



Business Case with operational Characteristics (SAT-Rdmp, WP2)

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Small Air Transport – Roadmap, WP2

Overview

- SAT-Rdmp: WP2
- Research Question
- Research Methodology
- Main in- & output parameters
- Business Cases
- Model
- Conclusion



SAT-Rdmp: WP2

Goals

- Define the **most profitable business case** for commercial Small Air Transport Operations
- Define the economic, environmental and safety **impact** of different business models
- Define the major influential **variables on the impact** parameters of each business model

Research Question

*How to **model** and find the **most profitable business case** for **personal air transport** in **Europe in 2030**, starting from the demand forecast of the previous part (WP1) of the SAT-Rdmp, so that the **economic impact, safety and sustainability** are reflected in the output, which is **robust**, can be **validated** and is **implementable** into the next phases of the SAT-Rdmp project?*

Research Methodology

Why, How, What?

- I. Initial research
 - SAT-Rdmp WP1, Eurocontrol, Air taxis, WP2 requirements...
- II. Business cases development
 - Developing a new business case (A. van der Star), GISSCIO protocol (R. Janssen)...
- III. Model construction
 - Development of an aircraft routing system (K. Wils),
Simulating air taxi networks (P. Bonnefoy)...
- IV. Model application
- V. Evaluation and validation of the results

Input parameters

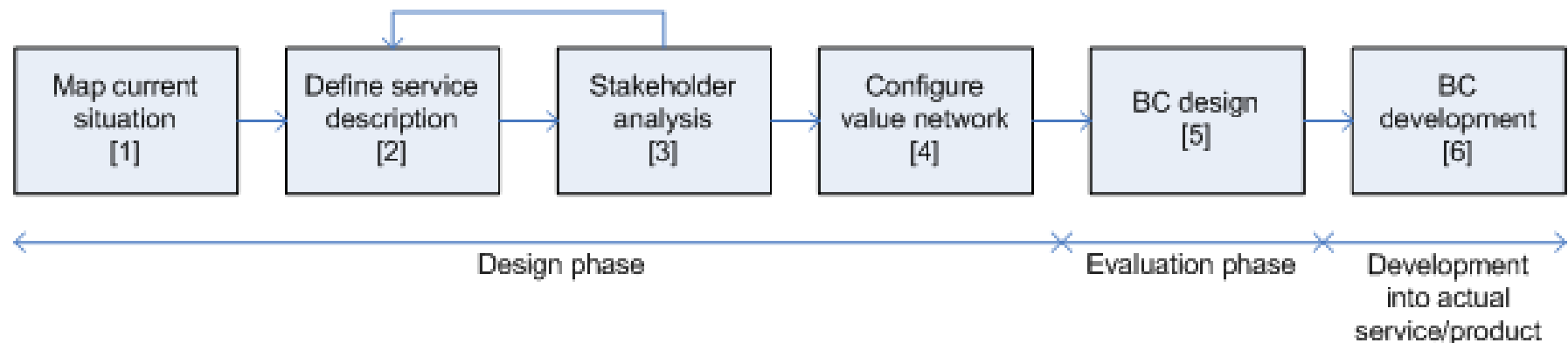
- Operations region
 - Europe, focus on region/country/airports
- Aircraft
 - Single vs. multiple types, leasing vs. buying, operational (cost) factors (maintenance, crew, hangar, Flight Hours/year...)
- Fare Structure
 - Ticket per aircraft/seat/(round) trip, on demand vs. semi on demand, dynamic pricing
- In flight accessories and attachments
 - Low cost vs. luxury flights
- Flight route determination
 - Influence of Air Traffic Control (ATC) or (un)controlled airspace, optimizing systems and routes, weather influence...

Output parameters

- Profitability
 - Revenue estimation, profit margin estimation, yield management...
- Economic impact
 - Compared to (other) transportation means (QSI)
- Safety impact
 - Risk assessment of single engine aircraft (J. Bradley)
- Environmental impact
 - Emission model (D. Rohacs)
- Other important factors
 - Direct operating cost, annual utilization rate, load factor, energy efficiency facto

Business Cases

Development



- Detail [2]: Define service description
 - Service
 - Detail: Target group, context of use, primary value proposition, previous experiences, raters, effort, service
 - Technology design
 - Organization design
 - Finance design

Business Cases

Development example: I. 100% Piston

- Service description
 - Target group: 63% piston market, range efficiency, low cost PAT
 - Context of use: Dense market (avoid empty flights, time)
 - Primary value: Low ticket price (plane sharing) + short travel time
 - Previous experience: Imagine Air, Fly Aeolus (Cirrus SR-22), SATSair (flight operations optimization system)
 - Rates: Low cost, dynamic pricing, plane sharing
 - Effort: Keep effort customer low
- Technology
 - Aircraft, safety impact, environmental impact...
- Organisation
- Finance

Business Cases

I. 100% Piston

- Demand WP1 (target group): 63% piston market
- Aircraft: Cirrus SR 22 (fleet size variable, leasing)
 - Max. Distance: 800km
- Market focus: Spain (25% of European demand, 88% domestic, keep empty flights limited)
- Service (on demand, plane sharing, in flight accessories limited, low cost)
- Vertical integration (marketing, maintenance, cleaning, ground support...)



Business Cases

II. 63% piston, 33% turbofan, 4% VLJ

- Demand WP1: 63% piston market, 33% turbofan, 4% VLJ
- Aircraft: Mixed fleet (fleet size variable, leasing)
 - Wider range (up to 2100km)
- Market focus: Spain + chance of broadening to France, Italy (2/3 of PAT market, keep empty flights limited)
- Service (on demand, in flight accessories, 'Frequent Flyer Program'...)
- Vertical integration (marketing, maintenance, cleaning, ground support...)

Business Cases

III. 100% VLJ

- Eurocontrol demand forecast: VLJ favorable
- Cessna Citation Mustang (fleet size variable, leasing)
 - Max. Distance: 2100km
- Market focus: Spain + chance of broadening to France, Italy (2/3 of PAT market, keep empty flights limited)
- Service (on demand, in flight accessories, 'Frequent Flyer Program'...)
 - More expensive, yet faster, more luxury and wider range
- Vertical integration (marketing, maintenance, cleaning, ground support...)

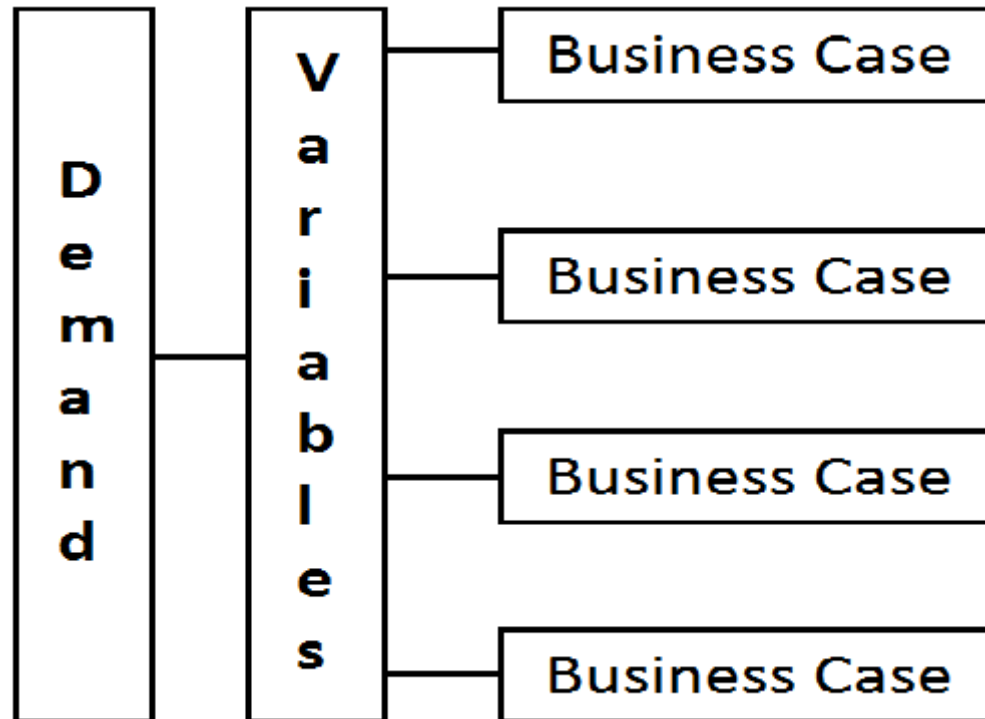


Business Cases

IV. Combination piston, VLJ

- Demand WP1: 63% piston market
+ Eurocontrol: VLJ favorable
- Aircraft: Mixed fleet (fleet size variable, leasing)
 - Wider range (up to 2100km), yet low cost also possible
- Market focus: Spain + chance of broadening to France, Italy
(2/3 of PAT market, keep empty flights limited)
- Service (on demand, in flight accessories or low cost,
'Frequent Flyer Program'...)
- Vertical integration (marketing, maintenance, cleaning, ground support...)

Model



Conclusion

- Four business cases, 2030
 - 100% piston
 - 63% piston, 33% turbofan, 4% VLJ
 - 100%VLJ
 - Combination piston, VLJ
- Model
 - Benchmarking

Questions?