



# Platform Issues in Commercial Aircraft Companies

Presented by  
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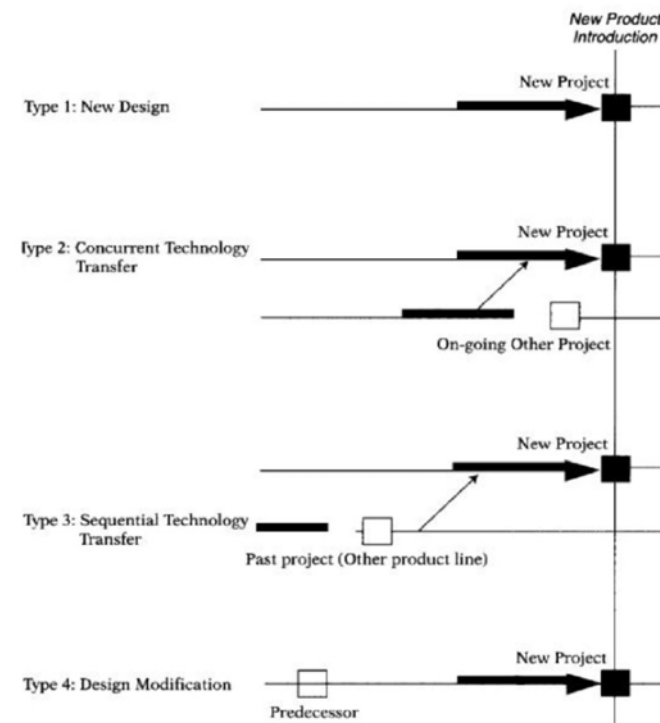


## Damien's Biography

- **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.



Source: Nobeoka and Cusumano, 1995, p. 398.



# 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.

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### **Sources:**

- Willcox, Karen and Wakayama, Sean. "Simultaneous Optimization of a Multiple-Aircraft Family." Reston, VA: Journal of Aircraft, Vol.40, No.4, July-August 2003.
- Nuffort, Matthew R. "Managing Subsystem Commonality." Cambridge, MA: Massachusetts Institute of Technology, February 2001.
- Boeing and Airbus websites (<http://www.boeing.com> and <http://www.airbus.com>).



# Developing metrics

Some propositions:

<b><i>Functional</i></b> (external point of view)	<b><i>Organizational</i></b> (internal point of view)
<b>Aircraft training savings</b>	<b>Production tools and machines savings</b>
<b>Maintenance productivity increase</b>	<b>Lead time reduction for derivative aircrafts</b>
<b>Spare parts investment savings</b>	<b>Percentage of elements reused</b>



## 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+)?**





# Questions?



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