Platform Issues in Commercial Aircraft Companies

Presented by
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Damien’s Biography

• Master’s student in Aero-Astro and ESD at MIT. Industrial Engineer student at ENSAM Paris.
• Joined LAI in Spring, and integrated the Product Lifecycle Team.
• Practical work experience during summer internships in aerospace companies in Europe.
• Focus on long-term Platform issues in commercial aircraft industry.
Interest of Product Families

- Reduce the overall development cost of products portfolio.
- Reduce lead time of derivative products.
- Integrate new technology faster through module improvements.
- Increase standardization of the development process.

Specificities of Aircraft Industry

- Long lead time - Few development projects at the same time.
- Few new projects - Increasing specialization of aircraft engineers.
- Long product lifecycle - Sequential evolution of products.
- Complexity of products - Intricate development process.
- Specific requirements - Constraints on integrality / modularity trade-offs.
Current State of the Practice

- **Platforms advantages perceived.**
  Ex: Airbus A320 family.

- **Need to integrate legacy systems and reframe organization.**
  Ex: duplicated processes resulting from Boeing mergers in the late 1990s.

- **Unequal integration of platform strategies into more global Product Development reframing.**

- **Platform strategy used to achieve different goals in different enterprises.**
Observations to date
Commercial Aircrafts

**Boeing:**
- recent focus on commonality. Extreme differentiation across aircraft models.
- high integration level of enterprise transformation. Top-down strategy.
- specialized knowledge scattered across the enterprise.

**Airbus:**
- historical concern about product families. Commonality central to its success.
- more emphasis on product innovation than on enterprise-level improvements.
- production system dispersed across Europe.

**Sources:**
- Boeing and Airbus websites ([http://www.boeing.com](http://www.boeing.com) and [http://www.airbus.com](http://www.airbus.com)).
Some propositions:

<table>
<thead>
<tr>
<th>Functional (external point of view)</th>
<th>Organizational (internal point of view)</th>
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<tbody>
<tr>
<td>Aircraft training savings</td>
<td>Production tools and machines savings</td>
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<tr>
<td>Maintenance productivity increase</td>
<td>Lead time reduction for derivative aircrafts</td>
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<tr>
<td>Spare parts investment savings</td>
<td>Percentage of elements reused</td>
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Future Research

• How platform strategies should be tailored to the aircraft industry? Current initiatives of main companies (Boeing / Airbus)?

• What metrics could be best assess the efficiency of aircraft platforms?

• What is the integration of platform strategies in current overall Product Development transformations (ex: Boeing Lean+)?