



MRO services make vs. buy analyses

For medium-sized airlines

MRO Central Asia | Tashkent, Uzbekistan
March 26th – 27th, 2024



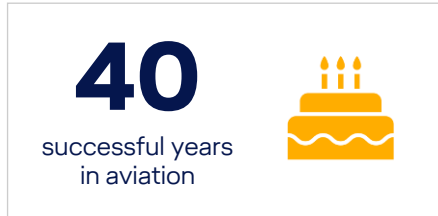
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Agenda

- 1 Overview of Central Asian MRO landscape
- 2 Qualitative criteria for in- vs. out-sourcing
- 3 Local and international base maintenance benchmark
- 4 Quantitative analysis for base maintenance
- 5 Concluding remarks

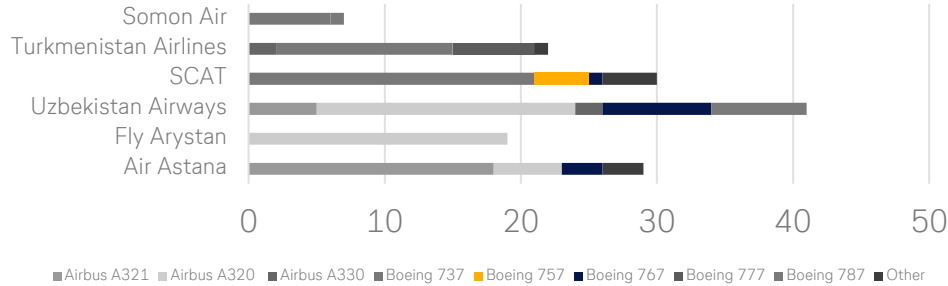


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Central Asia's aviation landscape benefits from a growing population and GDP, and a rise in tourism, forming a stable demand outlook in the region

Major in-service aircraft fleets in Central Asia



75 million



Growing population

USD 440 billion



Growing GDP

9.5 million



Pax at Almaty airport in 2023

The **growth of the tourism industry in Central Asia** has led to **increased demand for air travel**, prompting investments in airport facilities and services to accommodate the rising number of visitors



GDP: Gross domestic product

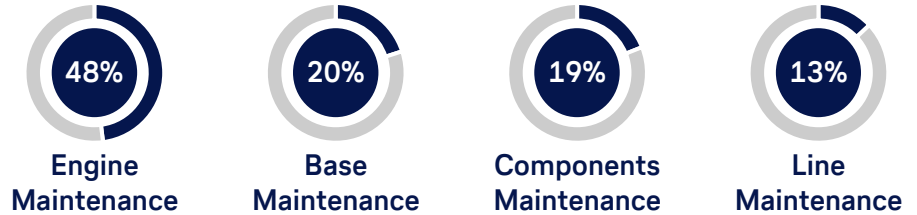


Worldwide MRO demand continues to rise, with increasing shares of engine and line maintenance. Available capacities remain a challenge

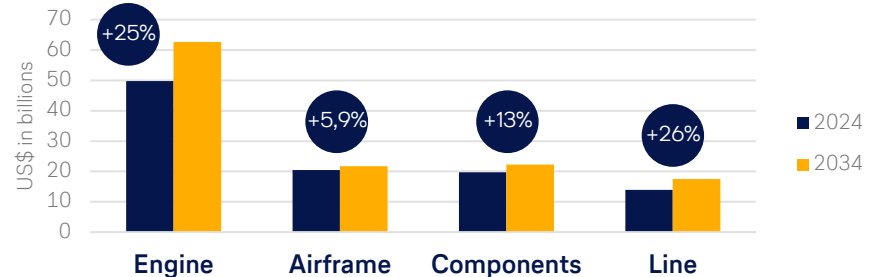
Selection of MRO providers in neighboring regions



In 2024 total MRO demand reaches USD 104b and will rise up to USD 124b in 2034. Engines and components account for the majority in demand:



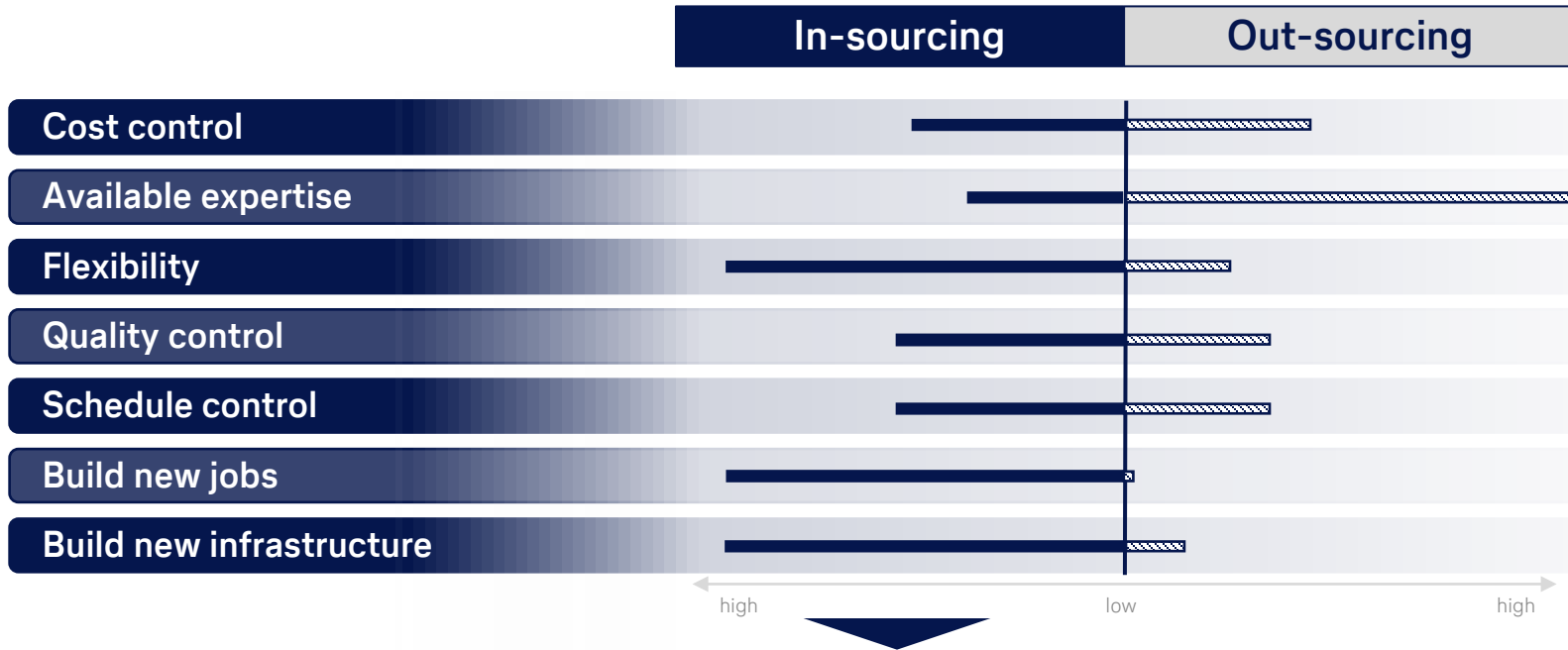
MRO demand from 2024 to 2034



*Source: Oliver Wyman Report 2024



For an airline to debate in- or out-sourcing, a range of qualitative criteria needs to be established and analyzed. These vary for each operator

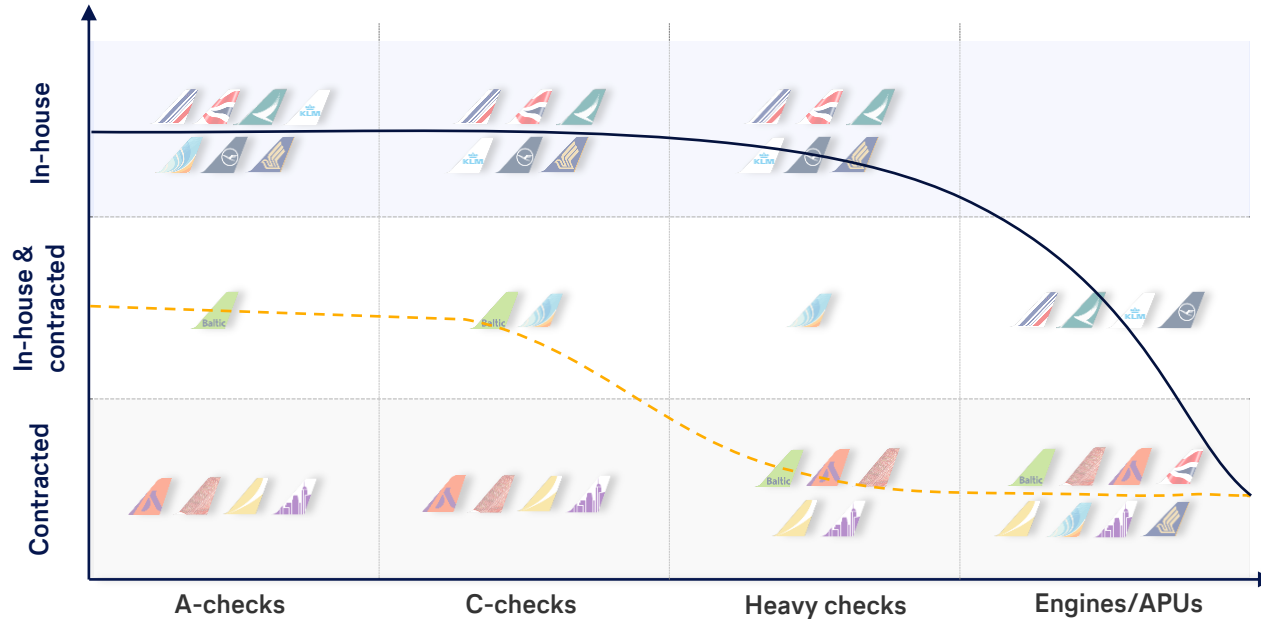


The **decision to insource or outsource** MRO services is not purely financially driven, it is also a **qualitative consideration** for each operator based on a set of qualitative criteria. These can vary drastically for each operator



A comparison of the maintenance contracting of international legacy airlines and LCCs demonstrates a noteworthy capability pattern

International legacy airlines and LCCs



Legacy airlines are mostly self-dependent and have their own MRO capabilities



LCCs mostly follow a lean approach of contracting base maintenance



Maintenance of **engines** & **APUs** are mainly provided by OEMs due to complexity of services



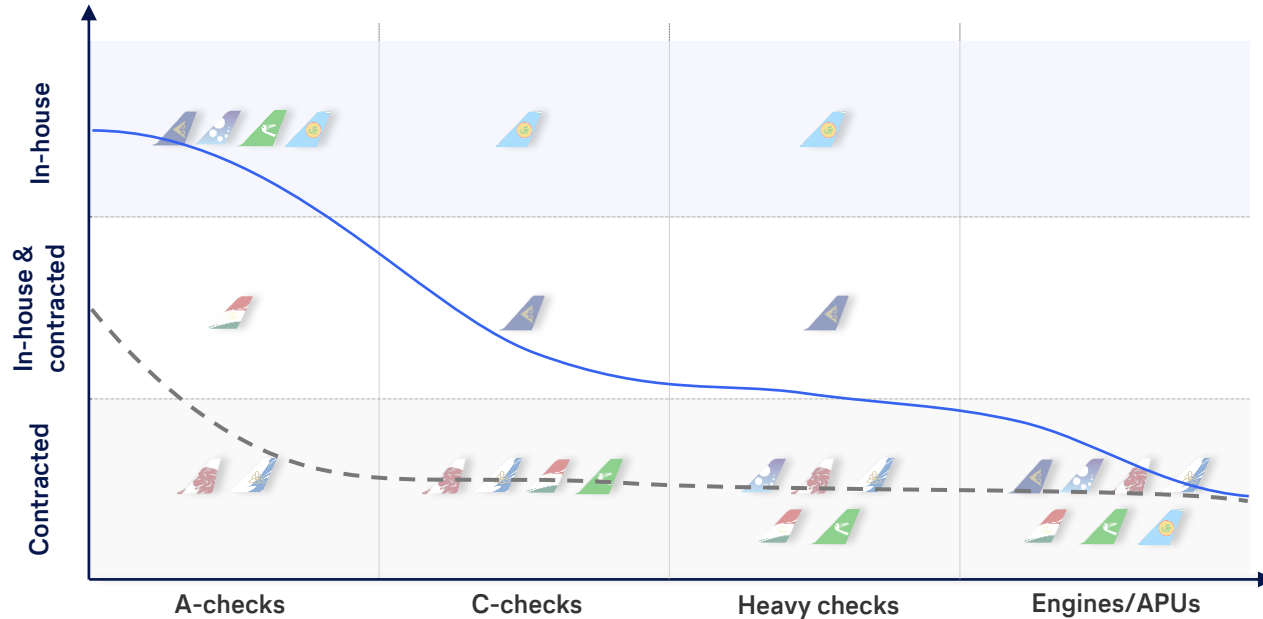
— International legacy airlines - - - International LCCs LCC: Low-cost carrier

Akasa Air
 Air Baltic
 Air France
 Air India Express
 British Airways
 Cathay Pacific
 Cebu Pacific
 Flydubai
 HK Express
 KLM
 Lufthansa



Comparing the international benchmark to Central Asia, a visible shift to more contracting of base and engine maintenance is notable

Central Asian legacy airlines and LCCs



Legacy airlines in the region have limited capabilities for A-, C-, and heavy checks



LCCs in the region choose to contract almost all services to MRO suppliers



Engine and APU maintenance is contracted to MRO suppliers or OEMs



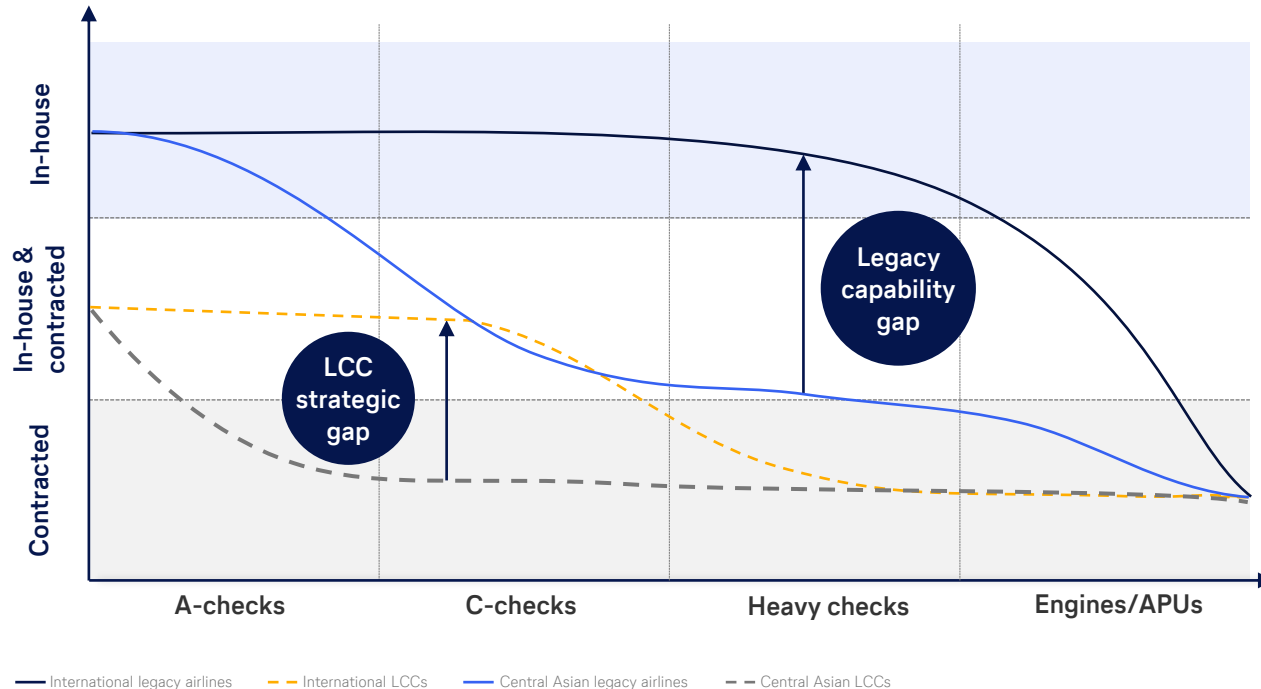
— Central Asian legacy airlines - - Central Asian LCCs

Air Astana
 Avia Traffic Company
 FlyArystan
 SCAT Airlines
 Somon Air
 Uzbekistan Airways
 Turkmenistan Airlines



A noteworthy base maintenance capability gap is visible between local and international benchmarks, which is attributable to various reasons

Combined benchmark analysis



The **largest discrepancy** in capabilities between Central Asia and the international benchmarks is visible in **legacy airline base maintenance**

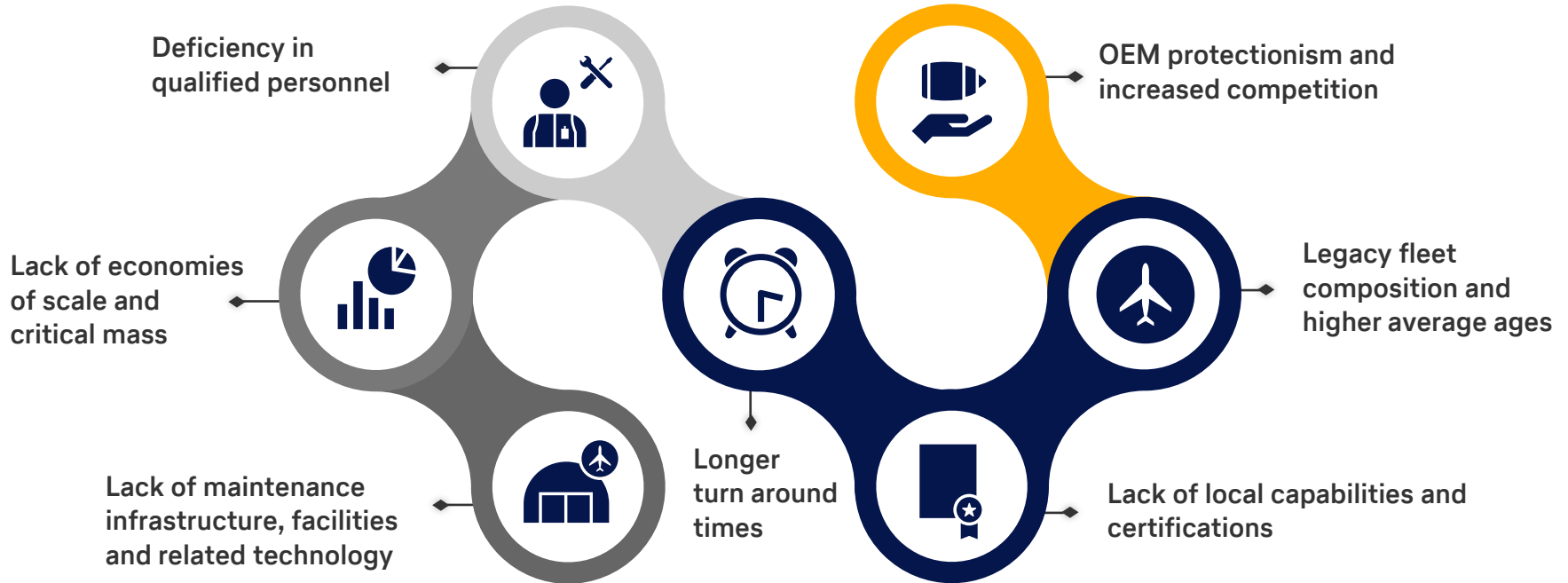


LCCs select to stay on a **leaner cost base** and outsource more in both benchmarks, however on a **different magnitude**



The rationale for more outsourcing in this region may be attributed to various challenges and limitations, which may be overcome in the future

Rationale for airlines to outsource



OEMs are making substantial strategic investments to explore further aftermarket opportunities, intensifying competition with MRO providers

Past

Manufacturer



- Focus on **design, manufacturing** and delivery of aircraft


After-sales services



- Manufacturers provide **documentation and spare parts** availability
- MROs conduct maintenance
- Limited licensing to 3rd party MROs


Today

Manufacturer



- Identification of **business potential** of MRO services
- Focus shift from a purely manufacturing capability to a **broader portfolio of after-sales services**


After-sales services



- OEMs start offering **maintenance, logistics, availability and training** services
- MROs required to qualify and **apply for an MRO license** to access documentation and offer MRO services


Examples

TotalCare® by Rolls-Royce



Rolls-Royce®

90% of all engines are enrolled into TotalCare®

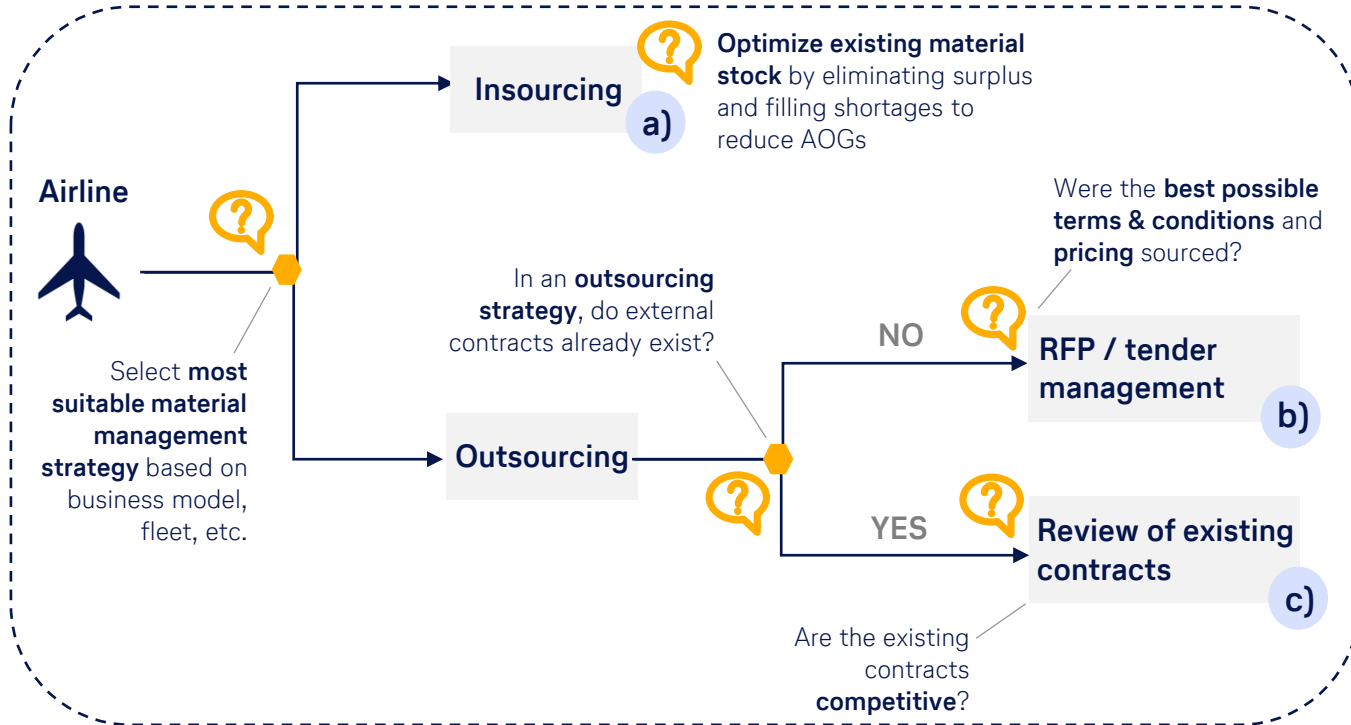
 **Pratt & Whitney**
An RTX Business

EngineWise® Services

Exclusive provider of on-wing component PBH-services for PW1000-series



Irrespective if outsourcing or insourcing is preferred, a comprehensive material management strategy is essential to manage risks & expenses



Material management



The development of a comprehensive material management strategy, addressing all maintenance divisions and covering the aircraft nose-to-tail is required. This includes:

- 1. In-house materials management:** Stock optimization & cost reduction, increase service level
- 2. RFP / tender management:** With current market intelligence, ensure the most suitable service and pricing was sourced
- 3. Review of existing contracts:** Identify uncompetitive terms & conditions and pricing and renegotiate

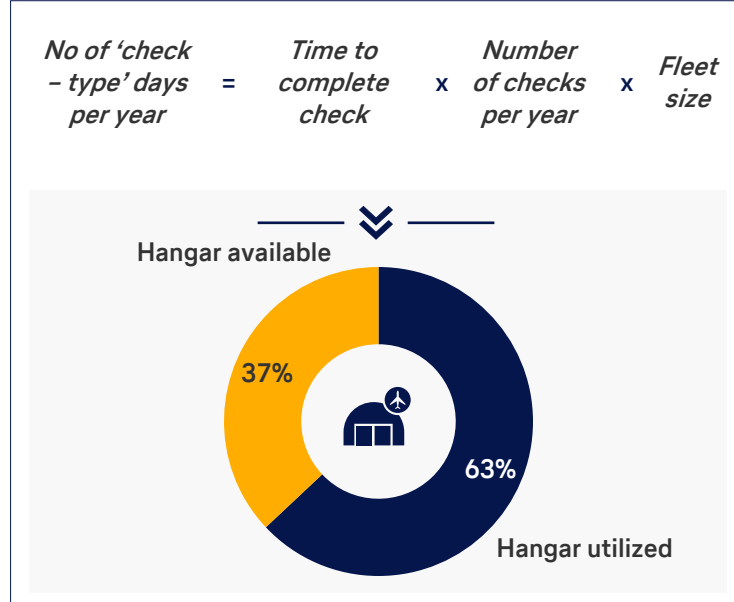


Developing a base maintenance capability should target a 70% base load factor from the own fleet. The remaining 30% can be offered to 3rd parties

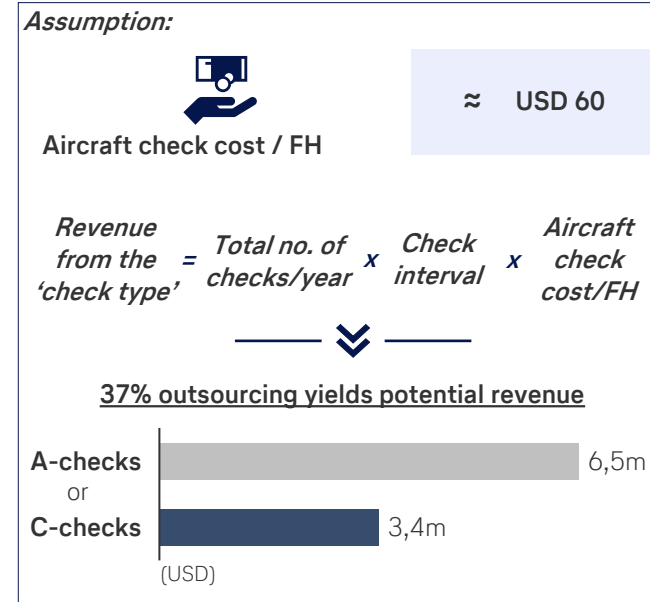
Current situation

	2 bays
	25x B737-800
	2500h / year
Utilization	
	800h 2 days
A-check interval and duration	
	5000h 24 days
C-check interval and duration	

Hangar utilization per year



Financial analysis



FH: flight hour



Central Asian aviation has significant potential backed by its increasing economic significance, geographic location and educated population

Strategic geographical location

due to its central position between Europe, Asia, and the Middle East



Critical mass required:

70%

hangar utilization based on own maintenance program

Although base maintenance is one of the slowest growing segments, it is one of the easiest ways to bring maintenance control into your airline



15%

Predictive maintenance
cost reduction potential

Significant and growing MRO demand in the neighboring regions, mainly Southeast Asia, Middle East and India

Strategic OEM partnerships are a key enabler to become a maintenance provider for future aircraft platforms

Engine & line maintenance

are the fastest growing segments



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