

SUPPLY CHAIN MANAGEMENT®

AVIATION



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SPACE – An initiative of aerospace prime contractors

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Summary

In June 2007 aeronautical primes founded the nonprofit aerospace association SPACE™ to support the development of their supply chains. The association aims to provide and implement services to improve industrial performance and competitiveness of supply chains by increasing the efficiency of subcontractors and the relationship with their major aerospace manufacturers. The mission of SPACE™ is to conduct industrial improvement projects at supplier's sites by pooling the resources of major aerospace actors like Airbus, Aernnova, Daher, Dassault Aviation, Diehl Aerospace, EADS, Eaton, Latecoere, Liebherr Aerospace, Moog, Rockwell Collins, Safran, Thales, UTAS Goodrich and Zodiac Aerospace and others. Since 2011, SPACE™ gets engaged in regional and national government supported projects [www.space-aero.org].

Strong need to improve the industrial capacity of the Aerospace Supply Chain

The aerospace industry is characterized by

- steady growth in the past, strong likelihood to continue in future (Figure 1),
- relatively low quantities and significant product lifetime (typical 30 years),
- highly specialized supply chain, regulated markets,
- complex multi tiers supply chains,
- Transition from manufacturing to series production,
- large number of SMEs engaged.

In order to streamline and improve the efforts of the Aerospace OEM regarding industrial development of their sub tiers, the Airbus systems supplier council has brought up the idea to commonly address the topic together with their important suppliers in 2006. In the meantime several pilot projects on common supplier development have been successfully carried out (Figure 2).

Due to cartel regulations (several companies could exercise in-

adequate pressure to common sub-tiers) the creation of an independent organization was required. The foundation of SPACE™ was the answer to these constraints.

What is SPACE and how does it operate?

"SPACE™" stands for "Supply Chain Progress towards Aeronautical Community Excellence". SPACE™ a non-

The mission of SPACE is to conduct industrial improvement projects at supplier's sites by pooling the resources of major aerospace actors.

profit organization gathers about 16 aerospace primes from the Systems and Aero structure business (Figure 3). They send delegates to the SPACE™ executive committee which is the operational decision making body of SPACE™. Additionally the primes are obliged – besides payment of annual fees – to send experts to common projects.

The SPACE™ association employs an operating manager and two further staff. The costs of operations for the association are covered by the membership fees.

Which methods are used by SPACE projects?

The resources for SPACE™ projects at suppliers are sent from the executive members. Each SPACE™ project

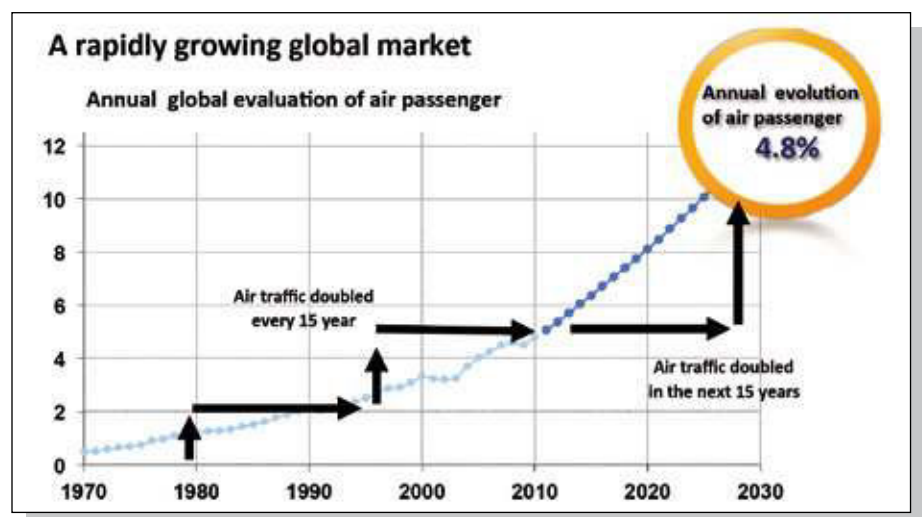


Figure 1: Ramp up of air traffic demand

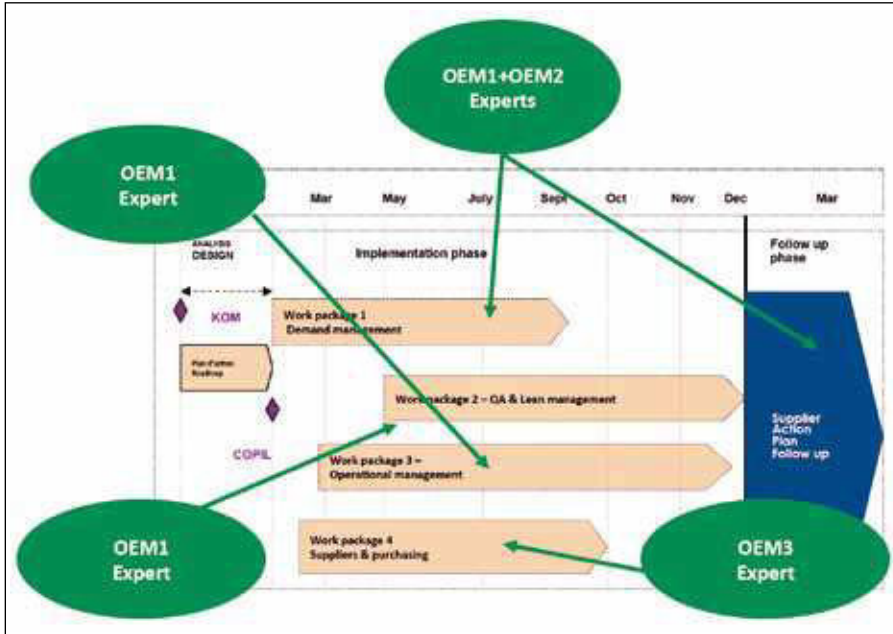


Figure 2: Typical SPACE™ project setup gathering experts from different OEMs

For the improvement itself, SPACE™ has gathered a toolbox comprising among others the following methods:

- FMEA
- 5 WHY'S
- 8D
- Check sheet
- Histogram
- Scatter diagram
- Control chart
- Flow chart
- Cause & effect analysis
- Pareto analysis
- First pass yield
- Overall Equipment Efficiency
- Skill matrix
- Value Stream Mapping
- Line balancing
- Visual management
- Takt time
- Kanban

starts with a diagnostics of the supply chain management maturity. This is mainly done by interviews and on site verifications at the supplier concerned. The method is based on the Supply Chain Management Handbook (SCMH) which has been developed by the International Aerospace Quality Group (IAQG). This comprehensive assessment determines 5 maturity levels in 10 categories (Figure 4).

The results of the assessment are the basis for the improvement project only. The assessment does not result in a grade or quality certificate. This allows to avoid “beauty contests” and to focus on the real improvement needs.

- Process Mapping
- Total Productive Maintenance
- Single Minute Exchange of Die
- Poka Yoke
- Line of balance
- Manufacturing Resource Planning (MRPII)
- Input – Output Control

SPACE Achievements

SPACE™ is focusing on improving on time delivery and reducing rejection rates. Around 150 Projects have been conducted so far, most of them in France. Each year, SPACE™ grants an award to the three best improvers. For example TECHCI, a member of the FINMASI Group, has received such an award. On time delivery has improved from 50% to 80% and rejection rate has been cut by half (Figure 6).

Government funded projects in France

In 2010 SPACE™ started to widen its scope for French region wide projects involving OEMs and supplier in a given region. These projects were government supported and carried out by using the SPACE™ methodology and toolbox. In contrast to the above mentioned projects the experts are not sent by the executive members, but comprise SPACE™ labeled consultants. The resulting improvement plans cover activities at both parties: the OEMs and their suppliers.

Aerolean'k was such a project involving 57 SME and 11 OEM. A satisfaction survey among the participating SME and OEM resulted in more than 90% satisfaction. The operational performance of the participating companies improved significantly (on time delivery, rejection rate).

This lead SPACE™ to develop such an initiative also in others regions (cf DINAMIC AERO managed with the



Figure 3: SPACE™ members, including executive members (center)

Pays de Loire region with 36 SME and 5 OEM) and now even delete a project is under construction with Gifas (target 400 SME and 70 OEM) covering the whole French territory.

Further development and outlook

Until recently SPACE™ has been focusing on France. 2013 was the year of a successful deployment in Germany and Spain will follow in the near future. For Germany a dedicated German representative has been hired who successfully builds his network among the OEM, SME, the BDLI and the German regional Aerospace associations. First projects at supplier sites are currently going on.

Zusammenfassung

Im Jahr 2007 haben die wichtigsten Auftraggeber der europäischen zivilen Luft- und Raumfahrt konstatiert, dass ihre Supply Chains zunehmend weniger in der Lage sind, die neuen Herausforderungen der industriellen Exzellenz zu erfüllen. Zur Förderung der Entwicklung dieser Branche haben sie entschieden, im Juni 2007 den Verband SPACE™ zu gründen [www.space-aero.org]. Die Aufgabe des Verbands ist die Durchführung konkreter industrieller Verbesserungsprojekte bei den Lieferanten durch eine gemeinsame Nutzung der Ressourcen der wichtigsten Auftraggeber in der Luft- und Raumfahrtbranche, u. a. Airbus, Daher, Diehl Aerospace, Dassault Aviation, EADS, Aernnova, Eaton, Latecoere, Liebherr Aerospace, Moog, Rockwell Collins, UTAS Goodrich, Safran, Thales and Zodiac Aerospace. Seither hat SPACE™ über 150 industri-

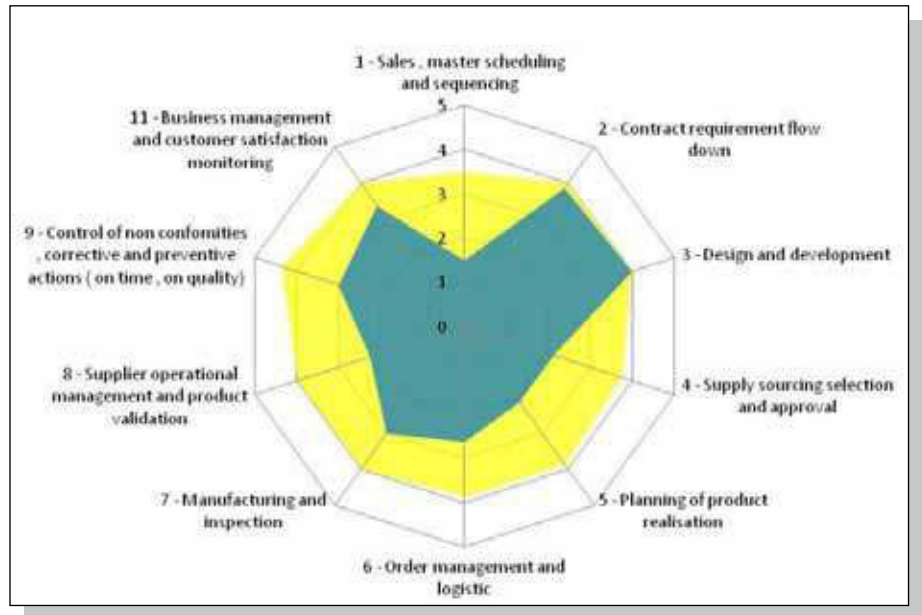


Figure 4: Assessment grid used for SPACE™ diagnosis

elle Verbesserungsprojekte unterstützt und mehr als 200 Experten an den Werkzeugen für eine effiziente industrielle Prozesskontrolle geschult. Seit 2011 führt SPACE™ regionale Verbesserungsprojekte mit öffentlicher Förderung in Frankreich durch. SPACE™ Kontakt für Deutschland: Norbert.Schroeder@space-aero.org.

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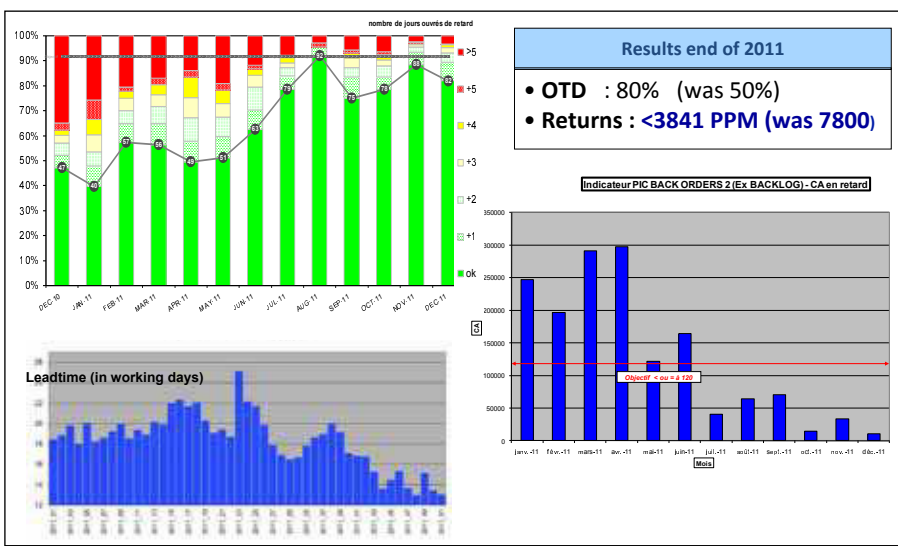


Figure 5: Indicator landscape of the TECHCI project

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