

MRO SURVEY 2019

# BIGGER, STRONGER, FASTER

The challenges of a more global and digital MRO market



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## ABOUT THE SURVEY

In its second decade, the annual Oliver Wyman MRO survey is an industry standard that samples the attitudes and strategies of executives from across aviation as they address key trends and emerging issues in the maintenance, repair, and overhaul (MRO) sector. More than 125 global aviation professionals responded to the 2019 survey, drawn from a cross-section of airline operators, captive airline MROs, independent MROs, and original equipment manufacturers (OEMs). Representatives from leasing organizations, financiers, parts distributors, and advisors rounded out the ecosystem of respondents.

This year, almost half of respondents to the annual survey were senior executives – either in C-suite posts, vice presidents, or above; nearly 80 percent were director level or above. In addition, approximately 80 percent of respondents were from organizations with more than \$500 million in annual revenues. This year's survey was our most global yet, with more than half of respondents' companies headquartered outside of North America and three-quarters reporting primary bases of operations outside of North America and Western Europe.

## Welcome to the 2019 MRO Survey, which combined with our Global Fleet and MRO Market Forecast 2019-2029, provides a detailed view of the changes taking place in the commercial aviation aftermarket industry.

This report expands on three of our survey topics. First, we assessed the possibility and implications of a recession, given concerns over rising fuel prices and interest rates, combined with an extended positive economic cycle and new geopolitical uncertainty. While our market forecast indicates the outlook for long-term MRO industry growth remains positive, survey respondents are both bullish about the future, yet believe they are ready should things go awry.

Second, the top disruptor cited by survey respondents this year is again the growth of OEMs in the aftermarket. It is clear the market anticipates that OEMs will continue charging down this path, prompting more consolidation within and across market segments. MROs will prosper by delivering the right price/right time services airline operators want. In turn, operators may have finally

reached a point of concern where they are beginning to develop additional options in the market.

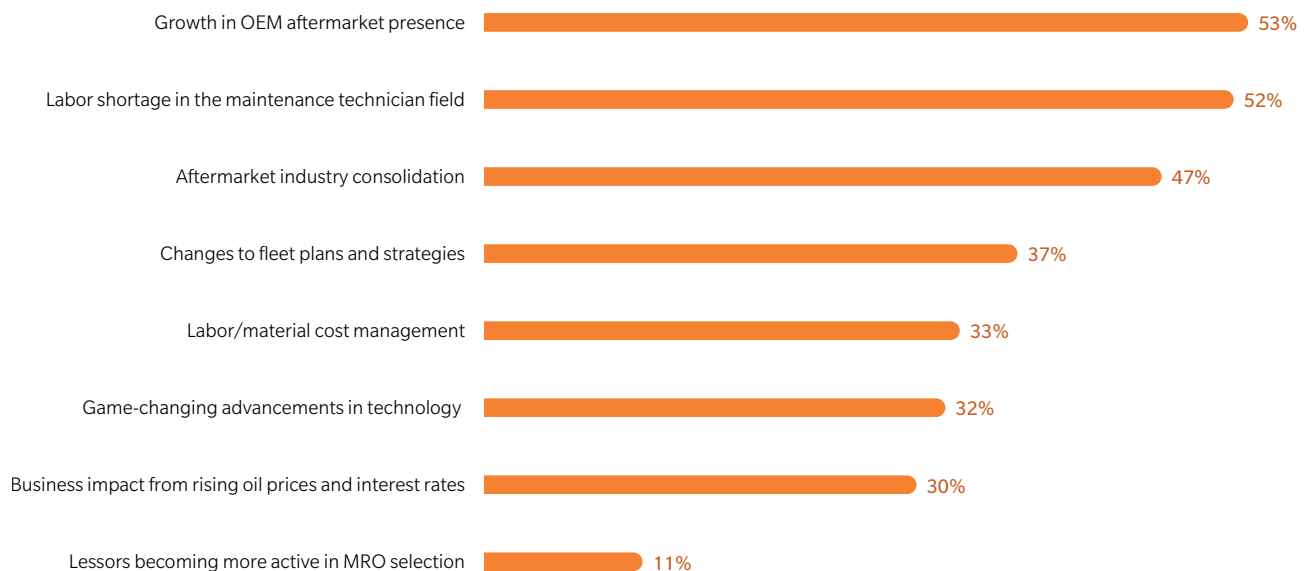
Finally, a deep drill on the technology front found that despite modest (or limited) impact to date, most market participants expect significant benefits from new data and analytics processes – fairly soon for airline health management and predictive maintenance, and within the next decade for other digital innovations.

The exhibit below highlights the top industry disruptors covered in this report. Others identified by the survey include perennial concerns over maintenance technician shortages and changes to fleet plans and strategies. More on these topics can be found in our [Global Fleet & MRO Forecast](#) as well as in previous editions of the MRO Survey on [www.oliverwyman.com](http://www.oliverwyman.com).

### Potential aviation aftermarket disruptors warranting the most attention

Q: Which disruptors will warrant the greatest attention and challenge for your company over the next five years?

PERCENT OF RESPONDENTS



Source: Oliver Wyman 2019 MRO Survey

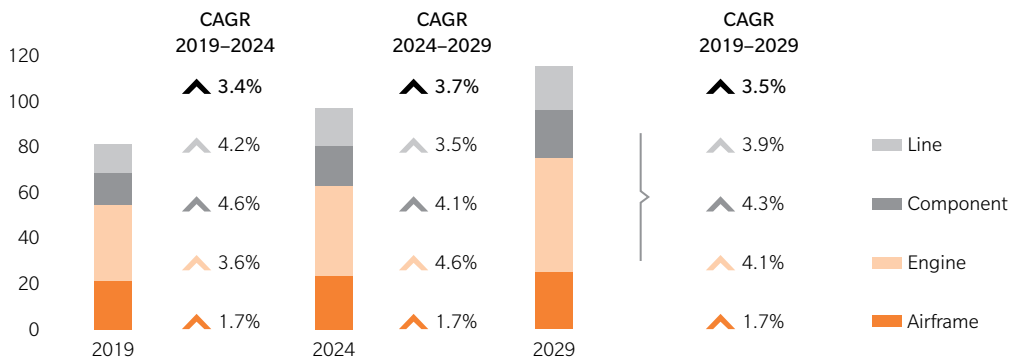
# A NEW AGE OF AIR TRAVEL

Air travel demand is anticipated to reach record levels over the next decade, with another 200 million people slated to enter the global middle class. Revenue passenger-kilometers (RPK) will grow faster than gross domestic product (GDP) for most economies – particularly in Asia. Consequently, this demand will require record expansion of the global aviation fleet. By the start of 2029, our latest Global Fleet & MRO Market Forecast projects a total fleet of 39,175 aircraft, an increase of 11,600 over 2019’s total of 27,492. This reflects in-service fleet growth of 3.9 percent a year over the first half of the decade and 3.3 percent a year during the second half.

The MRO market will increase in step as the global fleet grows: Total MRO spend, valued at around \$82 billion in 2019, will tick up by about 3.5 percent a year, to \$116 billion in 2029. The demands that MRO suppliers must meet will not only expand but evolve: Next-generation aircraft, equipped with more fuel-efficient engines and sophisticated technology, will come to represent a larger share of the in-service fleet. Most of these aircraft will be larger narrowbodies, as airlines move toward replacing existing fleets with aircraft that offer improved operational flexibility and better fuel efficiency.

## Growth of MRO spend, 2019–2029

US DOLLARS (BILLIONS)



Source: Oliver Wyman Global Fleet & MRO Market Forecast 2019-2029

# SAY THERE WAS A DOWNTURN...

Our forecast predicts a robust future for the commercial aviation fleet and MRO market. But with a decade of uninterrupted growth already under their belts, and an industry with a long history of cyclical performance, participants might be expected to worry. Various global economic trends – rising interest rates, possible trade wars – along with industry headwinds like low unemployment and labor shortages, raise the question of whether or when an economic slowdown or contraction might take place.

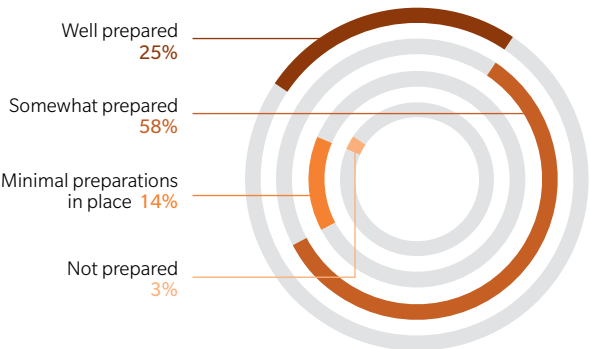
For this year’s MRO survey, we asked specifically about the potential for a recession. Respondents clearly don’t see this happening soon: More than 90 percent believe the aftermarket will grow over the next five years, and 70 percent expect that growth to exceed five percent. OEM’s are particularly optimistic – nearly half believe the MRO market will grow by more than 10 percent. This aligns with what is published in other market reports, most notably, the annual OEM market reports, which project nothing but continued, strong growth for the next decade.

Nearly half of respondents in the Americas and Europe expect growth in the range of five to ten percent, which is aggressive when compared to our annual MRO market forecast growth rate of 3.5 percent over the next decade. Despite rapid fleet growth, respondents in Asia are more pessimistic (or realistic) – half expect growth of less than five percent. One reason for

### Readiness for an economic downturn

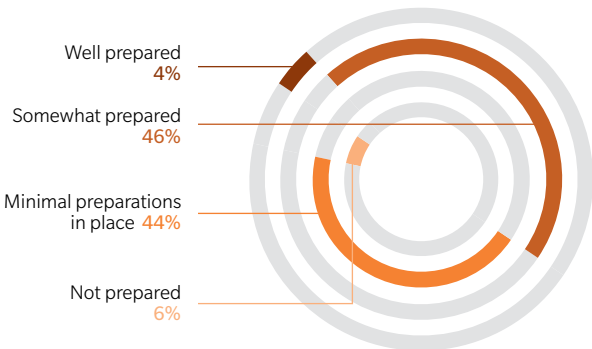
Q: How prepared is your organization for a potential downturn in the industry?

DISTRIBUTION OF TOTAL RESPONSES



Q: How prepared is the industry for a potential downturn?

DISTRIBUTION OF TOTAL RESPONSES



Source: Oliver Wyman 2019 MRO Survey

this outlook could be the influx of new aircraft into the region, leading to a “maintenance honeymoon.” Another is that the region’s typical meteoric growth rate may be slowing.

Of course, there’s always the risk of a sudden global upheaval. One only has to remember post-9/11, SARS, or the 2008 financial crisis to recall how sensitive aviation is to such shocks – the possibility of a downturn is always real. When asked if they are ready, more than 80 percent of respondents said they are somewhat or well prepared to manage a downturn. Only half, however, thought that their competitors or the industry as a whole are equally prepared, which is concerning.

Operators and non-operators have slightly different ideas about what they would do in the event of a recession. Both list among their top four actions canceling or postponing expansions, focusing on operational efficiency, and renegotiating their vendor/supplier agreements. But operators also would park older aircraft or aggressively cannibalize them for Used Serviceable Materials (USM) parts. Together with vendor contract changes, this would put the squeeze on parts sales and the repair aftermarket (with the airframe aftermarket the least impacted, as heavy maintenance is driven mainly by the calendar rather than utilization).

On the plus side, the USM market would be reinvigorated. In our 2018 MRO survey, most industry participants told us that they wanted to increase their usage of USM but were hindered by a lack of supply. Should operators return to more historical aircraft retirement rates, leading to increased cannibalizing or parting out of older aircraft, this would provide a new source of USM feedstock for both operators and MROs.

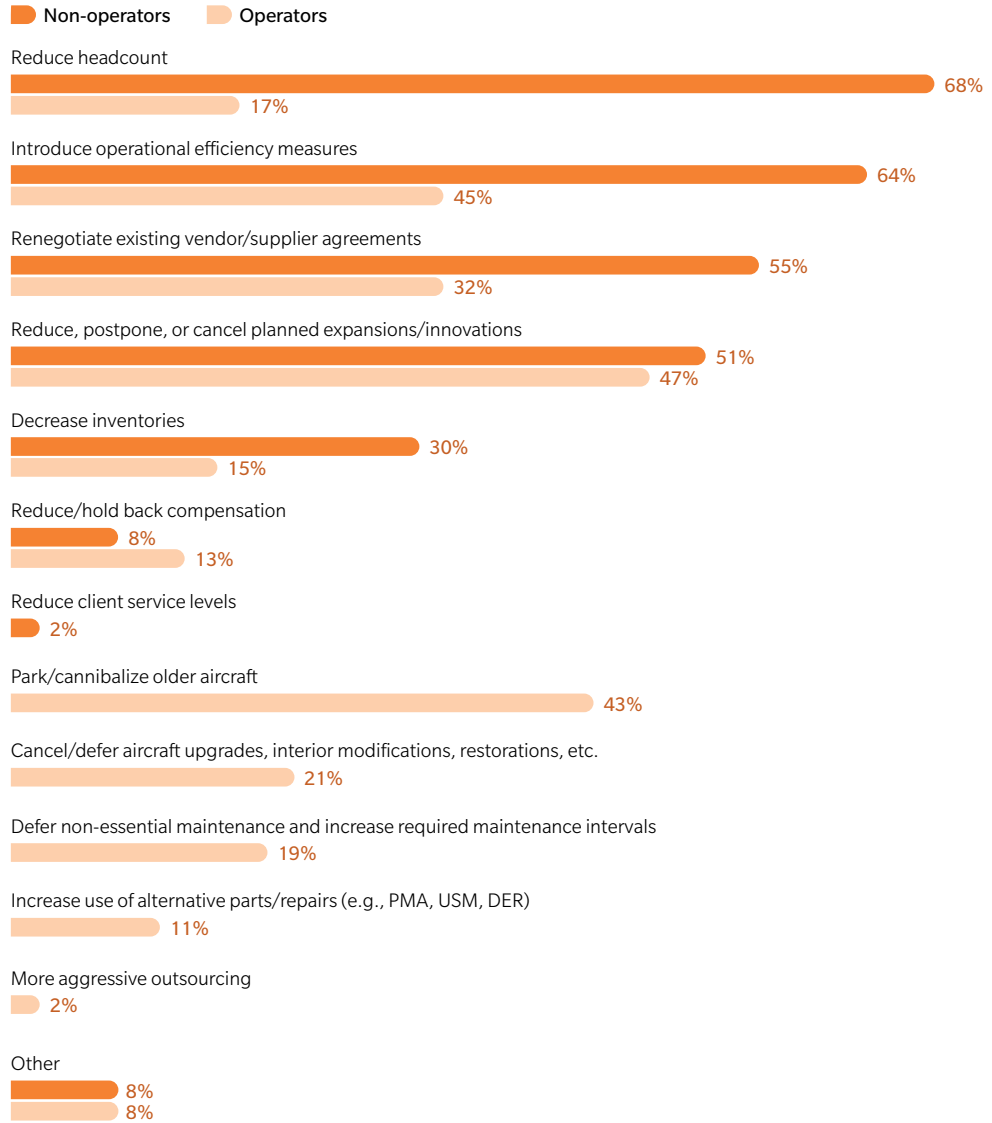
The top response for non-operators on recession action plans was that they would reduce headcount. Given a global shortage of skilled labor, with all participants having trouble finding experienced and qualified technicians, such reductions would likely hit non-technical labor first. Operators appear much less willing to let go of in-house expertise, as only 17 percent said they would pull the headcount reduction lever in a downturn.

If a downturn does happen, all is not necessarily lost. As part of our MRO market forecast, we analyzed a “doom and gloom” scenario of rising interest rates and fuel prices coupled with lower passenger demand. Even then, the overall MRO market can be expected to continue growing, albeit at a slower rate. As always, market participants who are prepared in advance will be best positioned for success; in the case of a recession, this will include managing discretionary investments quickly (particularly modification programs and aircraft upgrades), taking advantage of any uptick in the USM market, and reaching out for the best technical talent they can find.

### Responding to an economic downturn

Q: Select the top three levers you will likely use in the event of an economic downturn

DISTRIBUTION OF TOTAL RESPONSES



Source: Oliver Wyman 2019 MRO Survey

# A LESS CROWDED AFTERMARKET

Over the past decade, larger aftermarket suppliers and OEMs have grown through acquisitions and by pursuing new business models, such as joint ventures for sharing technology and data. Over two-thirds of respondents believe that a slowdown in the market would add fuel to these activities, as companies would be pushed to find new sources of market and revenue growth.

Among OEMs, airframe OEMs seem to be most poised for such changes in the near term according to respondents: 89 percent expect that airframe OEMs will expand into the aftermarket through joint ventures or in-house capabilities, while 79 percent believe that they will grow through the acquisition of other OEMs. A majority of respondents also rate consolidation within and across different types of companies as a likely ongoing trend.

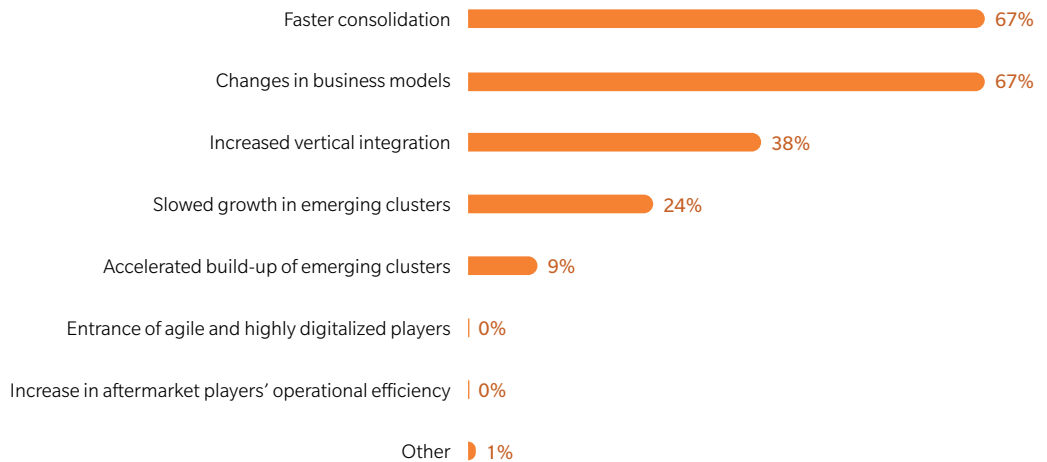
Future OEM consolidations, however, are slated to look somewhat different than in the past. There are fewer big Tier 1 OEMs, and mega-deals will be more difficult to justify, given current valuations. This means that larger OEMs will be more likely to set their sights on still plentiful Tier 2 and 3 OEM targets.

The attempt by OEMs to get as far into the aftermarket as possible raises new and interesting questions. For example, when will OEMs begin to service and develop markets for platforms and products not related to their own production capabilities? We are beginning to see signs

## Potential impacts on the MRO industry of an economic downturn

Q: How might the next recession impact the MRO industry? Select the three most probable options

PERCENT OF PARTICIPANTS WHO SELECTED EACH RESPONSE



Source: Oliver Wyman 2019 MRO Survey



of this in selected parts distribution and MRO spaces and, given growth targets, expect to see more.

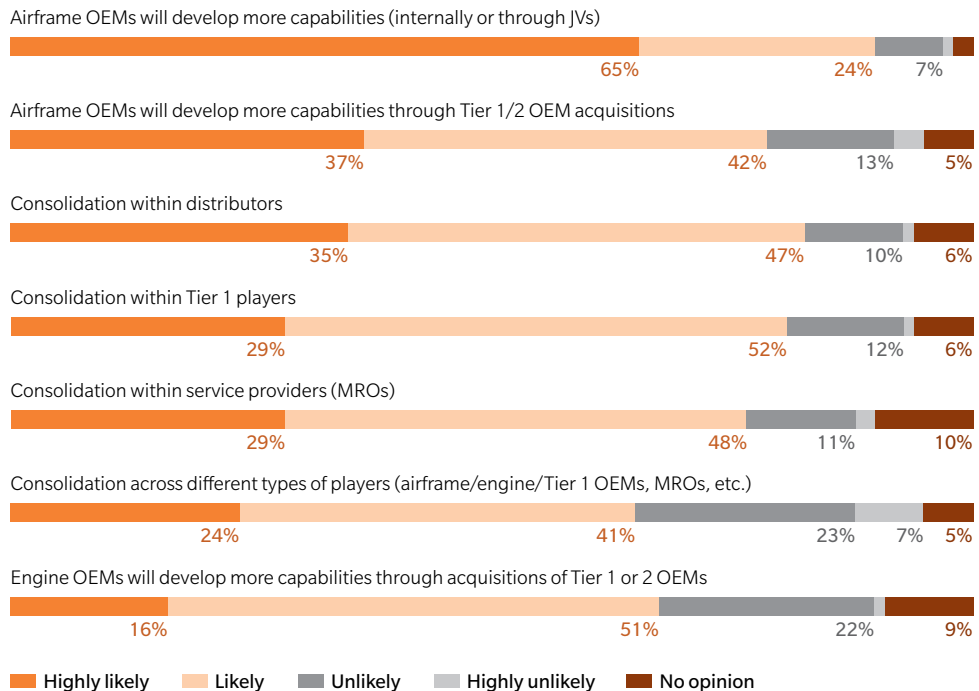
Another question to be investigated is how will operators respond to these changes in the aftermarket? Our view is that operators will want to maintain a balanced, competitive market, much like they have done with aircraft sourcing decisions. To achieve this, they may develop new suppliers or bring capabilities back in house, rebuilding their own technical operations functions as a way of controlling costs and reliability while ensuring a competitive cost base in the industry. In fact, among operators there is a strong desire to see more USM in the market, more parts manufacturer approval (PMA) parts in the market, and for deeper investment in engineering and repair development, as well as continued, aggressive competition on maintenance at the time of acquisition and across the life cycle of the aircraft. Clearly, operators are not standing by and waiting for the market to meet their needs.

And finally, how should MROs respond? We believe that there is still room and a need for standalone MROs that are well tooled, efficient, and cost effective. But as OEMs increase their aftermarket penetration, these MROs will be challenged to develop more customized service approaches and capabilities.

### Anticipated aftermarket changes

Q: Over the next couple of years, what is the likelihood of the following events happening in aftermarket services?

PERCENT OF PARTICIPANTS WHO SELECTED EACH RESPONSE



Source: Oliver Wyman 2019 MRO Survey

# THE EVOLUTION OF DIGITAL

Digital innovations such as big data, predictive analytics, and machine learning are making inroads into aftermarket services. Two-thirds of survey respondents said that aircraft health management (AHM) and maintenance planning/predictive maintenance have evolved the most to date, and these capabilities are expected to provide the most benefit in the next three years – particularly for operators. And over the next decade, a majority of respondents expect to see benefits from a wider array of digital offerings, including business intelligence/data analytics and new data/service platforms.

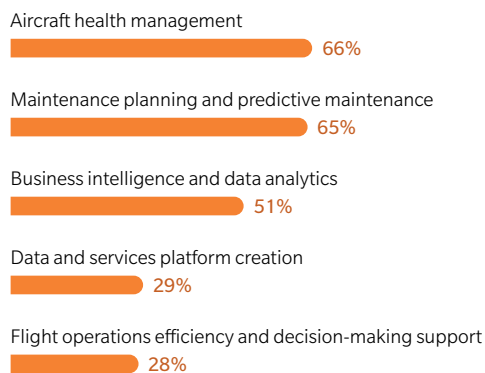
For operators, the choice of an MRO service provider is, however, still dictated by the classic trifecta of cost, timeliness, and high-quality service. While digital may offer structural advantages, there is clearly no substitute for getting performance fundamentals right: MRO providers who can deliver quality at a reasonable price will still win business.

All told, 85 percent of respondents rate a “strong digital and data analytics offering” as not a deal breaker and not important in choosing an MRO. This could be due to a lack of exposure: Half said that they have yet to see anything compelling in terms of aftermarket

## Evolution of digital offerings

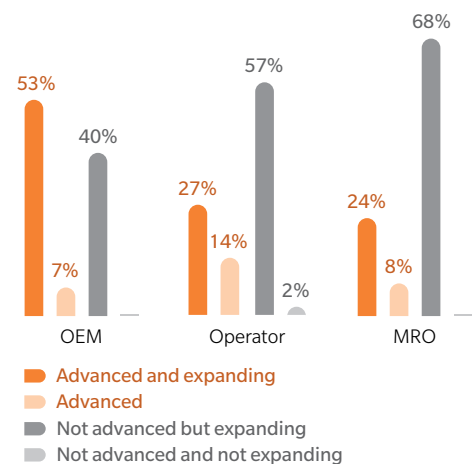
Q: What digital offerings have evolved the most?

% OF PARTICIPANTS WHO SELECTED EACH RESPONSE



Q: How would you describe your current capabilities in providing data analytics services?

DISTRIBUTION OF TOTAL RESPONSES



Source: Oliver Wyman 2019 MRO Survey

digital offerings. These responses lead us to believe that as MROs and OEMs invest in digital capabilities, they will need to figure out how to credibly tie innovation to visible improvements in cost, quality, and turnaround time. The OEM or MRO that can find a way to demonstrate or even guarantee tangible benefits to operators could take a leading market position.

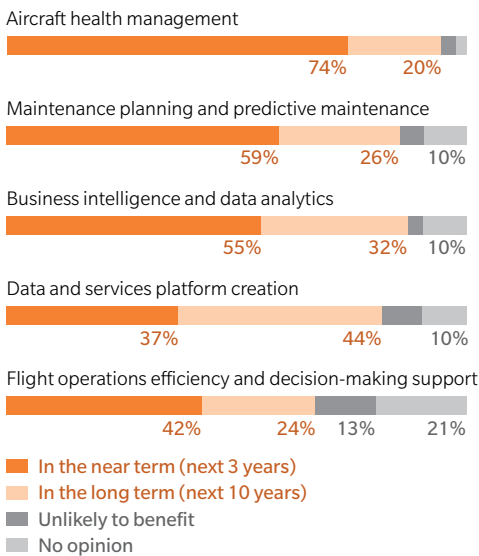
About half of OEMs are confident that they are advanced and expanding on the digital front, compared to around a quarter of operators and MROs. There is fierce disagreement, however, about who should provide various digital services: Less than a third of operators and MROs believe OEMs should provide AHM (versus 57 percent of OEMs) – a capability that currently falls directly in the OEM wheelhouse. Only ten percent of operators and no MROs believe that OEMs should provide maintenance planning/predictive maintenance – versus a third of OEMs that think they are best positioned to do so.

Clearly, there is a trust gap between OEMs and the rest of the market when it comes to OEM incentives and whether they will share the benefits of digital breakthroughs with the broader market. We see some OEMs responding by separating digital business units from their core manufacturing processes and developing extensive contractual and other agreements to bridge the divide. Bottom line, however, only realized benefits and time are likely to change market perceptions.

**Which digital offerings will provide the most benefits?**

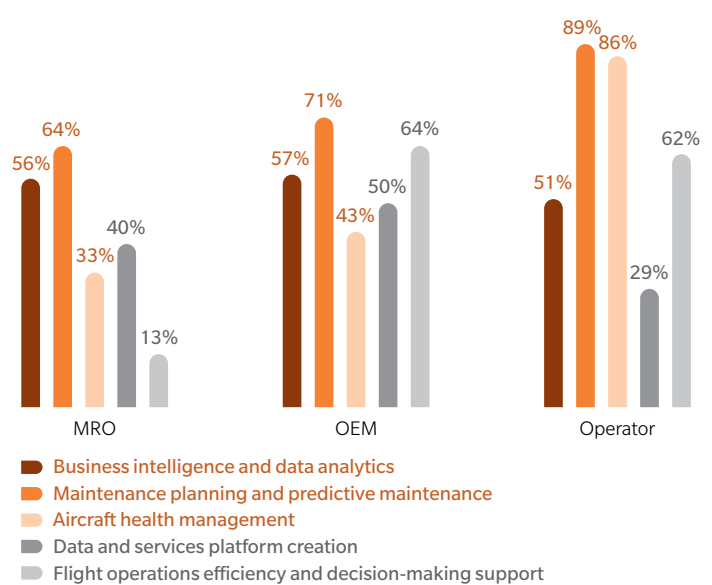
Q: Which digital offering is likely to benefit your business the most?

DISTRIBUTION OF TOTAL RESPONSES



Q: Which digital offering is likely to benefit your business the most in the next three years? By type of company

DISTRIBUTION OF TOTAL RESPONSES



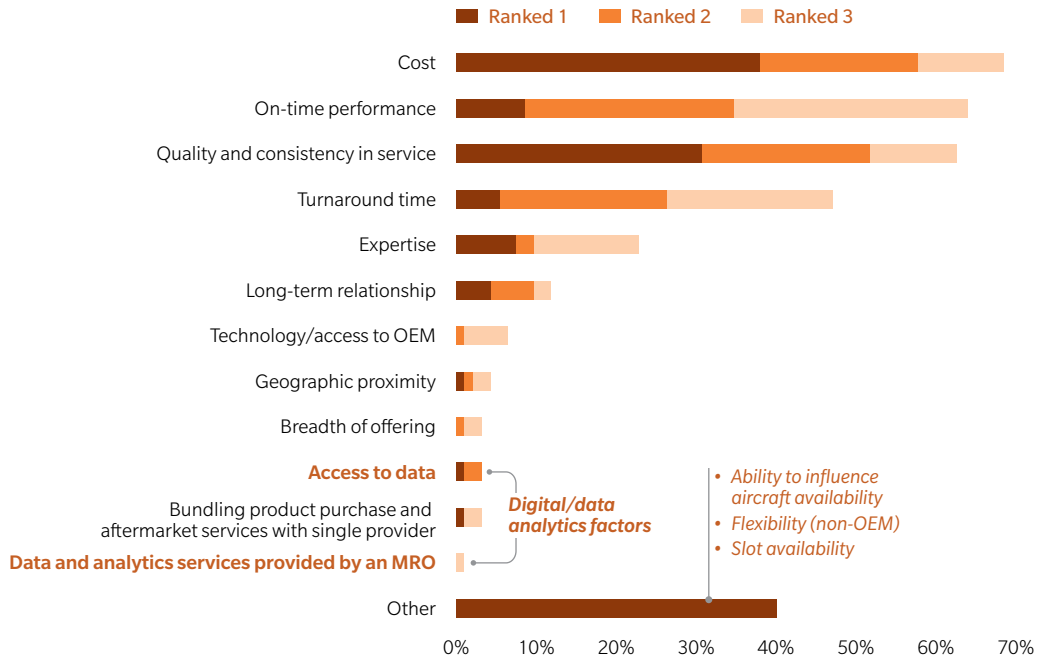
Source: Oliver Wyman 2019 MRO Survey

## Why operators choose an MRO

Q: What are the most important factors for an operator in choosing an MRO service provider?

PERCENT OF RESPONDENTS

Each factor ranked from 1 (most important) to 3 (least important)



## Importance of digital and data analytics

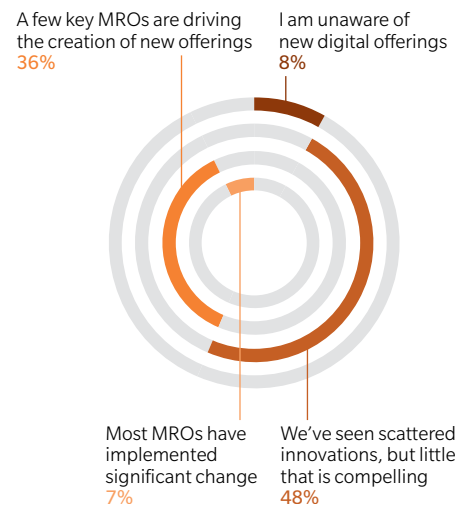
Q: How crucial is a strong digital and data analytics offerings when it comes to choosing an MRO service provider?

DISTRIBUTION OF TOTAL RESPONSES



Q: How have MRO digital offerings evolved over the past three years?

DISTRIBUTION OF TOTAL RESPONSES



Source: Oliver Wyman 2019 MRO Survey

## DIGITAL TOOLS A NEW BALANCING ACT

On new-technology aircraft such as the 787, A350, etc., new digital tools are posing both pros and cons for operators. Reports indicate that following aircraft health management and predictive maintenance (AHM/PM) suggestions can lead to higher reliability, but also generate new cost and inventory headaches that must be worked out.

AHM/PM is particularly impacting the material supply chain, as an MRO shop getting a replaced component may not receive a fault code or failure mode with the part – only a shop note such as “removed per AHM program” or “removed per Mx Ops Control due to predicted failure.” Diagnosing the problem with the component off wing is more time consuming and

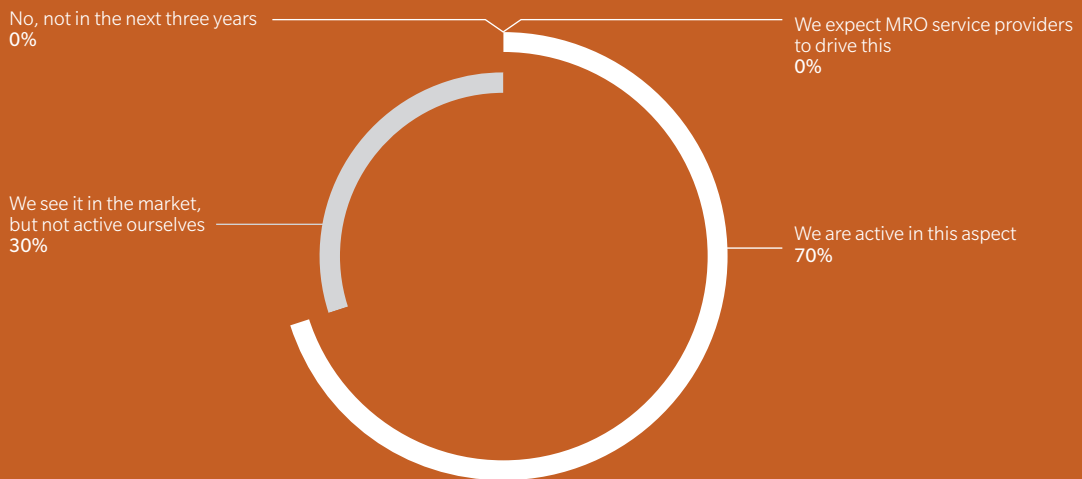
challenging for MROs, which typically have fixed-rate repair contracts with operators – in which they must diagnose, correctly repair, and return a part to the operator within contractual turn times.

While the bugs are being worked out, this situation could result in components returned to serviceable inventory without a repair or an increase in inventory investment requirements (due to longer turn times and more removals). To balance out the equation long term, the parts repair system will need to be updated to match new technology – for example, by pinpointing the likely failure of a part and sharing this data with service providers. Airline operators appear most likely to drive these process changes.

### EVOLVING MAINTENANCE PROGRAMS

Q: Do you foresee maintenance program evolution/optimization over the next three years?

DISTRIBUTION OF TOTAL RESPONSES, AIRLINE OPERATORS ONLY



Source: Oliver Wyman 2019 MRO survey

# CONCLUSION

Despite the long business cycle and some concerning external factors, our MRO market forecast shows a strong ten years ahead with minimal downside, while market participants are equally optimistic about the road ahead. Even if there is a slowdown or a full market contraction, industry players believe they are prepared to address the challenges. That said, there is an opportunity for more formal planning and preparation for the inevitable downturn in a traditionally cyclical industry. Now is a good time to consider how to take advantage of a stronger USM market, potential labor shifts, and the eventual consolidation activity that will occur, so that operators, MROs, and OEMs might weather the storm and recover stronger than ever.

OEMs continue to expand into the aftermarket. Market participants are especially concerned about airframe OEMs delving deeper into MRO services, either through joint ventures or acquisitions. Depending on how market dynamics change, we expect airline operators and MROs to maintain a competitive market by either investing in new companies and competitors or for operators to swing the pendulum back to insourcing key activities where they can capture value for themselves and protect their data and operations.

Finally, digital services continue to evolve but have not yet become essential to winning work in the marketplace. Operators see the value in such services but are not sure who should provide them or how best to benefit from the promise of big data and advanced analytics. While OEMs are advancing in terms of developing and delivering digital services, this has not yet enticed operators to fundamentally change their approach to maintenance or the aftermarket – that is the next inflection point we are all waiting to realize.

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If you would like to participate in the 2020 MRO Survey, please contact our survey team at: [MROsurvey@oliverwyman.com](mailto:MROsurvey@oliverwyman.com) and include your name, company, and contact information, so we may add you to the list.

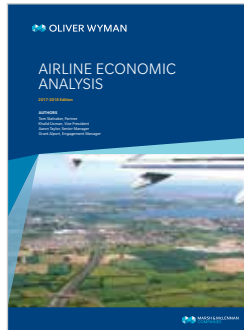
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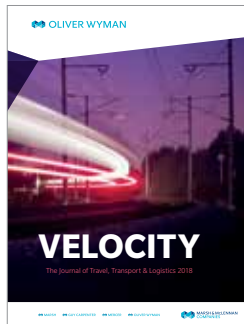
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