



HARBOUR | IQ™

**2018 Q2 Tooling Barometer**  
*June 27, 2018*

# Outline

- Current state of the industry
- Investment
- Apprentices and Retention Benefits
- Top Performers
- External Factors Effecting Tooling
- Summary

# Purpose and Methodology

Harbour Results, Inc. regularly conducts market research within the tooling industry to examine key trends, benchmarks, and forecast indicators. Over 70 tooling manufacturers and automation suppliers in 6 countries participated in this study, along with 70 production companies. The HRI team carefully analyzed the data from this study and reached out to companies when questions arose. In appreciation of your facility taking the time to be involved in this report, HRI is sending out this output for personal use. If any questions, comments, or suggestions arise when reading the following content, please reach out to the following individuals:

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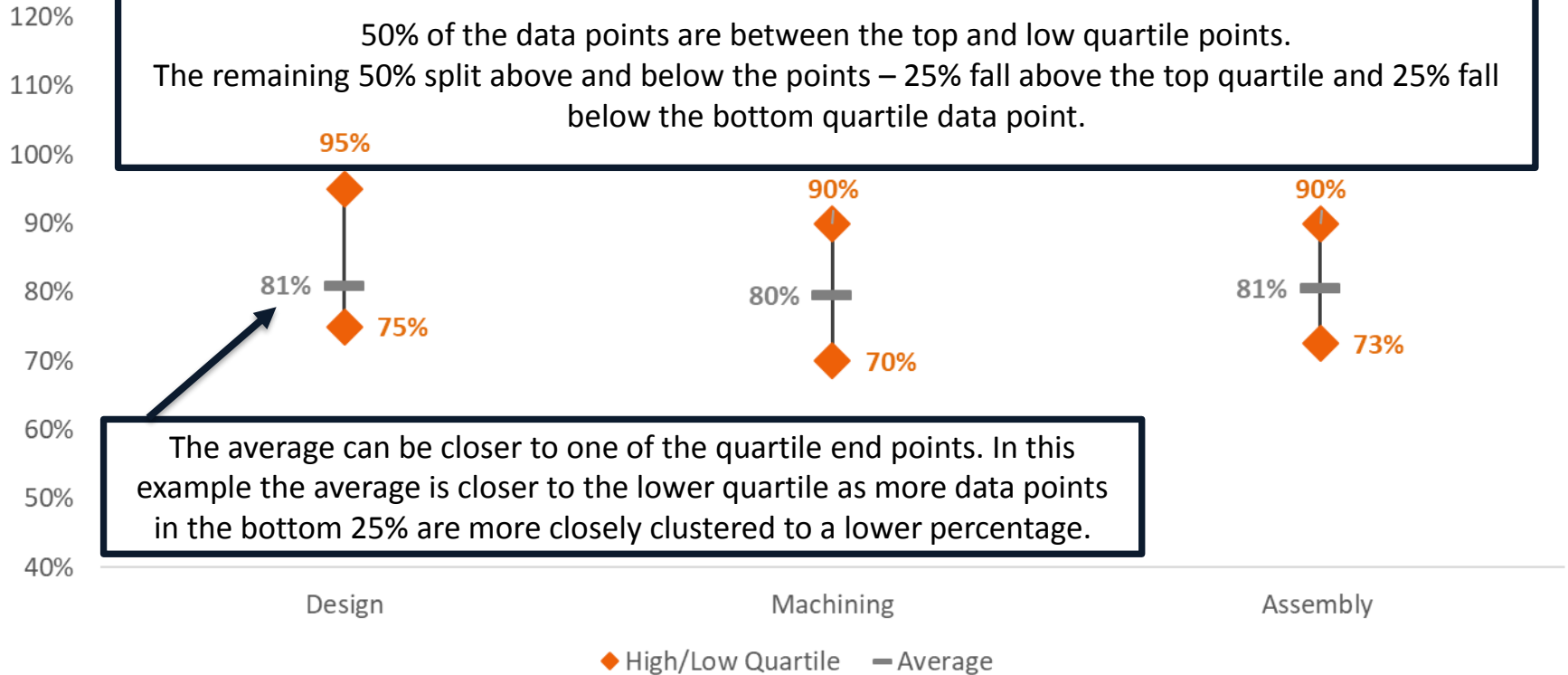
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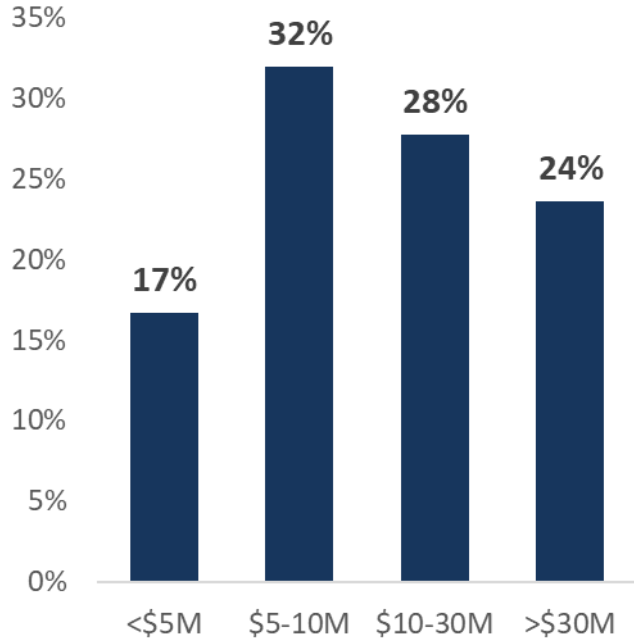
# Methodology - Quartile Example

## Mold Builder Capacity Utilization

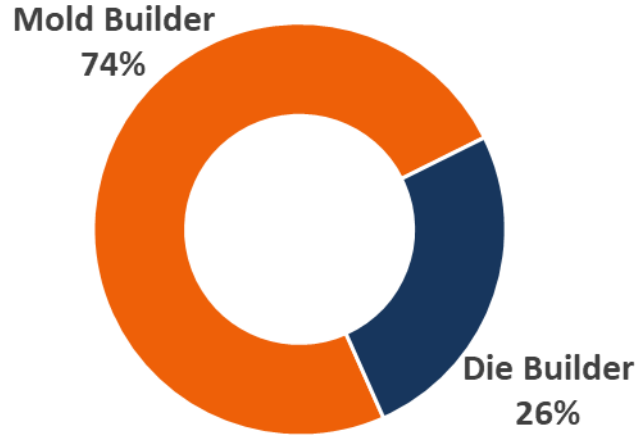


# Respondent Demographics: 74 Tool Shops

## Revenue Range (USD)



## Toolbuider Shop Type

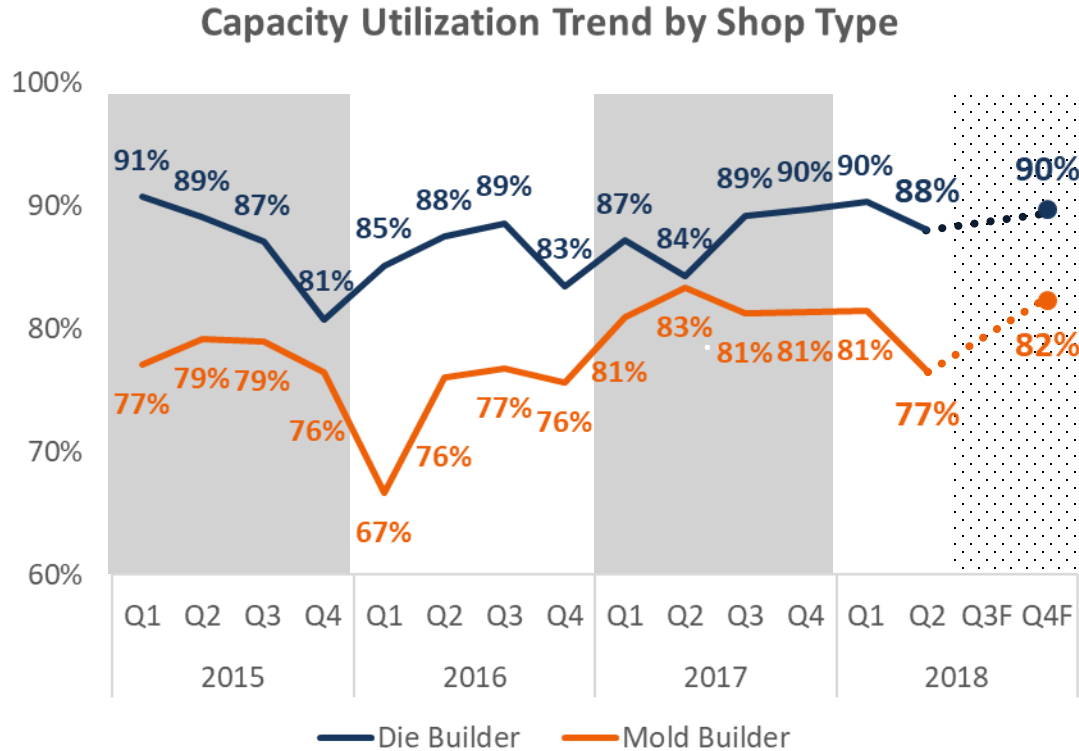


## Location

Region	% of Total
United States	57%
Canada	28%
Europe	9%
China	5%

Question: What was your annual revenue? What is your Facility's Primary Focus? Please identify your company's geographic location.

# Capacity Utilization Decreased in Q2



- Q1 and Q2 were soft in 2018 coming off of a gang buster year in 2017.
- Shops are slightly less bullish than Q4 2017 as signs of a slow down continue.
- However, the balance of 2018 is predicted to be another busy time with many new vehicle launches planned.

Question: What is your facility's current overall capacity utilization? What is your facility's expected 2018 overall capacity utilization? Shop Type: Mold and Die Builders

# Changes in Launches Impacting 2018 Sourcing



**Chevrolet Colorado**  
Facelift Removed



**Lincoln MKZ**  
Major Removed



**Ford Fusion**  
Changed from major to facelift



**GMC Canyon**  
Facelift Removed



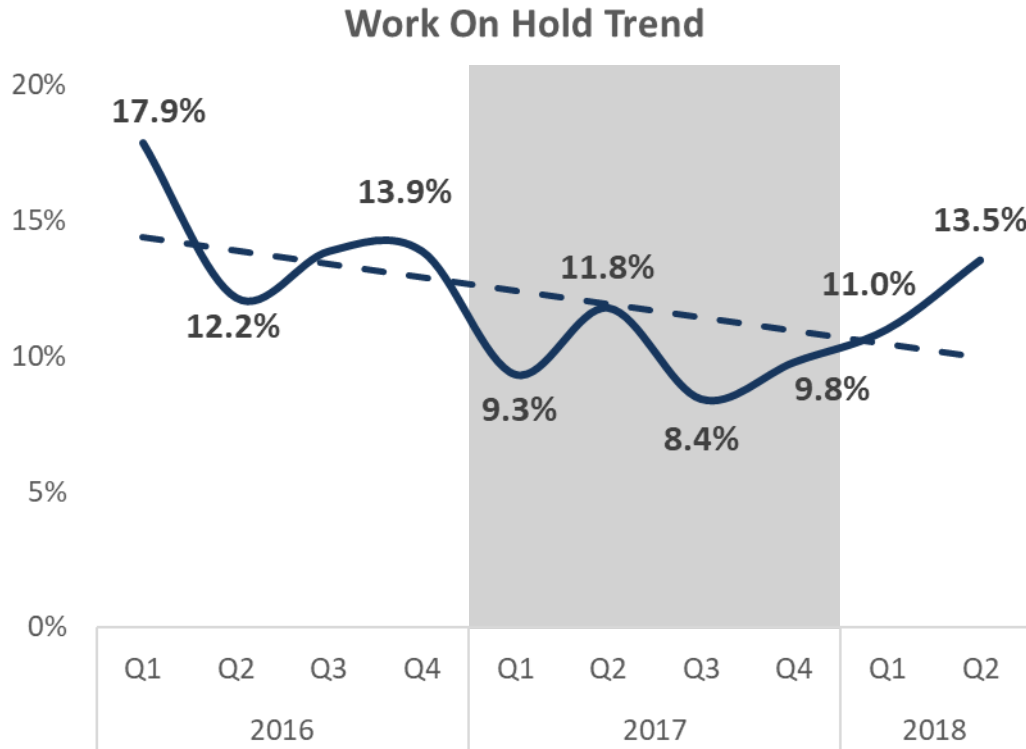
**Dodge Journey**  
New Removed



**Chevrolet Traverse**  
Facelift Delayed

Source: LMC Automotive Forecast – Q1 2018

# Work On Hold Shows Over 2 Point Increase



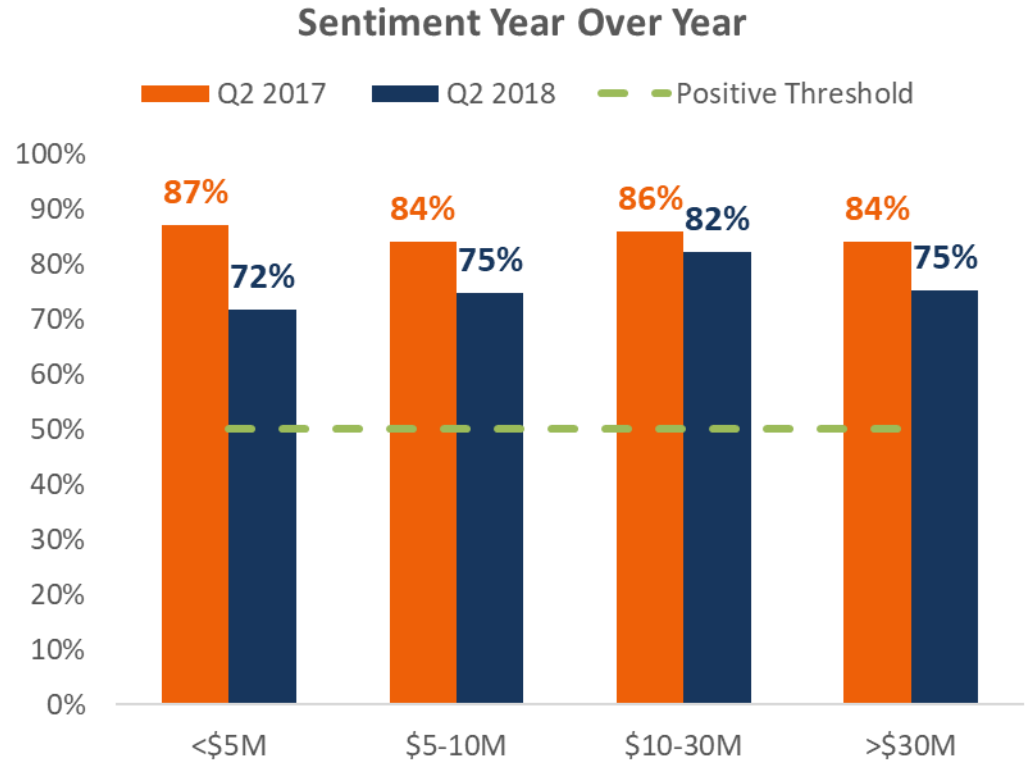
- Mold Shops are seeing higher levels of work on hold with an average of 13.7%.
- Die Shops are experiencing lower work on hold levels with an average of 13.2% on hold.
- Work on hold increases from the previous quarter though this is expected to shift due to automotive programs starting up that were delayed.

Question: What percentage of jobs have you been awarded are currently on hold due to reasons outside of your control? Shop Type: Mold and Die Builders



# Sentiment Down Year Over Year for All Shop Sizes

- Sentiment for Q2 compared to the previous year shows a substantial decrease for most shop sizes, with overall sentiment dropping 4 points to 76%.
- This data was polled prior to the announcements on tariffs in Canada and Mexico.
- We anticipate a drop in sentiment again this next quarter due to the concerns of tariffs.



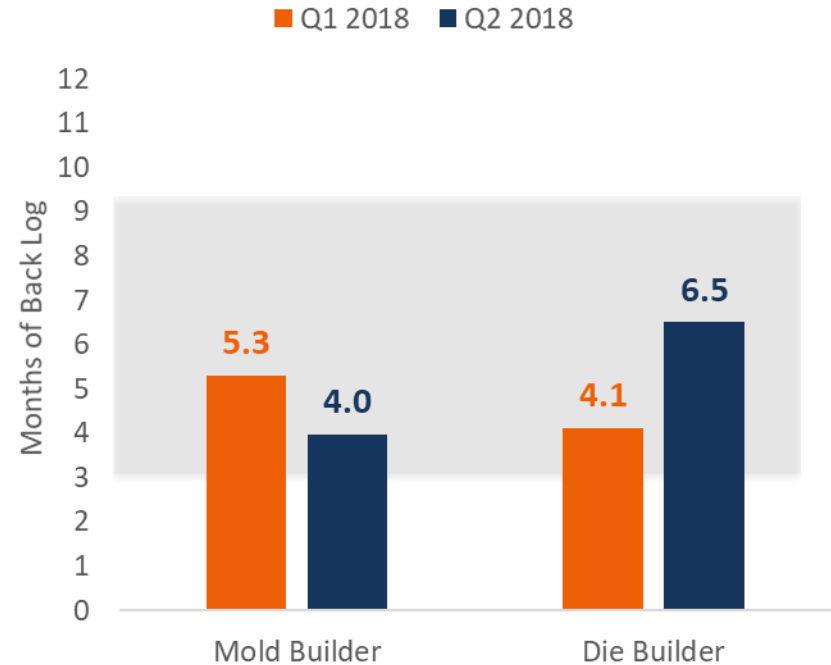
Question: Over the next three months, what is the general outlook for your facility? Shop Type: Mold and Die Builders

# Die Builders Maintaining Larger Back Logs

- Die shops see an increase in backlog from Q1 to Q2 while the opposite is true for Mold.
- Die shops have a longer lead time than mold shops therefore, they have work coming based on this data and mold shops should see it approximately 6 months later.

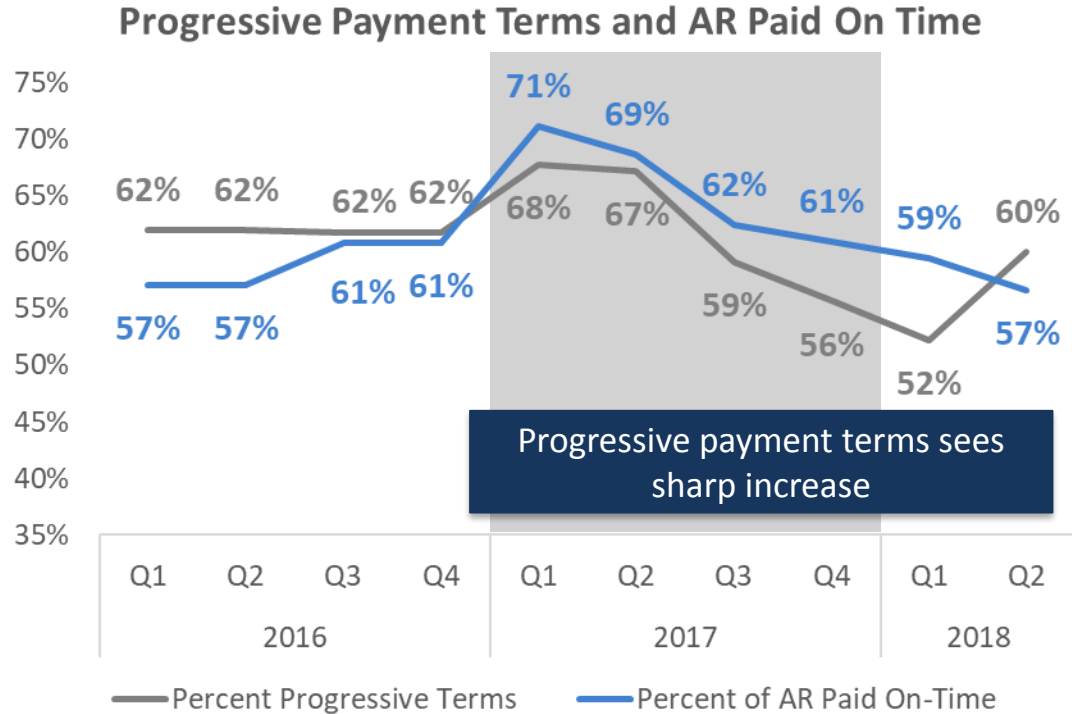
$$\text{Back Log Ratio} = \frac{\text{Back Log Value}}{\text{Annual Revenue}}$$

Calendarized Average Back Log



Question: What is your current annual revenue? What is your facility's current back log? Shop Type: Mold and Die Builders

# Progressive Payments See Sharp Spike Up

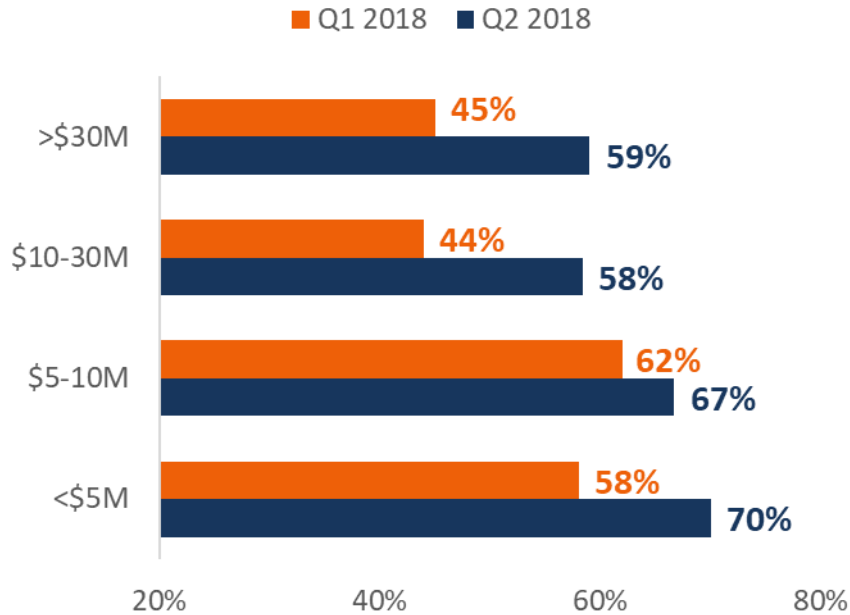


- A number of shops have landed non-automotive work with progressive terms.
- A few large domestic OEM packages were sourced recently with progressive terms.
- A consistent population of shops stayed at a high level of progressive terms.

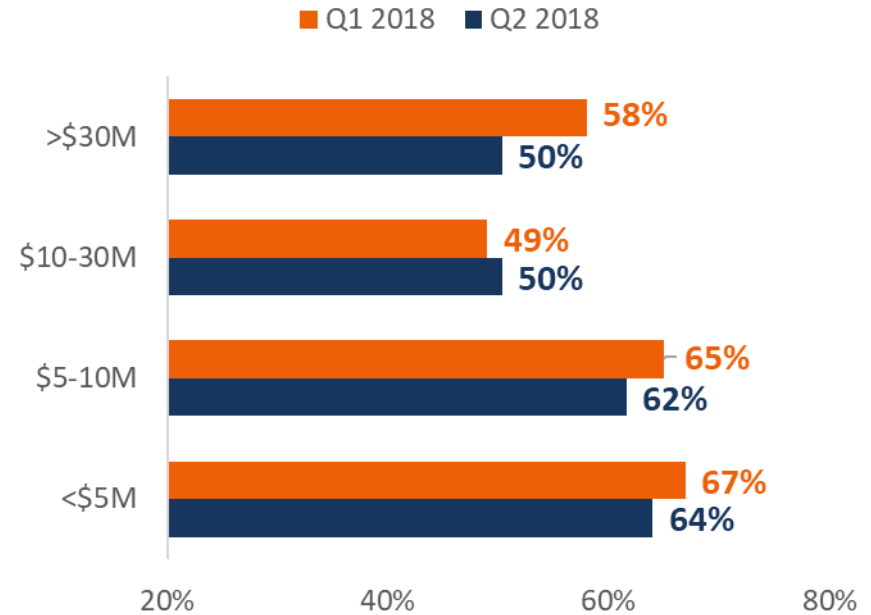
Question: Over the past three months, approximately what percent of your new booked business includes progressive payment terms and accounts receivables were being paid within contract terms. Shop Type: Mold and Die Shops

# Progressive Payments Up for All Shop Sizes

## Progressive Payment Terms Quarter Over Quarter



## AR Paid On Time Quarter Over Quarter



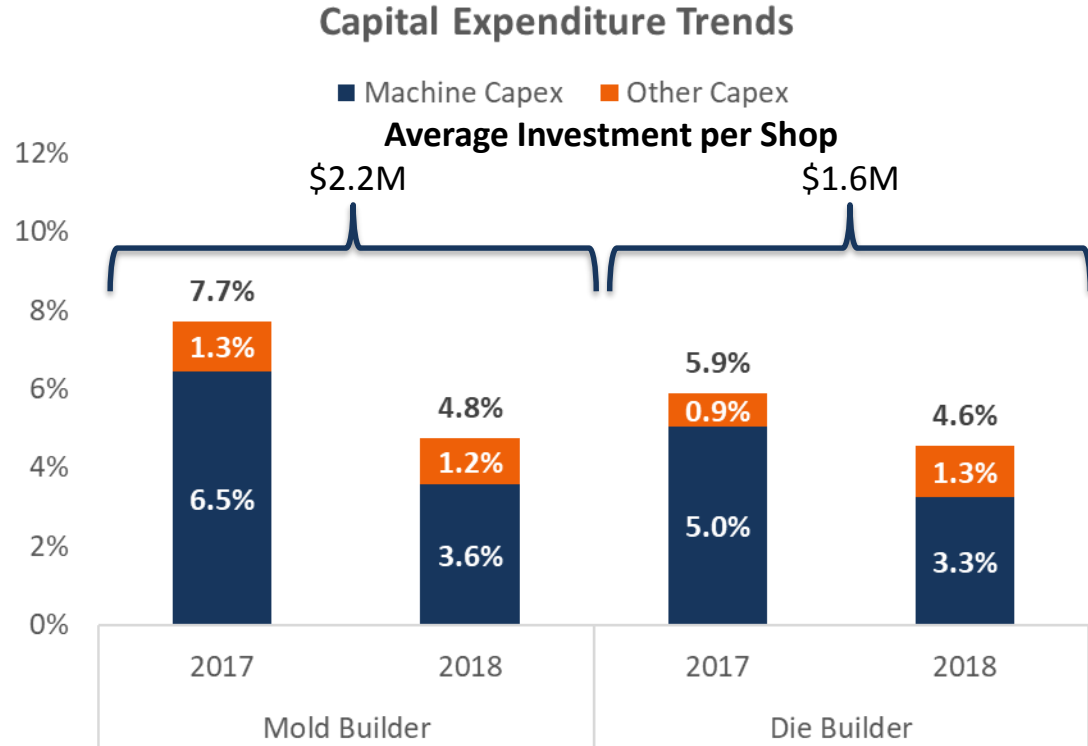
Question: Over the past three months, approximately what percent of your new booked business includes progressive payment terms and accounts receivables were being paid within contract terms. Shop Type: Mold and Die Shops

2018 Q2 Tooling Barometer

# INVESTMENT

# Shops Planning to Invest Less in 2018

- Particular investment in automation and new high speed cutting equipment.
- Nearly all tool suppliers plan a decline from significant investment in 2017. A great deal of investment has already taken place and HRI suspects this will continue to slow.

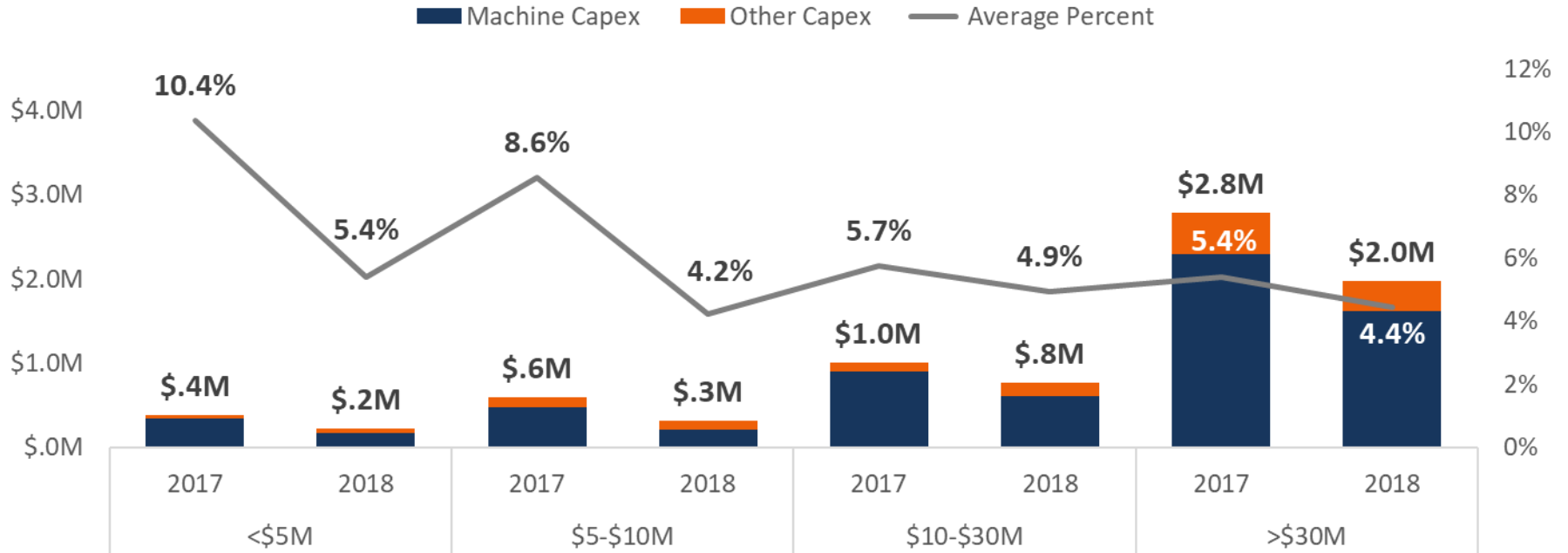


Question: How much did your facility contribute toward new capital expenditures in 2017 and how much is planned for 2018: Total, Machine, Other?  
 Shop Type: Mold and Die Builders – Q1 2018

# Large Shops Drive Investment by Dollar Amount

## However, Smaller Shops Invest Most as a Percentage

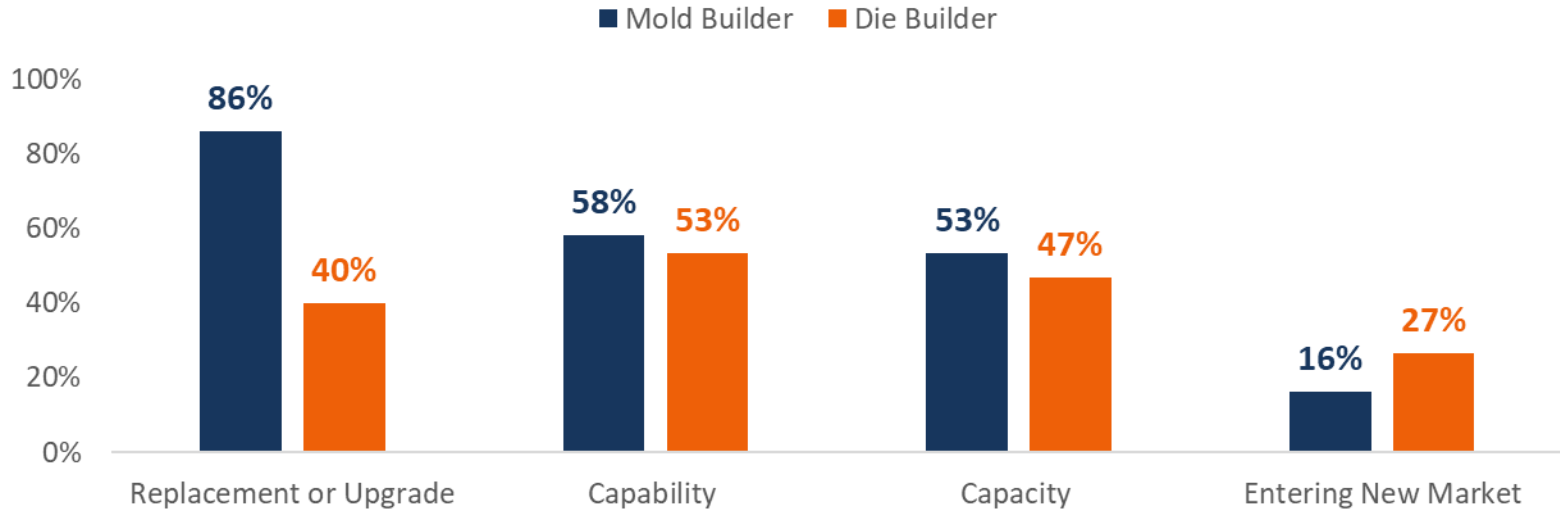
Capital Expenditure Trends (USD)



Question: How much did your facility contribute toward new capital expenditures in 2017 and how much is planned for 2018: Total, Machine, Other?  
 Shop Type: Mold and Die Builders – Q1 2018

# Why are Shops Investing in Machines?

## Top Reasons for Machine Investment



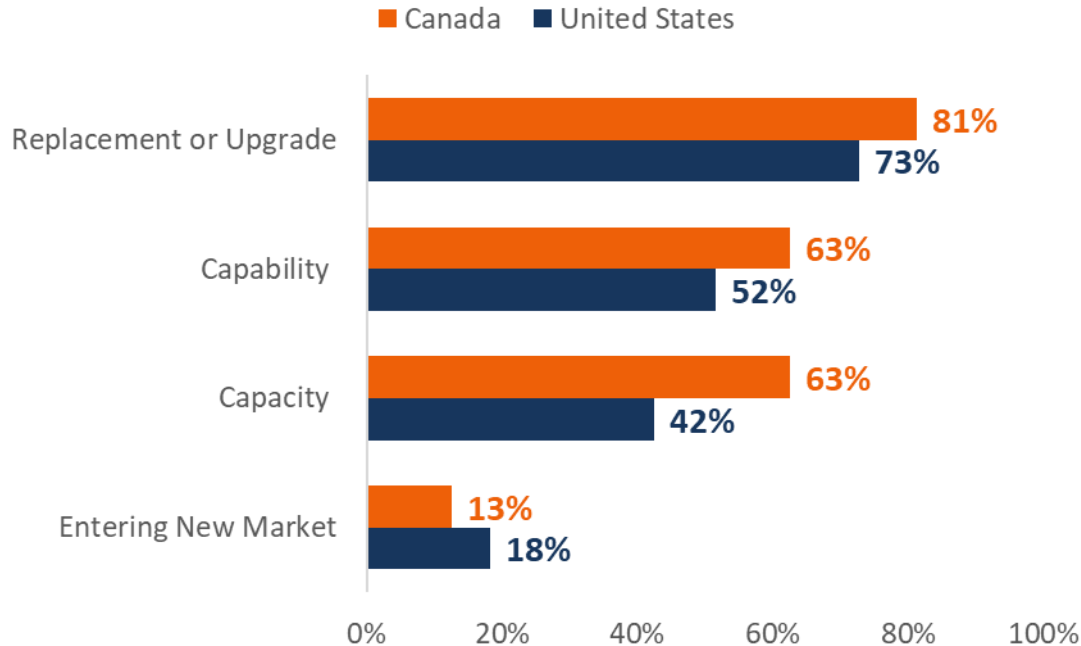
**In the next 24 months, 80% of tool builders are planning to invest in new machines**

Question: What business objectives driving decision to purchase new machines n the next 24 months? Shop Type: Mold and Die Builders



# Business Drivers for Machines Vary By Location

## Top Reasons for Machine Investment

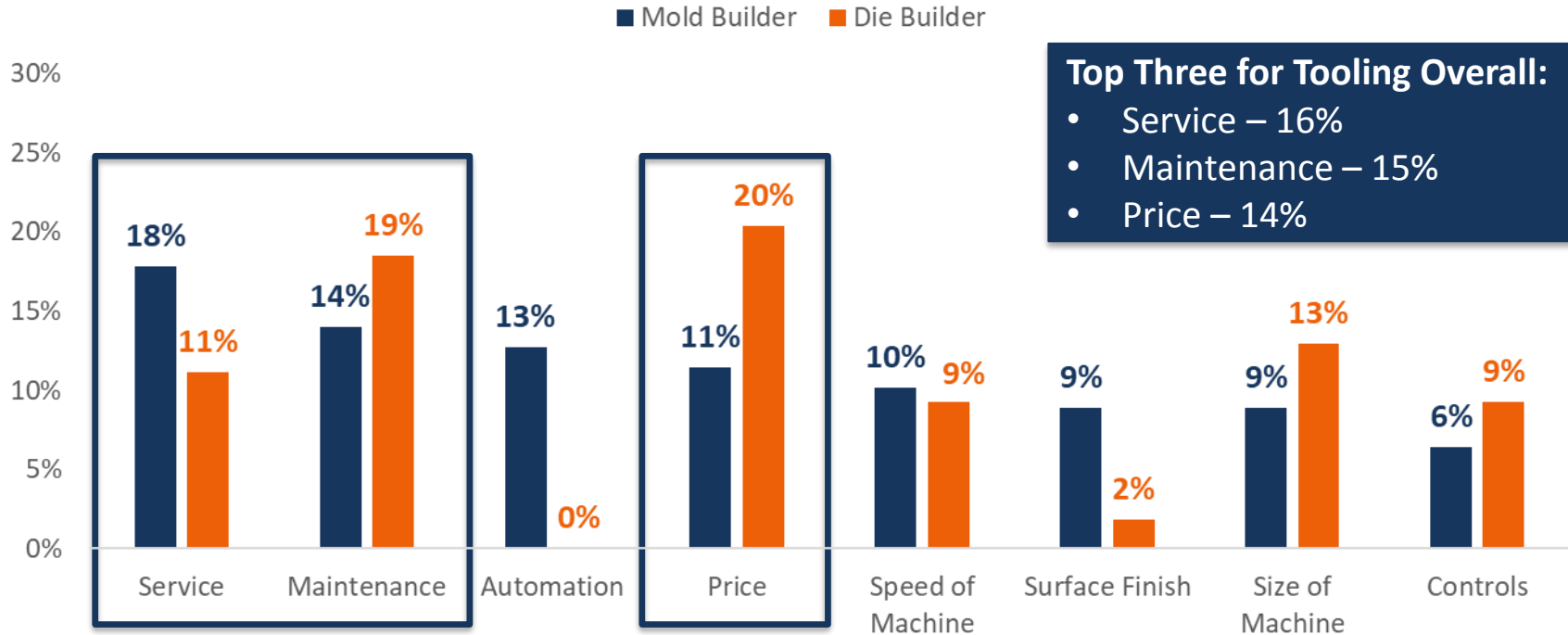


On the surface, US and Canada may appear similar in their business drivers for equipment; however, Canada is more focused on the capacity and capability new machines offer.

Question: What business objectives driving decision to purchase new machines n the next 24 months? Shop Type: Mold and Die Builders

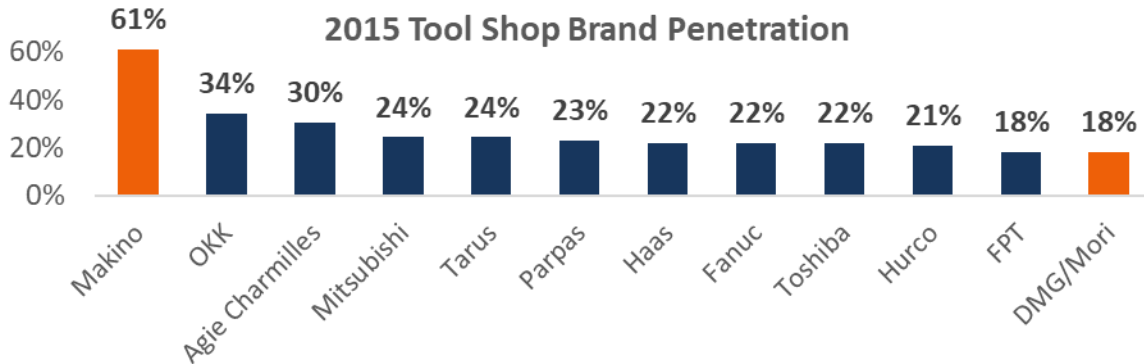
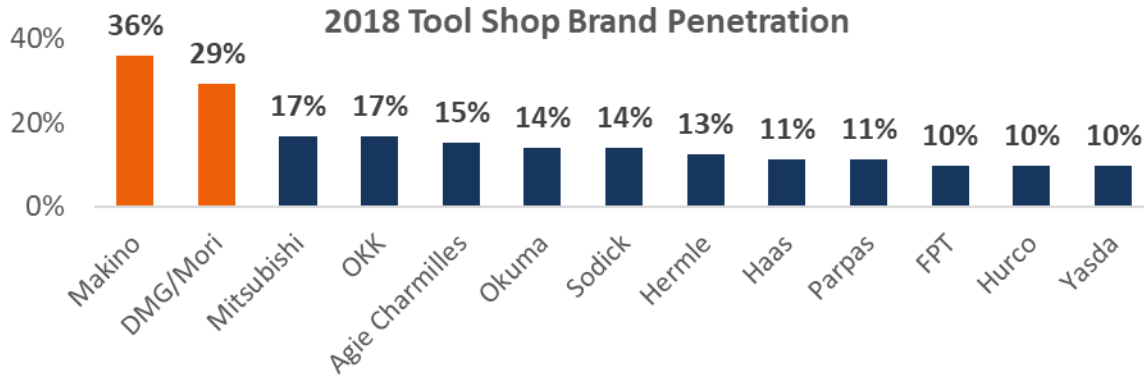
# Purchase Criteria Distinctly Different for Mold and Die

## Top Criteria in Machine Purchases



Question: What are your top 3 criteria for selecting a specific machine manufacturer? Shop Type: Mold and Die Builders

# Top Machine Brands Shift Since 2015

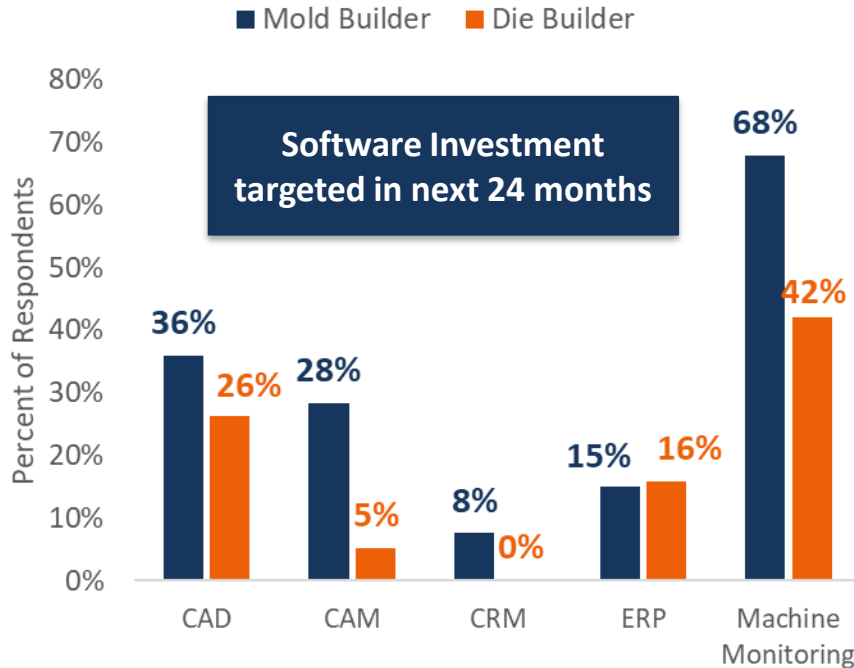


- Top machine brands have shifted since 2015 with DMG/Mori jumping 10 spots from 12<sup>th</sup> to 2<sup>nd</sup> across die and mold shops.
- Makino remains the top brand considered, however, penetration within shops has decreased over 20 points.

Question: What machine manufacturers are you considering purchasing from? Shop Type: Mold and Die Builders

# Future Software Plans Focused on Machine Monitoring

## Planned Software Investment

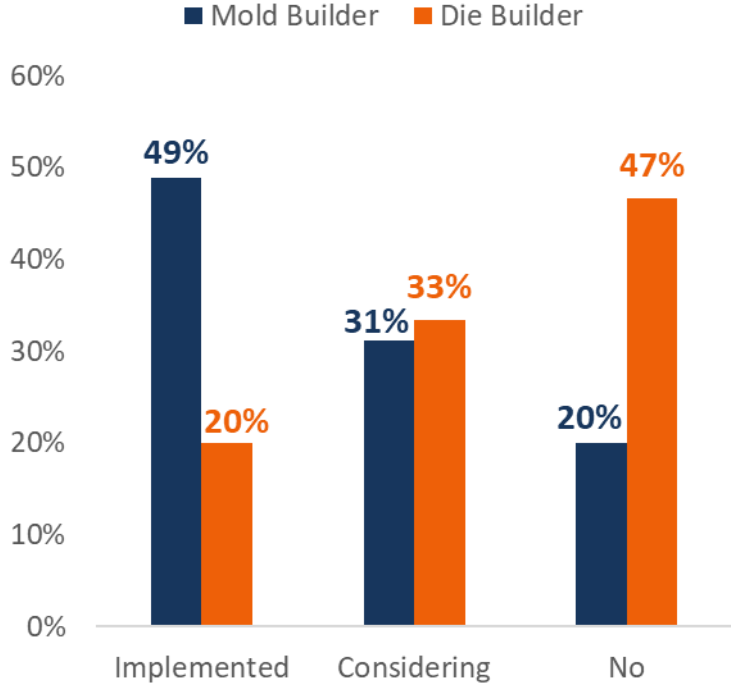


- 87% of Mold Builders and 47% of Die Builders are looking to invest in software over the next 24 months.
- Mold builders major investment focused on CAM software and machine monitoring to drive throughput.
- 80% of mold builders have implemented or are considering implementing machine monitoring while only 53% of die makers are involved with this software.

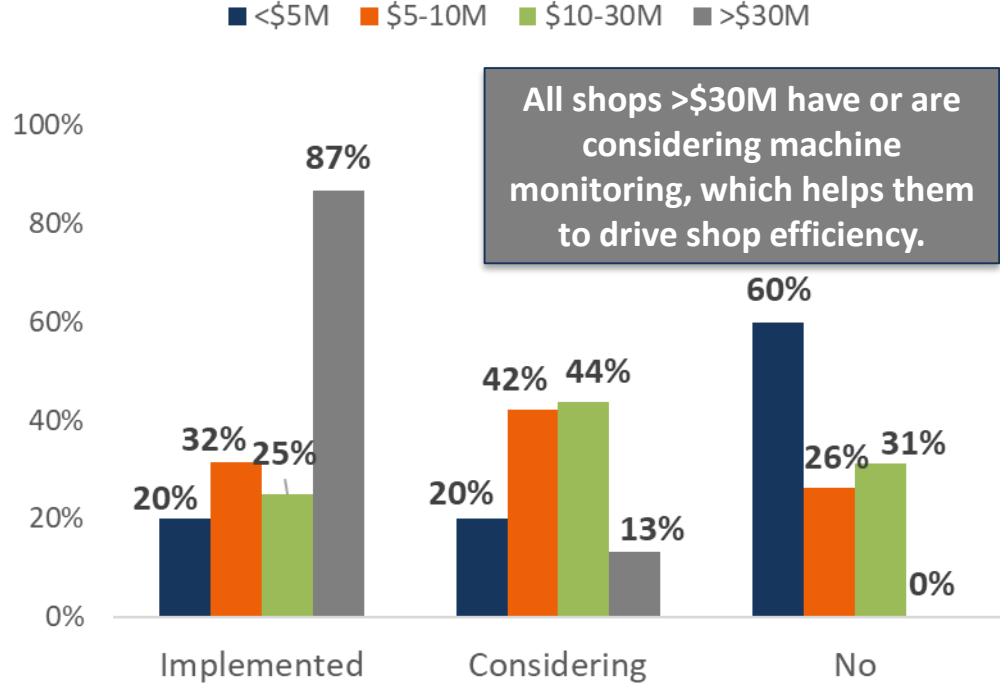
Question: What software is your facility planning to purchase in the next 24 months? Is your facility using or considering the use of machine monitoring software?  
Shop Type: Mold and Die Builders

# All Shops Over \$30M Have Monitoring Software

## Machine Monitoring Software



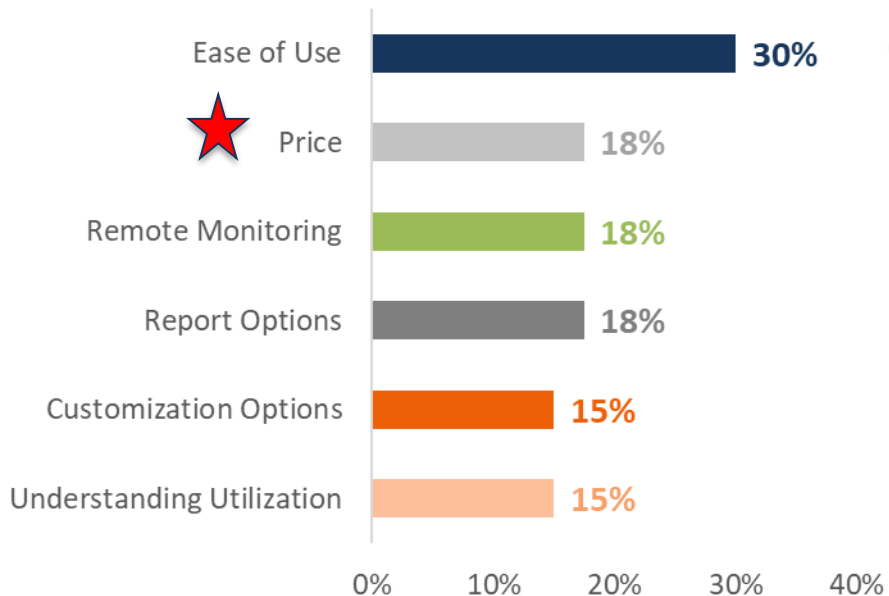
## Machine Monitoring Software



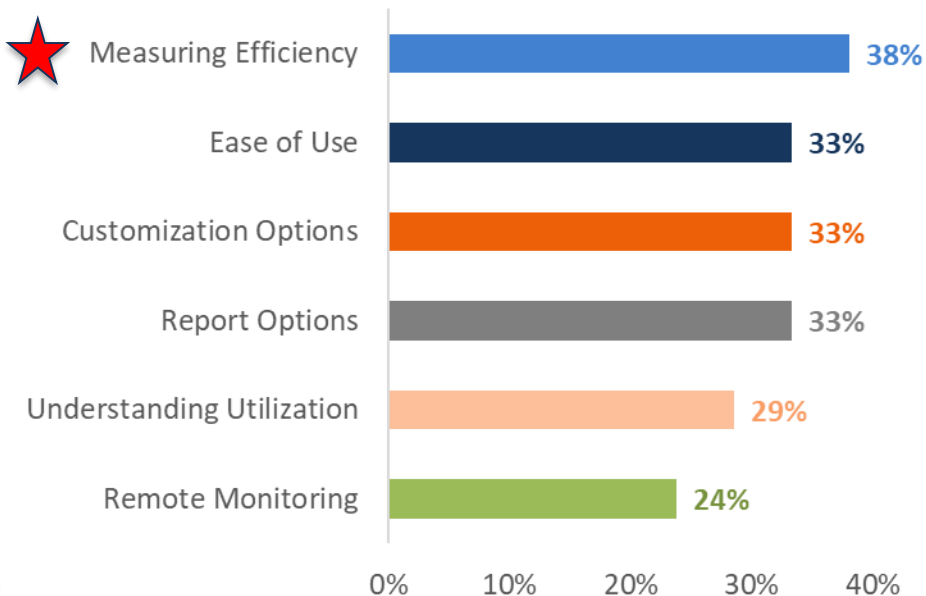
Question: What is your current annual revenue? Is your facility using or considering the use of machine monitoring software? Shop Type: Mold and Die Builders

# Machine Monitoring Criteria Varies By Region

## United States Machine Monitoring Top Criteria



## Canada Machine Monitoring Top Criteria



Question: What are your top three criteria for choosing a machine monitoring software? Shop Type: Mold and Die Builders

2018 Q2 Tooling Barometer

# **APPRENTICES AND RETENTION BENEFITS**

# Average Age in the Industry is Shifting

Department	Average Age – Including Apprentices	Average Age* – Excluding Apprentices	Difference
Designer	42.4	45.3	2.9
Machinist	40.6	44.3	3.7
Toolmaker	43.6	47.3	3.7
Overall Facility	42.6	45.6	3.0

Industry Demographics**	Average Age
Tool & Die Industry	50.2
Manufacturing Average	44.5
US Average	42.2

\*\*Source: bls.gov

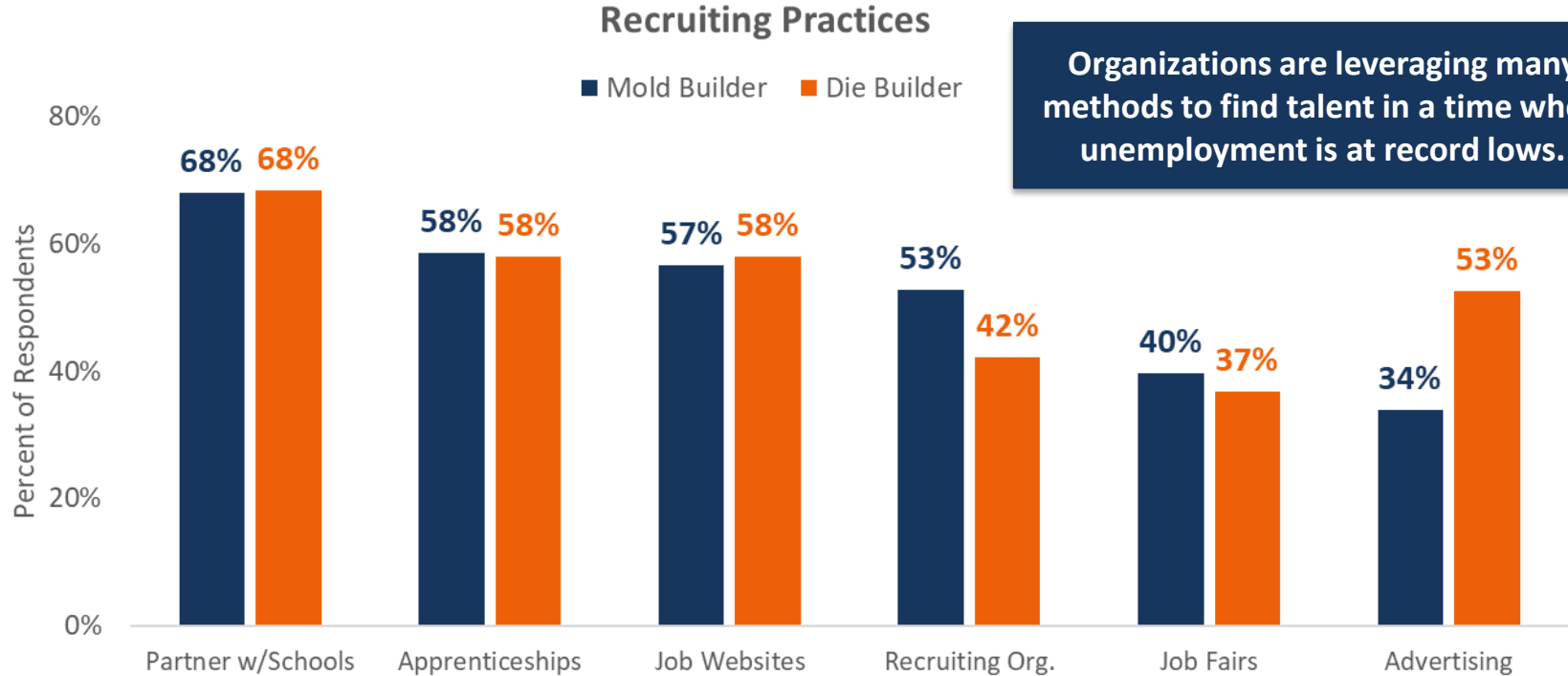
**Average age is slowing coming down but the need to bring in new young talent continues to be a challenge of most shops**

*\*Adjusted averages calculated with assumption that average age of an apprentice is 21 years old.*

*Question: What is the average age for the following: Overall Facility, Designer, Machinist, Toolmaker? How many apprentices and employees does your facility have: Total, Engineering, Machining and Toolmaking? Shop Type: Mold and Die Builders*



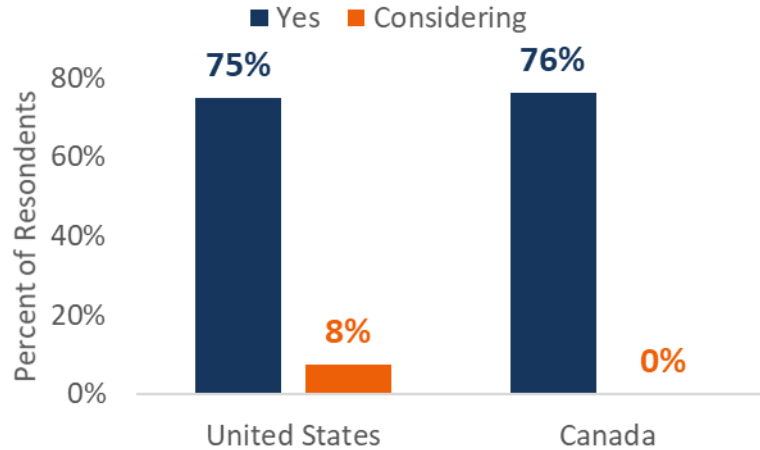
# Wide Range of Methods Used to Recruit Talent



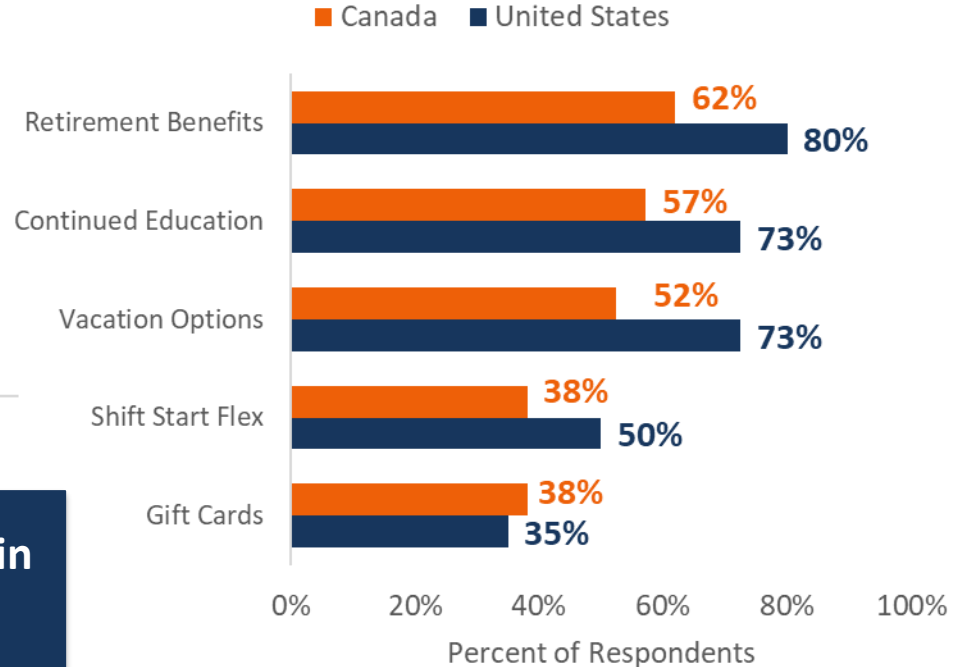
Question: What steps/methods do you utilize to acquire new talent for your facility? Shop Type: Mold and Die Builders

# US Shops Doing More to Retain Talent

## Bonus Programs



## Retention Incentives/Benefits

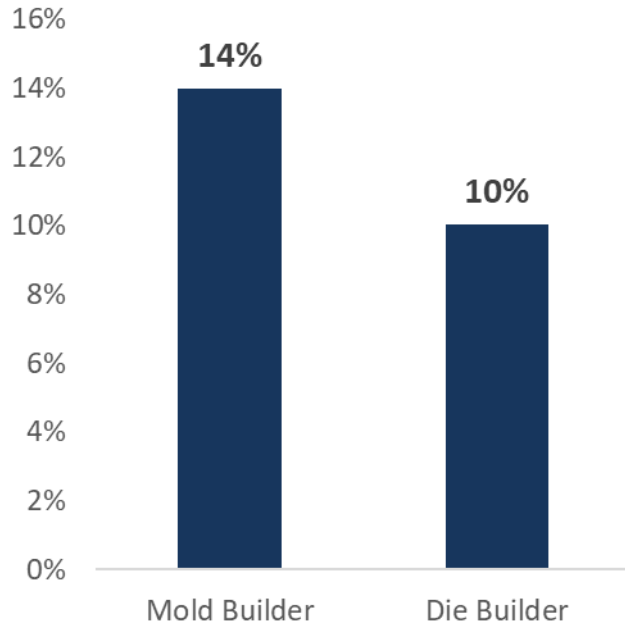


**Tool Suppliers must get more creative in order to retain work force.**

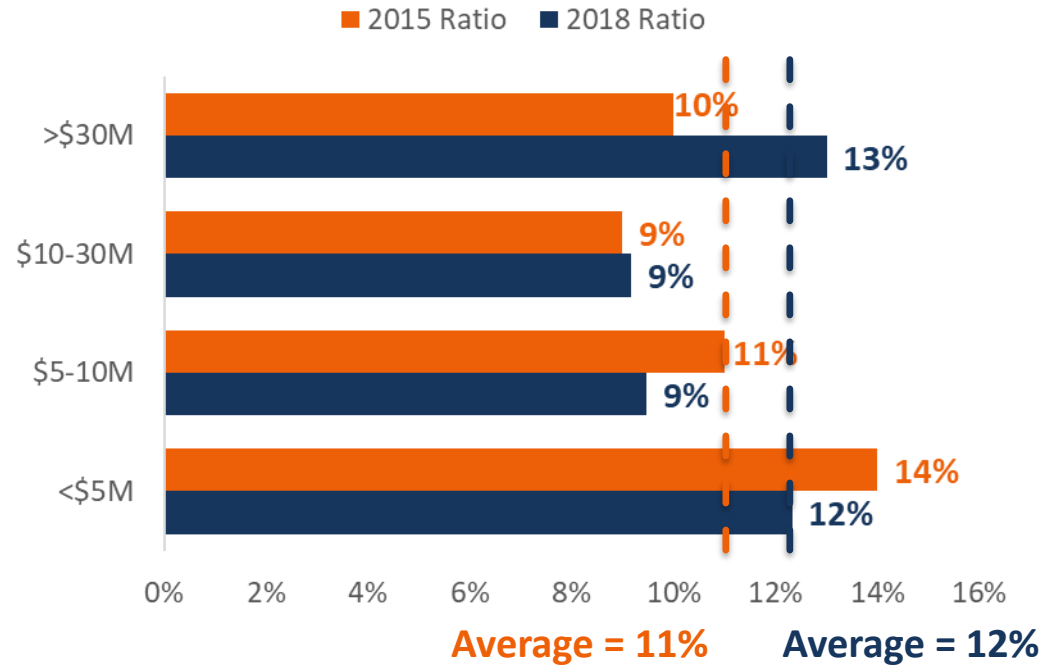
Question: Does your facility offer employee bonuses? Do you offer an options/incentives to encourage retention? Shop Type: Mold and Die Builders

# Apprentice Numbers Up 1% Compared to 3 Years Ago

## Apprentice to Hourly Employees



## Apprentices as a Percent of Hourly Employees



Question: How many apprentices does your facility have: Total, Engineering, Machining and Toolmaking? Shop Type: Mold and Die Builders

2018 Q2 Tooling Barometer

# TOP PERFORMERS

# Top Performers Comparison

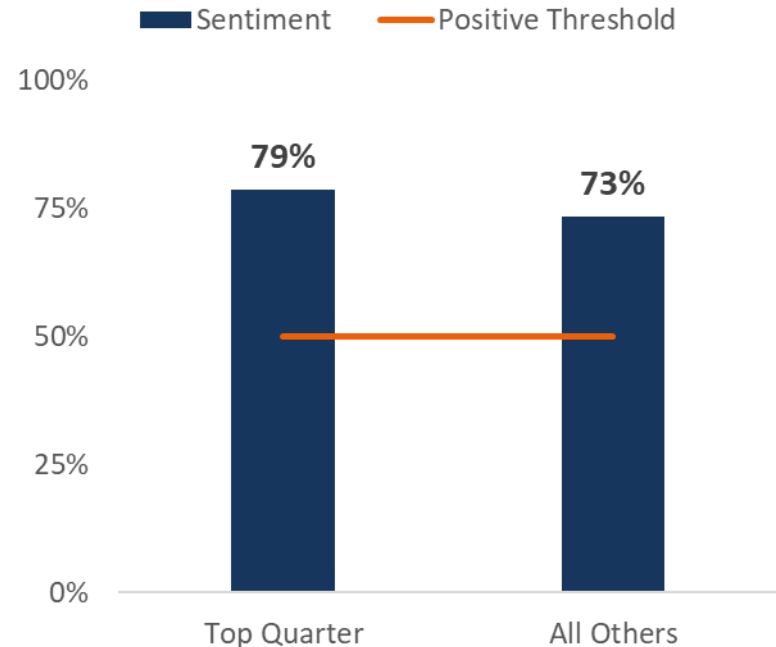
## Top Performers Based on Throughput:

- Revenue Per FTE: >\$170k (USD)
- Sentiment: Positive
- Overtime: ~15%
- Average Age: 44
- Total Shops: 25; 8 which are <\$10M

## All Other Shops Based on Throughput:

- Revenue Per FTE: <\$170k (USD)
- Sentiment: Positive
- Overtime: ~18%
- Average Age: 43
- Total Shops: 26; 15 which are <\$10M

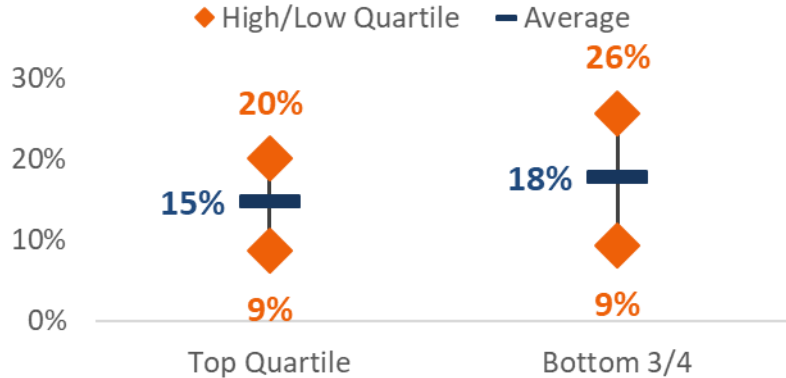
## Current Sentiment Index



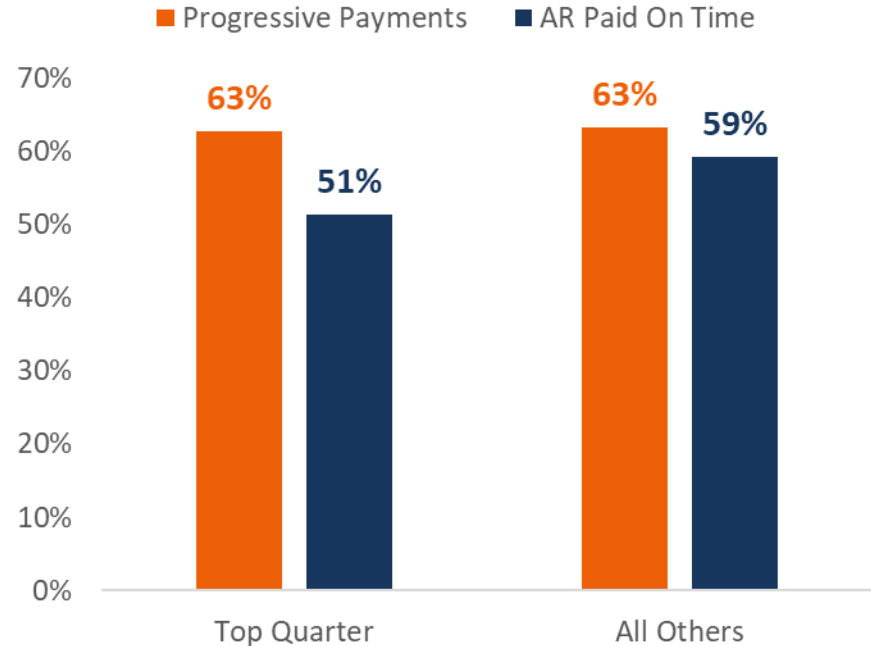
Question: What is your current revenue? How many hours a week to hourly employees average? How much is your facility's total outsourcing? Over the next three months, what is the general outlook for your facility? Shop Type: Mold and Die Builders

# Highest Throughput Shops Work Less Overtime

## Shop Overtime



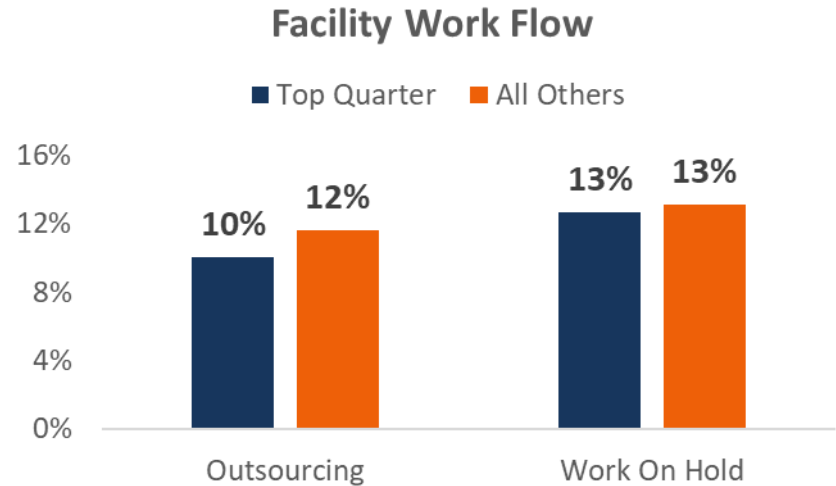
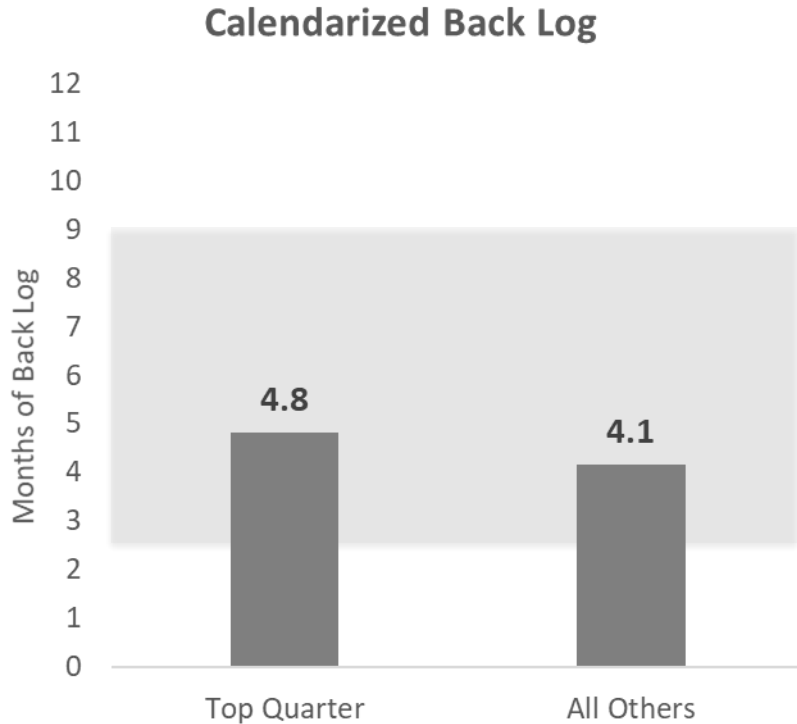
## Payment Trends



**Overtime is a key metric that the best shops work to reduce**

Question: Over the past three months, approximately what percent of your new booked business includes progressive payment terms and accounts receivables were being paid within contract terms. On average, how many hours a week do your hourly employees work? Shop Type: Mold and Die Shops

# Top Performers Manage Flow of Work Through Shop

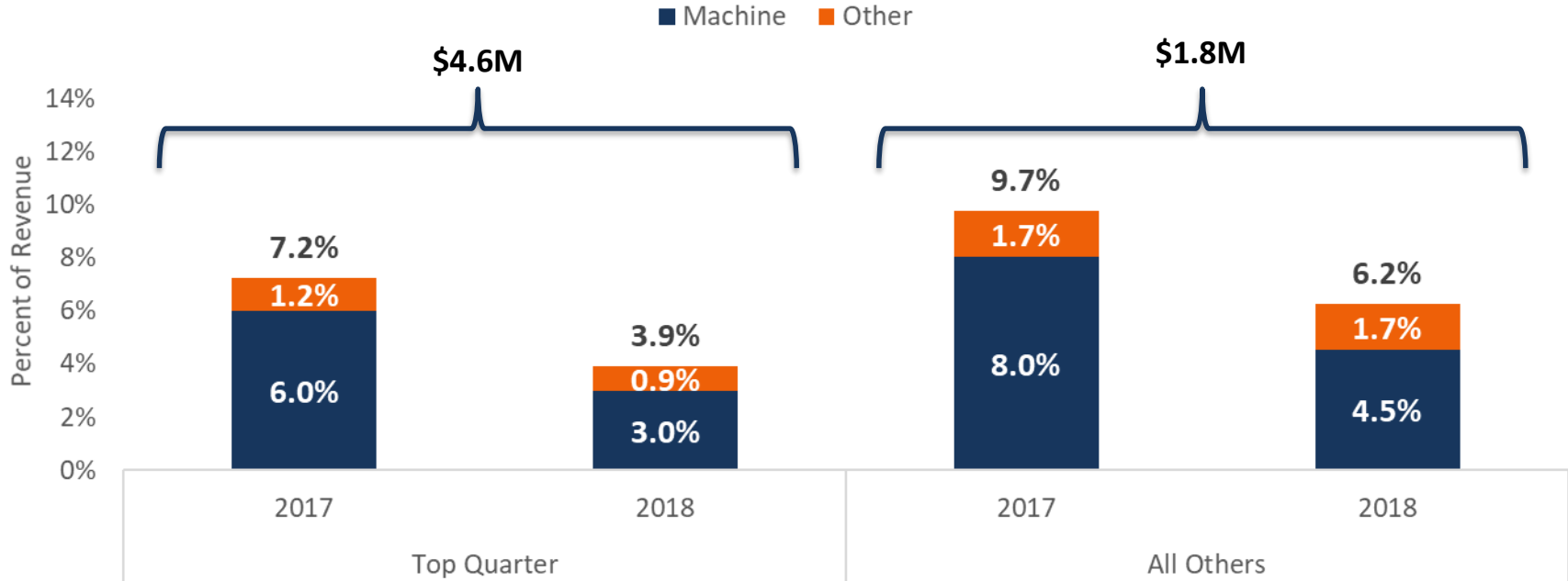


**Top performers tend to better manage outsourcing and thereby level load their business**

*Question: What is your current annual revenue? What is your facility's current back log? What percentage of jobs have you been awarded are currently on hold due to reasons outside of your control? How much does your facility outsource? Shop Type: Mold and Die Builders*

# Shops With Highest Throughput Investing More

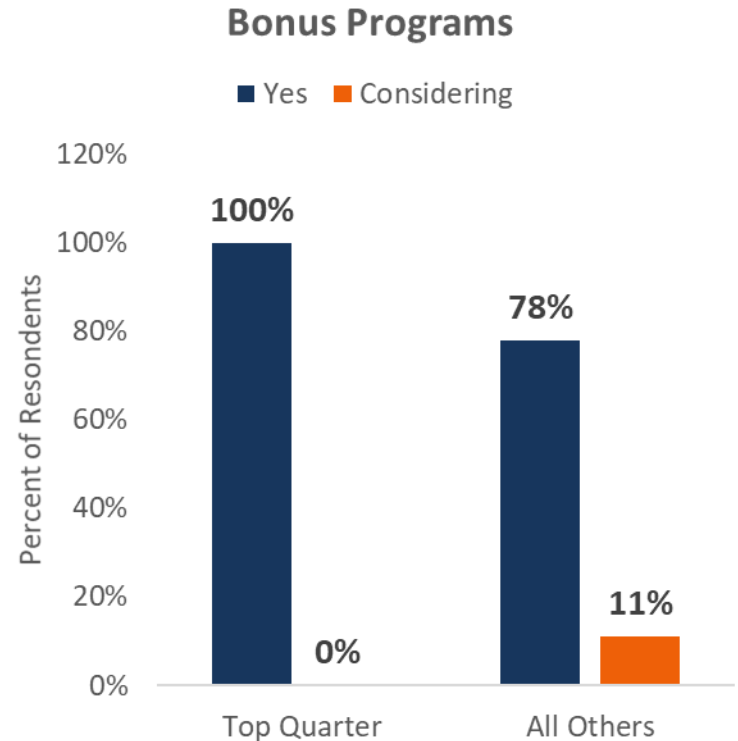
## Capital Expenditure Trends



Question: How much did your facility contribute toward new capital expenditures in 2017 and how much is planned for 2018: Total, Machine, Other?  
Shop Type: Mold and Die Builders – Q1 2018

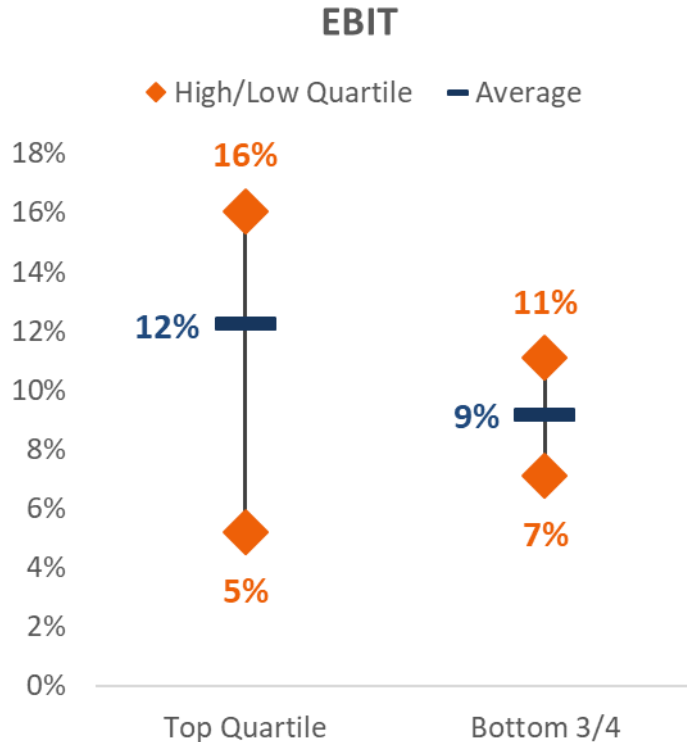


# Top Performers Invest More in Recruitment



Question: What steps/methods do you utilize to acquire new talent for your facility? Does your facility have a bonus structure in place? Shop Type: Mold and Die Builders

# Profitability Varies Greatly Among Shops



- Top performers tend to have much higher profitability.
- Some shops are well above the average and over performing to their peer group.
- However, it is not always the case. The variation in profitability among the top performers show that some are leaving money on the table.

Question: What was your EBIT for 2017? Shop Type: Mold and Die Builders

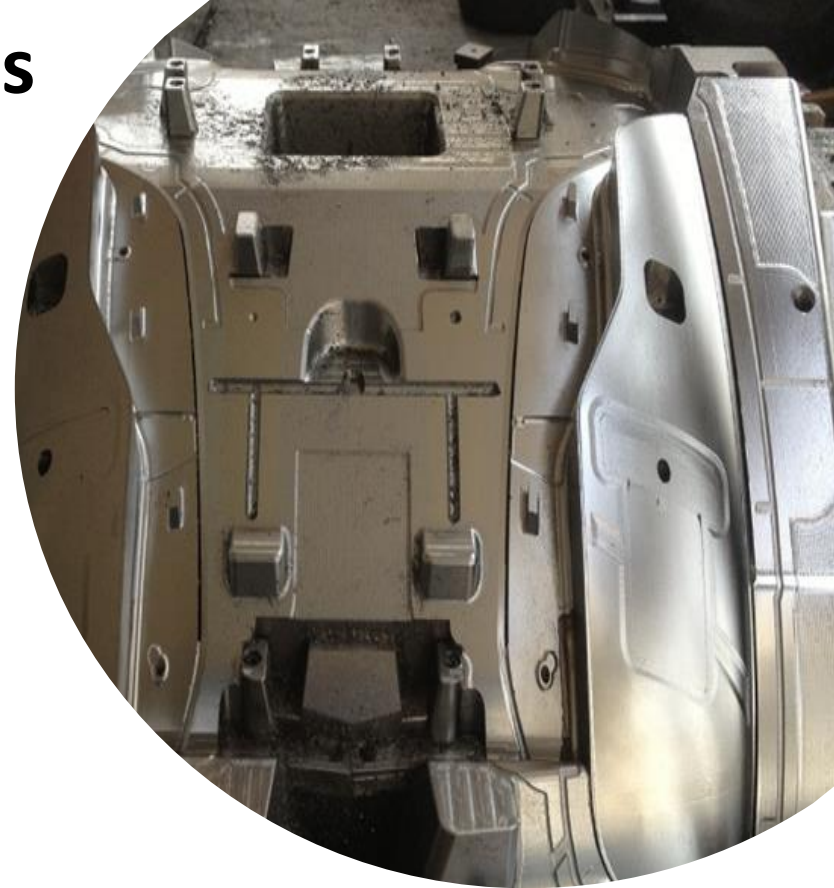
2018 Q2 Tooling Barometer

# **EXTERNAL FACTORS EFFECTING TOOLING**

# Steel & Aluminum Tariff Facts

## Facts:

- 25% tariff on imported steel
  - HRI believes once the steel has been manufactured it becomes a different H code and is no longer subject to the tariff
- 10% on imported aluminum
  - This includes aluminum die cast goods
- The U.S. produced 81.6M metric tons, imported 34.6M metric tons and exported 10M metric tons in 2017.
- Biggest impact on Canada – U.S.'s largest steel importer at 20% of the 7.9M metric tons imported in Q1 of 2018.
- U.S. raw steel prices are up 15% from April of 2018.
- U.S. manufacturers are diligently filing exclusion requests but no applications have been approved.



Sources: International Trade Administration, Trading Economics

# Retaliation Against U.S. Imposed Tariffs



- Mexico will implement tariffs on U.S. imports, targeting goods from U.S. states that supported Trump in the 2016 election.
- The U.S. exports 33.2% of its steel to Mexico.



- Canada will implement dollar for dollar steel and aluminum tariffs on the U.S.
- The U.S. exports 42.3% of its steel to Canada and imports 16.9% from Canada.



- EU is strategically imposing tariffs for maximum political impact. Targeting Bourbon and Cranberries to affect Mitch McConnell and Paul Ryan's home states of Kentucky and Wisconsin.

Source: Reuters, Forbes

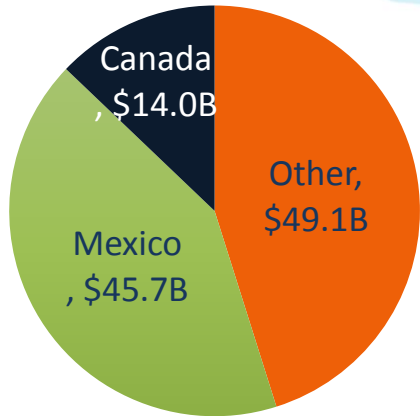
# Investigation into Imported Cars and Parts

Current State: The U.S. cannot self supply.

2017 Vehicle  
Production



U.S. Production	11 million
less U.S. Exports	- 2.4 million
plus U.S. Imports	+ 8.7 million
<b>U.S. Sales</b>	<b>= 17.3 million</b>



2017 Total U.S. Auto  
Parts Imports: \$108.8B

Future Scenario: High profit loss

DoC finds the quantity  
of imported cars and  
parts to be a threat to  
national security.

The proposed 27.5% is  
imposed by the Trump  
administration.

Conservatively  
amounting to a 15-25%  
decrease in profits per  
vehicle.

Source: Center for Automotive Research & HRI

# The Facts on New Chinese Tariffs

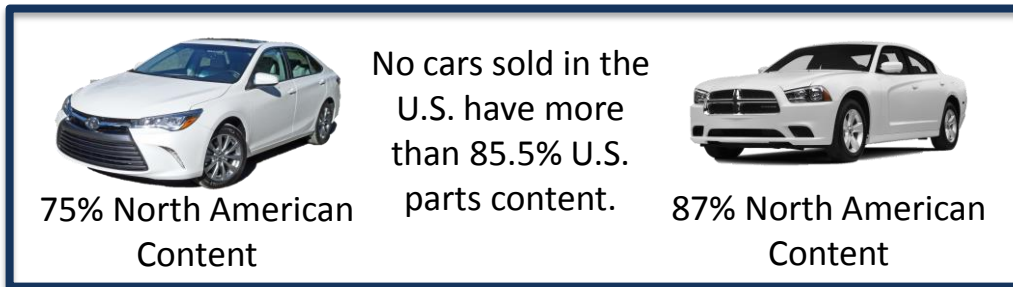
- U.S. announced 25% tariff on \$50B of Chinese imports, set to take effect on July 6<sup>th</sup>.
- U.S. has said that if China retaliates with the same tariffs starting July 6<sup>th</sup>, the Trump administration will impose tariffs on an additional \$200B of Chinese Imports.
- The 25% tariff applies to molds and components from China.
- The tariff will be imposed when the mold hits the U.S. border; order and ship dates rendered irrelevant.
- The tariff will be imposed on total price paid for the mold or mold component.
- In order to qualify for an exclusion, US products must not be produced in sufficient quantity, and are not reasonably available or not of satisfactory quality.



# Will tariffs yield a productive NAFTA renegotiation?

Key White House objectives stalling NAFTA negotiations

- **Sunset clause:** U.S. is demanding 5 year sunset clause. Mexico and Canada refused due to economic security concerns.
- **Automotive rules of origin:** U.S. hopes to increase the rules of origin from 62.5% to 85% for the NAFTA region, add a U.S. specific requirement of 50%, and expand the “tracing list”.



## Not on Trump's Timing

- Canada may not come back to the table. It's becoming a personal issue between Trump and Trudeau.
- Mexico is not in a place to come back to the table until after their elections in July; and at that point it will depend on the new president.

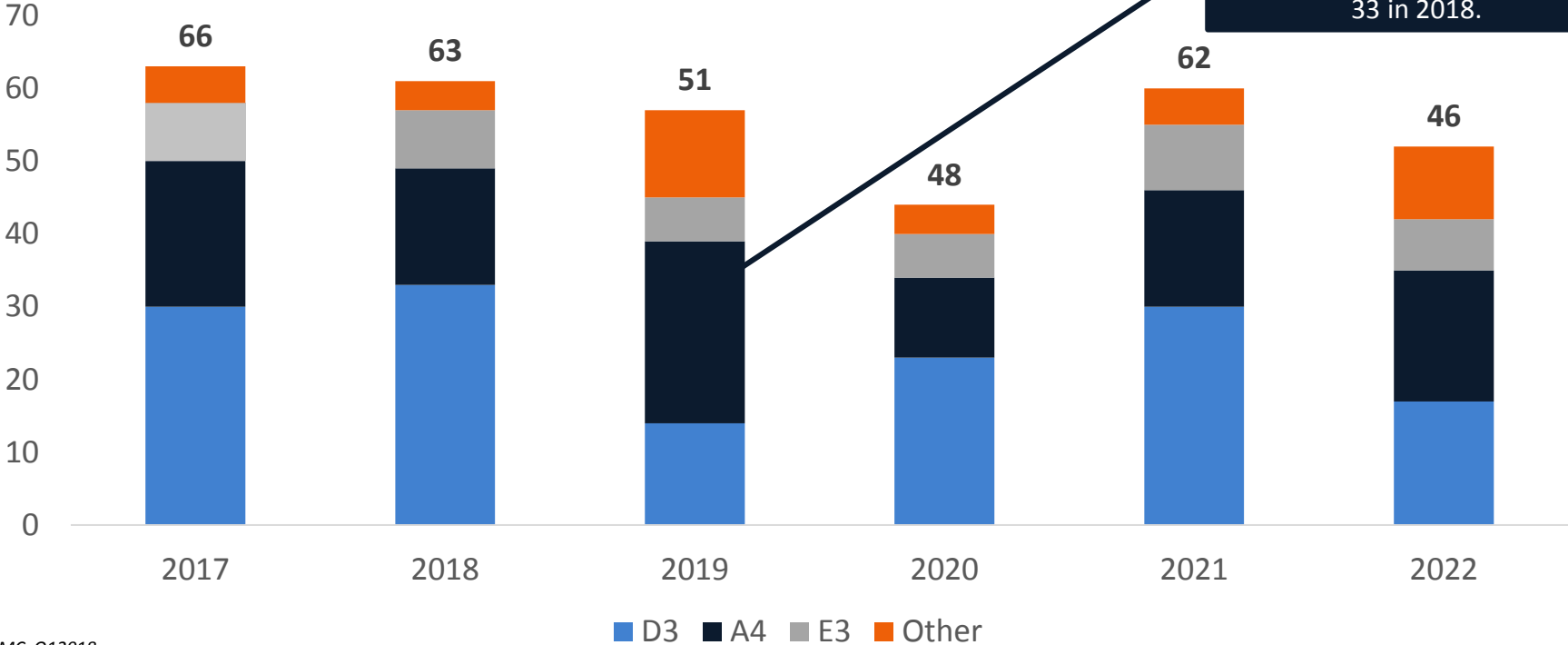
Source: Bloomberg, Motor Trend



# N.A. Vehicle Launch Forecasts are Still Strong

### Tool Source Vehicle Launches by OEM Group

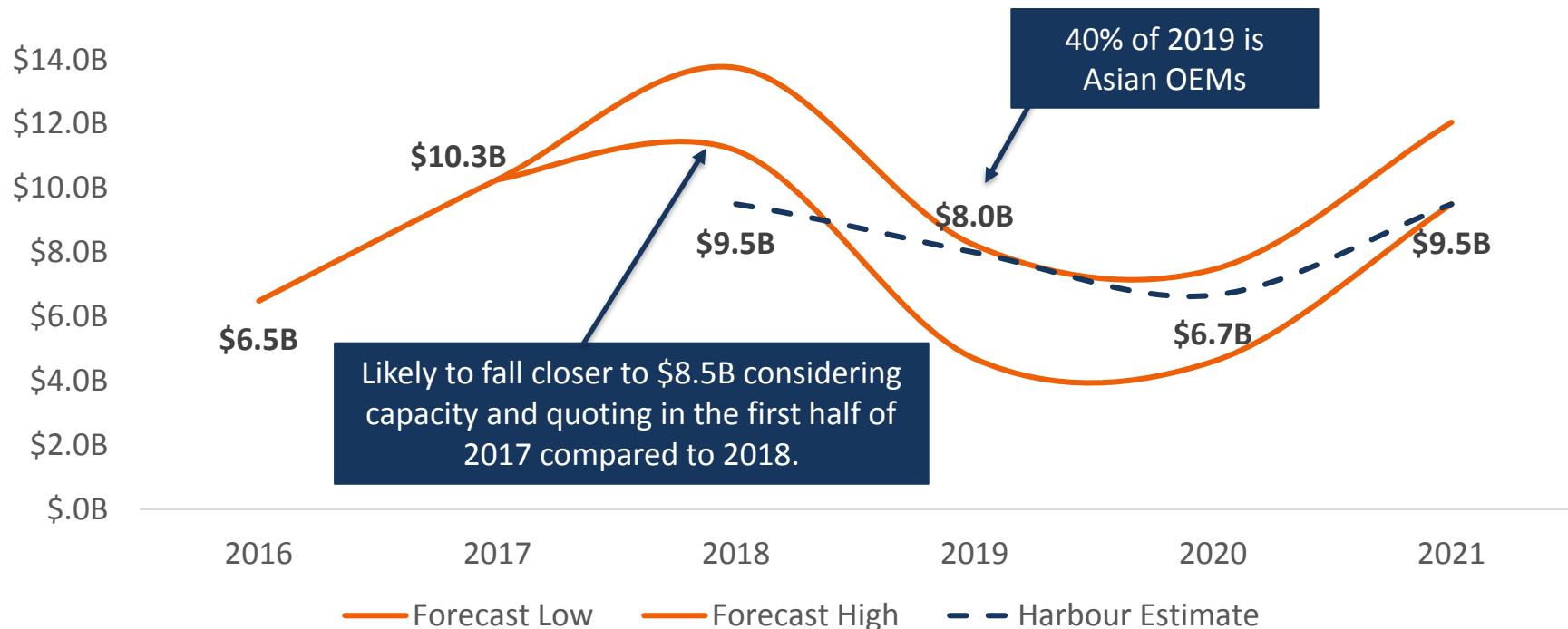
A4 makes up majority of launches in 2019. D3 have only 14 launches in 2019 down from 33 in 2018.



Source: LMC, Q12018

# Potential Softening on the Horizon?

## Tool Sourcing Spend Estimate - 2018 Q1



Source: LMC Automotive Forecast – Q1 2018

# Summary

- The tool industry was slow in the first 5 months of 2018 but it is expected to rebound in the second half of the year.
- Great variation exists in machine purchases but the best shops are spending more money and new brands are making an impact.
- Machine monitoring software is making an impact with many tool makers but with mold makers in particular.
- More apprentices are being added and the average age of shops is coming down but the best shops are doing more to attract and retain talent.
- Great variation in performance still exists in the tool industry. The strong are doing very well and many are still struggling.

# Harbour Results Partners



# Thank you for the opportunity

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