

A composite image featuring a large Airbus A380-800 aircraft in flight, viewed from a high angle. The aircraft is positioned over a blue compass rose with white directional markers and letters. The word 'FUTURE' is written in large, 3D white letters across the top of the compass. A red arrow points from the center of the compass towards the bottom left. The background is dark blue with white tick marks.

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A380 Projet
Shaping the Future

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Commercial Aircraft Development

→ How do we decide to launch a new product?

- Market
- Corporate Strategy – Competitive environment
- Conditions for Launch
 - Business case (NRC, RC, development lead time,)
 - Risks Management
 - Financing
 - Resources
 - Methods & Tools
 - Industrial organization & Partners
 - Sourcing policy & Supply chain
 - Initial Customers Base

Commercial Aircraft Development

→ Requirements

- Top Programme Objectives > Top Programme Requirements
- Top Aircraft Requirements
 - Customers Focus Groups
 - Product & margins policy including customisation
 - Limited Level 1 requirements is a must
 - Tracability is a certification requirement
- Validation & Verification including testing policy

Commercial Aircraft Development

→ Organization

- WBS
- OBS

→ Project tracking

- Formal reviews
 - Concept > Authorization To Offer
 - Detailed Design
 - Final Assembly Line
 - First Flight
 - Type Certificate
 - Entry Into Service
- Strategic and long term tracking
- Tactical tracking
- Reporting
- Feedback to customers

Why the A380 for Airbus?

→ Corporate strategy: prepare the Future

➤ Products strategy

- Catch 50% of the market above 100 seats
- Be on ALL product segments above the 100 seats

➤ Strategy in front of competition: offensive strategy

➤ Internal strategy: pave the way for moving from GIE to single company around an emblematic product

Why the A380 launch for Airbus?

→ Drivers

➤ Market

- Growth: Traffic has proven resilient to external shocks and doubles every 15 years
- VLA forecast demand
- In percentage, forecast VLA value is about 3 times the forecast aircraft number

➤ Congestion

➤ Environment

➤ Economics

What were the key drivers for A380 development

- Buy-in of the project by the stakeholders and potential customers ✓
- Company strategy and product objectives ✓
- Market and potential customer requirements ✗
 - No stable Top Aircraft Requirements at launch
 - Force to incorporate technologies at Low TRLs to achieve economics targets (50% of economics gains)
- Acting together with potential customers ✓
- Finance ✓
- Work forces (too many new comers and subcontractors) ✗

What were the key drivers for A380 development

→ Organization



→ Reporting and communication



→ Transport of components



→ Development not affordable within our business environment











➤ No common CAD and PLM

➤ No common processes

➤ Radical organization change

What were the key drivers for A380 development

→ Design

- No stable Top Aircraft Requirements at launch 
- External constraints e.g. airport compatibility 
- Certification potential show-stoppers and new technologies 
- Configuration 
- Architectures which are market differentiators 
- Technology readiness - Unprecedented step in technologies 
- Size effect 
- Novelties in Design Principles (Think out of the box) 

Major innovations on A380 Structure

Several new alloys, steel and titanium



1st
CFRP rear fuselage
Section 19 / 19.1

Thermoplastic J-Nose

CFRP Wing ribs

CFRP Floor Crossbeams
for upper deck

1st
GLARE® Partially
in Upper Fuselage

Laser Beam Welding
in Lower Fuselage

1st

1st
CFRP Center
Wing Box

CFRP- Rear
Pressure Bulkhead


Flap track panels in
CFRP (Resin Transfer Moulding)

1st
New CFRP Horizontal tail plane
And Vertical Tail Plane

1st

A380 Setting a new standard

A380 major systems innovations

- 
- **First** 2 hydraulic + 2 electrical circuits
 - **First** Electro-hydraulic flight Control Actuators
 - **First** 8 Identical Interactive cockpit displays
 - **First** 2 Displays for OIS
 - Brake to Vacate
 - Runway Over Run protection
 - **First** Variable frequency electrical generators
 - **First** Distribution with Solid State Power Control technology and Distributed power centers
 - **First** Large Ram Air Turbine
 - Open Integrated Modular Avionics
 - AFDX network
 - **First** Landing gear
 - **First** 5000psi hydraulic system pressure
 - **First** On-board Oxygen generating system (not selected by customers)
 - **First** Aluminum wires
 - **First** Doors with electrical assistance
 - **First** Dual/dual air conditioning packs
 - **First** On-board information system (OIS)
 - **First** On-board maintenance system (OMS)
 - **First** Wing and HTP fuel management
 - **First** Electrical Thrust Reverser

A380 Setting a new standard

AIRBUS

Summary

- Change in requirements led to several design standards
- No common design and manufacturing environment led to extra works and industrial burden
- Outstanding achievement from launch to 1st flight : **52 months**
- Delays of development aircraft deliveries to flight tests led to certification and customer delivery delays, subsequently
- New technologies associated to delays of development aircraft deliveries led to aircraft maturity challenges

Summary

BUT

**The A380 did the job agreed with customers from Entry Into Service
&**

The A380 has paved the way for the new Airbus



Thank you