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An Approach to Transform
Irregular Operations (IROPS) for Airlines

- A TCG Digital Perspective

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Contents

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Summary

The very scene of Airlines conducting smooth operations each day without any disruption is an ideal condition, rather a utopia. They grapple to provide a holistic solution for irregular operations (called IROPS), which is accepted as a 'normal' in the industry. However, with the advent of transformative systems, arising out of innovative thinking and the use of hyper contemporary technologies, airlines can, now, truly handle irregular operations at scale.

With the core pillar of delivering 'Velocity to Value', this paper presents TCG Digital's perspective of how the airlines can transform irregular operations from the ways in which they are handled today as just cost centers and siloed packets of standard operating procedures.

We look at the entire gamut of IROPS from 4 different perspectives – the Passengers, Aircrafts, Crew, and Airport Operations. We, then, visualize how some of the most critical use cases across these towers can be modernized and transformed with added value.

A framework for standardization, prediction, and partnering is also proposed for handling processes and systems across these four towers.

Though many of these processes already exist in the industry today, this paper presents a holistic proposal that effectively brings the diverse processes to scale so as to reach the ultimate goal of providing best customer experience and operational excellence.

Where we stand today

Statistics taken globally reveal the following:

9 million
globally affected passengers

8.2 million
lost customers annually

$ 62 million
lost revenue yearly

ACHIEVEMENT

$ 8.3 Billion
lost revenue annually for US airlines alone

$ 250
Average lost opportunity for every cancelled flight

$ 4000
US airlines alone spend on every crew rebooking

Obviously, these numbers depict dismal performance when it comes to the industry as a whole. All of these figures translate into common pain points for airlines.

- Cost elevation and loss of revenue opportunities
- Poor customer experience leading to more defectors and sharp decline in brand value, where loyalty towards airlines has almost become a passe
- Excess fees and charges have to paid for grounded aircrafts, airport fees etc.
- Sub-optimal crew utilisation
- Below par or non-existent predictability of IROPS

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So, what options do the airlines have?

The options available to the airlines include:

- Standardize, lean out, and automate operating procedures keeping into consideration all pain points
- Optimize the way IROPS are handled
- Cater to personalized treatment for passengers based on personas and not loyalty status alone
- Ensure clear communications – both internal and external
- Bolster partnerships for ensuring maximum catchment area is catered to for passengers and ops handling
- Adopt hyper contemporary technologies that alleviate problems or help predict them
- Rely on data for decision making and operations, not SOPs alone

These options for airlines can be smart and structured. Ideated and constructed on 4 towers of functions:

1. **Passengers and booking** management
2. **Aircrafts handling** – their operability, ground time etc.
3. **Crew handling** – their compensations, legalities, training etc.
4. **Airport operations during IROPS**

Across each of these towers of function, we lay down a framework of 3 action constructs:

Smart Option	Details
Standardize and Automate	■ Intelligently automate the SOPs and other protocols and communications required for IROPS handling ■ When working with partners and alliances, standardize their SLAs and SOPs to best cater to your business needs ■ Build on alliances for increased throughput
Predict and Optimize	■ Rely on data – historic and current, based on multiple sources (conventional and non-conventional) ■ Build AI/ML based predictive models for forecasting demand, supply, constraints etc. during IROPS ■ Optimize operations based on analytics
Partner and Operate	■ IROPS handling is no longer an in silo procedure, infact, never has been ■ Build a platform with all partner data and processes ■ Rely on core competency and build imbibe integration

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Deep dive into what airlines can do

In this section of paper, we will introspect into some of the crucial use cases for each of the 4 towers and horizontally scope across the framework of standardize and automate, predict and optimize, partner and operate.

A.   ACTION CONSTRUCT 1 - STANDARDIZE AND AUTOMATE

1.   Function area - Passengers and booking management

This is one of the most crucial function areas, given this is the face and brand of the airline of passenger experience. Some important propositions here are

- Automating rebooking, refund, compensations etc. This is something that has seen rise with the pandemic in recent times, but have existed in silos with airlines or travel solution providers of the likes of Amadeus, Sabre etc.

- Automate and standardize the processes of passenger booking management as a chain of values of products and suppliers involved. Travel today is not flights alone and IROPS w.r.t airlines can cause disruption to the entire travel plan of a customer, if all are planned (read hotels, car rental, tours etc.) through the same entity.

- Customers today do not fall into standalone and discrete segments. Rather, they qualify as personas that are contextual in nature. Hence, when IROPS happen, instead of just alleviating the problems by considering the tier level or loyalty status of the customer alone, the Booking Management of the airlines should consider the contextual persona and value of the customers as well.

2.   Function area - Aircrafts handling

As obvious as it could be, a grounded aircraft means lost revenue opportunity plus additional cost and charges. Here are some ideas on how standardization and automation can help during IROPS.

- Treat aircraft handling and maintenance during IROPS as an ecosystem of players and partners, components and activities across airports. Additionally, pair them with elements like manpower planning, training etc. to provide a complete, time-based array of services, just in time.

- Automate SOPs for maintenance, service checks etc. along with the necessary documentations and workflows; thus, reducing both cost and decreasing time to respond.

3. Function area - Crew handling

Crew handling is a very critical area during IROPS that have mostly been left out in silos. Here are what we think airlines can do:

- Create SOPs for crew handling, compensations etc. for disruptions across touch points and locations
- Extend notifications management for crew to include escalation management
- Provide real time update on scenarios
- Partner with other airlines for crew handling

4. Function area - Airport operations

Airport operations is an important area that can either cause moment of magic or moment of misery for an airline during IROPS. Here is how the pain can be alleviated:

- Automate communications across systems and groups
- Data as the single source of truth for operations
- A platform with all parties involved to cater to smart airport operations during disruption, providing a 360° view

B. ACTION CONSTRUCT 2 - PREDICT AND OPTIMIZE

1. Function area - Passengers and booking management

More the intelligence that can be churned out from the data that airlines hold, more apt will be the treatment of customers that airlines can render. Here are the following aspects that can been looked at:

- Build smart and contextual customer personas for booking servicing and communications – all based on data
- Predict customer propensity to accept rebooking/refund/compensation and address with respective actionables
- Build separate value funnels for separate segments

2. Function area - Aircrafts handling

In the event of disruptions, the ability to forecast the occurrence of cascading events empowers airlines to take preventive measures or act fast to contain them. Predictive analysis, therefore, is the crux of aircraft handling, especially to avert and also during disruptions.

Here's how:
- Based on historical data like MTBF, service history or current operational data, or data for OEMs, build predictive maintenance models
- Intelligent rerouting based on parameters like presence of maintenance base, maintenance staff availability, proximity to alternate airports etc.

3.   Function area - Crew handling

When it comes to data based decision making for crew, airlines have these options to go with:

- Enhanced crew management and training models, plus crew deployment based on likelihood of IROPS, compensations in case of IROPS etc.
- Optimize crew scheduling and training based on AI/ML model

4.   Function area - Airport operations

Optimization is the most important thing that can be derived out of data, for airport operations. The following could be high touch areas for airlines to implement solutions in:

- Optimization models like rerouting to alternative airports are needed for airport operations
- Facilities management during IROPS to be based on historical records – option for smart facilities
- Deployment of staff at required touch points, with required skill sets etc., based on their experience and training in handling IROPS or other non normal operations

C.   ACTION CONSTRUCT 3 - PARTNER AND OPERATE

1.   Function area - Passengers and booking management

Today, an ecosystem thrives much better than individual entities. Passenger and booking management, especially when things are beyond normal could be a critical business area. What airlines can do are:

- Build a platform economy of all partners involved in passenger travel to provide a unified IROPS management experience, much like what OneOrder proposes
- Have a single window for passenger handling with alliance partners
- Need for data democratization across partners

2.   Function area - Aircrafts handling

Maintenance and aircraft handling through partners at non hubs or other airports using single protocol would be a very useful area for airlines to venture in. This is currently something that all airlines do, in some form or shape. However, having a unified process that allows automation wherever possible and brings all the alliances together under a common umbrella is something that can be looked into.

3.   Function area - Crew handling

Airlines would have to partner with agencies, other airlines, members of alliance and more to create a unified view of crew handling during IROPS.

4.   Function area - Airport operations

When it comes to airport operations, partnering is the only mantra to success. These are some things for airlines to look into. These can be achieved through:

- Outsource, partner and decentralize airport operations during IROPS so long as SOPs and quality is maintained
- Bring all partners under a common platform where real time data sharing is available

What we perceive from these discussions

We have to be appreciative of the fact that IROPS, although has been called as a new normal over the last decade, does not equate to something that is expected, although obvious. Dealing with IROPS can either lead to moment of magic or moment of misery for airlines. Only through a constructive framework can the same be dealt with, which is 100% based on process transformation, data based decision making and hyper contemporary technologies.

Our framework of 'Standardize and operate', 'Predict and optimize', 'Partner and operate' could open gates for airlines and other companies related to the aviation business to transform the way they look at IROPS handling. It is only an ecosystem that can lead to success, not mere partnering. That is the ethos that has to be internalized by companies

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