AGILE @ Scale

Francois RICHER – Center of Competences Programme & Project Management
22th May 2019
A Global Company

129,442 employees from 135 nationalities

Located across 35 countries on more than 180 sites

International Sales
31% Europe
69% Non-Europe
A growth story

Airbus makes a vital and growing contribution to the economies of its home countries and the wider world – fuelling prosperity around the globe.

2017 Revenue

€59 bn*

12,000 Suppliers from more than 100 countries

2017 Ebit

€3.4 bn

* restated for IFRS 15

Order Book Growth

+650%

Order Intake

+220%

Self-financed R&D

+115%

2000 2017

2000 2017

€131.9 bn €997 bn

€49.1 bn €158 bn

€1.3 bn €2.80 bn

€997 bn

€158 bn

May 2019

Agile AIRBUS
Our strategy

Position as a leader

• **Strengthen market position** and profitability, while remaining a leader in Commercial Aeronautics.

• Preserve leading position in European Defence, Space and Government markets.

Utilise strategic levers

• Exploit **incremental innovation** potential within product programmes, while pioneering and fostering disruptions in our industry.

• Exploit **digitalisation** to enhance our products, services and operations, as well as pursue new business models.

• **Adapt** to a more global world and move closer to international markets.

• Focus **services** on and around platforms.

• Strengthen value chain position.

Deliver the results accordingly

• Focus on profitability, value creation, and market position – no need to chase growth at any cost; **actively manage portfolio**.
CityAirbus

A multi-passenger, self-piloted electric vertical takeoff and landing (VTOL) demonstrator designed for urban air mobility with cost efficiency, high-volume production and a low environmental footprint in mind.

**Autonomy**
15 minutes

**Engines**
- 6 fixed pitch propellers powered by direct drive engines
- 8 x 100 kW operating power electric motors

**Size**
Compact size for ideal integration into urban landscapes

**Battery**
- 140 kW power x 4 batteries
- 110 kWh energy in all 4 batteries

**Capacity**
Transports up to 4 passengers
Avionics and autopilot built for optimised urban air traffic management

**Cruise Speed**
120 km/h

Ducted high lift propulsion units designed for efficiency, low acoustic footprint and safety

**Making CityAirbus a reality**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Feasibility study: Study confirms that CityAirbus will meet operating cost targets and safety requirements to be certified for public use</td>
</tr>
<tr>
<td>2016</td>
<td>Full scale component testing: Key technologies demonstrated at full size</td>
</tr>
<tr>
<td>2017</td>
<td>Flight testing with small scale drone: Control algorithms and flight mechanics developed</td>
</tr>
<tr>
<td>2018</td>
<td>Demonstrator team created: Collaborative team of highly dynamic and experienced engineers set up</td>
</tr>
<tr>
<td>2023</td>
<td>Full scale demonstrator: Full-scale in-flight demonstration and verification of a full electric, RPM-contrained multi-propeller vertical takeoff and landing (VTOL)</td>
</tr>
<tr>
<td></td>
<td>CityAirbus takes to the sky: Fully certified CityAirbus becomes part of public urban transport mix, in conjunction with upgraded urban air traffic management</td>
</tr>
</tbody>
</table>

**Benefits of adding the third dimension to urban transport networks**

1. **Urban Development**
   - The third dimension increases the geographic accessibility to remote and underserved areas of the city

2. **Higher Speed and Range**
   - Self-piloted flying vehicles can operate at three times the speed of the average road vehicle and extend commuters' geographical reach by tenfold

3. **Environmental Footprint**
   - Self-piloted flying vehicles are fueled by electricity and are energy efficient
Our Projects landscape

Project types

Flying products Programmes
- Technical complexity
- Hundreds of teams to coordinate
- Stretch schedule with impacts on Corporate Strategy

IS Projects
- Reliability of the delivery model
- Reactivity to secure business continuity
- Size of deployment (often thousands of users)

Business Improvement Projects or Portfolio
- Business operations understanding
- Change Management
- Benefits realisation

Research & Technology
- Long lasting projects (>10 years)
- Coordination with external partners – Universities...

Buildings & Infrastructure
- CAPEX Projects on critical path for Airbus Strategy (industrial ramp-up)
Our foundations P&PM Center of Competences …. Setting standards

“Enhance our P&PM Culture to deliver on current/future programme commitments”

In 2008

“Operations keeps the lights on, strategy provides a light at the end of the tunnel, but project management is the train engine that moves the organization forward.”

— Joy Gumz
From a “process minded” to “Lean & Agile” Projects, Programme, Portfolio management

Over the last years, pressure has continuously increased on all projects...

Manage the unexpected in an organisation built on predictability

Reduce cycles & improve Time to Market

Transform Business models & solutions, delivery mode

Secure ramp-up up to +800 A/C per year

... leading to necessary adaptation of Project Management Methods
One of Our inspiration - The Heart of Agile – by Alistair Cockburn
Agile Transformation – People are at the heart of the Transformation

AGILE WAYS OF WORKING, COLLABORATIVE AND INCLUSIVE

DATA DRIVEN SINGLE POINT OF TRUTH

DIGITAL TECHNOLOGIES LEARNING ORGANISATION

CUSTOMER-CENTRIC DECISION MAKING

SHARING DATA WITH SUPPLIERS AND CUSTOMERS
SAFe in Airbus….Where are we today in Engineering and R&T?

SAFe in Numbers

<table>
<thead>
<tr>
<th>Domain</th>
<th>ART</th>
<th>Large Sol.</th>
<th>Portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Toolset</td>
<td>12</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Skywise</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ARP</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>R&amp;T</td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Air Supply</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Transformation</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

- **GO SAFe decision for Engineering Toolset (PLM)**: Feb 2017
- **1st Portfolio ‘E2E PLM & Engineering toolset’**: Apr 2017
- **Skywise 1st PI Planning**: May 2018
- **1st ART in E2E Eng. Toolset (DMU)**: Feb 2019
- **Skywise 1st PI Planning**: Oct 2018
- **R&T RMO 1st PI Planning**: Feb 2020
- **Cabin & Cargo 1st PI Planning**: Dec 2020
- **InCube Studio 1st PI Planning**: Sep 2019
- **Electrification 1st PI Planning**: Jun 2019
- **Fuselage of Tomorrow (FoT) 1st PI Planning**: Jan 2020
- **Propulsion of Tomorrow (PoT) 1st PI Planning**: Feb 2020
- **Maintenance of Tomorrow 1st PI Planning**: Feb 2020

*Fast growing-up*
Benefits of Agile and Agile @ scale
Return on Experience on first implementation areas

- **People engagement**
  - Method based on "information sharing" and **multifunctional teams** creates envy and quick adoption
  - 10 to 50% motivation increase

- **Value to Business**
  - **Stronger collaboration between Teams**
  - Time to get end user feedback from 12 months to 2 to 10 weeks

- **Fast Delivery**
  - From 18 months (full result at risk) to 3/6 months for a **Minimal Viable Product (MVP)** for new solutions

- **Flexibility and reactivity**
  - Regular revision of the backlog to face evolving business needs
  - From 1 year decision cycle to 3 months

- **Quality**
  - Demo sessions as cornerstone of project governance
  - 25-75% defect reduction
Our deployment philosophy….

Agile Global Squad

- Agile coaches close to Agile teams (IS, Engineering, Operations, Transfo)
- All PMOs also Scrum Masters
- Each new project checks if Agile can bring benefits during set-up

Next steps
- Develop Hybrid Agile Framework for non-IT projects
- Massive Agile Scrum awareness campaign
- Impediments removal projects (HR, Finance, Procurement)
Thank you