

Airfreight development in Morocco

Axe 2: Transport and logistics

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Abstract—In Morocco, the challenge is tremendous concerning Air freight sector, in order to keep pace with the progress of so many different shipping ways in the world. In 2015 air freight knew a growth of 18.7%. However, according to data purchased by the Moroccan Ministry of Transport on the growth of civil aviation between (2000 - 2014) the commercial flights and passengers has known a rising increase, contrary to air freight which has known a slow growth. So the question is: What are the main opportunities exposed to air freight in Morocco?

There are only 12 international airports within 24 active airports in Morocco, and this number is very modest compared with other countries who know a significant growth in the air freight sector. Approximately 90% of air freight operations in Morocco are handled in the International Airport of Mohammed V, which means that only about 10% of air freight is distributed to other international airports due to lack of air freight poles. A decrease in the amount of investments also remarked to develop the Air freight between the years (2000 - 2012).

Another issue is How could those challenges be raised in a globalized trade world? The most essential thing to perform in order to develop the air freight in Morocco, and to help this sector to grow better is by stimulating demand and encouraging investments in new airfreight poles in different Airports. Qualification and training programs whether in public or private schools also remain essential for providing future experts and managers in the domain.

For government side, strategies seems to be investing to set up and expand the foreground of the air freight, in order to make it the first line for transport companies, depot, and logistics operators, Developing the infrastructure to facilitate the trade, and business dealing, and ameliorating training centers in aviation specialties, in order to provide high qualified people, and this will help to contribute the availability of competent labors which will attract as well new airlines to invest in Morocco.

Finally, Airlines have also to develop their Strategies in Air Freight concerns by focusing on developing the quality of services, and providing products according to the needs of customers, and also expand the network of trips and its capacity, Also Taking other successful airlines as a role model, like Turkish airline which has effectively developed the field of air freight.

Résumé— Au Maroc, le défi est énorme concernant le secteur du fret aérien, afin de garder la place avec le progrès de tant de manières différentes d'expédition dans le monde. En 2015, le fret aérien a connu une croissance de 18,7%. Cependant, selon les données acquises par le ministère marocain des Transports sur la croissance de l'aviation civile entre 2000 et 2014, les vols commerciaux et les passagers connaissent une augmentation croissante, contrairement au fret aérien. Qui a connu une croissance lente. La question est donc: Quelles sont les principales opportunités exposées au fret aérien au Maroc?

Il n'y a que 12 aéroports internationaux dans 24 aéroports actifs au Maroc, et ce nombre est très modeste par rapport à d'autres pays qui connaissent une croissance significative dans le secteur du fret aérien. Environ 90% des opérations de fret aérien au Maroc sont effectuées à l'aéroport international de Mohammed V, ce qui signifie qu'environ 10% du fret aérien est distribué à d'autres aéroports internationaux en raison du manque de pôles relatifs au fret aérien. Une diminution du montant des investissements aussi est soulevée pour développer le fret aérien entre les années (2000 - 2012).

Une autre question est: Comment ces défis pourraient-ils être relevés dans un monde commercial mondialisé? La chose la plus essentielle à réaliser pour développer le fret aérien au Maroc et d'aider le secteur à mieux se développer est de stimuler la demande et d'encourager les investissements dans de nouveaux pôles de fret aérien dans différents aéroports. Les programmes de qualification et de formation, que ce soit dans les écoles publiques ou privées, restent également essentiels pour fournir de futurs experts et gestionnaires dans le domaine.

Pour le gouvernement, les stratégies semblent s'investir pour mettre en place et élargir le premier plan du fret aérien, afin d'en faire la première ligne pour les entreprises de transport, les dépôts et les opérateurs logistiques. Développer l'infrastructure pour faciliter le commerce et les transactions commerciales et améliorer les centres de formation dans les spécialités de l'aviation, afin de fournir des personnes hautement qualifiées, ce qui contribuera à mettre à disposition des travailleurs compétents qui attireront également de nouvelles compagnies aériennes pour investir au Maroc.

Enfin, les compagnies aériennes doivent également développer leurs stratégies en matière de fret aérien en mettant l'accent sur le développement de la qualité des services, et en fournissant des produits en fonction des besoins des clients. Prendre aussi le modèle de la compagnie aérienne turque qui a développé efficacement le domaine du fret aérien.

I. INTRODUCTION (HEADING 1)

If we look at the recent developments of shipping methods in the world, Air freight has become one of the most important international sector. This made it to become the preferred means of transporting for most of the commercial companies and the most active trade sectors in world.

Air freight supply chain is a process which is prioritized by international trade operators. When we look at general agreements and different flows of goods and people, we can easily rework a huge increasing in air services.

In Morocco, the challenge is so remarkable, all the activity is centralized in Casablanca, and means the participation of the other platforms remain modest. Passenger business has known a significant rising in the last couple of years, specifically after the signature of the open sky agreement. Hundreds of flights are departing and landing from and to Moroccan airports and many airlines are agreed by IATA to carry cargo shipments into their aircraft belly holds. Otherwise this capacity is not used as it supposed to be. In addition to air transportation for passengers Air Arabia Maroc for example provides cargo services. It has flights from Fes, Nador, Tangier, Marrakech and Agadir. Countries destinations are ultimately: UAE, Spain, France, Italy, Switzerland and Turkey. In those flights, under load indicators show that Aircrafts could carry additional weights in holds, which means an existing capacity that could be exploited. Airfreight sector in Morocco must have benefits from this capacity offered by adopting a single strategy: PROMOTION.

II. CHALLENGES FACING AIR CARGO IN MOROCCO

A. Air freight as an economic activity

Morocco has become in past years the preferred destination for many commercial and industrial companies because it is located in a strategic location between Europe and Africa. However, there are several international airports in Morocco. The big part of air freight operations in Morocco are handled just in Casablanca only HUB. Airfreight operations in the remaining airports are so modest due to lack of straight and concentrated strategies. Also, the investments in freight by local airlines is not motivated enough to attract any potential demand. Air cargo operations at airports need to focus on the establishment of air freight terminals at various international airports in Morocco and work towards reducing the cost of air freight to attract and encourage customers inside and outside Morocco to use air cargo in business. This depends on the development and training of people with high qualifications in management and logistics disciplines. Time and again addressing airfreight difficulties calls for innovative arrangements. One case is the utilization of territorial carriers to stay away from the clog and postpones that can happen at real air terminals. Local aircrafts tend to utilize littler airplane terminals and require less time for offering.

B. Government initiatives to encourage investment in Airfreight:

A range of investment projects to expand capacity and develop the nation's air transport are under way. According to local media, in 2015 ONDA was allocated Dh3.9bn (€357.6m) for capacity upgrades as well as safety and security improvements. One of the largest projects is the expansion of terminal 1 of Casablanca's Mohammed V Airport. After initial plans were finalized in 2009, then put on hold, work restarted in November 2014 and completion is expected in 2016. After the project is finished, capacity will double to 14m.

An expansion project at Marrakech airport will add a new 67,000-sq-foot terminal to the airport worth Dh1.2bn (€110m). The new terminal is scheduled to be completed by the end of 2016, according to ONDA, and its capacity will increase from 3m to 9m passengers per year. A project to expand the Fez Saïss Airport was finalized in mid-2016 at a cost of Dh479m (€43.9m). The project increased capacity by 2m to 2.5m passengers a year.

Future projects in the works include an airport specializing in business aviation in Tit Mellil, 30 km from Casablanca. The project is estimated to be launched in the second half of 2017 and will need an estimated investment of Dh490m (€44.9m). Preliminary studies are under way to set up a PPP arrangement for the project. With the completion of all the projects currently under way, total annual airport capacity in Morocco will increase from 24m passengers to 50m passengers, according to ONDA.

C. Investing in people

One of the most important challenges facing Air cargo sector in Morocco is investing in people. It means setting up sophisticated centers to train and equip people who can provide good customer satisfaction, but government has not focused on this point seriously because there are very few technical rehabilitation centers specialized in logistics. There is only one governmental formation center established in 2013 in Casablanca and some other centers belonging to the private sector. It may not be sufficient to meet the needs of this sector, which is known for its great growth and activity at the national and international levels. Seen on the development and meet the challenges of this sector, it will also contribute to attract investors and foreign companies specialized in air freight because the success and development of any sector depends on the construction of highly qualified people and high-level training.

Air cargo operations can be very complex. Precision delivery and safety rely on how well air cargo professionals are trained

Offer the industry's most dynamic and innovative training solutions for every aspect of air cargo operations, including on-time performance, business management and strategic planning.

The world is changing and competition is increasing at an international level, Air transport of goods need qualified partners with new ideas that are able to develop and rally challenges.

III. INVESTING IN TECHNOLOGY

A. The role of e-commerce

The Internet and E-commerce are becoming essential business tools for companies of all sizes in every type of industry, including the retail and airfreight industries. Over recent years, the air express distribution industry has changed, due in no small part to the role of electronics.

E-commerce is a new term in the world of economics that emerged with the spread of the Internet in the early 1990s and is based on the sale, purchase or exchange of products, services and information using an internal or external Internet. Growth in Morocco's e-commerce market is growing, especially with the culture of online buying, but consumers' concerns about internet security still have a negative impact on this medium, which needs further recovery to keep abreast of the remarkable development in the North African region.

Credit Suisse, the second-largest Swiss bank, expects e-commerce to continue its growth in emerging markets to surpass its spending in online retail markets from \$ 1 trillion in 2016 to \$ 2.5 trillion in 2025.

Marked officials and experts said there was a marked growth in Morocco's e-commerce market as consumer spending in online retail markets grew to meet their needs compared to previous years.

The number of electronic commerce in Morocco reached 1.2 billion MAD (120 million dollars) last year, compared to 893.2 million dirhams (90 million dollars) in 2015, an increase

of 33.3 percent, according to the Moroccan Ministry of Commerce and Industry.

While the number of Moroccan subscribers in the Internet service is 17 million in 2016, representing an annual growth of about 18% compared to the previous year, according to the National Agency for the regulation of transport (government).

So that developing the electronic commerce has a positive impact on the growth of air freight industry in Morocco, however, E-Commerce still facing a lot of constraints. The majority of the Moroccan e-stores do not target the international markets; they only target consumers in Morocco. Their deals are very limited as the example of Jumia which is one of the biggest E-Store in Morocco.

These e-stores may well contribute in the rise of the air freight in Morocco. However, The best strategy to increase the curve is to develop electronic stores that have products which can be able to target the international markets, and have large demands because the more demand of products they get the more the air freight will increase, and as an example of some famous electronic stores that have played a role model in the increase of the air freight industry like Amazon, Alibaba, and Aliexpress ...

In 2015 he National Union of e-commerce launched the website "made-in-morocco.ma", as the largest e-commerce website and the first of its kind in Africa, and this was under the effective chairmanship of the Ministry of Industry, Trade, Investment and Digital Economy, as well as the Ministry of Foreign Trade. Furthermore, the website is diverse and inclusive which offers to Moroccans and foreign customers all the products they need with the delivery inside and outside of Morocco. Besides, the website offers all products that are manufactured in Morocco. There are equivalent to 420,000 products in conformity with the international standards, and also manufactured by the largest Moroccan brands.

The website will include more than 90,000 books and paintings made by hundreds of artists. Besides a large selection of Moroccan films, musicals, foodstuffs and beauty cosmetics as Argan oil which has more than 1024 cooperatives with small and medium enterprises. The websites offers also other beauty products like traditional jewelries and designs made in Morocco. These kinds of enterprises help in the growth of the economic interests of the country.

It is obvious that the idea of this project which was implemented in Morocco is a good initiative that can contribute to the growth of several sectors, and which will significantly increase the air cargo industry. Despite the various advantage of this project and the availability of different products with good quality, it still faces some problems and challenges to achieve its aim. And this results was because of the website did not have a widespread and a great interest inside and outside of Morocco.

This project was supposed to achieve decent objectives to become one of the largest e-shops in Africa and a strong competitor to other e-commerce websites. These results can only be reached by relying on a range of promotional marketing methods to grab a large number of consumers inside and outside Morocco:

- Attracting a great number of costumers can be achieved by using Moroccan media platform like radio, television, print news, and magazines in order to show people the advantages of the website and what they can get from it. Using these medium can help to advertise and promote Moroccan brands, and make e-commerce as a part of local consumer culture.

- Promoting electronic stores by using social media like Youtube, Facebook, and Twitter. Nowadays, social media is considered to be one of the most powerful tools for large companies in the world to advertise their products.

- Promote the website for the Moroccan community living outside the country through various medium. For instance, Moroccan people who live in Europe represent more than 5 million immigrants which signify a large number of people to target. They represent a great category of costumers that help in the growth of numerous sectors in Morocco, especially the transportation and the trade sector. Finally, these methods can significantly contribute to the developments of the air freight industry.

B. Information and technology solutions

The freight business needs to grasp troublesome advancements from the customer world, including Internet of Things (IoT), computerized partners and automatons, to build productivity and meet client desire for more noteworthy straightforwardness all through the inventory network.

To take care of the developing demand for little package conveyances, distribution centers will change from a capacity area, to a dynamic office utilizing IoT and voice counterfeit consciousness (voice AI) empowering quicker handling of more shipments to create a higher profit for the land venture. Similarly as associated wearable gadgets, for example, smart watches are getting to be standard in the customer world; IoT-based innovation will make the "shrewd distribution center" without bounds. Late developments, for example, keen glasses used to show data activated by a standardized tag or QR code on a holder will be taken to another level by fusing scanners to naturally catch and info data into the distribution center framework, and incorporating voice AI to start activities. Comparative innovation is now being used in computerized partners, for example, Siri, Cortana or Amazon Echo. Load administrators to put resources into changing over machine summons to voice inside the following three years.

While rambles have turned into a natural method to give TV sports airborne film, the eagerly awaited standard rollout of automatons to convey packages to the client's doorstep is hampered by flight space limitations, government endorsements and protection contemplations. the prompt use of automatons in the load store network will be inside the limited space of distribution centers to lead stock checks all the more frequently and all the more precisely, supplanting the to a great extent manual process. Past finding lost or lost things, the automatons will utilize sensors to screen ecological data, for example, light or temperature for perishable sustenance, pharmaceuticals or domesticated animals, and

raise alarms to uncommon clamor or development that may demonstrate creatures are in trouble. Unisys predicts this inside the following a year.

New collusions amongst carriers and worldwide merchants will make ready for long haul income improvement With freight limit possibly expanding quicker than payload request because of additional traveler flights and bigger air ship, load limit administration has turned into the main test for carriers. In this condition of unconstrained limit, the conventional way to deal with yield administration won't fill in as aircrafts may dump freight space onto the market, making a value war. a central move to longer-term income improvement in view of vital unions amongst carriers and associations with substantial continuous conveyance prerequisites, for example, postal specialists, major online retailers, worldwide wholesalers and production network administration organizations. This will expect aircrafts to give their cooperation accomplices straightforward ongoing access to accessible limit and prescient examination to decide best courses in view of speed, unwavering quality and cost. This desire for perceiving will likewise stretch out to the "last mile" of the business-to-customer load production network, prompting the improvement of portable applications to enable the last beneficiary to have the capacity to track the approach of their conveyance – like how buyers presently track a moving toward taxi or Uber.

Develop an air cargo community system to try and reduce the cost and improve the efficiency of processing air freight shipments to interface with Moroccan Customs systems to facilitate the “seamless movement of goods and information”.

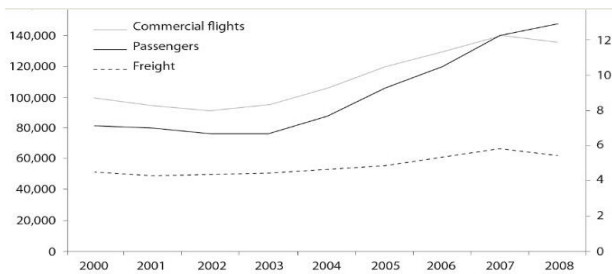
Because Each Air cargo shipment on average carries around 30 types of documents and well over 100 copies, thus resulting in significant documentation overheads, increased dwell times and supply chain opaqueness.

To facilitate the ease of doing business, it is recognized that an electronic platform be put in place to digitize key stakeholder interactions

This electronic platform can allow the reusability of data thereby eliminating duplicate data entry, reducing unnecessary paperwork by giving authorized access to data to the relevant supply chain stakeholder and bringing in supply chain visibility thereby reducing inventory and other transaction costs related to air cargo movement.

IV. AIRLINES BELLY HOLD CAPACITY

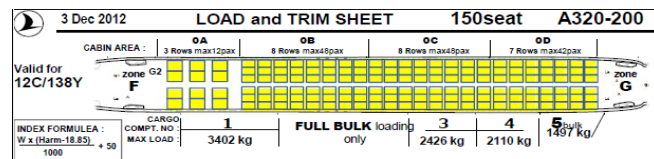
Spite of the international economic crisis, RAM Cargo has seen a strong recovery thanks to the launch of the 100% freight B733, the network densification and a set of commercial measures that have resulted in a consolidation of the customer portfolio. RAM Cargo carries an annual traffic of about 20,000 tons.



Despite a drop in volumes from 60.800 tons in 2006 to 55.000 tons in 2010, the country expects the development of industrial and logistics zones across the country to fuel growing demand for Air cargo. RAM anticipates annual average growth levels of around 5 % per year. ONDA is currently overseeing a DH 860 millions (€ 76.4 million euro) long - term investment plan to develop and expand freight terminals in key centers such as Rabat, Casablanca, Agadir and Tangiers , as for Casablanca , a new cargo facility is being built to replace the existing structure , owned and operated by RAM , with dates from 1962 . The new facility will be built on a surface area of 30,000 sq meters, compared to 11,500 sq meters today, and will be able to handle an annual capacity of 150,000 tons of cargo.

3 - Air Arabia Maroc A320 – 200 Cargo

We can take Air Arabia as a model for developing air freight at various airports in Morocco. Air Arabia Morocco is a low-cost Moroccan airline created in 1 April 2009. It Has 8 aircraft in service targeting 30 destinations, including often European countries, which know a large activity in travelers and tourism and economic transactions and do not forget the Moroccan community in Europe, which are more than 5 million people The Air Arabia fleet consists of the Airbus A320 this A320 which holds capacity is represented as follow:



Hold 1	Hold 3	Hold 4	Hold 5
3402 Kg	2426 kg	2110 kg	1497 kg

Fig.1. Holds plan for A320-200

FROM/TO	FLIGHT	A/C-REG	VERSION	CREW	DATE	TIME
EDDT/LROP	3796	JTF	12JN21	2/03	22AFR14	0909
LOAD IN COMPARTMENTS	WEIGHT	DISTRIBUTION				
PASSENGER/CABIN BAG	004084	B136/30				
	028275	Y145/195				
TOTAL TRAFFIC LOAD	032359	EFU.11498/		RSV.6897		
DRY OPERATING WEIGHT	093051					
ZERO FUEL WEIGHT ACTUAL	125410	MAX 134726				
TAKE OFF FUEL	018395					
TAKE OFF WEIGHT ACTUAL	143806	MAX 162068				
TRIP FUEL	011498					
LANDING WEIGHT ACTUAL	132308	MAX 142223				
LAST MINUTE CHANGES						
DEST SPEC CL/CPT + - WEIGHT						

Fig.2. Load sheet for a random A320 Flight

If we look at the two figures, the total loading in all compartment represents 4084 kg, by the way, the full capacity of holds is about 9435 Kg. that means about 5351 kg not used approximately in each rotation.

Acknowledgment (HEADING 5)

Anoir write here acknowledgment

References

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