

VIETNAM AERO SUMMIT 2024

"How to grow the MRO market in Vietnam. Solutions to improve the outsourcing rate of MRO in Vietnam"

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Vietstar Aero Engineering Company

Vietstar Airlines Multirole Company

☐ Vietstar Airlines

- Commercial Aviation
- Private Aircraft operating (Legacy 600/650, King Air B350)
- Helicopter Charter Flight
- Charter Flights
- Ground Handling
- Lands in 3 major airports (Noi Bai – 48 ha, Da Nang – 89 ha, Tan Son Nhat – 20 ha, Can Tho – 31 ha)

☐ Vietstar Express

☐ Vietstar Aero Engineering Co, an integrated MRO in Vietnam, has capability as follows:

- Up to C3 check for A320/A321
- Line maintenance and ad hoc support, structure repair
- Engineering and Maintenance Planning Support , Continuing Airworthiness Program, GSE services, Workshop support

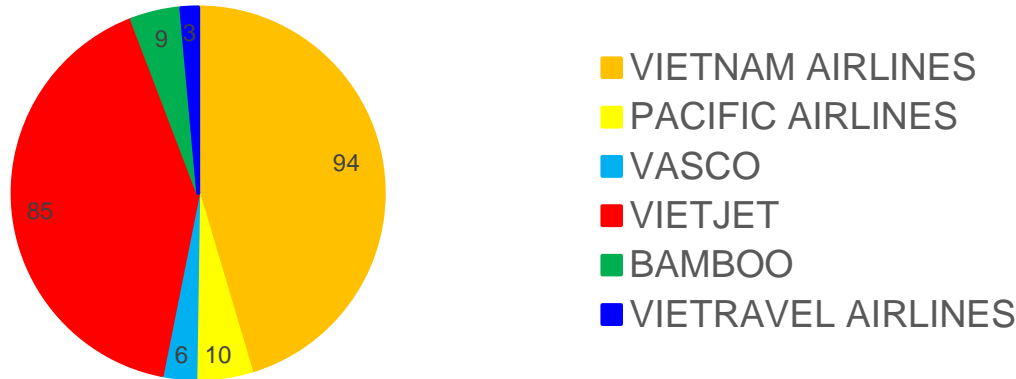
"How to grow the MRO market in Vietnam. Solutions to improve the outsourcing rate of MRO in Vietnam"

- **Overview of Airlines in Vietnam**
- **Overview of MRO industry in Vietnam**
- **Opportunities and Challenges**
- **How to grow the MRO market in Vietnam**
- **Solutions to improve the outsourcing rate of MRO in Vietnam**

Overview of Airlines in Vietnam

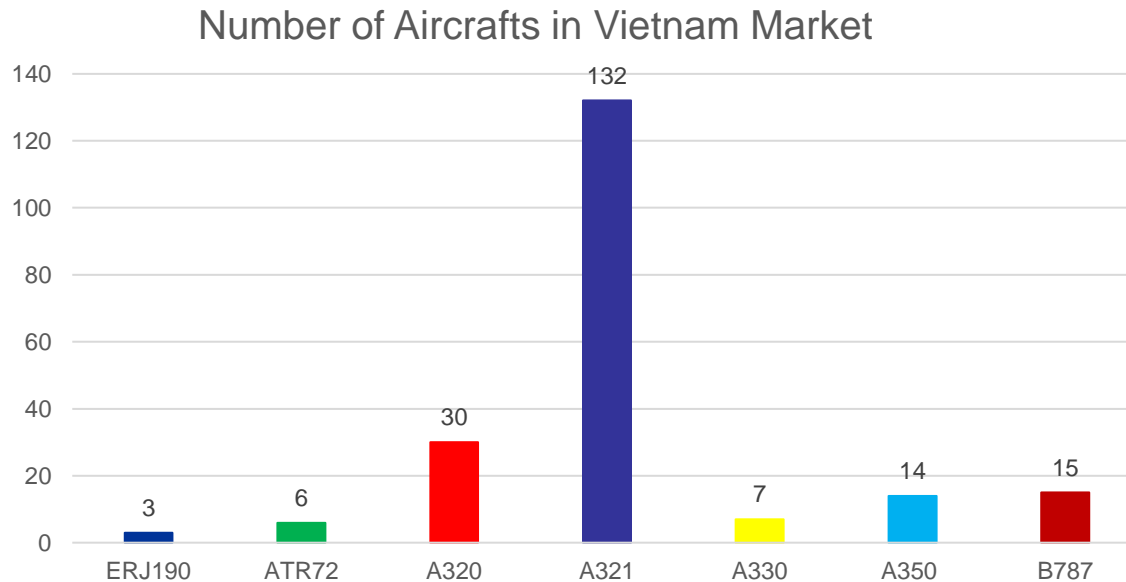


Number of Aircraft



Total: 207 A/C
(31 Dec 2023)

Number of Aircrafts in Vietnam Market By Aircraft Type



Source: GSO and author

Overview of Airlines in Vietnam



	2023	2035
Number of Aircraft	207	547
Revenues of Airlines (USD Billions)	6.7	23.85
Revenues of MRO (USD Billions)	0.61	2.623

In 2035: 547 aircrafts in Vietnam (growth rate: 13.3%/year)

IATA
forecasts
five fastest
growing
markets in
additional
passengers
(2015-2035)

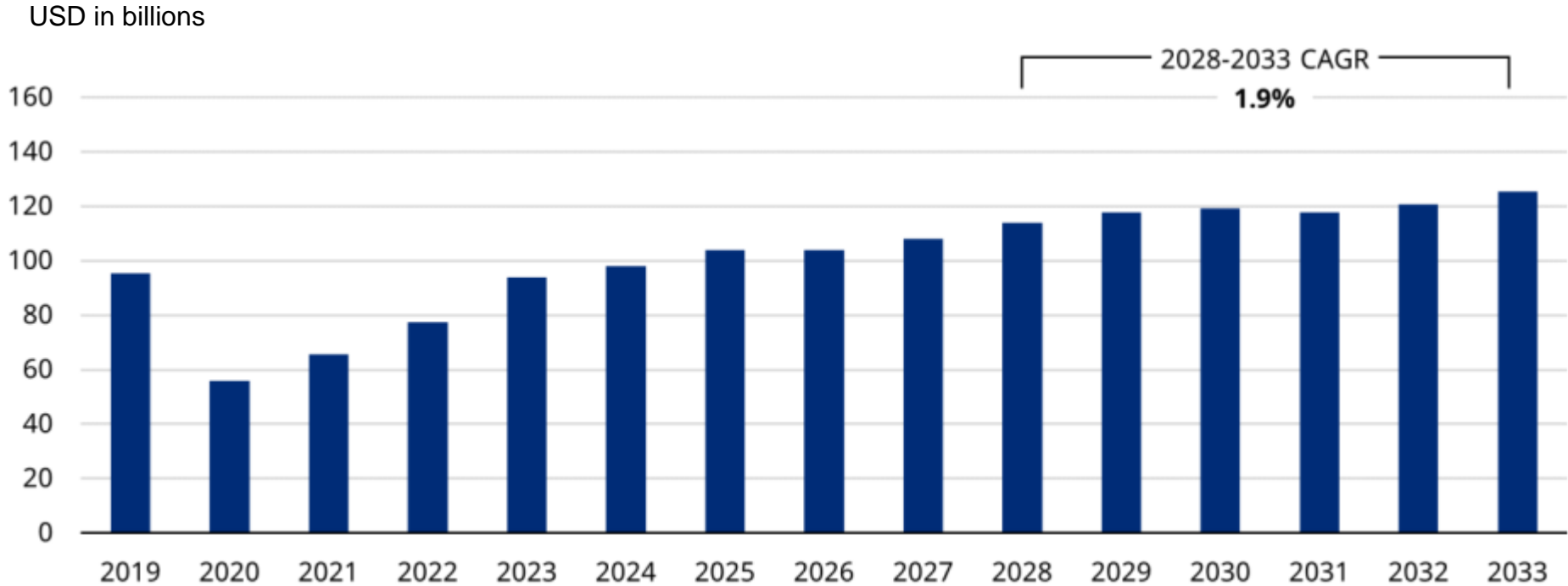


China: 817 million new passengers for a total of 1.3 billion
US: 484 million new passengers for a total of 1.1 billion
INDIA: 332 million new passengers for a total of 442 million
INDONESIA: 135 million new passengers for a total of 242 million
VIETNAM: 112 million new passengers for a total of 150 million

Overview of MRO industry in Vietnam



Global MRO Spend in 2019 – 2033, \$B

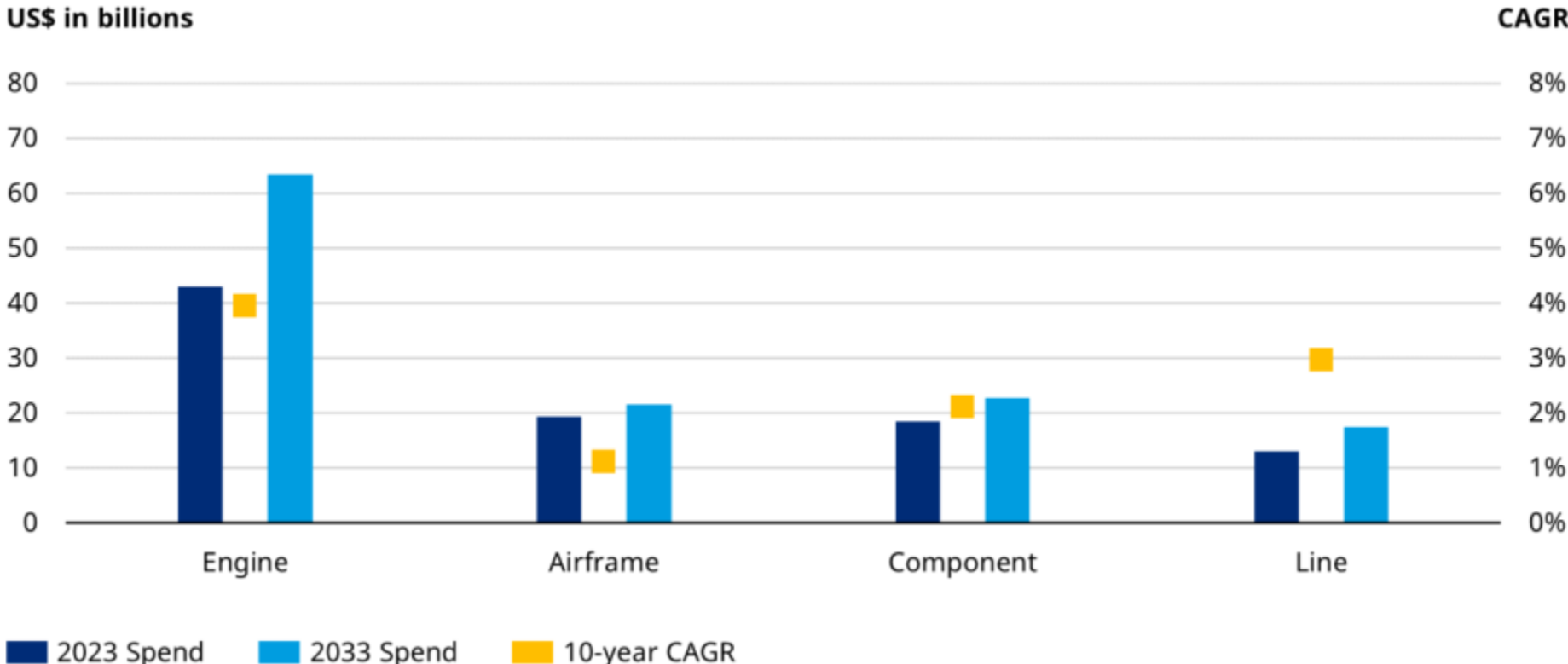


Source: Oliver Wyman

Overview of MRO industry in Vietnam



Total MRO demand forecast by segment, 2023 versus 2033



Source: Oliver Wyman

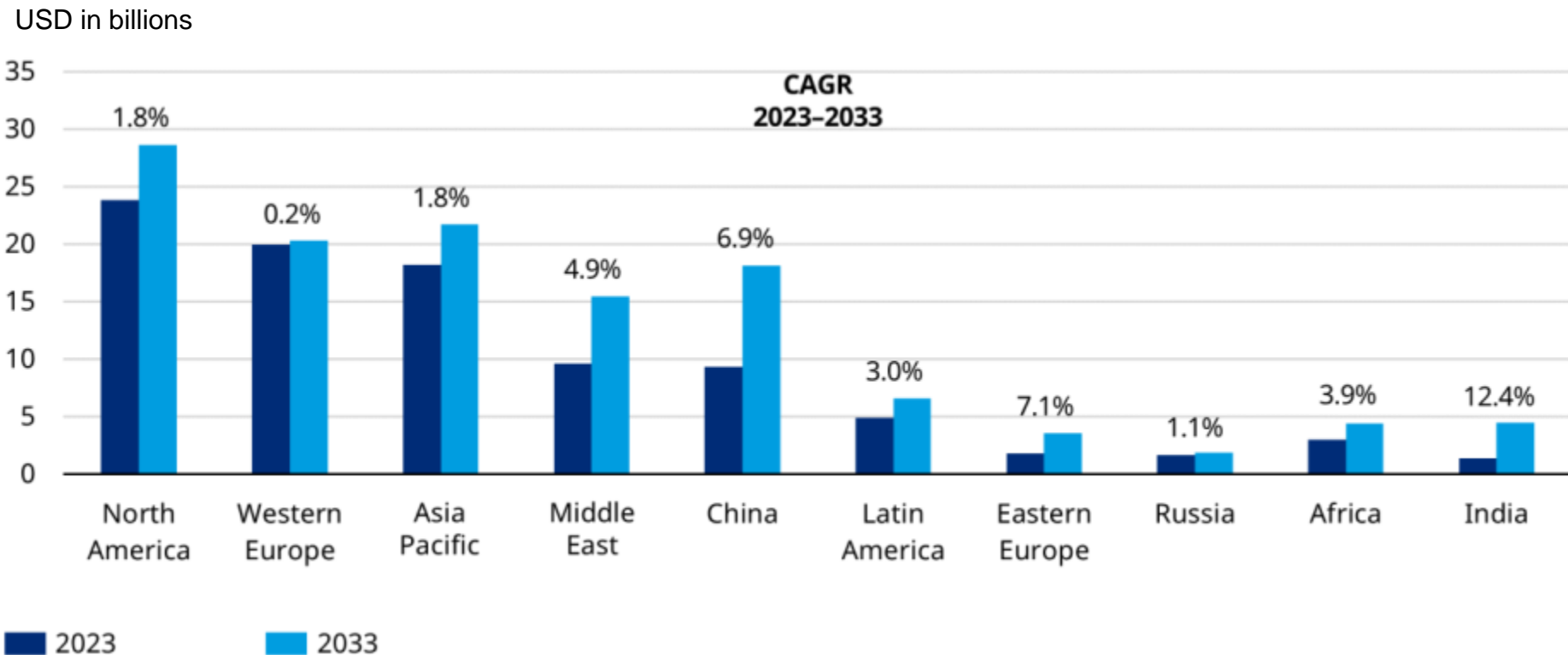
Overview of MRO industry in Vietnam



Global MRO demand 2023 is \$94B (98% of 2019)

- South East Asia: \$5.04 billion – 2,250 aircrafts in 2023
- Vietnam: \$610 million – 207 aircrafts in 2023

Total MRO demand forecast by region, 2019 versus 2032



Source: Oliver Oman and author

Overview of MRO industry in Vietnam



- **Integrated MRO: VAECO, VSAE**
- **MRO (line maintenance): SAMM**
- **MRO (component maintenance): AESC, VSTEAM**
- **Part M Maintenance: Pacific Airlines, Vietjet, Bamboo Airways**
- **Total workforce in aircraft maintenance in 2023: 4,784 staff**
- **Total revenues from MRO (excluding Part M): \$91 millions in 2023**
- **Total revenues from MRO (including Part M): \$112 millions**
- **Total value of MRO in Vietnam in 2023: 610 millions of USD**
- **Outsourcing: 75%**

Overview of MRO industry in Vietnam



1. Aviation Training Centers in Vietnam (CAAV approvals)

- Vietjet Training Center CAAV – Part 9 CAAV (Flight simulator)
- VAECO Training Center - Part 9 CAAV
- Vietnam Airlines Flight Training Center – Part 9 CAAV (Flight simulator)
- Pacific Airlines Training Unit – In house training
- Bamboo Airways – In house training
- Vietstar Airlines Training Center – Part 9 CAAV
- BAA Training – Part 9 CAAV
- AESC Training Center – Part 9 CAAV

2. Universities, Colleges in Vietnam

- Vietnam Aviation Academy
- University of Hochiminh Technology
- University of Hanoi Technology
- Nova College

□ Opportunities

- High growth of aviation market with 12% in next 10 years**
- New airports constructed (Long Thanh Airport) and expansion of major airports (Tan Son Nhat Airport, Noi Bai Airport, Da Nang Airport) in the coming years**
- High rate of maintenance outsourcing of airlines in Vietnam**
- MRO demand in 2030 is 1.51 billions of USD**
- Labor force with good skills and low pay**
- Vietnam will have 28 domestic and international airports nation wide by 2030**
- Aviation hub in region with 34 millions of international passenger in 2023 of 80 millions of passengers in total, and 1.23 million tons of international goods of 1.44 million tons of goods**

□ Challenges

- **Shortage of mechanics and certifying staffs**
- **Lack of preferential policy from government to support MRO industry**
- **Shortage of hangar**
- **Weak supporting industry for MRO**
- **Lack of distribution hub for materials and spare parts of aircraft**

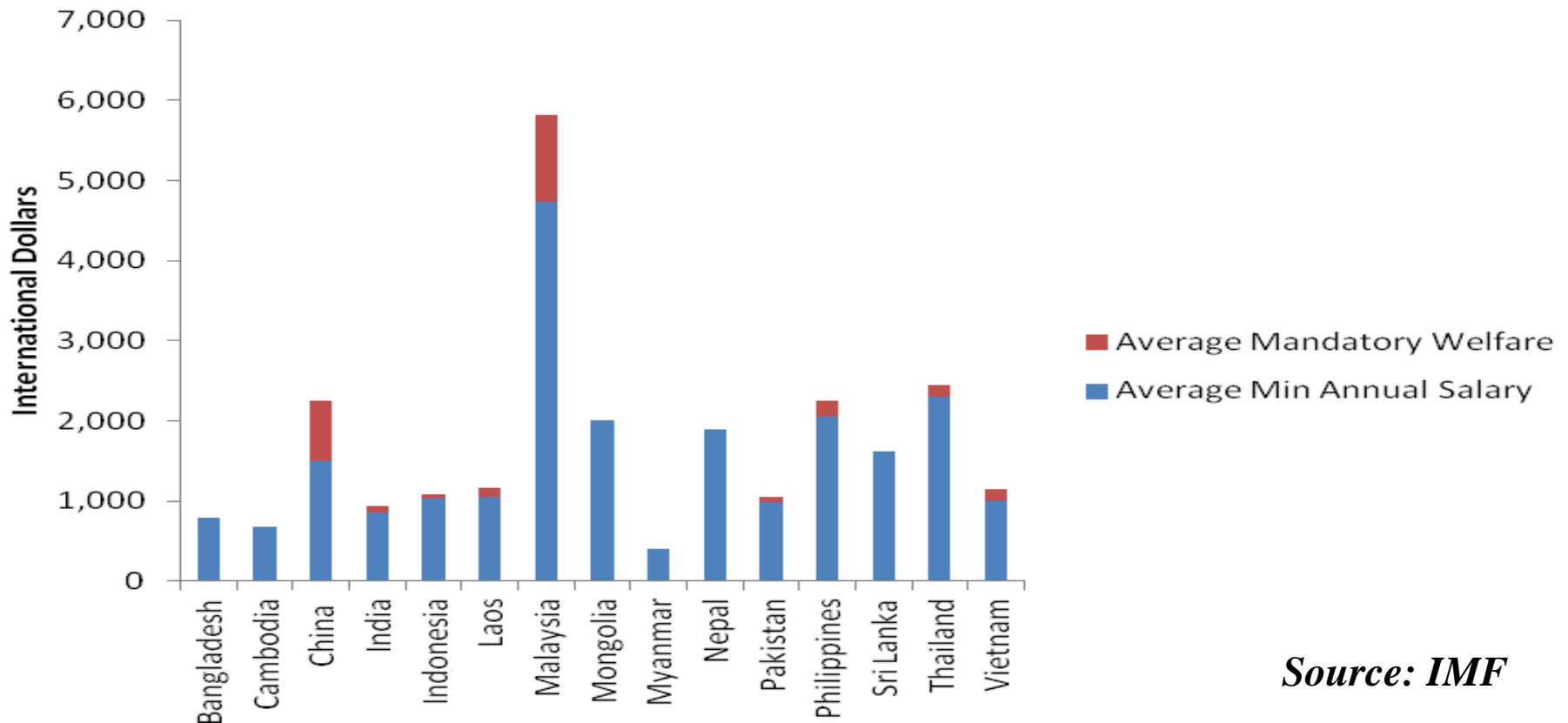
How to grow the MRO market in Vietnam

- ❑ Vietnam needs to build the aviation industrial zone with full scope of services
- ❑ Vietnam should make use of low labor cost and plentiful human resource in aviation to attract more investment for MRO from foreign countries
- ❑ Vietnam needs to allocate more land in Long Thanh Airport to develop for MRO (16 hectares dedicated to MRO in Long Thanh Airport is not enough)
- ❑ Vietnam needs to issue preferential policies and give incentives for MRO industry
- ❑ Vietnam needs to set up the supply chain in aviation for spare parts, materials, and rotables...
- ❑ Helicopter and business jet maintenance capability, B737 max line and base maintenance capability need to be set up.

MRO Staff Salaries



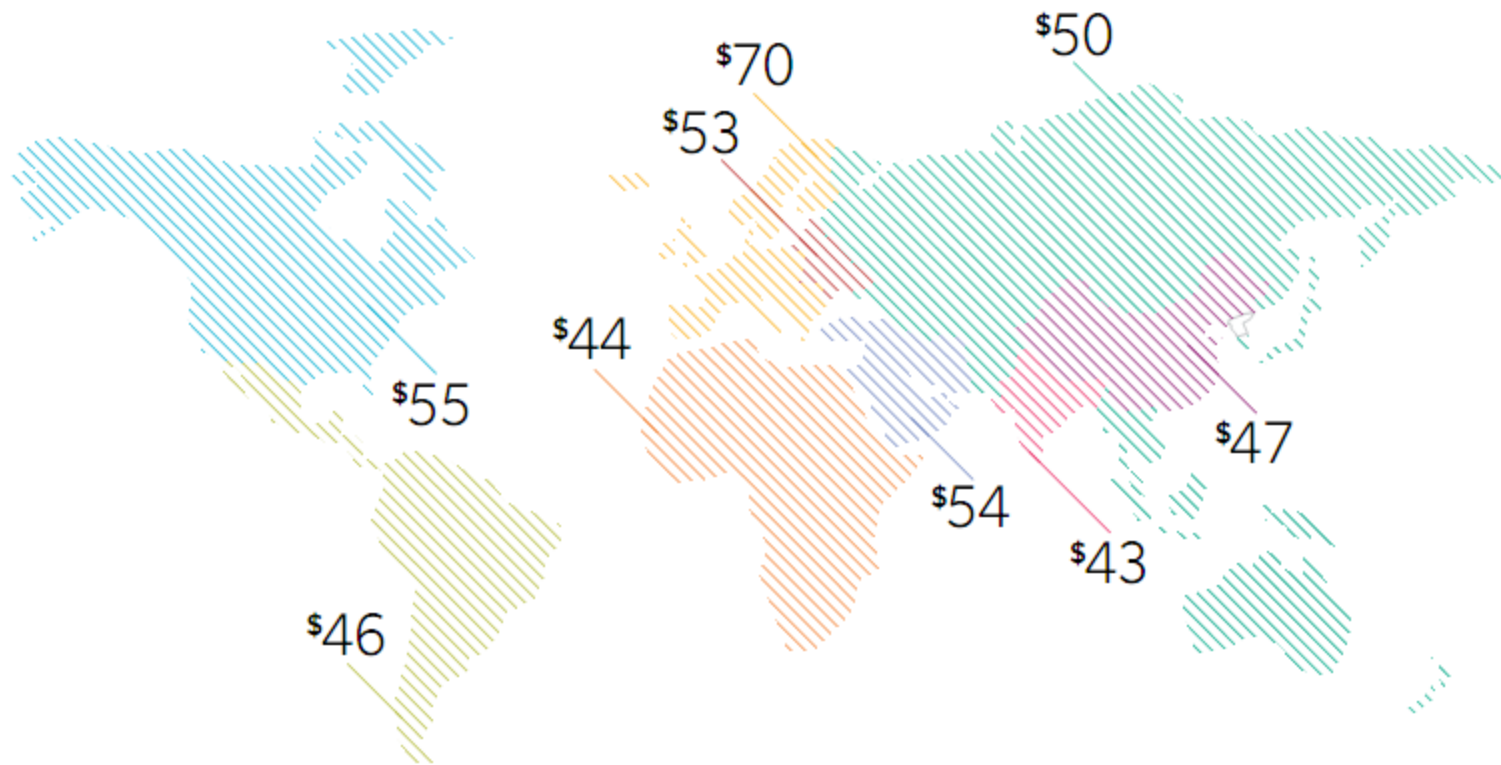
Salary	Singapore	Vietnam
School leavers	1,000 - 1,200 USD/month	300 - 350 USD/month
Skilled Engineer (min 5 years of experiences)	2,500 - 3,500 USD/month	2,000 - 3,000 USD/month
Managerial Manpower	10,000 - 15,000 USD/month	6,000 - 10,000 USD/month



Source: IMF

Average Min. Annual Salaries among Emerging Asian Countries

Current prevailing technician billed rates for heavy airframe maintenance



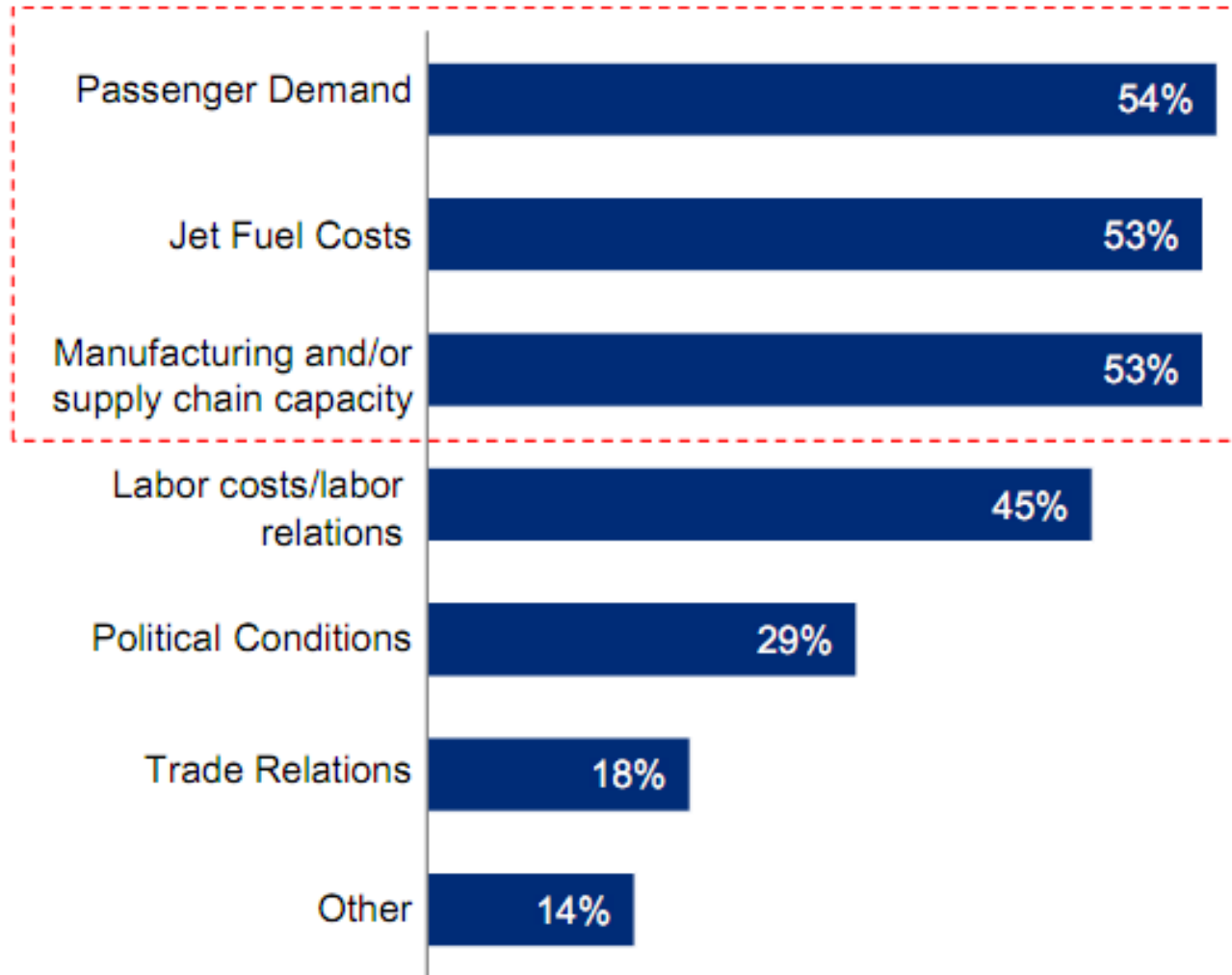
Source: MRO survey – Oliver Wyman

Solutions to improve the outsourcing rate of MRO in Vietnam

- Vietnam needs to attract more manufacturers, OEM to open the manufacturing facilities in Vietnam.**
- Engine shop, APU shop, landing gear shop have to be established in Vietnam**
- Vietnam needs to allow the tearing down aircraft to be developed in Vietnam**
- Vietnam has to build more wide body hangar to meet the demand of hangars for C check.**

Development trend of MRO in Vietnam

Factors determining the direction of MRO market



Source: MRO survey – Oliver Wyman

Maintenance Costs Optimization in Vietnam

- In house training for mechanics to become licensing engineer
- Arranging reasonable roster and controlling overtime payment for mechanics
- Setting up cost base system to monitor aircraft component repair, engine maintenance, and heavy airframe maintenance especially end of lease check
- Minimizing spare parts and consumables stock level
- Combining between airlines and independent MRO to do C check
- Sharing the resources of consumables and tools among airlines and MROs
- Performing A checks, phase check at night time
- Outsourcing complete maintenance services to MRO for start up airlines

THANK YOU