Post Pandemic Supply Chain Challenges in the MRO Industry

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Turkish Technic
AGENDA

1. Turkish Technic Company Overview
2. Post Pandemic Supply Chain Challenges
3. How Does IATA Smarthub Support Our Procurement
TURKISH TECHNIC

History & Future Perspective

1933

Technical Directorate under Turkish Airlines

2006

Entering BJ Business

2007

Supporting AJ Business

2009

Entering Aviation Production Business

2010-11

MRO & Production Joint Ventures

2013

HABOM Project

2014

Capacity Increase by M&A

2018

IFE JV

2019-2020

Istanbul New Hangars

Present

Capacity Increase & THY Hub Changes

Future

Growth Strategy
Operational Spin-offs
Organic & Inorganic Growth

Global Expansion Plan
Brownfield/Greenfield
Investments in specified Regions

Strategic Road Map

1

ENGINE & APU SERVICES

2

LANDING GEAR SERVICES

3

COMPONENT & POOL

4

TRAINING SERVICES

5

ENGINEERING SERVICES

6

AIRFRAME SERVICES
TURKISH TECHNIC

The Most Hangar Capacity in One City

- 33 WORKSHOPS
- 24/7 AOG SUPPORT
- 1.100+ SPECIALIZED TECHNICIANS
- 16.000+ AIRCRAFT COMPONENTS
- 113.000 COMPONENT MAINTENANCE

WORKSHOPS

- WORLD-WIDE CERTIFIED
- Certified through 36+ authorities

- EXPERIENCE
- 90 YEARS

- 4 AIRPORTS
- 11 HANGARS
- 16 WIDE 40 NARROW 2 PAINT

- CLOSED AREA 647k m²

- A320FAM, A330, A340, A350
- B737NG, B757, B767, B777, B787
- Gulfstream GIV, G450, GV-SP, G500, G550

- TYPES
- A/C
- A320 Fam.(inc. NEO)
- B737 CL/NG
- A330, A350, B777, B787

- EMPLOYEES
- 10.000

- A/C under pool services incuding THY
- *MRO JV’s

- *Production JV’s
TURKISH TECHNIC

1. CABIN INTERIOR SERVICES
   - Modification
   - Refurbishment
   - IFE Seat Overhaul (5 Star Cabin)
   - STC Implemented Services
     Manufacturing (TCI)

2. PAINTING SERVICES
   - Designated Paint Hangar
   - Highly Skilled Technicians
   - Inspection for Defects
   - All Types of Aircraft
Our JV – Turkish Engine Center

**ENGINE**
- CFM
  - B737NG
  - CFM56-7B
- IAE
  - A320 FAMILY
    - V2500-A5 SERIES

**APU**
- A320 FAMILY
  - P&W CANADA
    - APS3200 SERIES
- B737NG
  - B737 MAX
    - B737NG
    - 131-9A (Upcoming for A321NEO)

**LANDING GEAR**

**NARROW BODY**
- A319, A320, A321, B737NG

**WIDE BODY**
- A330, A340, B777
### Component Shops and Services

- 113,000 Component Maintenance
- 33 Workshops
- 24/7 AOG SUPPORT
- 16,000 Aircraft Components
- 1100 Specialized Technicians

### Design and Production

- Design
- Production & Cabin Reconfiguration
- Major and Minor STC Changes
- STC Implemented Services Manufacturing (TCI)

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<td>TURKISH TECHNIC</td>
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POOL (PBH) SERVICES

➢ 24/7 AOG Support
➢ Turkish Cargo as Global Partner
➢ Web Suite Portal for Customers
➢ 12.500+ PN Capability

➢ 3 Continent, 15 Countries
➢ 95+ % Success in Service Level
➢ 25.000+ Components Supplied per year
➢ Max.30 Minutes Response Time

➢ A320FAM
➢ B737 CL/ NG
➢ A330

➢ 29 Customers
➢ 31 Contracts

95+ %
SERVICE LEVEL

88 %
CUSTOMER SATISFACTION

671 A/C
OUR CUSTOMERS
On Site Component Stock In 3 Continents and 15 Countries
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LOSS OF EXPERIENCED PERSONNEL
Most of the companies have lost experienced personnel in order to downsize and endure the market conditions.

INCREASING DEMANDS
Increasing Flight Rates after the lockdown caused highly increasing maintenance activities.

PRICE INCREASE & SURCHARGES
Due to the global economical impact of the pandemic, the prices have started to increase more than expected.

ORDER LEAD TIMES
Most of the vendors were not able to catch up their old performance.

MATERIAL SHORTAGE
After the pandemic, procuring the raw materials and semi-products have become harder than usual.

LOGISTIC ISSUES
Air transportation and container issues.
Your package was delivered on time? You’ve got this supply chain workaround to thank.

Air cargo must maintain momentum.

Cargo continues to post positive figures.
TRIGGERING EVENTS

1. Single Supplier Issues
   By not having alternate suppliers can’t burndown the backlog

2. Increasing Re-Order Levels
   Since there is an increase in demand and lead time, Re-Order levels are increased as well

3. Decreasing Rate of Catalogues
   Uncertainty in procurement lead us change the style

HIGH PRICE ESCALATIONS
INCREASING LEAD TIMES
RAW MATERIAL SHORTAGE
UNSTABLE PRICES
NECESSARY IMPROVEMENTS

**REORGANIZATION**
- Separating Inventorial and Operational Purchases

**MORE PLANNING**
- As the EDDs are being postponed, the purchasing activities tend to be focused on high quantity purchases for the inventory

**MORE DATA ANALYSIS**
- Instead of currently used portals, IATA Smarthub has brought a new viewpoint

**PMA & ALTERNATE VENDORS**
- Due to market conditions PMA parts and alternate vendors have become a lot more important than ever

**IMPROVED COMMUNICATIONS**
- Improving internal and external communication and having more f2f meetings
Vendor Evaluation System (VES)

- Fully data oriented evaluation.
- Prepared to share with OEMs and Vendors
- LT Performance: 60%  Disputes: 10%
- Pricing: 30%  Customer Support will be Included
- Calculating risk factors
- Aims to follow up the improvements or drop backs

**RISK FACTORS**

- $x$: Total Risk
  - $x_1$: Unsufficient Stock Risk
  - $x_2$: Priority Risk
  - $x_3$: Single Vendor Risk
  - $x_4$: Long Lead Time Risk
- $y$: Order Volume

**Kraljic’s Matrix**

- **Leverage Categories**
- **Strategic Categories**
- **Non-Critical Categories**
- **Bottleneck Categories**

**Actions to be Taken**

- Sharing results with all the vendors and OEMs
- Corrective / Preventive actions to be determined
- Weekly / Monthly review until improvement

**Key Factors**

- Regularly postponing EDDs
- Changing prices within the same year
- Too many disputes unresolved
VENDOR EVALUATION RESULTS

➢ 2021 vs 2022
➢ Drastical changes in 2022
➢ New precautions for 2023 and 2024 required

VENDOR EVALUATION RESULTS

2021 vs 2022

Drastical changes in 2022
New precautions for 2023 and 2024 required
Increasing Contracted Order Rates
New long term agreements which are mutually more beneficial are being offered to the vendors.

Backlog Burndown Plans
The increased backlog orders are planned to be closed in shorter duration by the help of better planning.

More Reporting & Digitalization
Inventory Levels, increasing order rates, backlogs, EDDs, Priority Levels of order and especially pricing informations are now processed with deeper analysis.

New Capabilites & Agreements
Single sourcing vendors face production and backlog issues, as TT, we offer limited production agreements by receiving the capability via a mutually beneficial business models.

More Catalogues & Planning & Bulk Orders
New catalogues combined with extensive planning and plans made to by-pass possible supply chain issues via sending bulk orders to cover 6 months to 1 year. Critical issue is receiving the catalogues.

Strategic Sourcing and Vendor Support
As a part of Strategic Sourcing, detailed VES activities have taken place. In this manner we were able to monitor and provide more significant feedback to our vendors. This has also led us find different ways to support them.
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**HOW DOES IATA SMARTHUB SUPPORT OUR PROCUREMENT**

01 **BENCHMARKING**
- Procurement and repair prices used as data source

02 **BER DECISIONS**
- Repair and FMV rates are included for analysis

03 **PURCHASING via CONNECTOR**
- Purchasing activities to be started

04 **DATA INTEGRATION ENABLED**
- IATA Smarthub flexibility to create web services for internal reporting systems

05 **FEEDING VES DATA**
- New data to be included through IATA Smarthub

06 **BIDS via AUCTIONEER**
- Sales or Sourcing is available via Auctioneer System

07 **COST EFFECTIVE**
- IATA Smarthub is a very cost effective solution when compared to other products
FUTURE PLANS WITH IATA SMARTHUB

➢ PROVIDE REFERENCE VALUES TO DECIDE FOR PURCHASING, REPAIR AND SALES
➢ HELPS FOR DECISION SUPPORT
➢ FMV, REPAIR OR MARKET PRICE

➢ MONITORING AVAILABILITY RATES
➢ MONITORING PRICE LEVEL CHANGES
➢ COMPLETE MARKET TRANSACTION VOLUME

➢ LIVE CATALOGUE CREATION
➢ CREATING NEW KPI CALCULATIONS BY USING PRICE INFORMATION
➢ PROVIDE A NEW PERSPECTIVE TO VENDOR EVALUATION

NEED MORE STAGE 1 DATA
YOU ARE INVITED

MORE DATA CONTRIBUTION

CREATING NEW SOLUTIONS FOR NEW CHALLENGES

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THANK YOU