



## Aviation Beyond COVID 19/CLOUT in Aviation Beyond COVID 19

**Assem Mousa\***

Department of Computer Sciences, Egypt

**\*Corresponding Author:** Assem Mousa, Department of Computer Sciences, Egypt.**Received:** August 25, 2020**Published:** October 28, 2020© All rights are reserved by **Assem Mousa**.**Abstract**

The aviation and tourism sector is facing it in the world, like the rest of the sectors, a vicious and violent crisis since the start of the global pandemic of Corona, the history of aviation has not passed before, and all aviation and tourism workers are at risk due to this crisis. The danger begins again after the activation of the internal flight and the start of the external, in spite Aviation help a lot in COVID 19 Pandemic.

**Keywords:** Aviation; Tourism; COVID 19

Management in the aviation world is considered one of the most complex types of management as a dynamic environment, and with the emergence of the Corona virus, management has become more complex in combining employee retention, activity, economy and health.

Change is the only thing permanent in Life. THE Following new TECH will change Aviation as all sectors changed and help in Increasing revenue, reducing cost and fighting COVID 19.

From 1<sup>st</sup> Industrial Revolution to 2<sup>nd</sup>, 3<sup>rd</sup> and then 4<sup>th</sup> industrial revolution, and from main frame to PC THEN Ubiquitous computing and from main frame to Mini, workstation, pc, laptop, Mobile then Ubiquitous computing and Tactile internet (5G, IOT, CLOUD), Robot, Drone, AR, VR, MR, COE CLOD OF Everything (AI, IOT, 5G, BLOCK CHAIN, CLOUD).

The use of modern technology represented in the cloud of everything Inc (IOT, AI, BLOCK CHAIN, 5G, CLOUD COMPUTING) in addition to emotional intelligence has become compulsory and not optional, as was previously stated to reduce costs and time, maintain the health and safety of workers and passengers, improve service, safety and international competition.

**Some bad news statistics that we got as an effect of COVID 19**

- Foreseen airline revenue losses of up to \$252 billion in 2020 (IATA). Previous estimates were at \$113 billion - roughly equivalent to industry losses following the global financial crisis.
- Reductions in traffic between 48% and 61%.

Passengers has seen its traffic fall from 10.9 million passengers in March 2019 to 5.7 million in March 2020.

The decline in traffic over the year 2020 should reach 50% and in April 90%. While aircraft remain on the ground, fixed costs continue to run.

**The alarming statistics of the airline industry during the Coronavirus crisis**

- \$200 billion in loans to avoid massive bankruptcies
- \$61 billion spent by companies (cash burn) on Q2/2020
- 70 to 90% of air traffic at a standstill
- 75 million jobs at risk
- A 44% drop in the sector's revenues for the year 2020.

### Some good news statistics that we got as an Anti-effect of COVID 19

- According to experts, the in-flight broadband market will grow from an annual \$900 million USD to a potential \$30 billion USD by 2035.
- IOT could eliminate waste up to 150 billion dollar in industries. (Aviation-healthcare-power-Rail-oil and Gas) potential of IOT saving 1 per cent 1% across global industry.
- Artificial intelligent in aviation market will grow from 2017 to 2024 with an expected CAGR OF 47%.
- MRO-AIR can reduce errors 50% by and increase efficiency by 30%.
- Up to 20% delay from turn around solved by clout.
- Reduction 1% in fuel jet fuel using clout tech can save 30 billion dollar over 15 years.
- Industrial internet using clout can save 2 billion dollars a years for airlines.
- 5G in USA will generate 500 billion dollar and 3 million jobs
- In 2035, 5G will generate 12,3 trillion dollar global economy equal to consumer spending in USA at 2016.

### AI artificial intelligence

Artificial intelligence in the field of aviation can be used in many works such as mechanization and good fleet management, as well as in how to serve and retain customers. AI Use Cases in Aviation.

### Challenges and tasks

Since the aviation industry has only recently embarked on the AI journey, fully embracing AI is going to be a challenging task. The following challenges come to mind.

Data Confidentiality Management - Tracking Progress - Managing Investments.

### 5G fifth generation

#### How 5G could change travel

- Data control-Drones- Data sharing for airport and very low level operations- Real-world 5G demonstrated- Flying taxis, foldable devices, 5G network, walking car, and more.
- Modern robots in all their work on the fifth generation service.

### 5G robots

- “The robot can deliver real-time video stream from the terminal and enable for example monitoring the terminal area through remote or autonomous control and seeing that everything is running as it should”, explains Heike Koki, chief digital officer at Fin via.
- The importance of using robots to assist passengers at the airport and the building to go to the right places and experience other useful uses for passengers.

### 5G drones

The fifth generation 5G will solve the drone problem in achieving low latency and high density network.

### How the clout/Cloud of everything is changing airports

Airports are gradually introducing technologies for passengers and employees to make flights more comfortable and safe, the best practices of several airlines and airports as examples.

Clout INC Mobile services not only help passengers with check-in, search for the desired departure gate, and search for baggage. The world’s airlines and airports are adopting new technologies such as the cloud of things. Most talk about how clout/IOT is transforming the work of airlines and airports.

### Clout INC mobile services for tourists

How mobile technologies accompany the tourist throughout the journey - from the city of departure to the destination. The journey, after buying a tour or air ticket, begins with electronic check-in for the flight. A few hours before departure, the tourist calls a taxi using the application or finds the nearest car in the short-term rental service.

The tourist’s next step is to get tickets. By pre-registering for the flight, tickets can be obtained from the self-service terminal. After passing the control, the traveler can purchase any goods in stores using mobile payments, visit the resources of the airport stores on the Internet and make purchases in the terminal’s boutiques remotely. Some airports and airlines also offer food and drinks on board.

The final steps of the traveler already at the destination will be waiting for a notification in the mobile application about the arrived baggage and further planning the trip, including using navi-

gation services or mobile applications for ordering a taxi, the expert noted.

### How disruptive technologies are transforming travel

The future of the travel industry is likely to be shaped by technological and social innovation. Travel will become more comfortable with the help of innovations.

Passengers around the world are now facing various challenges. As Amadeus analysts found out, these are primarily: 47% of passengers experience discomfort when going through passport control, interacting with security and customs officials. The solution could be automatic transit at the airport. To do this, it is necessary to introduce a system of automatic passage of passport control/customs. The emergence of such technology is expected by 53% of travelers.

Stress after a trip, namely, passing through customs or passport control, is experienced by almost 51% of returning tourists. The solutions to the problem can be as follows:

- Introduction of smart tickets that will automatically update travel data (flight delays, change of departure date, etc).
- Introduction of M - health technologies, namely, miniature sensors for monitoring heart rate and blood pressure. 82% of travelers want wearable devices to monitor and help reduce stress while traveling.

Researching options and opportunities in unfamiliar terrain takes up to 47% of tourists' time. The solution may be to create smart recommendations based on the aggregation of data from expert blogs and online directories. Thus, personalized travel guides will be created, the appearance of which is expected by 86% of travelers. 51% of tourists are not aware of the best places, local restaurants and bars. Augmented reality technologies can provide access to historical and cultural information and expert assessments of the area. 61% of travelers expect a mobile app that overlays visual information about physical objects.

Good hotel/restaurant recommendations are lacking in 47% of travelers. Payment technologies in service establishments with payment memory will allow you to keep smart records, evaluate the quality of visited places and, over time, visit them again. 47% of tourists are ready to provide personal data in order to receive more personalized services.

The lack of access to home music, video and business data is a discomfort for business travelers. Cloud computing will give travelers easy access to their own music, video and data from hotel rooms. 59% of business travelers want to work with any data that is available on their home devices.

### Which companies are using cloud of everything technologies?

S7 Airlines - one of the largest and most respected airlines in Russia - is reaping a number of business rewards after developing its own block chain platform for ticket sales.

Easy Jet uses wearable technology. The new staff uniform features LEDs on the shoulders and hem to visually guide passengers. The work wear also has built-in microphones for direct communication with passengers, pilots and crew members. There is also an LED indicator on the lapel of the uniform, which displays basic information about the flight (flight number, direction of flight, etc). The company used drones to check its fleet of aircraft.

Helsinki-Vantaa Airport (Finland) improves service quality with Wi-Fi and I beacons. Airport operator Finavia has partnered with Walk base to install dozens of sensors in terminals to track passenger movements from the parking lot and further through the terminal. Air harbor services can now prevent queues, and airport shops can now send push notifications to passengers about great deals.

Virgin Atlantic has connected its Boeing 787 aircraft to a wireless network. Now the technical services of the airline and the airport receive real-time data from IOT devices on the operation of aircraft nodes. A single aircraft can produce over 0.3 terabytes of data per flight. The number of flights per year is in the thousands. Boeing's latest aircraft have wireless connectivity to almost everything from engines, flaps, to landing gear.

London City Airport has developed an interconnected sensor network and data hub to track passenger traffic. The project allows you to measure the number of passengers (through a network of sensors/cameras tracking faces), provide clients with location-based services.

Miami Airport has connected more than 500 beacons to the network, which provide detailed information and personalized services to customers in their terminals. In order to use the services based on navigation beacons, travelers need to download the MIA Airport Official mobile app. Users can scan boarding passes,

navigate between different points in the airport, and find check-in counters. Based on the distance of the beacons from the passenger, the application calculates the distance between the points and the approximate time for which it can be covered.

Lufthansa has launched a radio frequency tag network and mobile app that can track baggage from terminal to flight. Travelers can check information via Bluetooth.

Australia’s largest airline Qantas has launched an entertainment service with Samsung Electronics. To use it, you need the Samsung Gear VR headset, which some aircraft are equipped with. Onboard virtual reality helmets will allow you to watch new movies, learn about the airline’s flight directions, get information about traditions, interesting places and establishments of the destination, etc.

Rolls Royce is working with Microsoft to implement IOT technologies to make its aircraft engines “smart”. Microsoft solutions are used to diagnose potential engine failures. The sensors collect all useful vital data such as engine safety, fuel situation and air traffic data, and then they are analyzed to detect any indicators of malfunctions.

Shenzhen Airport started using An Bot in April 2016, which can work around the clock and respond to emergencies. The robot is equipped with four digital cameras; it can autonomously patrol the terminal and carry out intelligent monitoring, answer passengers’ questions about flight information, etc. An-Bot was developed by the Shenzhen Public Security Bureau and the National University of Defense Technology.

**Conclusion**

- The Internet of things will change everything, even aviation, as we are in a new era of connected aviation and speed in performance, and therefore flying is safer, more efficient and easy to manage, which is like a revolution in aviation
- This will require leaders and policy makers to embrace the modern digital age in aviation, travel and tourism. A series of actions have been identified for ecosystem participants looking to make digital transformation a success:
- There are some prerequisites to successful digital transformation. There must be a change in the culture of the organization, and the change is led by the leaderships in the organizational structure and digital functions to encourage and speed digital transformation. For example, the overall benefits of introducing intelligent automation for the workforce are often overlooked; with the focus resting on the negative impact it may have on a few specific work roles instead.

- Airlines focus on the relationship with customers through the web and improve it, but at the same time, attention must be paid to internal processes to achieve efficiency, time and cost and Fighting COVID 19 that technology can make.
- Aviation Must recognizes, Appreciate and Get Benefit of the technological gift of the 21<sup>st</sup> century in AI, Block chain, Digital Currency, Cloud, Cloud of Things, Tactile Internet, IOT, AR, VR, MR, U commerce, Data and Robotics and CLOUD OF Everything.
- Technology and the cloud of things is the best choice to take aviation to a better next level, and no matter how late the time is, it is necessary to accelerate the entry into modern technology.

**Assets from publication with us**

- Prompt Acknowledgement after receiving the article
- Thorough Double blinded peer review
- Rapid Publication
- Issue of Publication Certificate
- High visibility of your Published work

Website: [www.actascientific.com/](http://www.actascientific.com/)  
 Submit Article: [www.actascientific.com/submission.php](http://www.actascientific.com/submission.php)  
 Email us: [editor@actascientific.com](mailto:editor@actascientific.com)  
 Contact us: +91 9182824667