ADRIAIR
Airport Security and Air Taxi Network in the Adriatic

Final Report – March 2014

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Introduction and purpose of the research

- The main purpose of this research is to develop a study to validate a methodology to assess the market potential of an air-taxi service in IPA area;
- The research is aimed to answering some extremely relevant issues related to the market demand estimation:
  - WHAT is (and what is not) an air-taxi service
  - WHO are the ideal potential customers
  - WHAT they are seeking in an air-taxi service
  - WHICH strategies are more appropriate to match potential customers' expectations
  - HOW to communicate value to the potential customers
  - WHICH are the characteristics of the supply side that can be effectively exploited to match customers' expectations.

- The scientific responsible for WP3 is the University of Bologna (ITALY) that has the purpose of developing an appropriate methodology and disseminating it to the partners;
- The main activities performed are:
  - **Phase 1:** Descriptive analysis of the current market situation
  - **Phase 2:** Identification of the major competitors and benchmarking
  - **Phase 3:** Target identification and creation of a "potential customers" database
  - **Phase 4:** Identification of the ideal service levels from the customer's perspective
  - **Phase 5:** Estimation of the potential demand

- The diffusion of the results and the setting up of a common methodology is achieved thanks to periodic meeting organized each time by one of the partners (see Annexes for the detailed scheduling of the meetings)

Structure of the report and executive summary

EXECUTIVE SUMMARY

In the present report we present the results of our analysis on air-taxi services among the two borders of the Adriatic Sea.

1) We firstly analyze air-taxi service in the economic literature, in order to understand the definition of the service, its possible declinations, the economics and the business model.

2) Afterwards we analyze the passengers' flows between the two border of the Adriatic and the flows of goods and services, as a proxy for a potential demand for air-taxi services

3) We therefore depict a SWOT analysis, taking into account resources and competences and infrastructure endowment of the different partners

4) We finally develop a market research devoted to estimate the market potential, exploring firstly the customer value drivers through a qualitative market analysis and then conducting a survey on the preferences and the intention to buy of customers for different configurations of the service.

EXECUTIVE SUMMARY

- LITERATURE REVIEW: MAIN FINDINGS
  - DEFINITION: on-demand service, operated in small-medium airports served by commercial airlines with at least 3000 feet of runways, using light jets/planes (3-7 passengers) to cover a maximum distance of 900 Km
  - BUSINESS STRUCTURE: Different types of ownership available, depending on the number flights/contracts per year by each customer
  - ADVANTAGES: time flexibility, privacy, reliability of the service and availability are the most relevant pros of the service
  - DISADVANTAGES: costs connected to moving empty aircrafts and upgrade in case of unavailability

EXECUTIVE SUMMARY

- PASSENGER FLOW ANALYSIS: MAIN FINDINGS
  - Potential of Forlì airport during its period of operations, as well as for Rimini airport
  - Critical competition between Bologna airport and Forlì and Rimini airports
  - The most relevant passenger flows for the Emilia-Romagna region are:
    - Greece, Albania and Romania for Bologna airport
    - Russia, Ukraine and Albania for Forlì airport
    - Russia, Greece and Ukraine for Rimini airport

EXECUTIVE SUMMARY

- SWOT ANALYSIS: MAIN FINDINGS
  - STRENGTHS: high skilled human resources; fully operational airports with lots of unused and available capacity in IPA countries' airports
  - WEAKNESSES: economic crisis and slow enterpreneurial growth; governance issues in some partner airports (e.g. Forlì)
  - OPPORTUNITIES: potential partnership and synergies with other local businesses; small size of airports facilitates the conversion of the business to stimulate the introduction of an air-taxi service
  - THREATS: direct (i.e. other airport operating scheduled flights) and indirect (e.g. ferry transportation, car) competition; unclear regulation that causes a lack of international standards

EXECUTIVE SUMMARY

- FIELD ANALYSIS: MAIN FINDINGS
  - The QUALITATIVE study shows that frequency of direct flights and time flexibility are two related and very important issues for potential customers; many interviewees are concerned with aircrafts safety that should be appropriately communicated and transferred by air-taxi operators. An opportunity for Air Taxi operators could be the implementation of a bundle of ground and on-board services such as Wi-fi connection and car rental at destination. A major concern expressed by almost all the interviewee relates with price that is still perceived to be too high.
  - The QUANTITATIVE study supports the critical role played by price in shaping individuals' intention to adopt the service. Interestingly, respondents prefer saving money by losing part of the time flexibility. When respondents were asked about their ideal price levels of an air taxi service, their willingness to pay falls far beyond the price levels proposed in the study that were computed basing on the current cost structures of an air taxi operator

EXECUTIVE SUMMARY

- The ADRIAIR partnership involves:
  - airport authorities (Pula, Rjieka, Dubrovnik),
  - public institutions who are key shareholders of the airports of their territories (Province of Forlì-Cesena),
  - public body having territorial interest (the Province of Ravenna's territory is benefitting from the Forlì airport, it being situated at a short distance),
  - an important local development agency working in this project in strict cooperation with the airports concerned (LIR, with the airports of Banja Luka, Sarajevo and Mostar, who delegated it for lack of internal staff)
  - The Chamber of Commerce of Tirana, an actor of territorial marketing operating in synergy with the airport.

EXECUTIVE SUMMARY

- The ADRIAIR project is aimed to improving air transportation across Adriatic borders by addressing some relevant issues :
  - (1) BALANCING THE SECURITY STANDARDS OF THE AIRPORTS with the best practices and facilities implemented in the main European terminals and to improve the airport procedures with the aim of preventing duplication of security checks: e.g. professional training of airport operators and EU standard level equipment and procedures.
  - (2) INVESTIGATING AND EXPLOITING THE MARKET POTENTIAL OF THE REGIONAL AIRPORTS This market analysis will enable all the beneficiaries and other connected actors, to adopt the most appropriate development strategies, both “soft” (marketing) and “hard” (physical improvement of the airport infrastructures).
  - (3) ENHANCE THE CONCRETE REALIZATION OF AIR TAXI CONNECTIONS BETWEEN THE ‘REGIONAL’ AIRPORTS OF THE ADRIATIC, through reciprocal territorial marketing of the involved areas (but no direct funding to airlines implementing new flights)
  - (4) LAY DOWN THE BASIS FOR CREATING A PERMANENT NETWORK AMONG REGIONAL AIRPORTS OF THE ADRIATIC, which will be open not only to the participating partners, regions and airports, but will be accessible to all other regions and players that want to become part of the ADRIAIR network.

FLOW OF THE PROJECT

EXECUTIVE SUMMARY: OVERVIEW OF THE RESULTS

- **The results from our analyses reveal:**
  - A high potential of commercial and passenger exchanges between the two banks of Adriatic if by observing the actual flows (see chapter 1);
  - A considerable availability of resources to be dedicated from the partner airports to the development of more efficient structures to support the creation of an air-taxi network, basing on the outcomes of the SWOT analysis (see chapter 2);
  - The qualitative analysis reveals some interest in the target audience of firms that have to travel across the Adriatic borders for business purposes. A on-demand air-taxi service might fill a gap in the actual offering system that provides very few direct scheduled flights so that business travels are still operated mainly by car. However, some concerns about safety and prices emerge and should be carefully addressed in order to maximize the success probabilities of the service (see chapter 3);
  - The quantitative analysis identifies a gap between the ideal service profile and the actual service levels, especially regarding the pricing strategies that should be realistically implemented basing on the current status of the air-taxi business models and cost structure. This gap is relevant because it considerably undermines the potential demand by lowering customers' intention to purchase the service. Results from conjoint analysis further reveal that customers might positively accept a reduced flexibility over the time scheduling in front of a price reduction. This trade-off should be carefully considered by air-taxi operators in the definition of their business models (see chapter 4).

EXECUTIVE SUMMARY: IMPLICATIONS

As a consequence of the different analysis we suggest a careful consideration of the further steps to be performed.

While undoubtedly there is both an expression of interest of companies and managers (qualitative analysis) and also resources available (SWOT analysis), the quantitative analysis aimed to estimating potential demand shows some critical issues regarding mainly pricing and the definition of the offer profile.

Before going to market these issues should be addressed properly.

EXECUTIVE SUMMARY: IMPLICATIONS

- The results from our analyses point out several important issues that are relevant both to air-taxi operators, airport managers and policy makers:
  - Air-taxi operators should consider adapting their business models to the need for different pricing schemes exhibited by potential customers by offering the opportunity to share the flight with other customers;
  - This reduction of time flexibility imposes some challenges to air-taxi operators in terms of logistics (e.g. the implementation of a web-based booking platform) and demand segmentation (e.g. customers travelling for business vs. leisure purposes), and also to airport managers that should lay the bases for setting dedicated services for air-taxi passengers (such as Wi-fi connection);
  - Policy makers should in turn consider alternative taxation schemes on final users of air-taxis, that are currently equalized to luxury consumption in certain countries such as Italy, in order to invert the ongoing trend of market exit by many air-taxi operators. Moreover, a common and shared EU policy should help to prevent arbitration opportunistic behaviors that, again, impede the setting of an efficient service matching customer expectation.

Literature review on Air-taxi transportation

LITERATURE REVIEW
Executive summary – 1

The aim of this section (Literature Review) is to introduce the main theoretical findings and more relevant issues in Air Taxi Services that have emerged in the transport economic literature.
The Section will first pay attention to the various theoretical definition of air taxi, trying to assess an operational definition of air taxi services.
Moreover, the various possible forms of air taxi services will be described. They are, respectively, the fractional ownership, the time share, the joint ownership and the charter. Their main similarities and heterogeneities will be underlined.
Furthermore, the various advantages of air taxi services over scheduled airline flights will be listed and described by showing the market segment of demand for this peculiar air transport service.
On the other hand, the specific costs of air taxi (repositioning and upgrading) that generate a higher unit cost of service will be introduced.

LITERATURE REVIEW
Executive summary – 2

The second part of the literature review will be devoted to the discussion of the main theoretical models that have been proposed to analyze air taxi business. Four categories of models have emerged in the literature.
The first category of models is represented by those that focus on the income of consumers of this specific service to quantify the possible market extension and diffusion. A second series of models underlines the availability of easier and faster mobility as the characteristics of air taxi services. Thirdly, some models propose the typical economic setting of minimization of costs and maximization of profits to guide the evolution of firms' strategies in this business. Lastly, some models justify the existence of air taxi as a response to the congestion of other transport means that may motivate high end income brackets to opt for air taxi.
The section ends with some general conclusions and it also proposes some specific remarks related to the Adriair project.

Air Taxi Definition

- Air transport passenger service on-demand, without a fixed schedule either in terms of airports or in terms of time (Mane and Crossley, 2009)
- It normally operates in airports served by commercial airlines and in small regional airports with at least 3000 feet (900 mts) of runway (Trani et al., 2003)
- It uses very light jets/planes with carrying capacity of 3 – 7 passengers (Lee et al, 2008) on a range of distances which normally spans between 240 and 960 kms (Peeta et al, 2008)

Different Types of Air-Taxi - 1

- Fractional ownership. Firms or individuals buy a share of a jet that is then managed by a third firm which always guarantees the flight on the basis of the requirements of firms.
- Time-share. Firms or individuals buy the possibility to fly for a determined amount of hours (normally between 50 and 400) in a given time period (typically a year)
- Joint ownership. Firms or individuals buy a share of a jet which is then managed by a third firm. Joint owners compete on time windows for flights.
- Charter. Firms or individuals purchase one single air transport service.

Different Types of Air-Taxi - 2

- Fractional, Time-share and Joint are different forms of jet ownership. In these cases air transport services can be requested with some hours (between 4 and 8) of anticipation (Yang et al, 2010)
- Charter flights imply single or series of contracts which do not imply ownership. Air transport services are normally granted if they are requested at least one day in advance (Yao et al, 2005).

Different Types of Air-Taxi - 2

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Advantages of Air-Taxi Services – 1

- Flexibility
- Privacy
- Reliability (Zamparini and Reggiani, 2010)
- Guaranteed availability (for the cases different from joint ownership)

Advantages of Air-Taxi Services – 2

• Use of proximity airports that allows to minimise the other legs of a trip and to reduce waiting and security control times (Bonnefoy, 2005).

•In US, they can fly to 5,000 airports, while commercial airlines can only use about 500 with an average saving time of 150 minutes wrt to commercial airlines (Mane and Crossley, 2009)

•Air taxi services allow to exclude baggage losses and cuts baggage handling times (Yao et al, 2005)

Specific Costs of Air-Taxi

- Reposition to move empty aircrafts to pick up costumers
- Upgrade in case of unavailability, the company has to provide costumers with better planes/jets without any extra cost
- The typical cost of air-taxi during flight is between $1.50 and $2.00 per passenger per mile in US (Seshadri et al, 2006). Note that reposition, upgrade and fixed costs have to be added to this figure.

Four Categories of Models

- Models focused on the Income of Consumers (Yao et al., 2005; Mane and Crossley, 2009; Peeta et al., 2008)
- Easier and faster mobility (Long et al., 2001; Kemmerly, 2006; Bonnefoy, 2005)
- Minimization of Costs and Maximization of Profits (Keskinocak, 2008; Fagerholt et al., 2008; Espinoza et al., 2008a, 2008b; Yang et al., 2010)
- Air taxi as a response to the congestion of other transport means (Dollyhigh, 2002; Lee et al., 2005; Baik et al. 2007)

Models focused on the Income of Consumers

- Yao et al. (2005) emphasize the grouping of high end income consumers with the method of temporal windows
- Mane and Crossley (2009) take into account the value of time savings and compare various transport means stressing that people with high value of time savings (Zamparini and Reggiani, 2007) will opt for air taxi services
- Peeta et al. (2008) consider overall utility and assume that high income consumers will have a higher utility by choosing air taxi services

Easier and faster mobility

- Long et al. (2001) stress the importance to avoid the overcrowding of commercial airports and the possibility that Air taxi services can generate an extra demand for air travel
- Kemmerly (2006) takes into account the part of the population that lives far away from commercial airports
- Bonnefoy (2005) considers jointly the distribution of the population in the territory and the monthly distribution of demand for air services

Minimization of Costs and Maximization of Profits

- Keskinocak (2008) considered the cost of positioning of the routes and the subcontracting costs as the most important variables in order to propose an optimal planning of flights
- Fagerholt et al. (2008) assume that the maximization of profits is dependent on the number of served nodes, the travel and waiting times and the probability to accept future reservation requests
- Espinoza et al. (2008a, 2008b) consider the choice of the optimal size of the aircraft on the basis of a series of parameters related mainly to scheduled requests, travelled distances, empty flights
- Yang et al. (2010) propose to use part of the fleet for planning and another part for reserve in order to eliminate subcontracting costs

Congestion of other transport means

- Dollyhigh (2002) proposed a model where the choice of air taxi services is based on distance, income of the household, speed, time of departure and arrival. The latter variables being influenced by congestion.
- Lee et al. (2005) assume that air transport services are destined at a market niche but suffer of higher costs of exercise that can be minimized by an efficient allocation of aircrafts in an informed and effective way.
- Baik et al. (2007) consider that transport demand is in excess with respect to supply and propose a model where the choice of air taxi services is dependent on a series of parameters that characterise the utility function of consumers.

Concluding remarks

- Importance to point to a specific market niche with peculiar needs in terms of transport and high value of travel time savings. Management strategies of air taxi firms can allow to attract a larger demand
- Relevance to plan with care the optimal dimension of vessels and the number of vessels that should constitute the operating fleet
- Only few case studies – limited, to our knowledge, to USA and Norway – exist. Most studies propose simulation experiments

Concluding remarks

• Importance of Air taxi to revive small airports in the IPA region
• Distance of flights justifies the use of air taxi services among the partners of the Adriair project
• The high unit costs of air taxi require to carefully analyze the economic structure of each IPA country and its economic interactions with the other partner areas in order to assess the feasibility of an air taxi service
• Local authorities may foster the aggregation of local firms with the aim to establish joint or fractional ownership schemes of air taxi services

CHAPTER 1

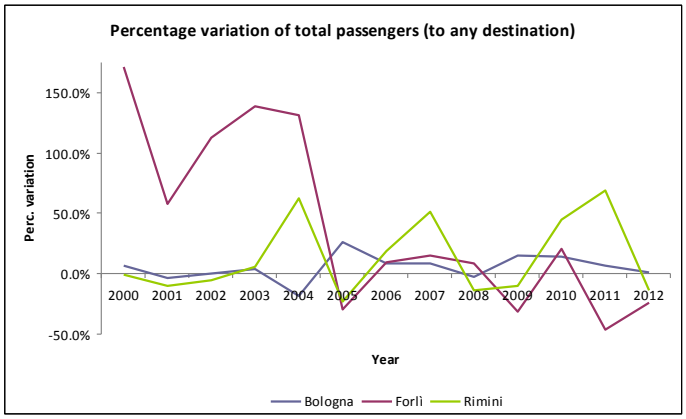
Air transportation flow across Adriatic and IPA countries

Context: BO/FC/RN Airports

- Strong growth of airport traffic in Romagna (Forlì and Rimini's airports) in the early 2000s
- Critical competition between airports of Bologna and Romagna
  - Impact of economic crisis → decrease in transport demand
  - Forlì's airport went bankrupt in 2013, and is now out of business
  - Rimini's airport has been declared bankrupt, but is currently still operating under a receiver appointed by the tribunal, although the Russian market seems to practically be the only one served at the moment

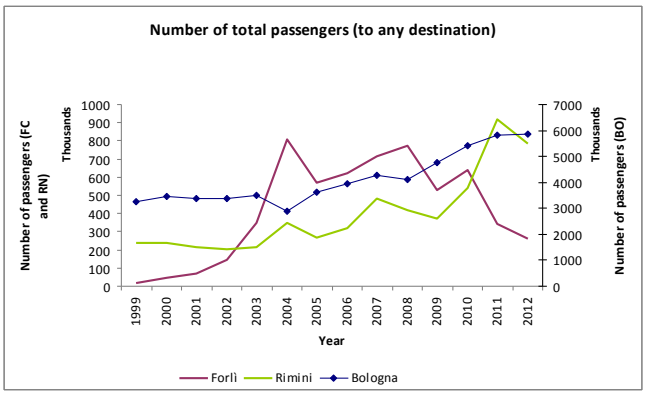
Trends of BO/FC/RN Airports

- While Forlì was strongly on the rise until 2004, the recent years show its decline (in particular since Ryanair left the airport to operate from Bologna)
- Rimini shows periodical growth and decreases, probably depending on the charter flights trends, and most recently on the demise of Wind Jet, whose operations stooped in 2012 (it operated in both the Rimini and Forlì airports, which Rimini being an operating base)
- Bologna is rather stable, being a mature airport



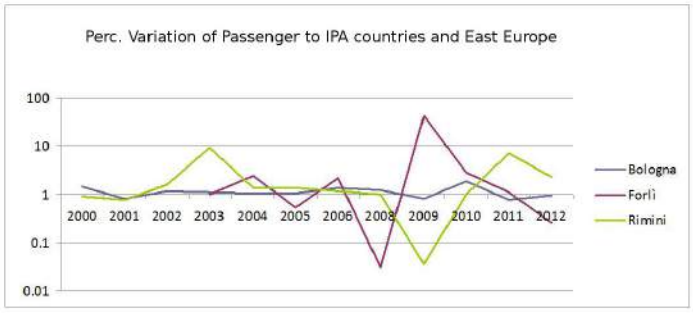
Details on FC/RN Airports

- The graph for the number of overall passengers shows how Rimini has taken over Forlì in 2010, and shows a marked upward trend over the years



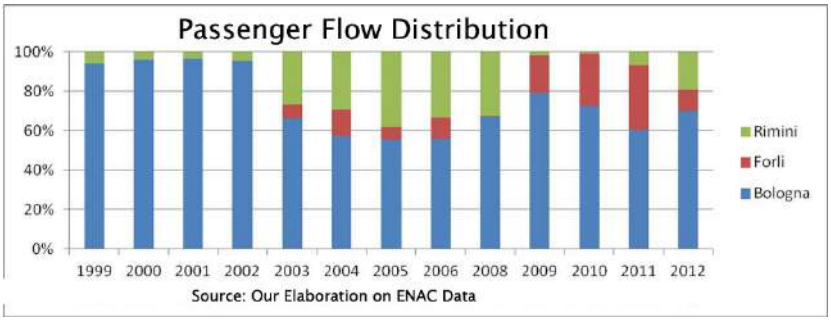
Trends of BO/FC/RN Airports for IPA Countries and East-Europe

- Looking at IPA and East-European countries...
  - Bologna remains stable
  - Forlì and Rimini show mostly positive trends, with some year-specific significant losses, mostly due to just one major vector or destination being eliminated



Details on BO/FC/RN Airports for IPA Countries and East-Europe

- Looking at the related distribution of passengers over the three airports...
  - Bologna's share of traffic has significantly decreased in the beginning of the 2000s
  - Forlì and Rimini alternate, over the years in taking up a cumulative 30-40% of total flows



Analysis of Recent Air Transport Traffic between BO/FC/RN and IPA Countries and East-Europe

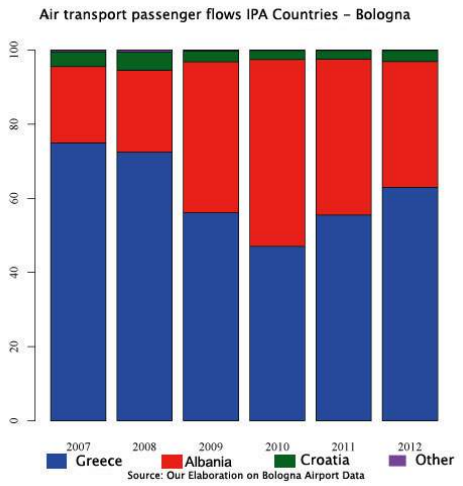
- Passenger data from the ENAC (National Commercial Aviation Authority) Annuaries
- Difficulties in data collection – need for data from the airport operators
  - For these recent years, more difficulties concerning the data
- Years 1999–2006: Data gathered as undirectional [flows in the two directions are merged (e.g., Forlì-Russia + Russia-Forlì)] and aggregated by (foreign) country and (Italian) airport
- Finally, traffic data between the airports of Bologna and Rimini and the reference countries were provided directly by the airports:
  - For Bologna, from 2007 to 2012
  - For Rimini, from 2010 to 2012

Air Transport Flows, 2004–06

- **Main IPA/EastEurope markets for the Bologna/Forlì/Rimini airports in 2006**
  - BOLOGNA: (#1) Greece (100k); (#2) Albania (42k); (#3) Romania (36k)
  - FORLÌ: (#1) Russia (21k); (#2) Ukraine (16k); (#3) Albania (15k)
  - RIMINI: (#1) Russia (163k); (#2) Greece (2k); (#3) Ukraine (1k)
  - While Bologna has closer links with countries from the Balkans area, Forlì and Rimini cater more to Eastern Europe (for Rimini, mainly Russia)
- **Most relevant changes (2004–06)**
  - BOLOGNA: (#1) Greece (+78%); (#4) Czech Republic (+60%); (#5) Hungary (+101%)
  - FORLÌ: (#1) Russia (+90%); (#2) Ukraine (+81%); (#3) Albania (+111%)
  - RIMINI: (#1) Russia (+68%); (#2) Greece (–76%); (#4) Romania (–43%)

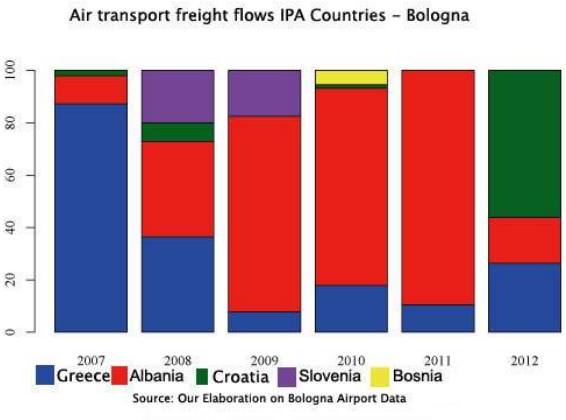
Air Transport Flows, Bologna, 2007–12

- For the airport of Bologna, Greece and Albania represent almost the interity of flows
- Croatia has a very limited share of flows, others follow with minimal figures



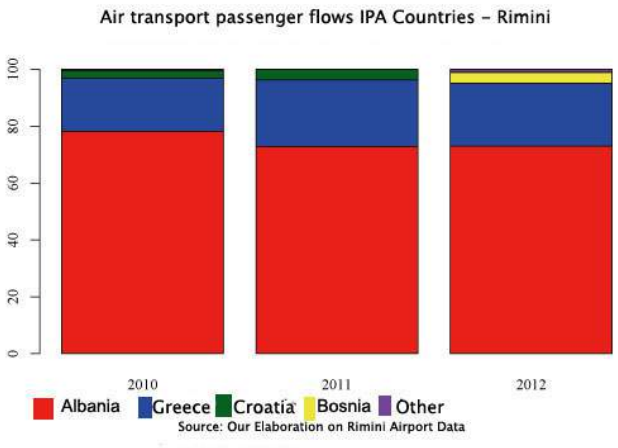
Freight Air Transport Flows, Bologna, 2007–12

- For the airport of Bologna, we can replicate the analysis for freight transport
- A much more diverse picture is shown here, where the share of Greece gradually declines, and the one of Albania on the other hand increases (aside from 2012)
- Croatia and Slovenia also play relevant roles



Air Transport Flows, Rimini, 2010–12

- For the airport of Rimini, Albania represents most of the flows towards IPA/Adriatic countries
- Greece and Croatia are less relevant
- Still, most of Rimini's airport traffic is with the Russian market, making flows towards the remaining countries marginal in relative terms



Multicriteria Analysis

- A multicriteria decisional tool, based on the Regime method (Hinloopen and Nijkamp 1990), is used to evaluate the 'ideal' partners on the basis of international trade and air traffic data
- Alternatives: Albania, Bosnia, Croatia, Greece, Montenegro, Serbia, Slovenia
- Airports: Bologna and Rimini
- Criteria: passenger traffic, freight traffic (only Bologna), value of imports and exports between the BO/FC/RN provinces and the above countries
- Three scenarios, with different weights given to the criteria, are used, for each combination of airport/country/year and then nested

Multicriteria Analysis Results

- Greece emerges as the preferred destination country for both airports with 100% probability
- Croatia and Slovenia also perform well
- It is not surprising that Member States Greece, Slovenia and Croatia (who only entered in 2013) have the most prominent positions, since trade data are considered in the analysis

	Bologna	Rimini
Albania	0,526 (4)	0,333 (5)
Bosnia	0,167 (6)	0,639(3)
Croatia	0,667 (3)	0,807(2)
Greece	1,000 (1)	1,000 (1)
Montenegro	0,000 (7)	0,000 (7)
Serbia	0,361 (5)	0,167 (6)
Slovenia	0,779 (2)	0,500 (4)

Spatial Interaction Modelling of Air Traffic Flows

- In a modelling exercise, total passenger flows between the airports of Bologna and Rimini and the aforementioned countries (total passengers transiting between each airport and country over the two directions) are related to:
  - Euclidean distance (between airport and country's closest airport)
  - Total imports and exports (province to/from country)
  - Total trade (sum of imports and exports per pair)
  - Population (province/country)
- Both OLS and Poisson (GLM) models are estimated

Spatial Interaction Modelling of Air Traffic Flows (2)

- In-sample forecasting:
  - Poisson models tend to overestimate flows, while OLS models tend to underestimate them
  - Considerable underestimate for Albania (flows are much greater than expected, most likely due to language reasons) and overestimate for Serbia and Bosnia

	Bologna			Rimini		
	GLM	OLS	Real	GLM	OLS	Real
Albania	24619	366	89356	2883	67	19151
Bosnia	12219	172	115	1281	33	0
Croatia	5062	83	5125	591	21	800
Greece	110624	46695	107282	15634	9156	5382
Montenegro	22260	37	159	1308	2	0
Serbia	25344	1180	41	3020	231	63
Slovenia	2212	13	12	342	4	0

Spatial Interaction Modelling of Air Traffic Flows (3)

- We can now attempt a 'naive' (unconditional) estimate of potential (expected) passenger flows over the Forlì airport, if reopened
- Greece, as it may be expected, results as the main possible destination market, followed by Serbia
- It should however be considered that given geographical proximity and substitution effects, the three airports of BO/FC/RN are not independent, and an increase in one's supply of routes on a particular country implies an opposite sign effect on the others' demand (and later on supply) for the same country

	OLS		
	2009	2010	2011
Albania	157	158	156
Bosnia	74	74	73
Croatia	36	36	34
Greece	19949	20182	19921
Montenegro	16	16	16
Serbia	509	509	499
Slovenia	6	6	6

Conclusions

- Potential of Forlì's airport during its period of operations, as well as Rimini's
- Role of adopted methodological tools in modelling potential demand
- Data limits
- Consequently, cautious use of results for economic/transport policy

Research Direction

Methodologically:

- More variables/data, etc.
- Study of accessibility and value of time for different segments of the population
- Study on generalized costs (instead of plain distance) and related behavioural parameters
- Study of the 'complex' air transport network in the area, considering nearby airports as well (Ancona, Padova, Venezia, etc.)

Policy analysis:

- Impact and sensitivity analyses in the presence of new carriers (e.g. low cost-carriers, air-taxis, etc.) between airports, or of new airports

CHAPTER 2

Commercial flows between IPA countries

DESK ANALYSIS
Executive summary

• The **number** and **monetary value** of actual commercial exchanges between the Forlì area (including also other surrounding territories which are well connected to Forlì, such as Bologna, Rimini and the partner Ravenna) and the other IPA areas suggests that there should exists firms which are active in the focal territories and are involved in commercial exchanges and might be therefore interested in the development of an effective aero-taxi service

• The commercial exchanges between the IPA areas comprise a relatively compact set of **industries** whose turnaround is significantly higher than the other industries:

- textile products, clothing, leather and accessories
- food, beverage and tobacco
- based metal and metal bearings, excluding machinery and plants
- machinery and not classifiable devices

• All these industries might be suitable also for **on-demand freight transportation** besides passenger (managers, technicians, ...) transportation → further investigation required.

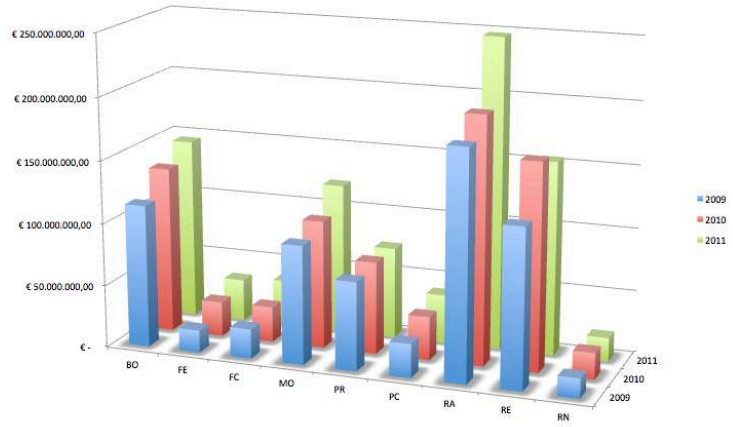
DESK ANALYSIS
Executive summary

- The analyses, at the current stage, allow us to estimate the actual number of firms who MIGHT be interested in an aero-taxi service. HOWEVER:
  - If the service were actually implemented, more firms might decide to engage in commercial exchanges with IPA countries → their number needs to be estimated
  - Which is the ideal service configuration (e.g. price, frequency, plane dimensions) that maximizes the intention to use the aero-taxi service by actual and potential firms involved in commercial exchanges between IPA areas? → service features need to be identified and their impact quantified
  - We have a portrait of the commercial flows, and also a first draft with the results of our analysis. We have to understand better the means of transportation currently used for freight transportation and the eventual passenger flow induced by the observed commercial activities → assessment and quantification of the amount of passengers/ freight that could be transported by the aero-taxi service

TRIENNIUM 2009-2011: IMPORTS FROM IPA COUNTRIES BY PROVINCE

IMPORT	2009	%	2010	%	2011	%
BO	€ 113.915.890,00	16,96	€ 132.734.279,00	16,98	€ 145.353.406,00	16,72
FE	€ 17.782.318,00	2,65	€ 27.628.042,00	3,53	€ 33.634.021,00	3,87
FC	€ 23.623.034,00	3,52	€ 28.248.604,00	3,61	€ 36.783.527,00	4,23
MO	€ 94.742.328,00	14,11	€ 102.238.167,00	13,08	€ 120.329.820,00	13,84
PR	€ 70.719.158,00	10,53	€ 73.759.673,00	9,44	€ 73.083.273,00	8,41
PC	€ 26.928.576,00	4,01	€ 34.649.883,00	4,43	€ 39.151.999,00	4,50
RA	€ 181.965.439,00	27,10	€ 196.825.109,00	25,18	€ 247.496.102,00	28,47
RE	€ 126.251.401,00	18,80	€ 164.633.324,00	21,06	€ 154.309.620,00	17,75
RN	€ 15.602.833,00	2,32	€ 21.013.390,00	2,69	€ 19.138.401,00	2,20
tot	€ 671.530.977,00	100,00	€ 781.730.471,00	100,00	€ 869.280.169,00	100,00

The analysis of the imports in the triennium 2009-2011 reveals an increasing trend (30%), with a turnover from 671mln to 869ml €.

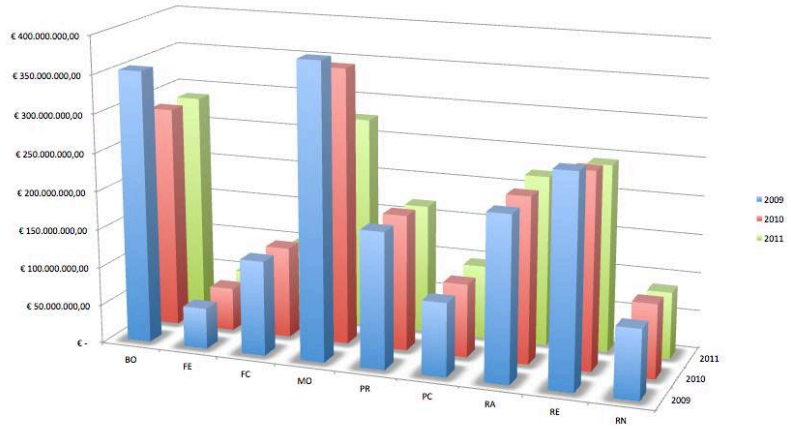


The most active provinces that import products from other IPA countries for 2011 are Ravenna (247ml Euro), Reggio Emilia (154ml Euro) and Bologna (145ml Euro).
Then, the provinces of Modena (120ml Euro), and Parma (73ml Euro).
The least active province is Rimini, with a turnover of 19ml di Euro.

TRIENNIUM 2009-2011: EXPORTS FROM IPA COUNTRIES BY PROVINCE

EXPORT						
	2009	%	2010	%	2011	%
BO	€ 353.802.903,00	20,06	€ 288.241.893,00	17,35	€ 287.228.477,00	18,68
FE	€ 52.737.837,00	2,99	€ 55.898.516,00	3,36	€ 55.162.419,00	3,59
FC	€ 123.215.767,00	6,99	€ 118.316.229,00	7,12	€ 101.454.266,00	6,60
MO	€ 383.222.334,00	21,73	€ 358.683.030,00	21,59	€ 276.576.065,00	17,99
PR	€ 177.156.326,00	10,04	€ 176.940.155,00	10,65	€ 168.647.280,00	10,97
PC	€ 95.543.124,00	5,42	€ 95.571.881,00	5,75	€ 96.227.511,00	6,26
RA	€ 214.484.592,00	12,16	€ 216.218.569,00	13,02	€ 221.691.893,00	14,42
RE	€ 273.504.999,00	15,51	€ 255.077.651,00	15,35	€ 243.650.387,00	15,84
RN	€ 90.023.544,00	5,10	€ 96.344.287,00	5,80	€ 87.118.082,00	5,67
tot	€ 1.763.691.426,00	100,00	€ 1.661.292.211,00	100,00	€ 1.537.756.380,00	100,00

The analysis of the exports in the triennium 2009-2011 reveals a decreasing trend(-13%), with a turnover from 1,7 billion to 1,5 billion €.



The most active provinces that export products toward other IPA countries for 2011 are Bologna (287mln Euro), Modena (276mln Euro) and Reggio Emilia (244mln Euro).
Then, the provinces of Ravenna (220mln Euro), and Parma (168ml Euro).
The least active province is Ferrara, with a turnover of 55mln Euro.

IMPORT/EXPORT of FORLI'-CESENA PROVINCE

1- Dimension of the phenomenon

Forlì-Cesena Province imports and exports are both following an increasing pattern and currently account for around 140 million €

2- Which IPA countries are likely to be the most profitable?

Imports: Greece, Slovenia and Croatia
Exports: Greece, Slovenia and Serbia

3- Which product categories are likely to be the most commercialized?

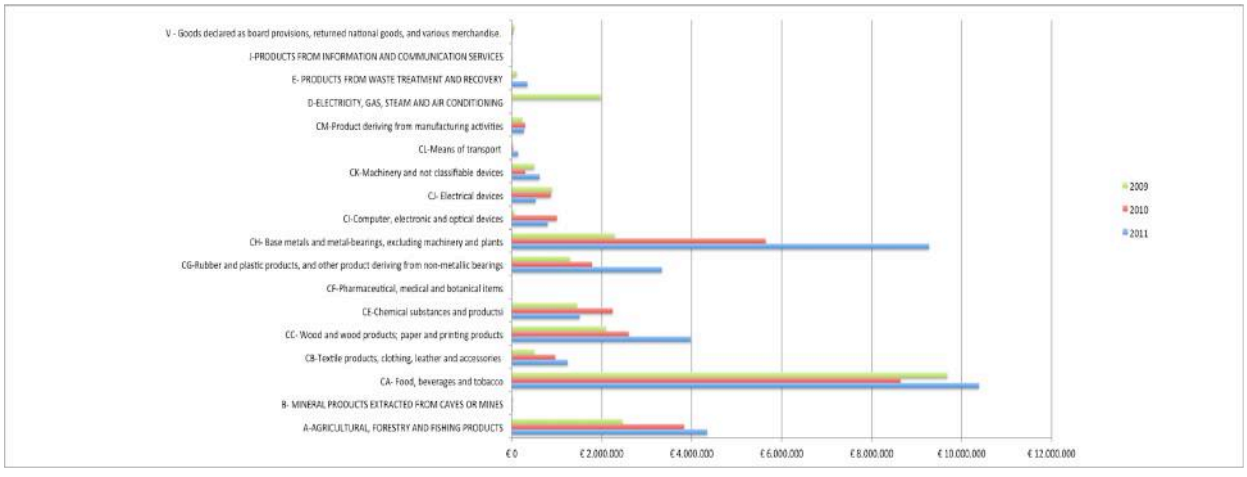
Imports and Exports: CA-food, beverage and tobacco; CH-based metal and metal bearings, excluding machinery and plants.

IPA COUNTRY	YEAR	IMPORT	EXPORT
Grecia	2009	€ 12.717.405,00	€ 74.168.995,00
Albania	2009	€ 670.283,00	€ 7.103.111,00
Slovenia	2009	€ 6.532.718,00	€ 16.577.062,00
Croazia	2009	€ 1.254.339,00	€ 14.433.685,00
Bosnia-Erzegovina	2009	€ 90.665,00	€ 1.359.524,00
Montenegro	2009	€ -	€ 700.391,00
Serbia	2009	€ 2.357.624,00	€ 8.872.999,00
Grecia	2010	€ 13.613.781,00	€ 72.645.828,00
Albania	2010	€ 1.200.299,00	€ 6.636.279,00
Slovenia	2010	€ 7.178.430,00	€ 18.357.000,00
Croazia	2010	€ 2.010.299,00	€ 8.570.588,00
Bosnia-Erzegovina	2010	€ 22.708,00	€ 2.143.119,00
Montenegro	2010	€ -	€ 1.119.734,00
Serbia	2010	€ 4.223.087,00	€ 8.843.681,00
Grecia	2011	€ 15.647.003,00	€ 57.928.190,00
Albania	2011	€ 1.479.894,00	€ 4.749.294,00
Slovenia	2011	€ 9.696.765,00	€ 19.203.415,00
Croazia	2011	€ 2.175.123,00	€ 10.224.790,00
Bosnia-Erzegovina	2011	€ 512.382,00	€ 1.414.759,00
Montenegro	2011	€ 4.252,00	€ 1.282.487,00
Serbia	2011	€ 7.268.108,00	€ 6.651.331,00

IMPORT/EXPORT of FORLI'-CESENA PROVINCE

Despite Greece constitutes the most relevant commercial partner in absolute terms, in the observed triennium there emerges an interesting increasing trend of the turnover with Slovenia (import +48%; export +16%). With regards to the remaining IPA countries, exports from Forlì-Cesena province follow a decreasing trend.

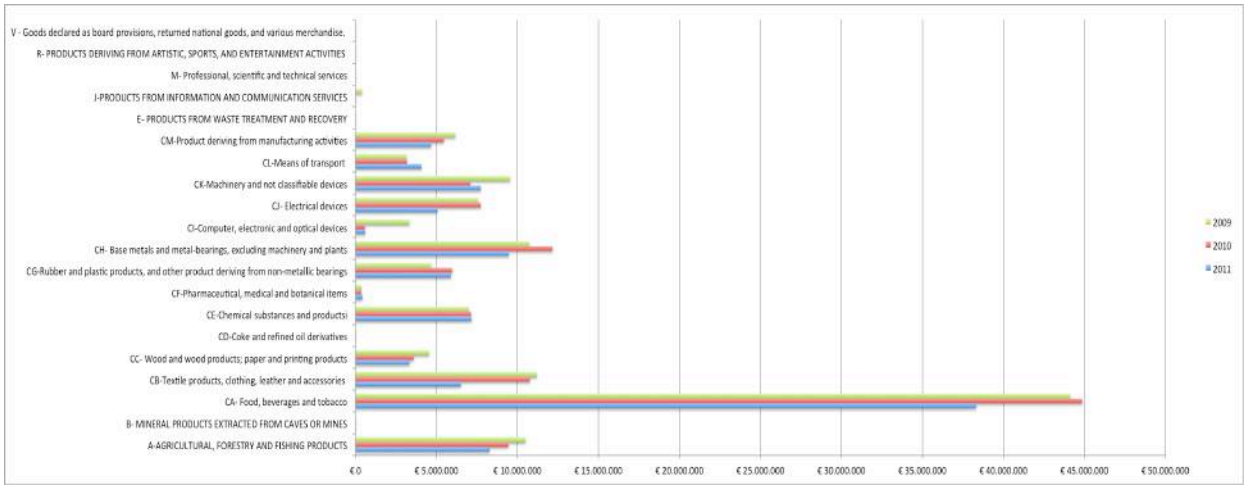
IMPORT of FORLI'-CESENA PROVINCE



Imports from IPA countries by the province of FC in the triennium 2009-2011 reveal an increasing trend (around +55%).The highest turnaround is observed with Greece.

The most imported product categories are CA- Food, beverages and tobacco and CH- Base metals and metal-bearings, excluding machinery and plants.

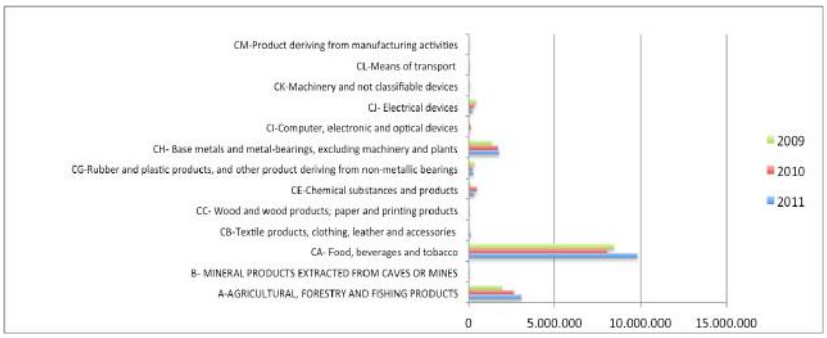
EXPORT of FORLI'-CESENA PROVINCE



Exports toward IPA countries from the province of FC in the triennium 2009-2011 reveal a decreasing trend (around -18%).The highest turnaround, though decreasing by 22% in the examined triennium, is observed with Greece.

The most exported products are CA- Food, beverages and tobacco.

IMPORTS: GREECE



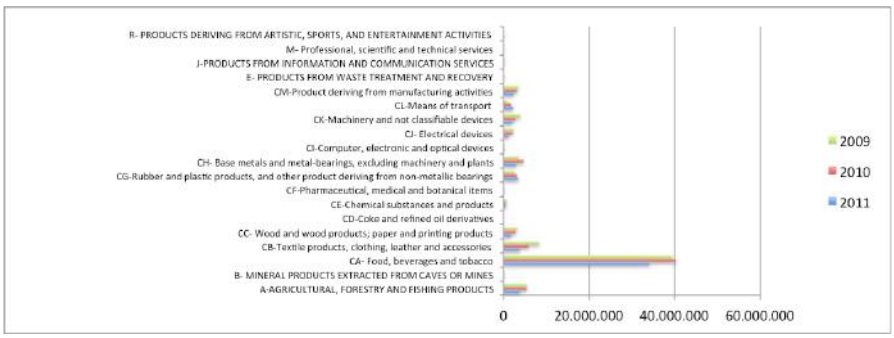
The imports from Greece toward the province of FC follow an increasing trend (+23%).

The most imported product category is CA- Food, beverages and tobacco (+16% in the observed triennium).

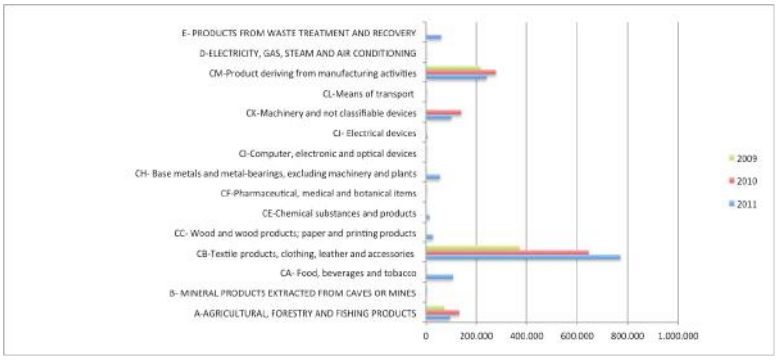
EXPORTS: GREECE

The exports from the province of FC toward Greece follow a decreasing trend (-22%).

The most exported product category is CA- Food, beverages and tobacco (-14%).



IMPORTS: ALBANIA

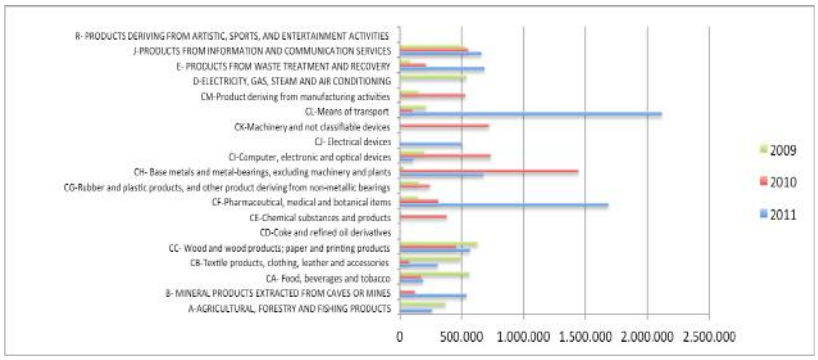


The imports from Albania toward the province of FC follow an increasing trend (+120%).

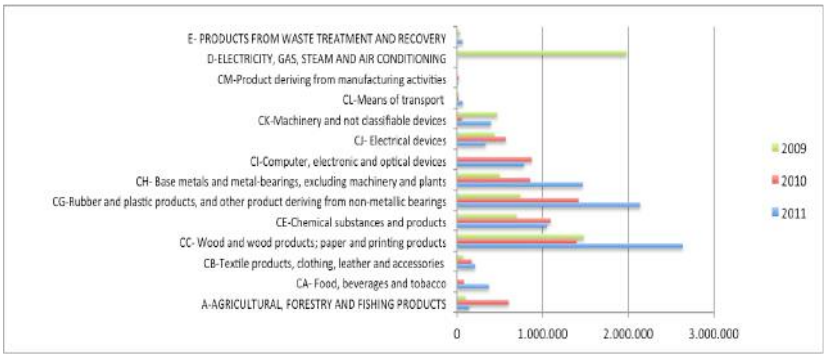
The most imported product category is CB-Textile products, clothing, leather and accessories (+108% in the observed triennium)

EXPORTS: ALBANIA

The exports toward Albania from the province of FC follow an increasing trend (+102%).
The most exported product categories are CF-Pharmaceutical, medical and botanical items (+1.000%), and CL-Means of transport (+900%).



IMPORTS: SLOVENIA



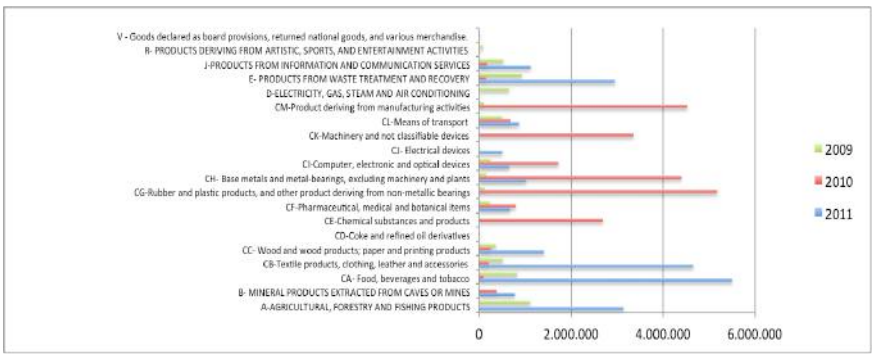
The imports from Slovenia toward the province of FC follow an increasing trend (+48%).

The most imported product category is CC- Wood and wood products; paper and printing products (+78%).

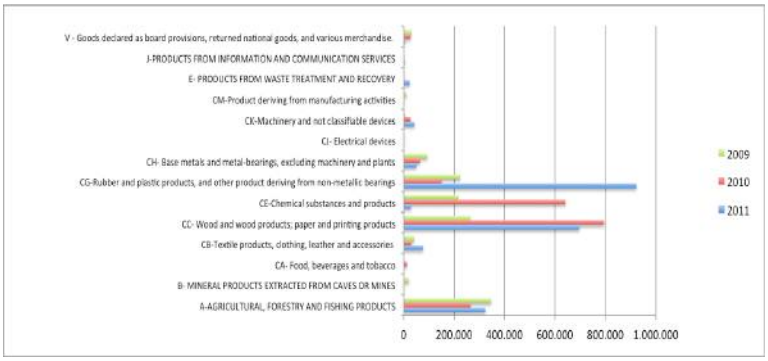
EXPORTS: SLOVENIA

The exports toward Slovenia from the province of FC follow an increasing trend (+270%).

The most exported product categories are CA- Food, beverages and tobacco (+560%),and CB-Textile products, clothing, leather and accessories (+806%).



IMPORTS: CROATIA



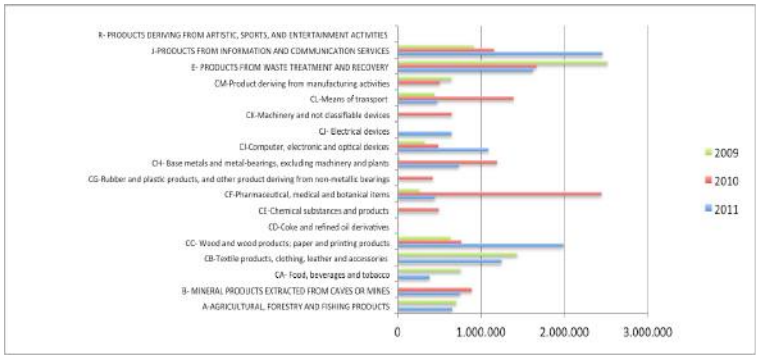
The imports from Croatia toward the province of FC follow an increasing trend (+73%).

The most imported product category is CG-Rubber and plastic products, and other product deriving from non-metallic bearings (+314%).

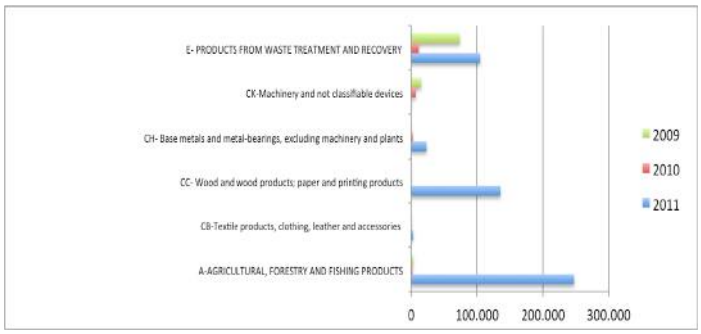
EXPORTS: CROATIA

The exports toward Croatia from the province of FC follow an increasing trend (+45%).

The most exported product categories are J-products from information and communication services (+170%), CC-Wood and wood products; paper and printing products (+214%). Interestingly, the category, E-products from waste treatment and recovery is following a decreasing trend (-35%).



IMPORTS: BOSNIA-ERZEGOVINA



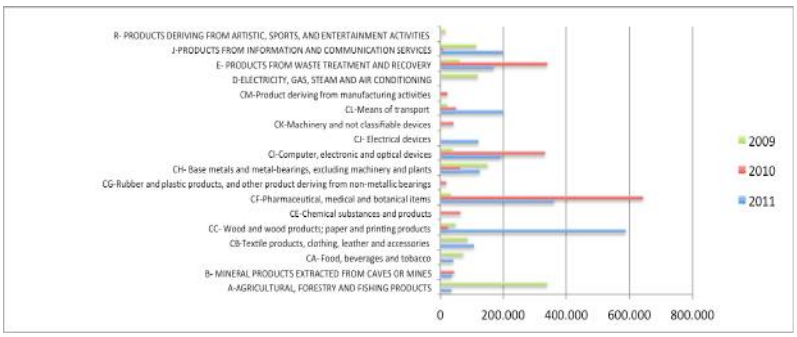
The imports from Bosnia-Erzegovina toward the province of FC follow an increasing trend (+465%).

The most imported product category is A-agricultural, forestry and fishing products (+807%).

EXPORTS: BOSNIA-ERZEGOVINA

The exports toward Bosnia-Erzegovina from the province of FC follow an increasing trend (+98%).

The most exported product categories are CC- Wood and wood products; paper and printing products (+1.135%), whereas exports of A-agricultural, forestry and fishing products follow a decreasing trend (-90%) .



IMPORTS: MONTENEGRO

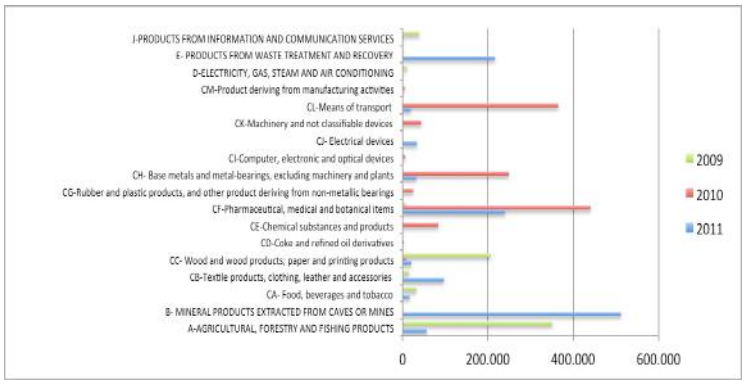
Imports from the province of FC toward Montenegro in the biennium 2009-2010 were null.

For 2011 the only observed commercial exchange involved the product category CC- Wood and wood products; paper and printing products (around 4.000 €).

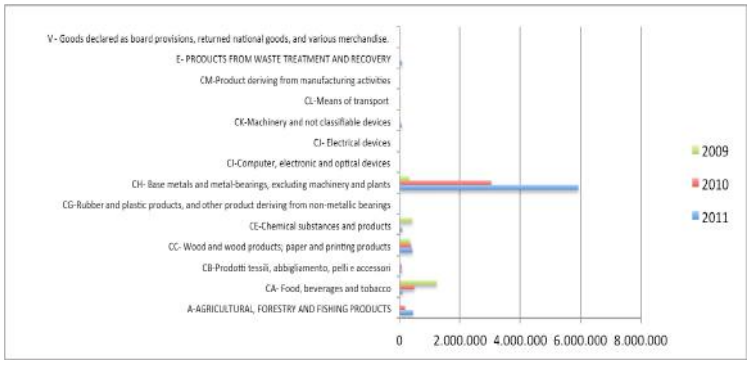
EXPORTS: MONTENEGRO

The exports toward Montenegro from the province of FC follow an increasing trend (+87%).

The most exported product category is B-mineral products extracted from caves and mines (around 500.000 € for 2011), whereas .
A-agricultural, forestry and fishing products follow a decreasing trend (-84%).



IMPORTS: SERBIA



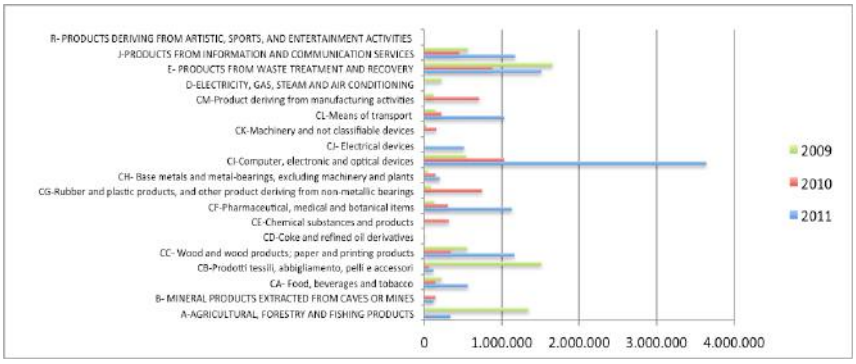
The imports from Serbia toward the province of FC follow an increasing trend (+208%).

The most imported product category is CH- Base metals and metal-bearings, excluding machinery and plants (+1.700%), whereas imports of CA- Food, beverages and tobacco follows a decreasing trend (-92%).

EXPORTS: SERBIA

The exports toward Serbia from the province of FC follow an increasing trend (+60%).

The most exported product categories are CI-Computer, electronic and optical devices (+570%), whereas exports of CB-Textile products, clothing, leather and accessories (-92%).



IMPORT/EXPORT of BOLOGNA PROVINCE

1- Dimension of the phenomenon

It might make sense for imports (+28%) due to an increasing pattern and currently account for around 145 million €.
Exports account for around 290 million €, though following a decreasing pattern (-19%).

2- Which IPA countries are likely to be the most profitable?

Imports: Greece, Slovenia and Croatia
Exports: Greece, Slovenia and Croatia

3- Which product categories are likely to be the most commercialized?

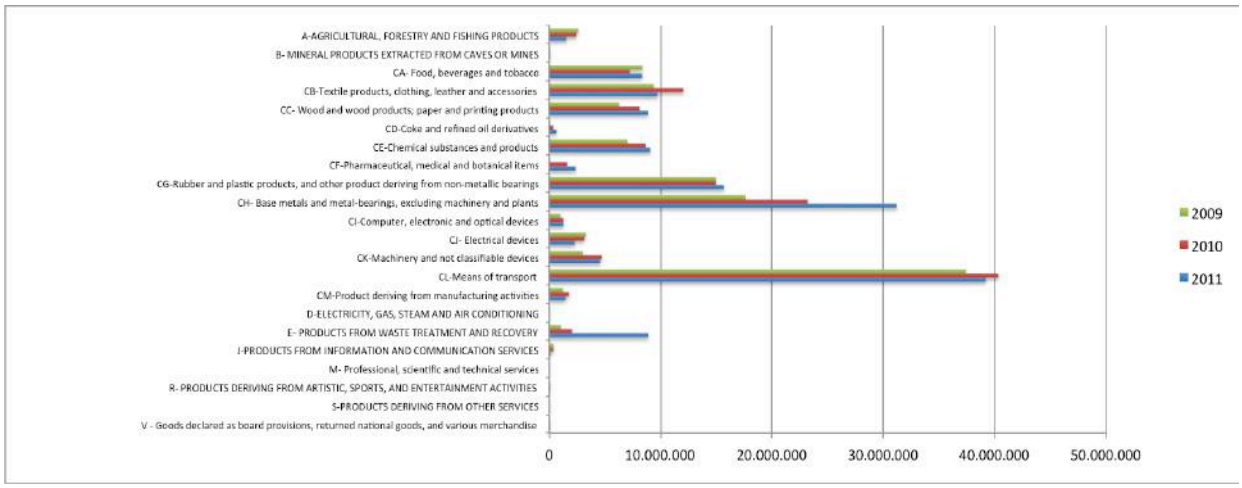
Imports: CL-means of transport; CH-based metal and metal bearings, excluding machinery and plants.
Exports: CK-machinery and not classifiable devices; CB-textile products, clothing, leather and accessories.

IPA COUNTRY	YEAR	IMPORT	EXPORT
Grecia	2009	€ 29.965.808,00	€ 175.994.002,00
Albania	2009	€ 850.191,00	€ 13.478.753,00
Slovenia	2009	€ 41.296.242,00	€ 63.851.093,00
Croazia	2009	€ 21.099.181,00	€ 43.465.418,00
Bosnia-Erzegovina	2009	€ 7.184.347,00	€ 15.024.904,00
Montenegro	2009	€ 348.719,00	€ 1.919.782,00
Serbia	2009	€ 13.171.402,00	€ 40.068.951,00
Grecia	2010	€ 38.962.501,00	€ 141.819.488,00
Albania	2010	€ 2.223.270,00	€ 11.448.134,00
Slovenia	2010	€ 52.063.865,00	€ 66.498.271,00
Croazia	2010	€ 21.476.560,00	€ 41.942.351,00
Bosnia-Erzegovina	2010	€ 4.863.829,00	€ 8.054.522,00
Montenegro	2010	€ 45.177,00	€ 1.567.108,00
Serbia	2010	€ 13.099.077,00	€ 16.912.019,00
Grecia	2011	€ 38.019.758,00	€ 114.197.923,00
Albania	2011	€ 3.408.854,00	€ 14.806.812,00
Slovenia	2011	€ 60.644.207,00	€ 80.203.736,00
Croazia	2011	€ 25.645.975,00	€ 45.957.623,00
Bosnia-Erzegovina	2011	€ 4.408.311,00	€ 12.097.969,00
Montenegro	2011	€ 25.969,00	€ 1.372.296,00
Serbia	2011	€ 13.208.892,00	€ 18.259.146,00

IMPORT/EXPORT – PROVINCE OF BOLOGNA

Slovenia constitutes the most relevant commercial partner in import activities, while Greece represents the most relevant partner in export activities. In the observed triennium there emerges a decreasing trend with Greece; with regards to the remaining IPA countries, exports from Bologna province follow a decreasing trend, especially for Bosnia-Erzegovina.

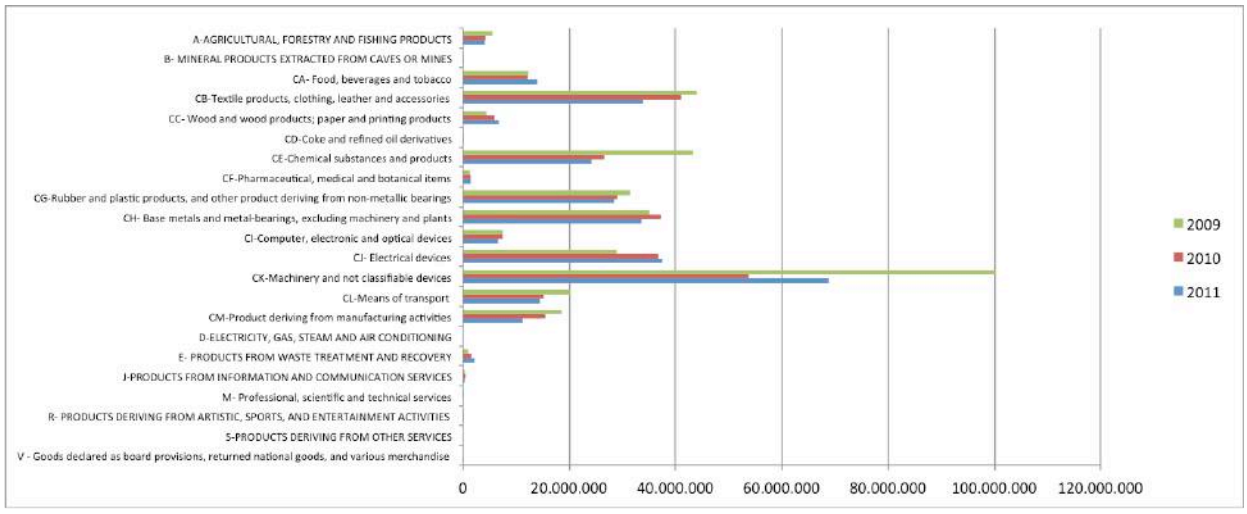
IMPORT – PROVINCE OF BOLOGNA



Imports from IPA countries by Bologna province in the triennium 2009-2011 reveal an increasing trend (around +28%).The highest turnaround is observed with Slovenia and Greece.

The most imported product categories are CL-means of transports and CH-base metals and metal-bearings, excluding machinery and plants.

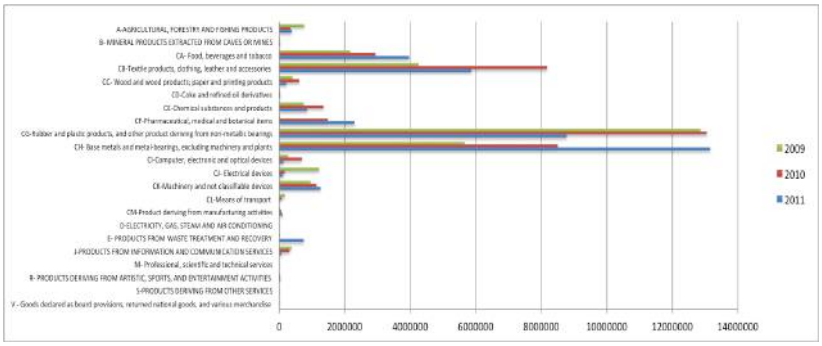
EXPORT – PROVINCE OF BOLOGNA



Exports toward IPA countries from the province of BO in the triennium 2009-2011 reveal a decreasing trend (around -19%).The highest turnaround, though decreasing by 35% in the examined triennium, is observed with Greece.

The most exported products are CK-machinery and not classifiable devices.

IMPORTS: GREECE



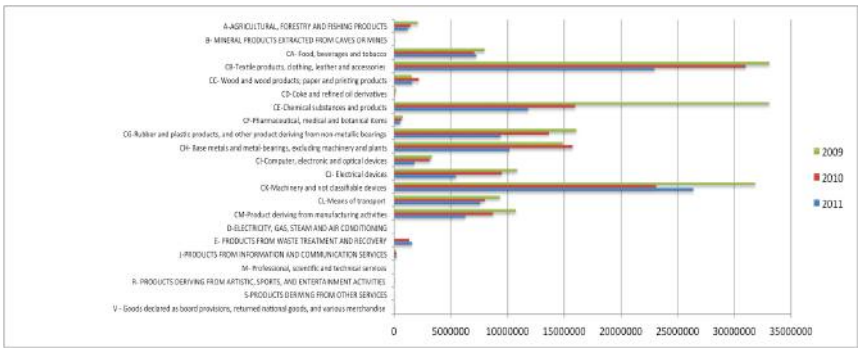
The imports from Greece toward the province of BO follow an increasing trend (+27%).

The most imported product categories are CG-rubber and plastic products, and other product deriving form non-metallic bearings (-32%), and CH-base metals and metal-bearings, excluding machinery and plants (+132%).

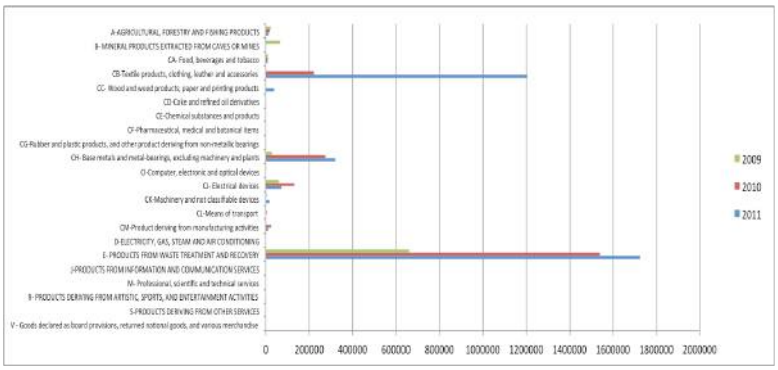
EXPORTS: GREECE

The exports from the province of FC toward Greece follow a decreasing trend (-35%).

The most exported product category is CB-textile prodcuts, clothing, leather and accessories (-31%).



IMPORTS: ALBANIA



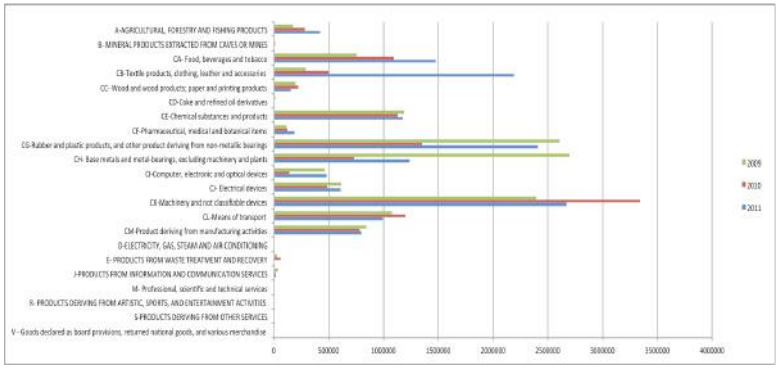
The imports from Albania toward the province of BO follow an increasing trend (+300%).

The most imported product category is E-products from waste treatment and recovery (+161% in the observed triennium).

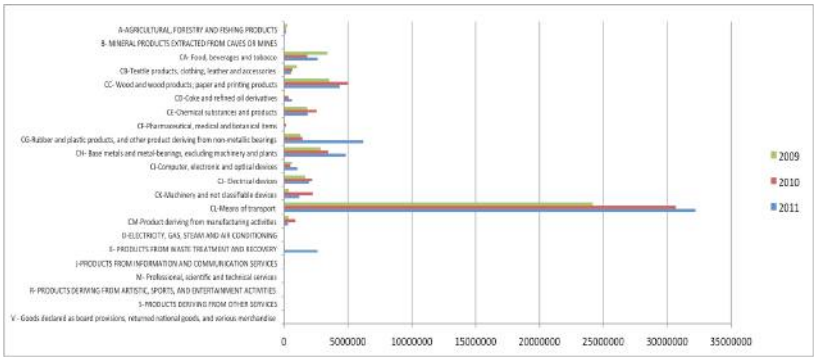
EXPORTS: ALBANIA

The exports toward Albania from the province of BO follow an increasing trend (+10%).

The most exported product category is CK-machinery and not classifiable devices (+11%).



IMPORTS: SLOVENIA



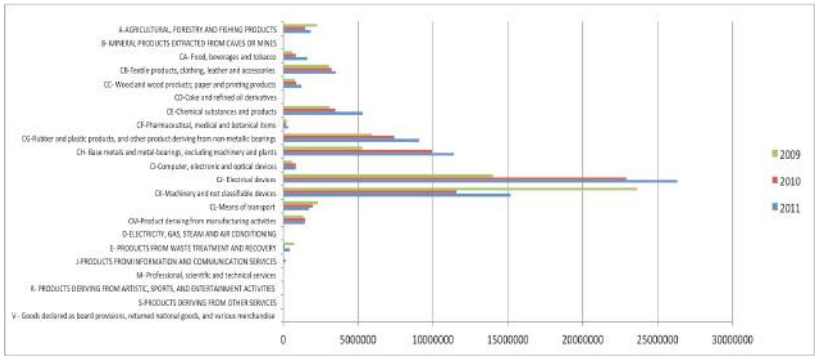
The imports from Slovenia toward the province of BO follow an increasing trend (+47%).

The most imported product category is CL-means of transports (+34%).

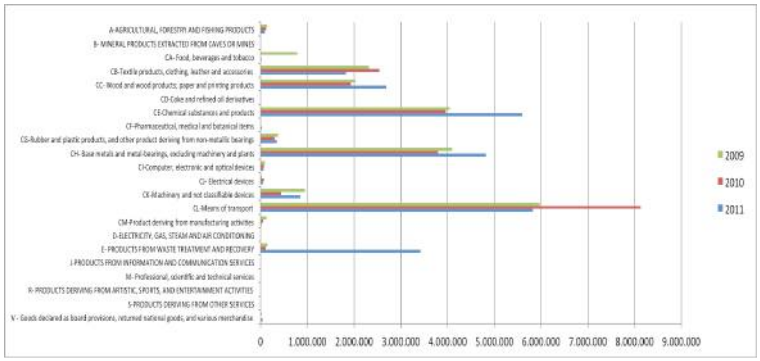
EXPORTS: SLOVENIA

The exports toward Slovenia from the province of BO follow an increasing trend (+26%).

The most exported product category is CJ-electrical devices (+88%).



IMPORTS: CROATIA



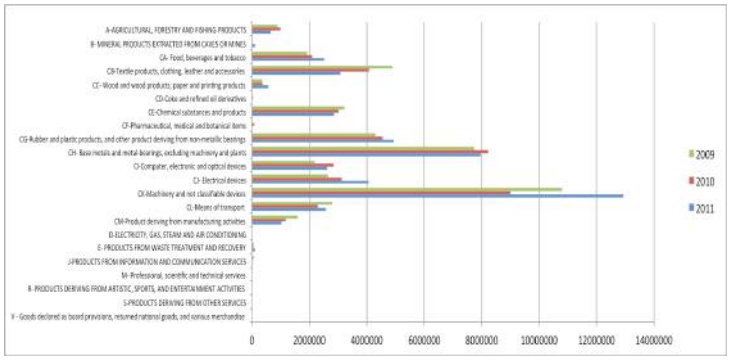
The imports from Croatia toward the province of BO follow an increasing trend (+21%).

The most imported product category is CL-means of transport (-3%), and CE-chemical substances and products (+38%).

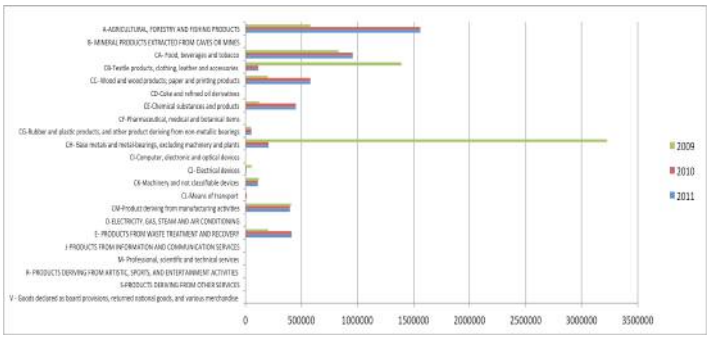
EXPORTS: CROATIA

The exports toward Croatia from the province of BO follow an increasing trend (+6%).

The most exported product categories are CK-machinery and not classifiable devices (+20%), and CH-base metals and metal-bearings, excluding machinery and plants (+3%).



IMPORTS: BOSNIA-ERZEGOVINA



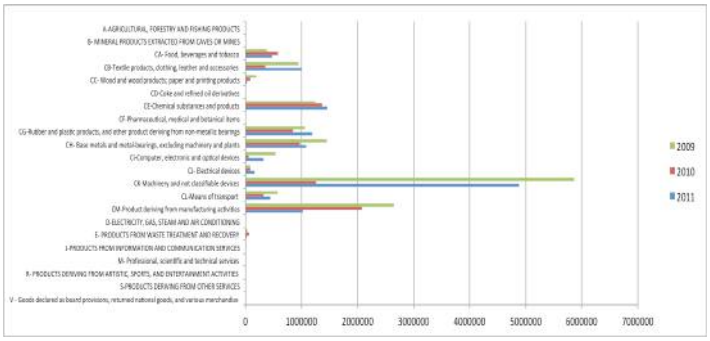
The imports from Bosnia-Erzegovina toward the province of BO follow an increasing trend (+39%).

The most imported product category is A-agricultural, forestry and fhising products. Interestingly, the category, CH-base metals and metal-bearings, excluding machinery and plants is following a decreasing trend (-95%).

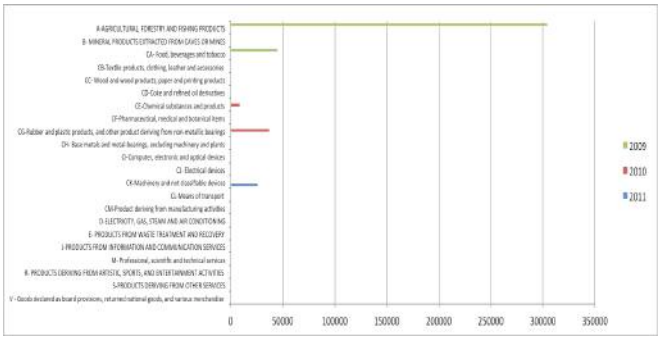
EXPORTS: BOSNIA-ERZEGOVINA

The exports toward Bosnia-Erzegovina from the province of BO follow a decreasing trend (-19%).

The most exported product category is CK-machinery and not classifiable devices (-17%) .



IMPORTS: MONTENEGRO



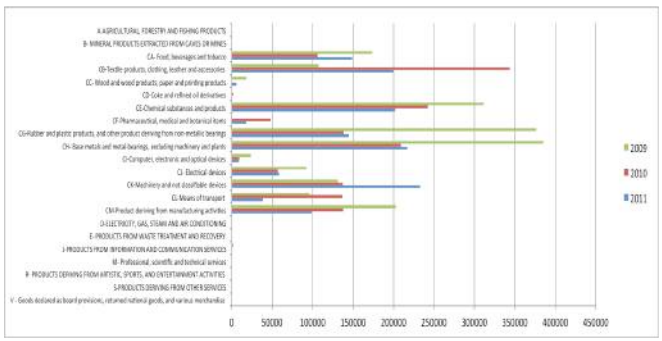
The imports from Montenegro toward the province of BO follow a decreasing trend (-93%).

The imported product category in 2011 is CK-machinery and not classifiable devices.

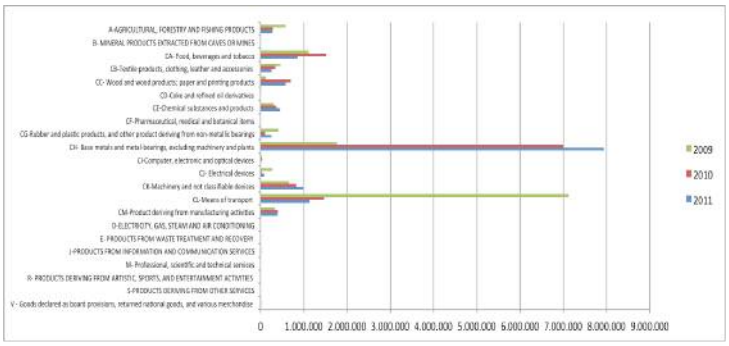
EXPORTS: MONTENEGRO

The exports toward Montenegro from the province of BO follow a decreasing trend (+29%).

The most exported product category is CE-chemical substances and products (-35%).



IMPORTS: SERBIA



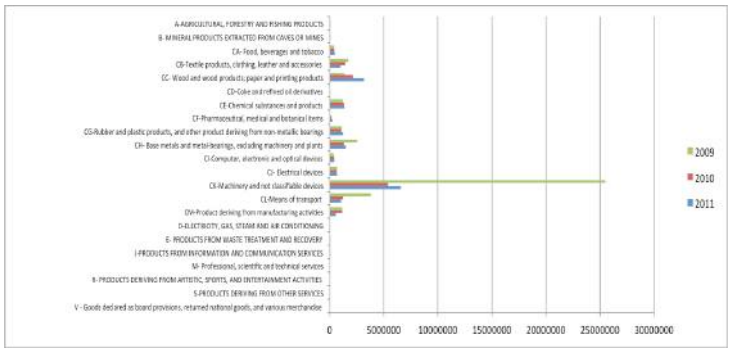
The imports from Serbia toward the province of BO follow an increasing trend (+0,3%).

The most imported product category is CH- Base metals and metal-bearings, excluding machinery and plants (+350%).

The exports toward Serbia from the province of BO follow a decreasing trend (+54%).

The most exported product categories are CK- machinery and not classifiable devices (-74%), and CC-wood and wood products, clothing, leather and accessories (+128%).

EXPORTS: SERBIA



IMPORT/EXPORT of RIMINI PROVINCE

1- Dimension of the phenomenon

Rimini does not seem to display a clear potential in the exchanges with IPA countries.
Imports follow an increasing pattern (+26%) , although small in magnitude, and currently account for around 19 million €.
Exports account for around 87 million €, though following a decreasing pattern (-3%).

2- Which IPA countries are likely to be the most profitable?

Imports: Greece, Bosnia-Erzegovina and Croatia
Exports: Greece, Slovenia and Bosnia-Erzegovina

3- Which product categories are likely to be the most commercialized?

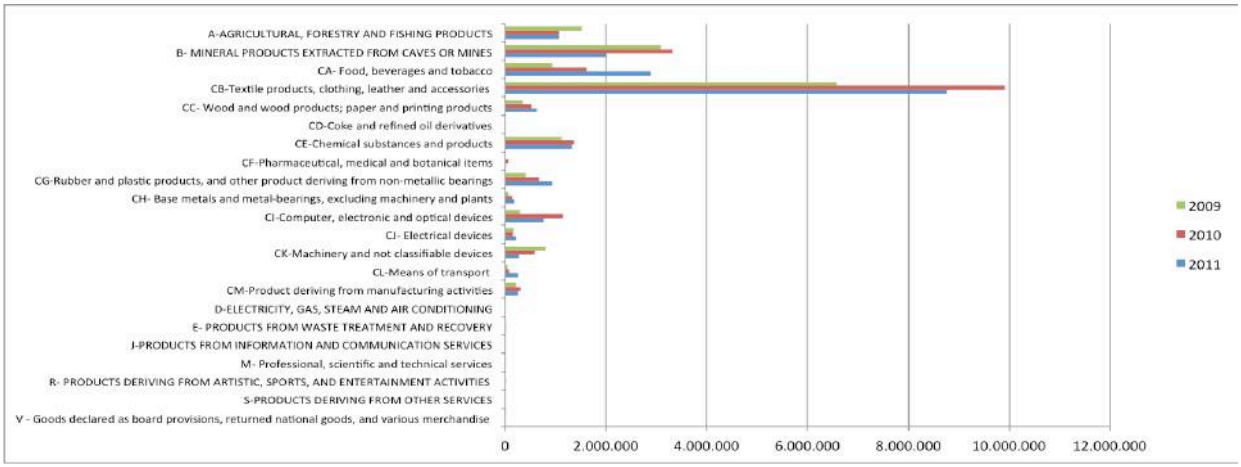
Imports and Exports: CB-textile products, clothing, leather and accessories

IPA COUNTRY	YEAR	IMPORT	EXPORT
Grecia	2009	€ 4.114.697,00	€ 43.888.268,00
Albania	2009	€ 714.216,00	€ 4.254.399,00
Slovenia	2009	€ 1.271.086,00	€ 9.581.094,00
Croazia	2009	€ 5.235.919,00	€ 17.030.459,00
Bosnia-Erzegovina	2009	€ 4.228.179,00	€ 6.902.627,00
Montenegro	2009	€ -	€ 1.050.591,00
Serbia	2009	€ 38.736,00	€ 7.316.106,00
Grecia	2010	€ 6.404.613,00	€ 45.830.306,00
Albania	2010	€ 1.093.814,00	€ 4.000.422,00
Slovenia	2010	€ 2.941.092,00	€ 19.366.599,00
Croazia	2010	€ 4.910.863,00	€ 9.296.650,00
Bosnia-Erzegovina	2010	€ 5.558.154,00	€ 8.303.628,00
Montenegro	2010	€ -	€ 845.402,00
Serbia	2010	€ 104.854,00	€ 8.701.278,00
Grecia	2011	€ 6.398.812,00	€ 33.558.695,00
Albania	2011	€ 1.753.733,00	€ 4.016.149,00
Slovenia	2011	€ 2.953.307,00	€ 18.593.137,00
Croazia	2011	€ 3.057.197,00	€ 9.164.762,00
Bosnia-Erzegovina	2011	€ 4.984.363,00	€ 11.435.546,00
Montenegro	2011	€ -	€ 1.038.918,00
Serbia	2011	€ 479.918,00	€ 9.467.722,00

IMPORT/EXPORT – PROVINCE OF RIMINI

Despite Greece constitutes the most relevant commercial partner in absolute terms, in the observed triennium there emerges an increasing trend of the import from Bosnia-Erzegovina, and an increasing trend of export to Slovenia and Bosnia-Erzegovina.

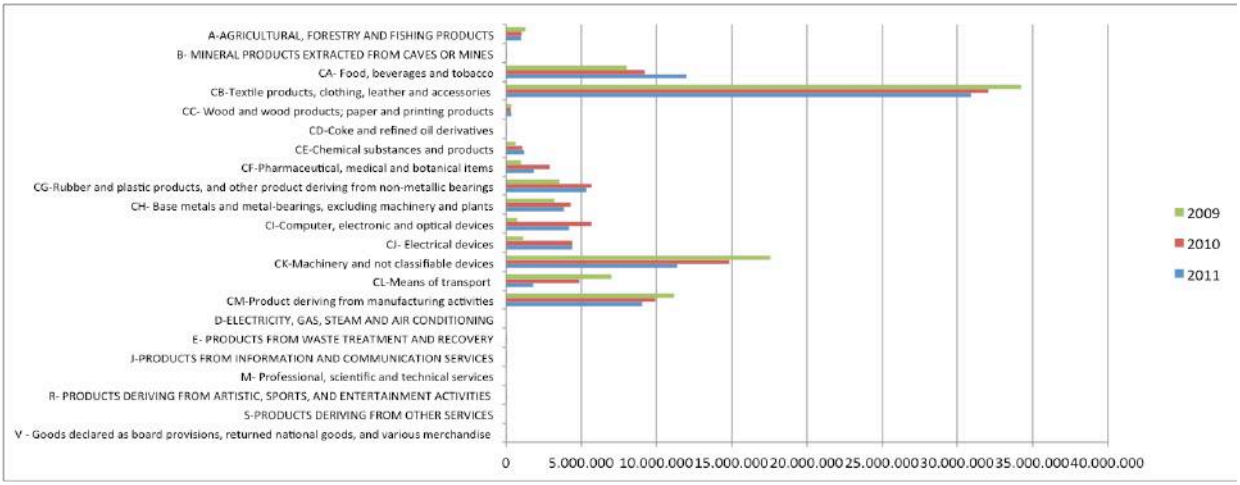
IMPORT – PROVINCE OF RIMINI



Imports from IPA countries by the province of RN in the triennium 2009-2011 reveal an increasing trend (around +26%).The highest turnaround is observed with Greece.

The most imported product category is CB-textile products, clothing, leather and accessories.

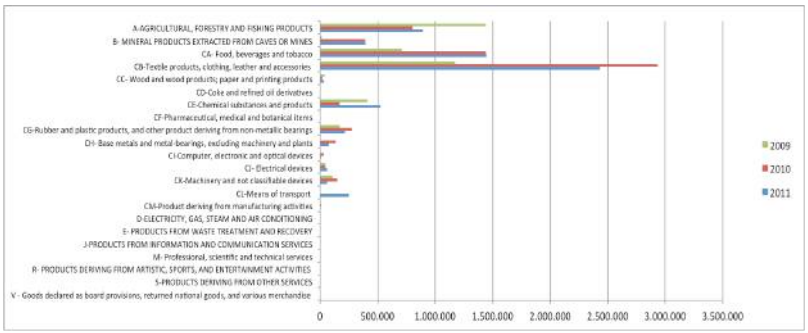
EXPORT – PROVINCE OF RIMINI



Exports toward IPA countries from the province of RN in the triennium 2009-2011 reveal a decreasing trend (around -3%).The highest turnaround is observed with Greece.

The most exported product category is CB-textile products, clothing, leather and accessories (-10%).

IMPORTS: GREECE



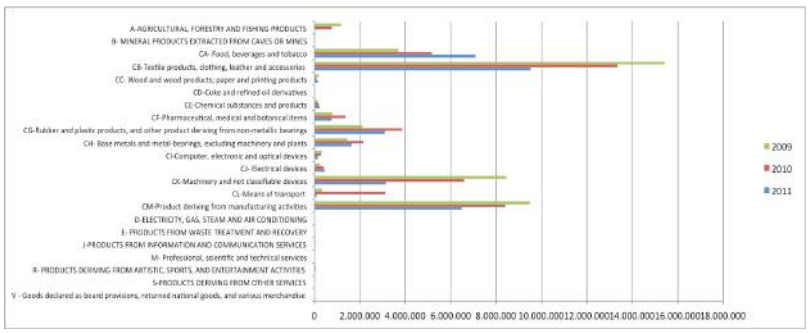
The imports from Albania toward the province of RN follow an increasing trend (+55%).

The most imported product category is CB-Textile products, clothing, leather and accessories (+107% in the observed triennium)

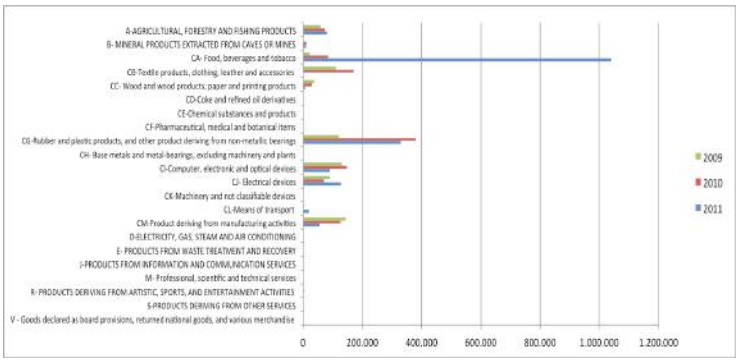
EXPORTS: GREECE

The exports toward Albania from the province of RN follow a decreasing trend (-24%).

The most exported product category is CB-Textile products, clothing, leather and accessories (-38%).



IMPORTS: ALBANIA



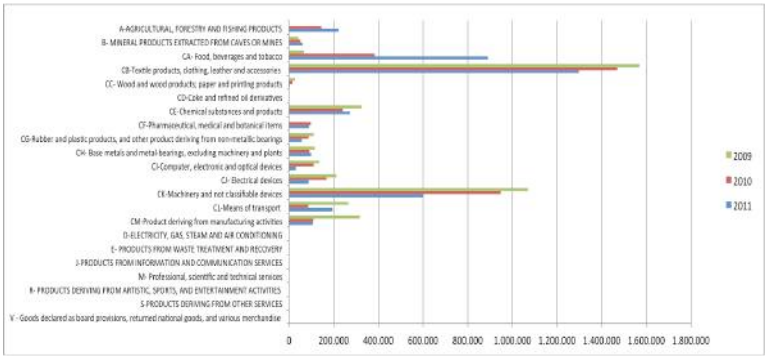
The imports from Albania toward the province of RN follow an increasing trend (+145%).

The most imported product category is CA- Food, beverages and tobacco (+4.539%).

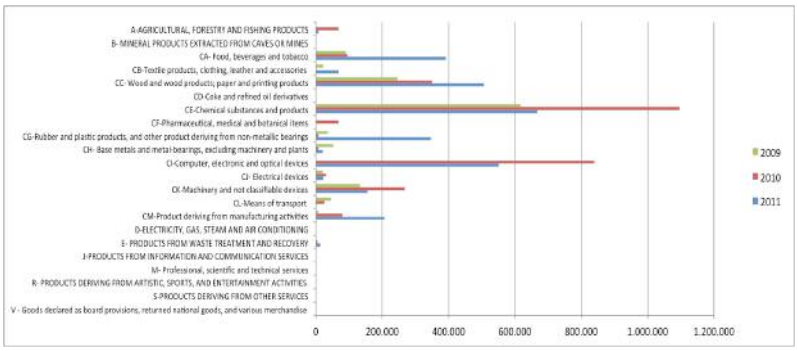
EXPORTS: ALBANIA

The exports from the province of RN toward Albania follow a decreasing trend (-6%).

The most exported product category is CB-Textile products, clothing, leather and accessories (-17%).



IMPORTS: SLOVENIA



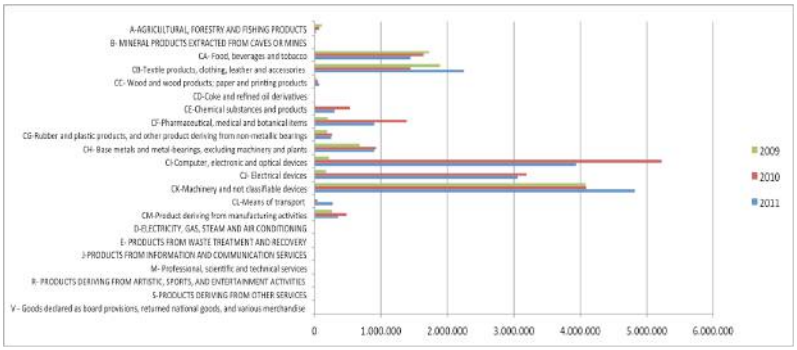
The imports from Slovenia toward the province of RN follow an increasing trend (+132%).

The most imported product category is CE-chemical substances and products (+8%).

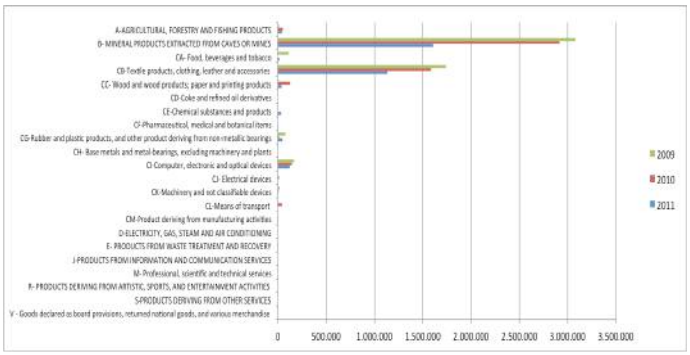
EXPORTS: SLOVENIA

The exports toward Slovenia from the province of RN follow an increasing trend (+94%).

The most exported product category is CK-machinery and not classifiable devices (+18%).



IMPORTS: CROATIA



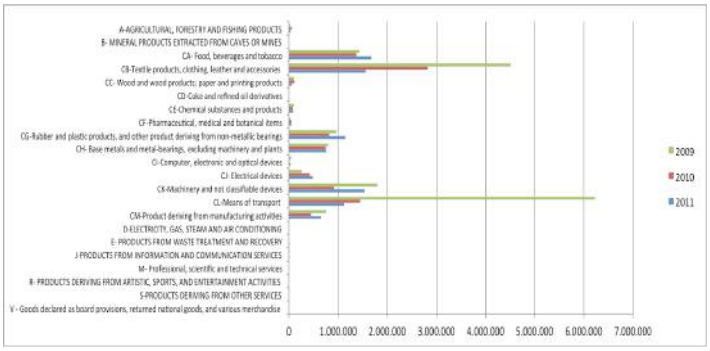
The imports from Croatia toward the province of RN follow a decreasing trend (+42%).

The most imported product categories are B-mineral products extracted from caves or mines (-48%), and CB-Textile products, clothing, leather and accessories (-35%).

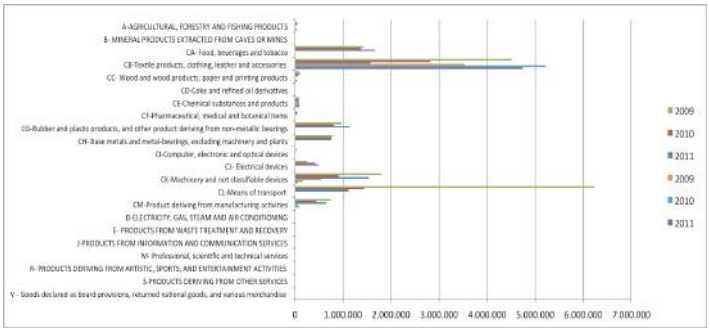
EXPORTS: CROATIA

The exports toward Croatia from the province of RN follow a decreasing trend (-46%).

The most exported product categories are CB-Textile products, clothing, leather and accessories (-65%), and CL-means of transport (-82%).



IMPORTS: BOSNIA-ERZEGOVINA



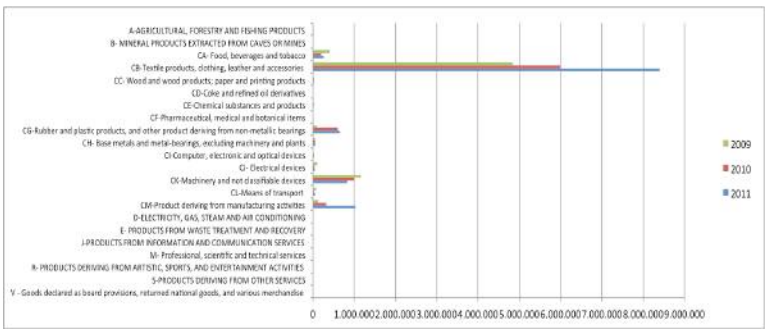
The imports from Bosnia-Erzegovina toward the province of RN follow an increasing trend (+18%).

The most imported product category is CB-Textile products, clothing, leather and accessories (+34%).

EXPORTS: BOSNIA-ERZEGOVINA

The exports toward Bosnia-Erzegovina from the province of RN follow an increasing trend (+66%).

The most exported product category is CB-Textile products, clothing, leather and accessories (+73%).



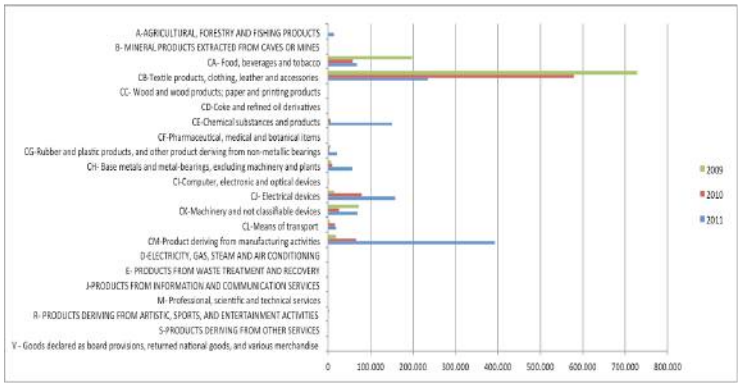
IMPORTS: MONTENEGRO

Imports from the province of RN toward Montenegro in the biennium 2009-2010 were null.

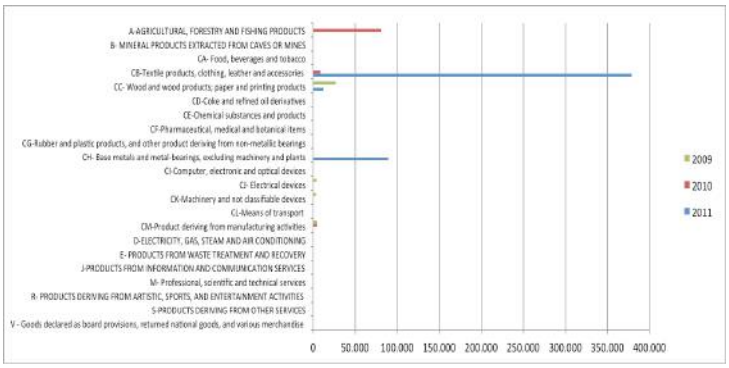
EXPORTS: MONTENEGRO

The exports toward Montenegro from the province of RN follow an increasing trend (+13%).

The most exported product category is CB-Textile products, clothing, leather and accessories g trend (-68%).



IMPORTS: SERBIA



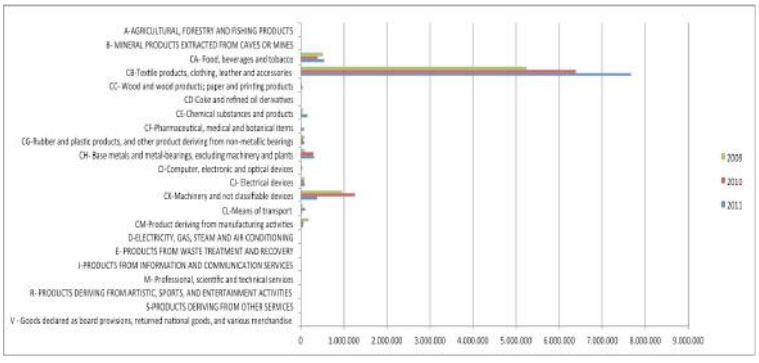
The imports from Serbia toward the province of RN follow an increasing trend (+1.139%).

The most imported product category is CB-Textile products, clothing, leather and accessories (+4.316%).

EXPORTS: SERBIA

The exports toward Serbia from the province of FC follow an increasing trend (+39%).

The most exported product category is CB-Textile products, clothing, leather and accessories (+46%).



Summary

PROVINCE	DIMENSION OF THE PHENOMENON		IPA COUNTRIES MOST PROFITABLE		PRODUCT CATEGORIES MOST COMMERCIALIZED	
	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS
FORLI'-CESENA	140 million €	140 million €	Greece, Slovenia, Croatia	Greece, Slovenia, Serbia	CA-food, beverage and tobacco; CH-based metal and metal bearings, excluding machinery and plants	CA-food, beverage and tobacco; CH-based metal and metal bearings, excluding machinery and plants
BOLOGNA	145 million €	290 million €	Greece, Slovenia, Croatia	Greece, Slovenia, Croatia	CL-means of transport; CH-based metal and metal bearings, excluding machinery and plants	CK-machinery and not classifiable devices; CB-textile products, clothing, leather and accessories
RIMINI	19 million €	87 million €	Greece, Bosnia-Erzegovina, Croatia	Greece, Slovenia, Bosnia-Erzegovina	CB-textile products, clothing, leather and accessories	CB-textile products, clothing, leather and accessories

Current situation of Forlì airport system

The aim of this section is to describe the current situation of the Forlì Air Transportation System (FATS) in order to identify the main elements that allow to better understand the internal strengths and weaknesses and the external opportunity and benefits. In fact, by the SWOT ANALYSIS we can understand the current situation and the possible future scenario of FATS and interpret this in the light of the ADRIAIR PROJECT.

In the FATS a central role is played by the Forlì Airport, named Ridolfi, that during the last year has witnessed a light and shadow period characterized, in summary, by:

-a privatization project;

-find a new way of development;

-and find a new potential markets.

In the next slides will be exposed a brief summary of the main elements that describe the current situation of the Forlì Airport. After that we will present the results of the SWOT ANALYSIS.

The origin of Forlì Airport dates back to the second half of the nineties. Starting from 2000 we assist to the major development of the Airport, under the direction of the SEAF S.p.A. (the shareholding structure was composed of a public partnership). However, following a series of trade agreements not gone well, starting from 2008 the Airport goes in decline until to reach, in the may 2012, winding up of the SEAF S.p.A. and the research of a new ways of development. Actually, the Ridolfi Airport continues to be operating for the activities of flight school and private flights.

The Forlì Airport is niche airport, characterized by considerable flexibility factors, that allow it to adapts to a variables use (passenger and cargo activities - commercial, charter and general aviation). Moreover, it is located in a advantageous geographical area, with a context socio - economic of particular relevance. The airport has a good level of services that make it "easy" to use by passengers and airlines, including low cost.

The Forlì Airport is located in the south-east of the city of Forlì, just over 4 km from the city center, next to the highway exit of the A14 and close to the train station (Bologna - Ancona line).

The airport has an area of 7 hectares of land, with a only one runway of 2,560 meters long and 45 meters of wide. The runway has equipped of four joints that connect it to the apron area and to a service square area.

It is equipped with a parking area of 63,000 m², with 7 car parks for commercial aircraft.

It is equipped with a departures terminal with 11 check-in counters, 2 boarding areas and 8 gates, distributed over an area of 6,000 m². The arrivals hall has 430 m². It is fitted with 3 conveyors luggage.

The parking area has composed of 720 car parking spaces, in an area of 19,000 m².

The purpose of the present section of the ADRIAIR PROJECT is to identify positives and negatives aspect related to the actually and future scenario of the FATS. In doing so, a SWOT ANALYSIS was undertaken.

SWOT stands for Strengths, Weaknesses, Opportunities and Threats. SWOT ANALYSIS is strategic planning tool used to evaluate the Strengths, Weakness, Opportunities and Threats related to a particular project or any other situation requiring a decision. The result of this analysis process is usually exposed in the form of a matrix with four quadrants.

SWOT ANALYSIS is useful because is a method than enable an organization to reflect on a particular project in order to establish the right objectives and its future development. In fact, it allows to clarify the characteristics of the project that give it an advantage over others (Strengths), the characteristics that place the project at a disadvantage relative to others (Weaknesses), the elements that the project could exploit to its advantage (Opportunities), and, finally, the elements in the environment that could cause trouble for the project (Threats).

SWOT Analysis Forlì

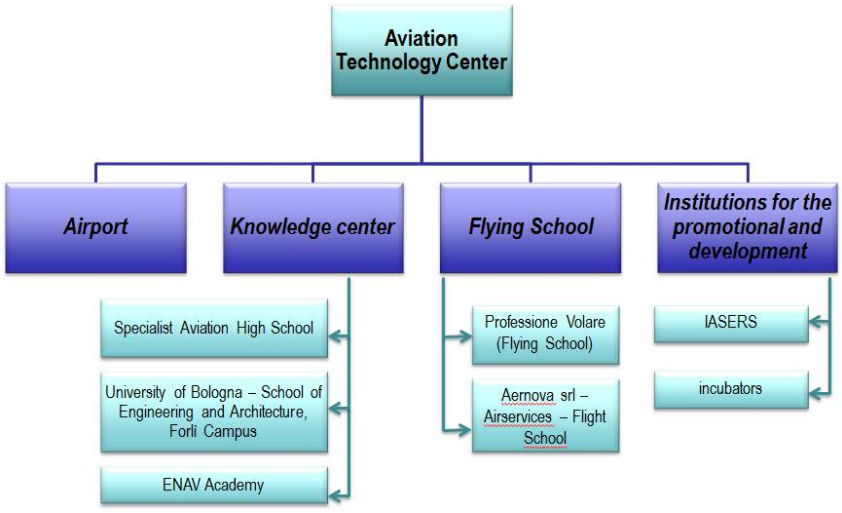
- A **"niche and central"** functioning Airport infrastructure.
- The existing airport is located within few hours flight from some the most economically important cities and territories in the Europe.
- Presence of High Skilled Human Resources.
- There were **operating flight routes with Eastern Europe**.

Strengths

- The Forlì Airport is included in the **Aviation Technology Center: Airport; Knowledge's center** (ITAER + University of Bologna, ENAV Academy)**; Flight school; development and promotional entities.** It allows an **Integration between airport services and high education and University research system.**
- The Forlì Airport is close to one of the most popular European Touristic Area (Adriatic Coast) for tourism in the both Adriatic sides (Balkan and Italy).
- **It is located in the center of the mobility network,** that includes: the Highway 14 (Ta-Bo) and 13 to Ravenna, the highway E45 (Ravenna-Rome) and E55, the SS 9 (Via Emilia), the SS 16 (Adriatic), the SS 67 to Florence.
- In the nearby territory there is the **new railway yard named Villa Selva.**
- Presence of **an active entrepreneurial characterized to small and medium enterprises**.

SWOT Analysis Forlì

The Aviation Technology Center Structure



Strengths

ALMA MATER STUDIORUM - UNIVERSITÀ DI BOLOGNA
IL PRESENTE MATERIALE È RISERVATO AL PERSONALE DELL'UNIVERSITÀ DI BOLOGNA E NON PUÒ ESSERE UTILIZZATO AI TERMINI DI LEGGE DA ALTRE PERSONE O PER FINI NON ISTITUZIONALI

SWOT Analysis Forlì

The Aviation Technology Center: Knowledge Center

Strengths

- **Specialist Aviation High School**, 3 field of study: ***Conducting of half plane***, Logistics, Constructing of half plan.

- **University of Bologna, School of Engineering and Architecture, Forlì Campus** - Bachelor's and Master's degree in **Mechanical Engineering** and Bachelor's and Master's degree in **Aerospace Engineering**

- **ENAV Academy**: operational, technological, managerial education, **School of Aviation Management, Education Centers, Education in Partnership**

SWOT Analysis Forlì

The Aviation Technology Center: Flying School

Strengths

- **Professione Volare: Flying School, FTO** (Flight Training Organization) Certifications, **Maintenance PART** 145 approval, **CAMO** IT.MG.0074 approval, **AOC** approval, **Flight Licenses, Ratings, Language proficiency**.

- **Aernova srl:** it provides several Air Services, which **Air Advertising, Perspective pictures, Zenithal pictures, Environ Services, Aircraft Maintenance, Air Fuel**.

SWOT Analysis Forlì

The Aviation Technology Center: Institutions for promotion and development

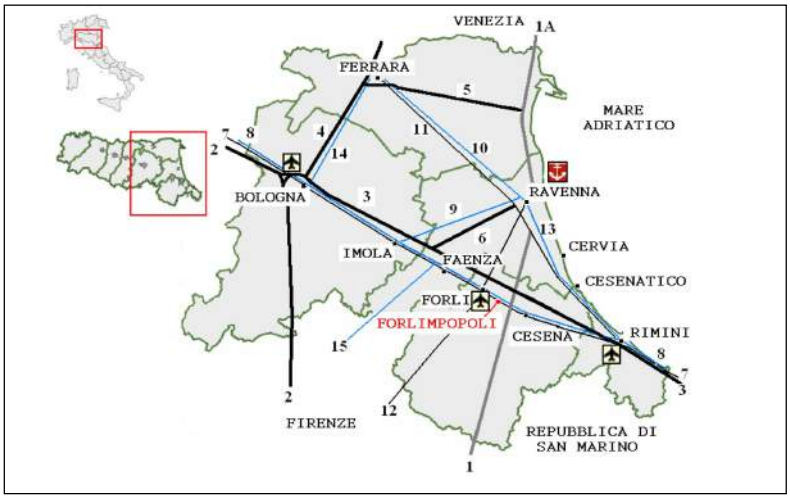
Strengths

- **IASERS:** is a **Consortium operating out of Forlì airport and aviation technology hub**. It is a subsidiary by the municipality of Forlì, the Province of FC and the Forlì-Cesena Chamber of Commerce**. It is a services' provider to the Forlì aviation technology hub, in a coordinating and promotional role**. It also provides a varied selection of training courses for the aviation industry in partnership with knowledge center and other professional training establishments and local flying schools.

SWOT Analysis Forlì

The Mobility Network

Strengths



Source: Un nuovo modello di sviluppo locale? Position Paper per lo sviluppo del progetto "quale modello di sviluppo nella provincia di Forlì-Cesena", a cura di Antares, Maggio 2010

ALMA MATER STUDIORUM - UNIVERSITÀ DI BOLOGNA
IL PRESENTE MATERIALE È RISERVATO AL PERSONALE DELL'UNIVERSITÀ DI BOLOGNA E NON PUÒ ESSERE UTILIZZATO AI TERMINI DI LEGGE DA ALTRE PERSONE O PER FINI NON ISTITUZIONALI

SWOT Analysis Forlì

Weaknesses

- Airport company (Seaf S.p.A) **has gone into liquidation process.**
- Seaf's **past financial indicators unsatisfactory**.
- The Head of Company is actually **under judicial investigation.**

- **Slow Entrepreneurial growth.**
- Current International **economic crisis.**
- **Different currency**: Euros (Italy, Greece , Slovenia, Montenegro), Kuna (Croatia), Lek (Albania) konvertibilna marka (Bosnia-Herzegovina), Serbian Dinar (Serbia).
- In the province of Forlì-Cesena there is an **absence of an integrated cultural offer.**
- **Bumpy roads** (with particular reference to E45) and **high costs of maintenance.**
- **Not efficient connection with Ravenna** because of congestion of the principal roads.

SWOT Analysis Forlì

Opportunities

- The **small size of Airport allows an easier conversion of business** into Human and goods transport services by Air Taxi.
- The New service of Air **Taxi could avoid the loss of employment**

- The Forlì Airport is close to one of the most popular European Touristic Area could **increase the tourism in the both Adriatic sides (Balkan and Italy) creating a new touristic network**
- **National Strategic Position**
- **The improvement of the territorial logistical platform**
- **Availability of land space** for further activity development
- **Increasing of internationalization** of local entrepreneurial
- **Potential partnership in synergies** with related territories business (Harbour of Ancona)
- The Air Taxi services is an Opportunity **to change actually company reputation**
- The Air Taxi services **could create new occupation**

SWOT Analysis Forlì

Opportunities

The Harbour Of Ancona

SWOT Analysis Forlì

Opportunities

The Harbour Of Ancona

Harbour Services and Indicators

- **General Port Services**: fuel provision, waste collection, cleaning pounds, illumination, train service, water provision
- **Technical – Nautical Services**: or launch, trailer, pilotage, mooring
- **Good's Services**: shippers, enterprises, work provision
- **Passengers' Services**: shipping agents, Dorica Port Services (management of passengers and transports within the Port)

	2011	2012
Good	7.951.818 tonn	8.413.028 tonn
Container	142.213Teu	120.674Teu
Tir + Trailer	140.049	158.908
Passengers	1.172.489	1.553.787

SWOT Analysis Forlì

- **Lack of airport strategy connected to the strategy of territorial marketing.**
- **Possible loss of the current main client Airline**
- **Competition by other regional operators as opposed to common efforts** (e.g. Bologna Airport and other Regional Hub)

Threats

- Absence of **clear connection between the entrepreneurial** and the **Aviation Technology Center**
- **Possible increasing of traffic** of the main roads
- **Persistence** of economic **crisis**
- **Absence of strong interested buyer for Airport** privatization project
- **Possible increase of environmental pollution** and increase of Carbon Emission (CO_2)
- **Opposition of environmental associations**

SWOT Analysis Forlì

As explained above, the potential of the FATS is significant, although the current Forlì Airport situation requires interventions related to its governance.

In the last slide, we exposed a brief summary of the maim results of the SWOT ANALYSIS.

The key elements for the future scenario for the Forlì Airport, and for the FATS, are closely linked to:

- the availability of lean and flexible infrastructure;
- the presence of the Aviation Technology Center;
- the strategic and central position in the Romagna Mobility Network;
- the proximity to other important logistical infrastructure (i.e. Ancona Harbor).

Current situation of other IPA airport system

SWOT Analysis Banja Luka

Strengths

- Fully operational and licensed airport with all necessary facilities available
- Lot of free, unused capacity
- It is located on a plain and approach is easy with no hills or other obstacles
- It has easy and very close access to E-661 Banjaluka - Gradiska highway which connects to the European route E-70 after 25 Km; the river Sava is 25 Km away and a railway track which connects to the European railway network is 18 Km away
- Nearby city of Banja Luka, located 20 km away, as a strong backbone;
- Approximately 1.000.000 million residents and 40% of economy of BiH in a radius of 100 Km with no other airports.
- Very small and acceptable environmental disruptions
- Good relations with neighboring, industrial friendly, municipality of Laktasi and city of Banja Luka
- Lots of available nearby land for planned airport extensions (such as building of cargo facilities).

SWOT Analysis Banja Luka

Weaknesses

- There is no home-carrier after the Government of Republic of Srpska decided to terminate Sky Srpska
- Only one airline, BH Airlines, uses the airport for only one flight (to Zurich) four times a week
- Airport has acceptable number of employees but they need additional training and certification (employees did not have significant education and training in last 9 years)
- Fire fighting equipment is out-dated
- Lack of funding

SWOT Analysis Banja Luka

Opportunities

- Low cost opportunities due to cost advantages (low: wages, taxes)
- Strong ethnical incoming traffic; estimated 1.5 million residents of BiH live abroad and often visit their home country (potential of transfer from road to air as well as generation of new traffic)
- The airport is located in a Trade Free Zone which could drive the development of cargo traffic
- Planned construction of a new terminal building and documentation is prepared for this project
- Planned construction of a cargo centre
- Low-cost carrier WizzAir has announced their interest in using the Airport
- Visa free travel to all neighbouring and EU countries
- BiH will soon become a candidate for EU membership

ALMA MATER STUDIORUM - UNIVERSITÀ DI BOLOGNA
IL PRESENTE MATERIALE È RISERVATO AL PERSONALE DELL'UNIVERSITÀ DI BOLOGNA E NON PUÒ ESSERE UTILIZZATO AI TERMINI DI LEGGE DA ALTRE PERSONE O PER FINI NON ISTITUZIONALI

SWOT Analysis Banja Luka

SWOT Analysis Dubrovnik

SWOT Analysis Dubrovnik

Weaknesses

- Seasonal demand
- Limited Catchment area (411.000 inhabitants)
- Final destination
- Absence of Home Based Carrier

SWOT Analysis Dubrovnik

Opportunities

- Improved accessibility attracting both leisure and business travellers
- New quality products attracting foreign tourists
- Development of tourism and business traffic to emerging markets
- Increasing outgoing tourism (tour operators cooperation)
- State support in developing the destination
- Joining Schengen might attract additional traffic

SWOT Analysis Dubrovnik

SWOT Analysis Pula

SWOT Analysis Pula

Weaknesses

- Area focuses on tourism – not secondary industry
- No multi-modal exchange
- Poor rail access
- No pilot school or other GA industry at airport
- Train links to hinterland very poor
- High seasonality

SWOT Analysis Pula

Opportunities

- Close to coast – maritime tourism interchange
- Development of agricultural businesses
- Well known destination in Western Europe and Russian markets
- Ability to use land to develop GA
- Close to train line – if new routes can be opened
- Possibility of Intermodality, vicinity of highway, railway and sea harbour.

SWOT Analysis Pula

Threats

- Other airports in Croatia in similar situation
- Other touristic resorts in Croatia
- Management about to change
- Short-term focus on tourism from airport owners
- Dependence on tourism
- Regulatory environment not steady and sure

SWOT Analysis Ravenna

Strengths

- The airport "La Spreta" is located near Ravenna, an outstanding art city, as well as to the Adriatic coast, a mass tourism destination. The Ravenna area boast a relevant attitude towards strong relationships with East Europe, in particular with the countries of the eastern Adriatic.
- The area has recently been fenced by ENAC
- The airport is equipped with a modern and functional radar, fit for any kind of flight;
- The airport covers an area of approx. 80 hectares; it has an asphalted runway, 1200 meters long and with a largeness of 30 meters, with a 08/26 orientation (hence it is situated approx. along the direction East/Ovest). The current 1.200 meters of available runway are completely usable; furthermore, as there aren't clear-ways beyond the stop-ways, the usable surface could be further expanded. In fact, beyond the limitations of the stop-ways, further areas without clear-ways are available beside the trade-off runways and landing run-ways. None clear-ways are existing also beyond the present area that is under the jurisdiction of the Port Authority, so the airport boast a significant potential for expansion. .
- The is a tested petrol station, in accordance with the law;
- The proximity to Ravenna (a few kilometres) but, at the same time, a certain distance from it and other minor towns allows that any activity could be performed with a low environmental impact, both in terms of noise and air pollution as well as of road traffic. Also the flights over the inhabited centres are inexistent.
- The body owner of the airport (ENAC) has carried out investments in a continued way to keep functional the plant.

SWOT Analysis Ravenna

Weaknesses

- The airport La Spreta is currently authorized for recreational/sport activities of various type; it has only occasionally been authorized for air-taxi activities.
- Necessity in the mid-term of to update/replace the existing petrol station
- Lack of some fundamental infrastructures (eg. Public aqueduct)
- Necessity to organize some essential services for commercial flights, in particular international.

SWOT Analysis Ravenna

Opportunities

- Creation of a net of relationships and links with airports having hobby/sport activities in the two banks of the Adriatic sea;
- The New service of Air **Taxi could avoid the loss of employment**
- Development potential, subordinated to an authorization from ENAC and the realisation of small investments, for private tourist flights based on demand air-taxi, of interest for Italy and the two banks of the Adriatic sea, in compliance with the growing tourism trends (culture, nature, sport)
- Functional to business travels of entrepreneurs and managers between the two banks of the Adriatic sea (the enterprises located in Ravenna that have had commercial relationships with partners of the other bank of the Adriatic sea in 2012 are 273) and to flights linked to recreational tourism of high level.
- The technological innovation in the flight sector could progressively increase the competitive capacity of private flights with air-taxi.
- The progressive integration in the European Union of the countries of the Eastern Adriatic, first of all of Croatia since the 1st of July 2013 , could increase the needs of the inter-Adriatic mobility also in the air.

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SWOT Analysis Ravenna

Threats

- The current economic crisis has reverberated its effects also on the import-export trends from/to the Province of Ravenna with the other bank of the Adriatic sea. In fact, the import/export volume in the years 2009-2011 has been modest. Furthermore, the development prospects formulated by the IMF for the next years points out as unsustainable the traffic of goods by air between the two Adriatic coasts.
- Some difficulties for ENAC to identify a satisfactory typology of management of the airport, that allows an evolution of it in the development of commercial trips, although minor (e.g. the air-taxi) .
- The current financial restrictions make difficult to finance investments, even if modest, in the minor airports.
- it is underway a rationalization process of the airports in Italy, that could jeopardize the net of the minor airports.

SWOT Analysis Rijeka

Strengths

- Favourable **geographic position**
- Location on the island of Krk in a **touristic area** with more than 100 hotels within a range of 50 km.
- Within a **radius of 100 km is 60% of the Croatian population and 60% of Croatian tourism**
- A mild and sunny **microclimate**, ideal for tourism and safe traffic all year round
- **No possibility of noise pollution** because approach/departure surface is over the water area and far enough from the urban and tourist settlements
- In the **neighbourhood** is the Adriatic Oil Pipeline - **JANAF, the Rijeka – Zagreb motorway, a container terminal, a sea port and a railway station**
- **Close to the city of Rijeka**, which is the administrative, economical and cultural centre of the Primorje–Gorski Kotar County
- **Possibility of handle up to 747 – 400/ An-124**
- **Easy availability and simple access to the airport**
- **No peak hours – no holding circuits**
- **Operational all year round**
- **Qualified staff**

SWOT Analysis Rijeka

Weaknesses

- **Absence of cargo traffic**
- **No air taxi services**
- **Absence of aircraft maintenance facilities**
- **Incoherence with Italian** airports

- The traffic has a large **seasonal variation**
- **Lack of financial resources**
- **Insufficient number of low-cost carriers**

SWOT Analysis Rijeka

Opportunities

- Overall **air travel** is predicted to **increase** this decade
- **tourist arrivals** in Croatia is expected to **increase**
- Croatia's **entry into the European Union**
- **Changing the ownership structure** (PPP, concession...)

- **Congestion in major European airports**
- **Introduction of air taxi services** – entering new market
- **Creation of a permanent network** among regional airports of the Adriatic
- **Plenty of space available for further development** (construction of storage and manipulation facilities for management of goods transported via air, introduction of veterinary and phytosanitary control, expansion of the passenger building, apron & taxiway)

SWOT analysis
Summary

SWOT Analysis Summary

S

- Presence of High Skilled Human Resources in freight and passengers
- Fully operational and licensed airport with all necessary facilities available
- Lot of free, unused capacity

W

- Slow Entrepreneurial growth
- Current International economic crisis
- Strong ethnical incoming traffic
- The actual situation of the Forlì Airport Governance

O

- The small size of Airport allows an easier conversion of business into Human and goods transport services by Air Taxi
- The New service of Air Taxi could avoid the loss of employment
- Potential partnership in synergies with related territories business

T

- Competition by other regional operators as opposed to common efforts (e.g. Bologna Airport and other Regional Hub)
- Regulatory environment not steady and sure
- Possible increasing of traffic of the main roads
- Lack of airport strategy connected to the strategy of territorial marketing
- Persistence of economic crisis

Field market research for potential demand estimation

Market research for assessing Market potential for Airtaxi transportation

- OVERVIEW OF THE STUDY:
  - Research objectives
  - Overview of the methodological approaches and data collection
- QUALITATIVE STUDY:
  - Objectives and sample creation
  - Interview structure and output
- QUANTITATIVE STUDY:
  - Objectives and research methodology
  - Questionnaire and sample description
  - Analyses and results

OVERVIEW OF THE STUDY

- THE ANALYSES PERFORMED IN THIS PHASE OF THE PROJECT ARE AIMED TO:
  - Understand the most important features of an Air Taxi service that are taken into account by the target business segment in the evaluation of the service;
  - Estimate the ideal service levels and the perceived value associated by potential customers with alternative service configurations;
  - Define an ideal service configuration that maximizes potential customers' utility and purchase intentions;
  - Assess the proportion of firms interested in an Air Taxi service on the total number of firms that are active in the partners' local areas.
- IN ORDER TO ACHIEVE THESE OBJECTIVES, A RICH SET OF DATA AND METHODOLOGIES ARE ADOPTED:
  - Qualitative data obtained through semi-structured interviews are used to identify the features of an Air Taxi service that really matter in potential customers' perceptions and, for each of these features, which levels are considered acceptable;
  - Quantitative data obtained through an online survey are used to estimate the marginal importance of each service level in determining the overall value that customers associate with the possible service configurations, basing on the conjoint analysis methodology.

CHAPTER 3

QUALITATIVE STUDY

QUALITATIVE STUDY

- OBJECTIVES:
  - Understanding from the voice of the customer which are the strengths and weaknesses associated with Air Taxi transportation basing on their previous experiences or perceptions
  - Detecting which are the features of transportation services that are most important for target customers when planning their business trips
  - Isolating the air-taxi service levels that contribute to create value for target customers
- SAMPLE CREATION:
  - Small sample of firms taken from the databases provided by the Chambers of Commerce (between 10 and 20 firms for each local area) plus some public local institutions (e.g. provinces, trade associations, …)
  - The criteria adopted for including a firm/institution in the sample were based on previous experience in international commercial exchanges and/or interest toward the other IPA countries in order to obtain well-informed insights into the topic under investigation
  - Key representatives (e.g. import/export manager, CEO, city major) were contacted to schedule a personal interview

QUALITATIVE STUDY

- SEMI-STRUCTURED INTERVIEWS WERE CONDUCTED IN ORDER TO LEAVE ENOUGH SPACE FOR EACH RESPONDENT TO EXPRESS HIS/HER THOUGHTS BY FOLLOWING A GENERAL LOGICAL FLOW OF THE QUESTIONS:
  - Knowledge of other IPA countries, current/planned commercial exchanges or interests with these countries, reasons for this interest and previous situation;
  - Pros and cons of exchange activities with IPA countries; current situation and criticalities of communication and transportation toward and from IPA countries;
  - Potential improvements and priorities in the transportation services toward and from IPA Countries.

- METHOD:
  - The interviewer was equipped with a printed outline of the questions to be asked during the interview (however, the interviewer had the possibility to make slight changes to adapt the structure to the development of each single interview) and an audio tape recorder;
  - The content of the interviews was later transcribed verbatim from the audio tapes, then individual answers were codified and assembled in a final aggregated report.

CHAPTER 4
QUANTITATIVE STUDY

QUANTITATIVE STUDY

• OBJECTIVES:
  • Estimating the marginal utility that customers associate with each level of the service features, and the weight of each feature on overall evaluations;
  • Determining which among the possible service configurations is most appreciated by customers and produces the highest levels of purchase intention;
  • Detecting any possible difference among the customer segments included in the sample (e.g. geographical area, business size, business travel frequency, …).

QUANTITATIVE STUDY

• RESEARCH METHODOLOGY:
  • Conjoint analysis is a multivariate research technique aimed to measuring the relative importance of a set of product/ service attributes and the marginal liking of each possible attribute level;
  • The methodology of conjoint analysis is based on the decomposition of the total utility associated with each profile into an utility measure at attribute-level. Accordingly, respondents to conjoint studies are asked to assign a score (or to rank) a set of alternative profiles generated through the full (or reduced, depending on the number of attributes) combination of the attribute levels.
  • Conjoint data are typically collected via survey questionnaires. In the present study a structured questionnaire was administered to the entire set of firms in the database of the enterprises located in the partners' areas created in the previous stage of research.
  • In the current study, participants were asked to evaluate 8 alternative profiles, resulting from the fractional combination of the levels of the attributes identified in the qualitative phase: a) Departure time flexibility (Defined by the customer traveling alone vs. the operator in case of shared flight); b) Wi-fi on board and departure lounge (included vs. not included in price); c) Car Rental at destination (included vs. not included in price); d) "Buy 10 pay 8" voucher (available vs. not available); e) Price (4,000 vs. 5,000 vs. 6,000 €)

QUANTITATIVE STUDY

- THE QUESTIONNAIRE:
  - The questionnaire used to collect data for the quantitative phase of the research has been implemented and delivered through the software Qualtrics, a professional tool for online survey management. Invitation to participate in the survey was sent via email to the panel of firms listed in the database in the period October 24th - December 20th, 2013. The invitation email contained an overview of the project explaining the research purposes and a link to the webpage hosting the questionnaire;
  - The questionnaire was composed of three sections: I) An initial filter section aimed to describe the current situation of business travels for each firm and their willingness to use air taxi services in the future, II) the conjoint analysis section where participants were asked to evaluate the 8 profiles, and III) a final descriptive section where each respondent was asked a battery of questions about the firm's priorities in terms of commercial interests in IPA countries, number duration and length of business travels during one year and descriptive items on the respondent's role within the firm and the firm's revenues.

QUANTITATIVE STUDY

- SAMPLE DESCRIPTION:
  - A total of 440 usable answers was gathered (201 Forlì-Cesena; 127 Ravenna; 24 Dubrovnik; 28 Rijeka; 38 Pula; 19 Banja Luka; 3 Tirana);
  - Most of the surveyed firms make 1 up to 4 travels per year (35.7%), mainly covering short-range distances (67.7%) by car which is far the most used means of transport (78.2%).
  - Almost half of the respondents are CEOs (53.8%), and the majority of the surveyed firms has a turnaround of more than 2M €/year (44.9%).

Results of the research and discussion

QUALITATIVE STUDY

- Overall, the interviewee displayed a good knowledge about the IPA countries and the transportation and communication issues related to these countries. However, they have a scarce direct experience with Air Taxi services that have been seldom used for business travels;
- Frequency of direct flights and time flexibility constitute two related important issues for respondents that would benefit from a more efficient scheduling of their working activities;
- Aircraft safety emerges as another relevant issue that might impede the adoption of the Air Taxi service. Several interviewee express their concerns about the safety standards of air taxis in comparison to the bigger aircrafts employed by scheduled flight operators;
- An opportunity for Air Taxi operators could be the implementation of a bundle of ground and on-board services that are particularly appealing to the target of business-executive customers, such as dedicated parking slots, fast chek-in, handling and custom procedures, dedicated waiting room with many facilities (e.g. free wi-fi);
- A major concern expressed by almost all the interviewee relates with price. Price is considered the most important variable affecting the decision to purchase the service rather than relying on other existing, though more time-consuming, alternatives. On the one side, firms are aware of the fact that such a customized service has to be reasonably more expensive than other solutions, but they might be willing to sacrifice part of the time flexibility of the service by sharing the flight and the costs with other passengers in order to lower the price. An affordable price is considered by most the interviewees as the key factor that will determine the commercial success of the project.

QUANTITATIVE STUDY

- MAIN FINDINGS, CONJOINT ANALYSIS:
- Marginal utilities and attribute importances have been estimated with IBM SPSS Conjoint 20, and are summarized in the table reported in the following page;
- Overall, price is the most important attribute (33.9%), followed by departure time flexibility (20.9%), Wi-fi included in price (20.4%), car rental at destination (12.8%) and “buy 10 pay 8” voucher (12%);
- From an aggregate point of view, respondents prefer saving money by losing part of the time flexibility (Utility Difference = +,44), Wi-fi (Utility Difference = +,46) and Car Rental (Utility Difference = +,30) included in price, with a slight preference toward the availability of a “buy 10 pay 8” voucher (Utility Difference = +,10) and a very strong preference toward the minimum price possible of 4,000€ (Utility Difference = +1,20);
- However, if looking at the table, it is interesting to note the variations in attribute importance among the perceptions revealed by respondents from the different partner areas.

QUANTITATIVE STUDY

- MAIN FINDINGS, CUSTOMER INTENTIONS:
  - A word of caution about the launch of the Air Taxi project between IPA countries might be suggested by looking at the average scores of respondents’ intentions to make use of an air taxi service in the following 12 months (mean = 1.52 on a 11-point scale, standard deviation = 1.39), and to purchase their most preferred profile among the 8 alternative scenarios if it were actually implemented (mean = 3.73 on a 11-point scale, standard deviation = 2.41).
  - Moreover, respondents report that, if their preferred profile were actually implemented, they would use it maximum 1 time per year (45%), up to 5 times per year (35%) , or even never (16%). Only few respondents would use the service more than 6 times per year (4%). Under this perspective, the service might not be economically sustainable
  - One of the main reasons potentially underlying these low levels of purchase intention might be found in the price levels of the service that appear to be still too high. When respondents were asked about their ideal price levels of an air taxi service, the average minimum (mean = 656 €) and maximum (mean = 1,402 €) fall far beyond the price levels proposed in the conjoint profiles that were computed basing on the current cost structures of an air taxi operator
  - No significant differences were found between the levels of future intentions observed and the geographical location of the respondents, nor firm size nor actual levels of business travels.

PROVINCE		FORLI-CESENA	RAVENNA	DUBROVNIK	RIJEKA	PULA	BANJA LUKA
TIME FLEXIBILITY	CUSTOMER	-.38 (20% importance)	-.63 (27% importance)	-.33 (23% importance)	1.25 (28% importance)	-.35 (22% importance)	.13 (7% importance)
	OPERATOR	.38	.63	.33	-1.25	.35	-.13
WI-FI	INCLUDED	- .63 (12% importance)	.23 (15% importance)	.35 (23% importance)	1.25 (28% importance)	.19 (19% importance)	.54 (30% importance)
	NOT INCLUDED	.63	-.23	-.35	-1.25	-.19	-.54
CAR RENTAL	INCLUDED	.19 (12% importance)	-.03 (15% importance)	.06 (12% importance)	.50 (11% importance)	.15 (12% importance)	.33 (19% importance)
	NOT INCLUDED	- .19	.03	-.06	-.50	-.15	-.33
BUY 10 PAY 8	AVAILABLE	.06 (10% importance)	-.08 (11% importance)	.04 (12% importance)	.50 (11% importance)	.07 (16% importance)	0 (0% importance)
	NOT AVAILABLE	- .06	.08	-.04	-.50	-.07	0
PRICE	€ 4,000	1.58 (46% importance)	.43 (32% importance)	.08 (31% importance)	1.33 (22% importance)	.71 (31% importance)	.94 (44% importance)
	€ 5,000	-.67	-.17	.23	-.67	-.23	-.31
	€ 6,000	-.92	-.27	-.31	-.67	-.49	-.64

	FORLI-CESENA	RAVENNA	DUBROVNIK	RIJEKA	PULA	BANJA LUKA
INTENTION TO USE AN AIR-TAXI SERVICE (from 0 to 10)	1.46	1.33	2.06	1.96	1.69	1.44
INTENTION TO USE THE SERVICE IF THE OFFER PROFILE WERE ACTUALLY IMPLEMENTED (from 0 to 10)	6.29	2.60	4.00	3.14	3.00	3.33

The picture of direct and indirect competition in the customers' perspective

Competitive alternatives to air-taxi

- The research took into account all reasonable alternative means of transport to reach cities included in the Project, for understanding competition to air-taxi that could arise from substitute services.
- Networks of "relations origin-destination" considered are these linking Forlì or Ravenna to Dubrovnik, Rijeka and Pola in Croatia, to Banja Luka in Bosnia, to Tirana in Albania.
- As the situation of civil aviation with both FSC and LCC is well known, the research focused on the following means of private and public transport, that are presented hereafter:
    - **Private Car**
    - **Coach**
    - **Ferry**
- **Railway** was not a concern, considering that planning a business trip from an Italian destination to the Balkans, and vice versa, by means of the current offer of trains might be extremely complicated (cross border information on timetables and schedule connections to Slovenia and Croatia are very limited) and therefore this choice cannot be considered a reasonable alternative to flights.
- All data shown hereafter are based on a desk research which assumes average distances, average costs (as a mean on low, medium and high season tariffs) and travel times.
- This overview does not cover direct connections between Bosnia, Croatia and Albania between themselves.

Alternative means of transport: private car

- Private car is the **fastest alternative to flying** to get to the Balkans and especially to reach Croatia, with the highest degree of autonomy and the most precise time scheduling, due to the low traffic flows in the area.
- In particular, considering a departure from Forli or Ravenna, the table below shows timing and costs of reaching the other cities in project partner Countries:

From	To	Distance (one way)	Hours (based on ViaMichelin JP)	Costs (way-back) Euros
Forlì	Ravenna	30	0,5	10
Ravenna	Pola	410	5,5	160
Ravenna	Dubrovnik	920	13	320
Ravenna	Rijeka	360	5	145
Ravenna	Banja Luka	700	8	225
Ravenna	Tirana	1200	16,5	300

- As the table shows, from Ravenna (here assumed as the departing origin, 30 km away from Forlì) only few destinations are located within a reasonable travel time, such as Pola and Rijeka.
- Reaching Banja Luka takes almost 8 hours, while Dubrovnik and Tirana are more than 1 day car trip far away, respectively 13 and 16.5 hours. At least for this reason, for Tirana and Dubrovnik private car would not represent a competitive alternative to air-taxi.
- Private car runs **with very competitive costs** compared to air-taxi (considering they can fit up to 4 comfortable seats), but involves longer time trips due to the low average speed possible on highways/motorways.

Alternative means of transport: coach

- Several coach lines run from Italy to the Balkans, though few of them might functionally serve the business market, due to inadequate standards of travelling and being dedicated mostly to the *visiting relative* segment or, generally, leisure market.
- In particular, the following connections exist from Emilia Romagna (several cities, according to coach operators time plans):
- **Bosnia**: no direct connections to Italy. Coaches run from Croatia, Slovenia, Germany, Austria and Bulgaria
- **Croatia**: direct connections run from Bologna, Venice and Trieste to Pola and Zagreb on a daily basis, all year long. Cost of travel starts at 15 Euros (Pola-Trieste, 2.5 hours) and goes up to 40 Euros (Bologna-Zagreb, 9 hours)
- **Albania**: direct connections run from both Bologna and Forlì to Vlore and Tirana via Brindisi and Bari harbors, with ferryboat trans-bordering, twice a week, all year long. Cost of travel starts at 80 Euros (to Vlore) up to 100 Euros (to Tirana) and the travel takes, on average, 16 hours.

- All considering, **coach does not represent a real competitor** to air-taxi due to the following reasons:
  - **Scheduling is not flexible**
  - **Travel time is not comparable**, especially from selected cities of Emilia R. to Croatia and Albania
  - The service **is mostly dedicated to the leisure segment**, which might be incoherent with hosting businessmen
  - **Bosnia has no direct connections.**

Alternative means of transport: ferry

- Ferries run from several harbors that can suite for travels originating from Forlì and Ravenna to Croatia and Albania. These harbors are:
  - **Trieste, to Croatia**
  - **Venice, to Croatia**
  - **Pescara, to Croatia**
  - **Ancon, to Albania and Croatia**
- **A fast line to Albania is also planned to start up in 2014 summer from the Ravenna harbor**.
- Croatia can be reached by ferry through the following connections:

From	To	Scheduling	Hours	Costs p.p. (way-back) Euros (average)
Venice	Pola	Seasonal - 3 days/week	3	170
Ancon	Zadar	Seasonal - 6 days/week	9	120
Ancon	Split	Yearly - 3 times a day	5	180

- Albania can be reached by ferry through the following connections:

From	To	Scheduling	Hours	Costs p.p. (way-back) Euros (average)
Trieste	Dureshe	yearly - 2 days/week	36	110
Ancon	Dureshe	yearly - 2 days/week	20	100

- All considering, **ferry can be a competitive alternative for connections to Pola and Split** while Albania and other Croatian cities require a very **long travel** that is **not flexible** by schedule and **quite limited in availability** (due to seasonal scheduling).

Alternative means of transport: most relevant evidences

Some major consequences deriving from the analysis of evidences of this research that policy makers should consider are:

•In the last two years, the number of air-taxi operators has started declining as a consequence of demand decrease.

•Direct taxation on users (demand) could be either reduced or made proportional to the length of the flight or based on the segments (business vs leisure)

•In order to assemble demand on the same flight, with the scope of reducing the price per person, new regulation must be adopted in some IPA countries (i.e.: Italian regulation permits the sale of air-taxi services to 1 contractor only for the entire capacity of the aircraft).

•Regulations must be also clearly addressed and dedicated to this business model. Operators stated that a certain ambiguity exists on legislation used by policy makers (Minor aviation, Airtaxi, General Aviation, Executive Aviation, Business Aviation, Charter, Corporate Jet).

•If regulations applied by each Country in the area are somehow different, this may cause arbitration and opportunistic behaviors, such as the case of foreign operators that mostly operate in a third Country (market) but benefits from taxation of their domestic Country.

All considered, the research highlighted some potential in the market observed for a lower budget demand, which could be targeted through a significant reduction of the service price. This could be reached through:

1.making it possible to assemble demand (regulations) and

2.reducing direct taxation

Conclusion

IS THERE SUFFICIENT POTENTIAL DEMAND FOR A AIR-TAXI SERVICE? YES AND NO

YES, because:

- There is an interesting flow of passengers flying (with regular airline flights) and travelling by car between the two borders of the Adriatic Sea. For instance, respondents to the quantitative study reveal that, on average, the vast majority of their business trips across IPA countries is by car (78.8%).
- There is an interesting flow of commerce, mainly in the industries of CA-food, beverage and tobacco, CH-based metal and metal bearings, excluding machinery and plants, CL-means of transport; CH-based metal and metal bearings, excluding machinery and plants, CB-textile products, clothing, leather and accessories between the two borders of the Adriatic Sea.
- During the SWOT analysis the availability of resources needed to support the service seems to be present.
- During the qualitative phase (interviews and focus group) of the market research managers of companies in the region and institutions have clearly expressed the need for a better, quicker and more convenient way of transportation

NO, because:

- During the quantitative phase of the interviews customers have clearly expressed a concern regarding the potential high price of the service and a low intention to purchase. When asked about their ideal price levels of an air taxi service, respondents reveal that the average minimum (mean = 656 €) and maximum (mean = 1,402 €) fall far beyond the price levels proposed in the actual price levels that should be realistically implemented basing on the actual cost structure.

IS THERE SUFFICIENT POTENTIAL DEMAND FOR A AIR-TAXI SERVICE? YES AND NO

- During the quantitative phase of the interviews customers have clearly expressed a concern regarding the potential high price of the service and a low intention to purchase. Actually, the average minimum (mean = 656 €) and maximum (mean = 1,402 €) prices are far below the lowest price possible basing on the actual cost structure of air-taxi companies (i.e. 4,000€)
- The configuration of the value proposition for the market does not fit perfectly the customer needs emerging from the research. Particularly, service configuration should be focused mainly on price (33.9%), followed by departure time flexibility (20.9%), and Wi-fi included in price (20.4%).
- The awareness of the potential service is very low, according to the market research survey. If the preferred air-taxi profile offer were actually implemented, respondents would use it maximum 1 time per year (45%), up to 5 times per year (35%) , or even never (16%). Only few respondents would use the service more than 6 times per year (4%).

Implications for management and public policy

WHAT SHOULD MANAGERS AND INSTITUTIONS DO?

- Leverage on existing strengths and infrastructures.
- Increase definitely the awareness of the potential service, through proper marketing and communication activities.
- Craft the offering to the market accordingly to customer needs expressed in the quantitative survey.
- Act strongly on the cost/price side of the offering, decreasing it towards an acceptable level in the customer's perspective.

- Both direct interviews and the on-line quantitative questionnaire demonstrated that the market places great relevance to the cost of the flight (pricing issue).
- This is evident for the Italian market, while Croatia and Bosnia recorded more volatile results.
- Moreover, the market shows a low potential demand to the service, in terms of both propensity and frequency to use this mean of transport. Considering evidences from personal interviews to both potential buyers and operators, this could be attributable to:
  - Awareness of the high costs compared to the cost of other means of transport
  - Low frequency of top manager business trips, which are more and more replaced by video and telephone conferences
  - Distressed business environment deriving from a negative perception of the current financial and economic situation in the area.
- Indeed, respondents suggested a pricing range that nearly corresponds to that of a business flight of a full services carrier (FSC) rather than that of a private flight, indicating that the service required to connect to IPA Countries is the airline connection (which is weak, especially in the low season) rather than the air-taxi connection.
- The good flexibility on scheduling accepted by respondents is another clear evidence of the fact that a public transport (with frequent connections) could suite market needs.
- Besides pricing, the investigation around other services' attributes showed that ancillary services, such as WI-FI connection and car rental are not key variables and they cannot generate, by themselves, significant additional value and utility.

Current market situation in the area

- A preliminary census of air-taxi operators[1] with hangars and certifications (permits to operate) in the Project Countries has accounted about 35 operators (no data on Albania). The number of those that ended operations in 2013 is unknown, but there is evidence that the current number of operating companies is lower than 35.
- The most relevant feeder market for the area is clearly the industrialized area on Northern Italy that historically generated daily business trips to major delocalization or export Countries (mostly the Balkans, among which almost all IPA Countries)
- This area of Italy, including the regions along the Adriatic Coast, is facing a strong down-turn of production, with domestic sales suffering, while export flows are keeping the pace.
- Travel policies became therefore more pressing and the cost of a business trip is accurately verified and make efficient. For this reason, although being time consuming, the car is very often the alternative to the lack of direct FSC flights.
- Croatia also generates domestic connections between the islands, but with a seasonal trend and serving a leisure market that follows different purchasing paths and service requirements.
- On the contrary, Albania is quite new to this business model.

1. The census was not intended as having a scientific purpose, being out of the scope of this research

Pricing issues for Italy

- Some relevant considerations must be done to get the clear picture of pricing managerial implications for flights operated *to and from Italy*:
  - For all connections to and from Italy, including IPA Countries, the regulation n. 201/2011 art. 16, c. 10bis puts an extra tax (called “luxury tax”) of 100 Euros per person per way. This tax is doubled (200 Euros) for connections longer than 1.500 km. This means that, for example, since April 2012, an air-taxi flight boarding 4 people from Ravenna to Split and the way back, costs 800 Euros more in tax than it was before. If the flight connected Venice to Athens, this tax would account to 1.600 Euros.
  - Furthermore, an ownership tax was introduced by the same regulations costing the aircraft owning operators 1,5 Euros per (aircraft) kg per each aircraft a year, which also impacted operations pricing
  - As highlighted by the interviews carried out with Italian operators in the area of Emilia Romagna, since from 2011 the private flight demand from the Northern-Eastern area of Italy collapsed because of the economic downturn, empty-legs and optimization of flights in general became critical, with a negative impact on average price.
- In general, pricing optimization relies on flexibility of demand about scheduling (assembling demand) and fast repositioning of aircraft (network optimization): when demand is low, neither assembling of demand and repositioning can be optimized and this impacts pricing.
- For this reason, pricing cannot be lowered when market fundamentals are feeble, as far as fixed costs of operations are high.

Policy making and incentives

Some major consequences deriving from the analysis of evidences of this research that policy makers should consider are:
•In the last two years, the number of air-taxi operators has started declining as a consequence of demand decrease.
•Direct taxation on users (demand) could be either reduced or made proportional to the length of the flight or based on the segments (business vs leisure)
•In order to assemble demand on the same flight, with the scope of reducing the price per person, new regulation must be adopted in some IPA countries (i.e.: Italian regulation permits the sale of air-taxi services to 1 contractor only for the entire capacity of the aircraft).
•Regulations must be also clearly addressed and dedicated to this business model. Operators stated that a certain ambiguity exists on legislation used by policy makers (Minor aviation, Airtaxi, General Aviation, Executive Aviation, Business Aviation, Charter, Corporate Jet).
•If regulations applied by each Country in the area are somehow different, this may cause arbitration and opportunistic behaviors, such as the case of foreign operators that mostly operate in a third Country (market) but benefits from taxation of their domestic Country.
All considered, the research highlighted some potential in the market observed for a lower budget demand, which could be targeted through a significant reduction of the service price. This could be reached through:
1.making it possible to assemble demand (regulations) and
2.reducing direct taxation .

THE IDEAL PROFILE OF OFFERING

- TIME FLEXIBILITY: Flight schedule defined by the air taxi operator in order to give the possibility to share the flight (and the costs) with other passengers
- ON BOARD SERVICES: Wi-fi included in price
- ADDITIONAL SERVICES: Car rental at destination included in price
- PROMOTIONAL TOOLS: “Buy 10, pay 8” voucher available (but scarcely important)
- PRICE: 4,000€

Annexes

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Conjoint analysis is a multivariate technique used specifically to understand how respondents develop preferences for products or services.

It is based on the simple premise that consumers evaluate the value of a product/service/idea (real or hypothetical) by combining the separate amounts of value provided by each attribute.

Utility, which is the conceptual basis for measuring value in conjoint analysis, is a subjective judgment of preference unique to each individual. It encompasses all product or service features, both tangible and intangible, and as such is a measure of overall preference.

In conjoint analysis, utility is assumed to be based on the value placed on each of the levels of the attributes and expressed in a relationship reflecting the manner in which the utility is formulated for any combination of attributes.

How to measure utility using Conjoint Analysis: the process

- Benefits, attributes and performance levels identification
- Levels' combination and products' selection (concept, product profile and card)
- Survey of the preferences related to the product alternatives
- Measurement of the performance level
- Measurement of the relative importance of the attributes

Source: Costabile (1996)

Step 1
(qualitative analysis)

Benefits, attributes and performance levels identification

List any important attribute and its possible levels

Qualitative analysis and in-depth interviews

Step 2

Define an appropriate number of alternatives (concept) by combining the identified attributes

Step 3

Survey of the preferences related to the product alternatives

Ask the sample to evaluate the concepts

After carefully reading the characteristics of the offering package summarized in the picture below, please provide your evaluation of the offering package on scale ranging from 1 (extremely negative) to 10 (extremely positive)

Step 4

Measurement of the performance level

How? By performing a statistical regression analysis

" The evaluation of Mister X on concept A" = f (attributes; price)

Evaluation of the single attribute contribution to the total customers' utility

(= Utility's coefficient evaluation)

$$U_A = b_0 + U_1(ATTRIBUTE1) + U_2(ATTRIBUTE2) + U_3(ATTRIBUTE3) + U_4(ATTRIBUTE4) + U_5(PRICE)$$