required 2020 industry volume needed to achieve breakeven in your North American operations?



Source: IHS Markit (History, Sales and Production); IHS Markit (Sales Forecast)

Peaks and Valleys

North America Vehicle Production Cycles



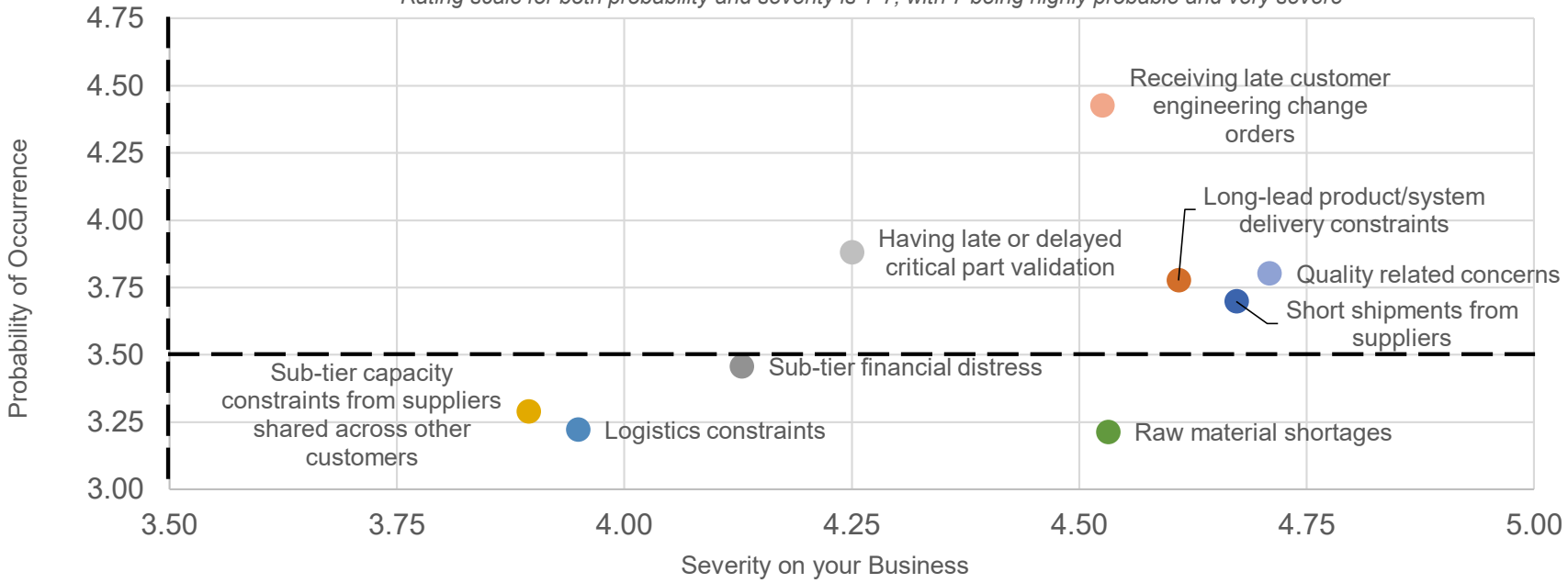
Source: Wards, LMC Automotive, IHS-Markit, Authors' Calculations

Supplier Concern Scenarios

Timing issues are not only the most disruptive, but also the most likely

Within your supply chain, over the next 12 months, rate the likelihood of occurrence and the severity that each of the following possible scenarios would have on your business.

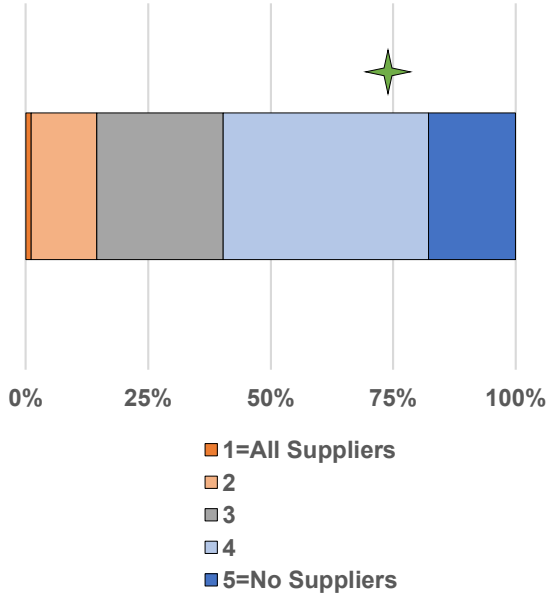
Rating scale for both probability and severity is 1-7, with 7 being highly probable and very severe



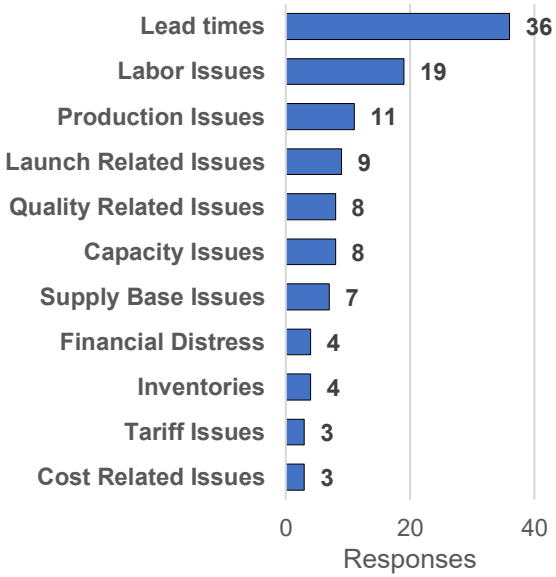
Production Risks

Predominantly timing, and labor related, yet impact of financial distress is rising

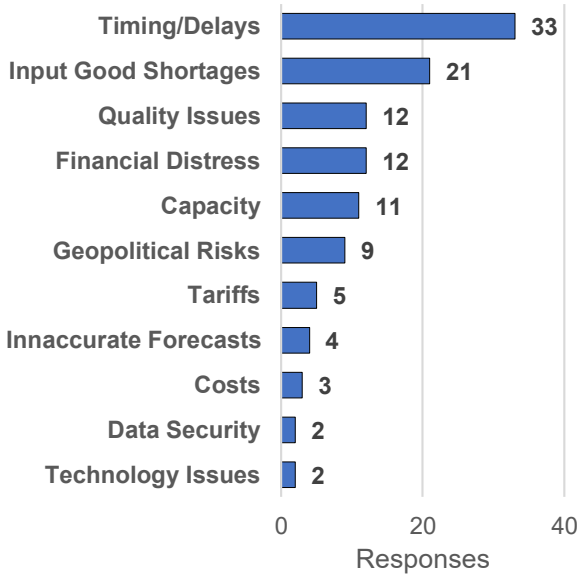
Over the past year have you witnessed an increase in distress within your supply base?



What is your greatest internal risk in meeting customer production requirements?



What is your greatest supply chain risk in meeting customer production requirements?



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CTA 2020 Trends to Watch

The Future of Transportation

CES

Multi-Modal Transportation

C-V2X Communications

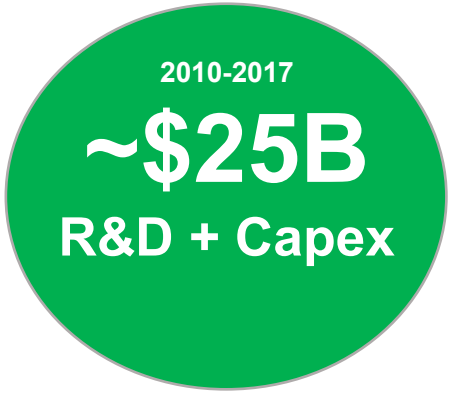
Self-Driving Vehicle Fleets

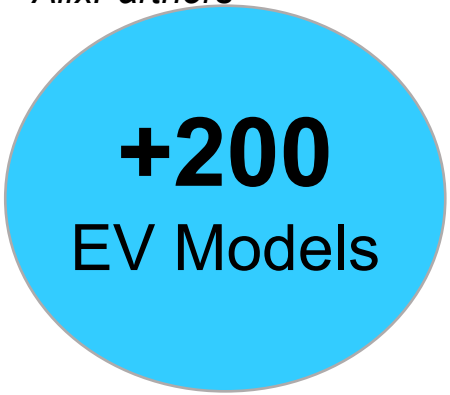
Electrification

Capital Allocation Headwinds

'Billions of dollars will be lost

by many global automakers' that invest in autonomous and electric vehicles while consumer buy-in remains low
–AlixPartners





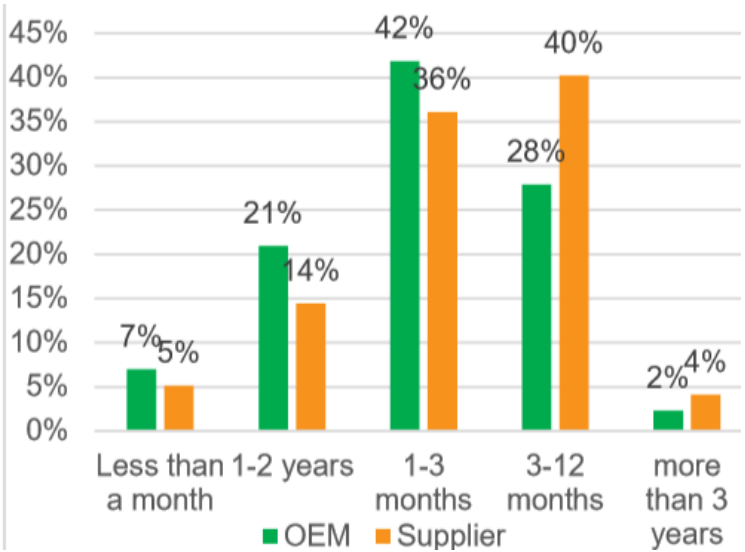
- Underscores Role of Opportunity Targeting
- Raises Importance of Due Diligence
- Market pressures to usher in industry consolidation
- Leverage expertise: opens door to set clear terms & limit risk

AlixPartners Global Automotive Outlook: What's Ahead for the Industry

Costly EV/AV Arms Race Drives Alliances

Source: LMC Automotive

COVID-19 Automotive R&D Impact Survey



Tech Deployment Delays

Listed as the main impact by 54% of respondents

E-mobility Technology

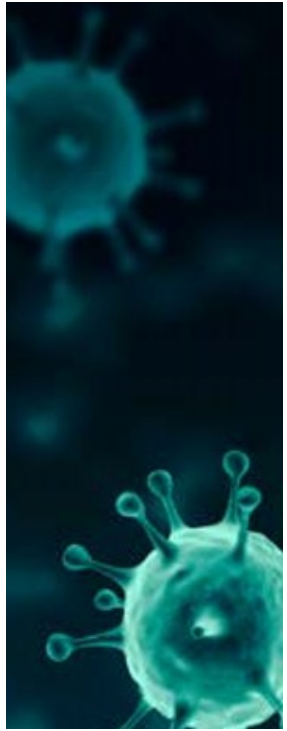
The most impacted according to 22% of respondents

1 in 5

Respondents think the R&D impact will last longer than 12 months

only 4%

Respondents expect no reduction or delay to development projects



IHS Markit – COVID-19 survey, April 15, 2020

Partnership Case Study:

Business Case:

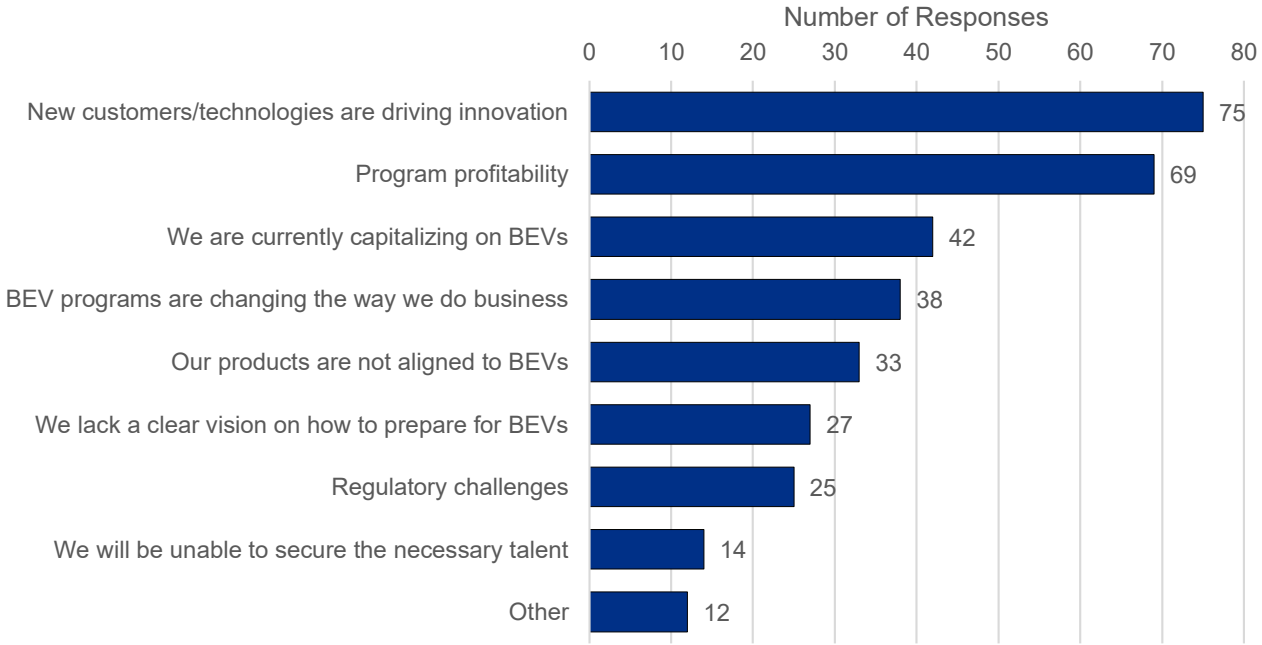
- Speed to Market
- Threat Mitigation
- Mutual Learning
- Block Competitors
- Scaling Potential

Unique Selling Proposition:

- Rugged Duty Cycle
- Premium Positioning
- Range +400 Miles
- Dimension

Electrification: Risks and Opportunities

What are your biggest challenges/opportunities as the industry prepares for a Battery Electric Vehicle (BEV) future?

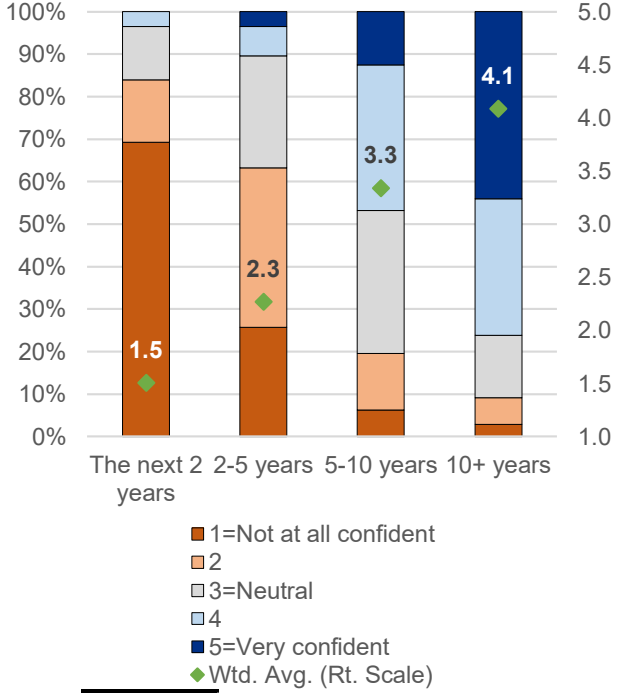


Other Issues and Comments:

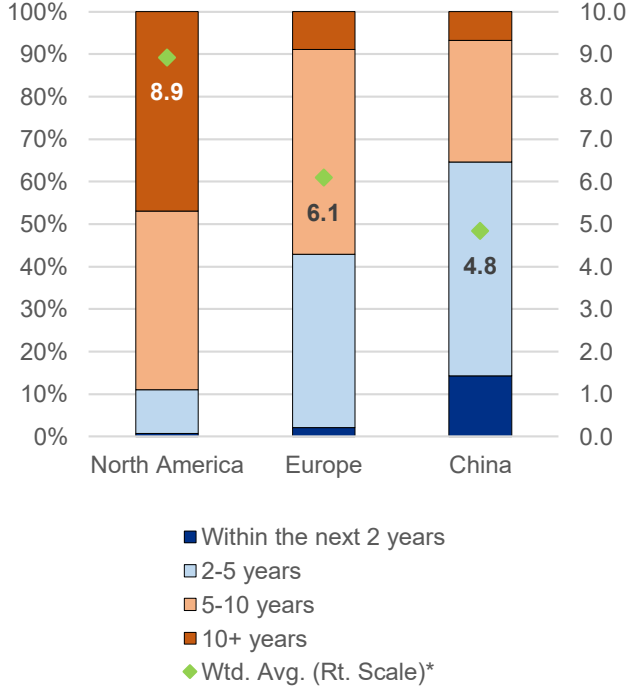
Growing our knowledge of BEV vehicle to prepare for the new opportunities.
Uncertain how it will affect our product line
Customer acceptance of our solutions
Capacitizing for low volume vehicles
Market penetration of new, innovative product
Neutral impact so far
No clear direction by some of the OEM's
Over capacity vs. market demand
Volume Uncertainty
Infrastructure for BEV adoption, incentives for BEVs, consumer acceptance, battery costs
Low Volume Offerings

Electrification: Supplier Outlook

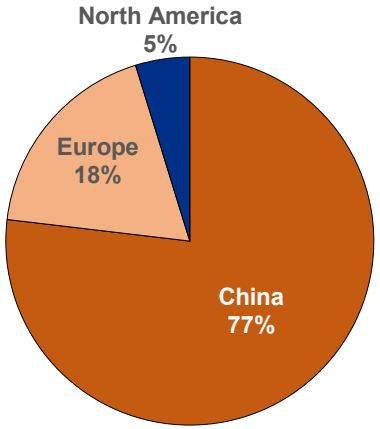
How confident are you that global BEV production will reach a substantial portion (10% of total production) within...



How confident are you that global BEV production will reach a substantial portion (10% of total production) within...



Regionally speaking, where do you believe a substantial level of BEV production (10% of total production) will first occur?



The Future of Transportation Stack

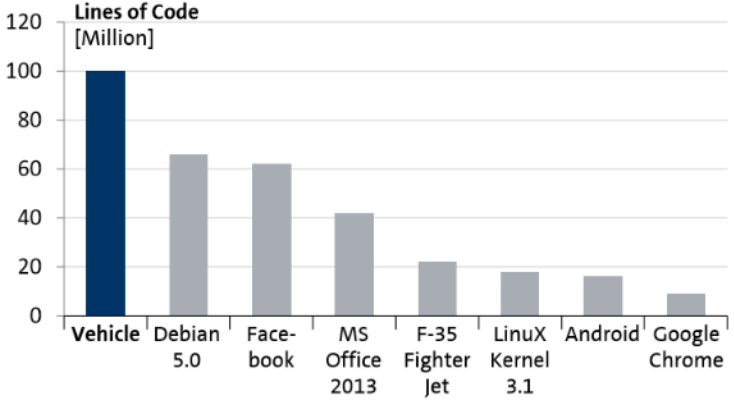
Comet Labs

Source: www.wired.com

Software as Vital Industry Differentiator

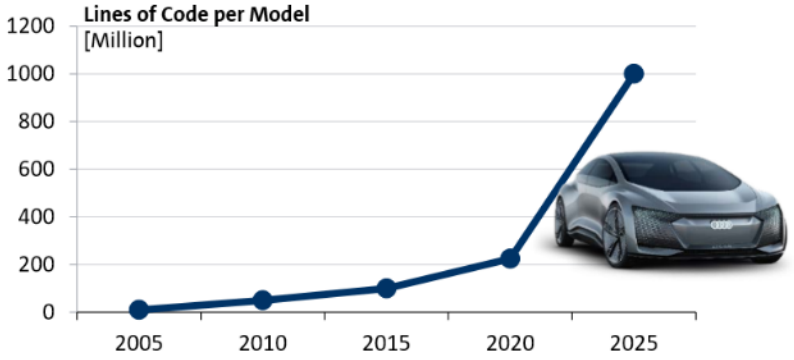
Today

- 100 million lines of code per vehicle
- Approximately $ 10 per line of code
- Example: Navi system 20 million lines of code



Tomorrow

- > 200 - 300 million lines of code are expected
- Level 5 autonomous driving will take up to 1 billion lines of code



Sources: https://spectrum.ieee.org/transportation/systems/this-car-runs-on-code | http://frost.com/prod/servlet//press-release.pag?docid=284456381 | https://www.visualcapitalist.com/millions-lines-of-code/

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Takeaways

- **Capex:** Boom-Bust intensifies competition; anticipate consolidation
- **Culture:** Resilient, Collaborative, Inventive, Humble, Curious
- **Flexibility:** Liquidity is key; vital to balance ‘Core’ vs Emerging
- **Strategy:** Weather the storm + future Talent needs + M&A
- **Technology:** Grow partnering competency; Monetize on the journey
- **Stretch:** Align opportunities with capabilities, identify sweet spots

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