

Shaping the future of Airline Disruption Management (IROPS)



Methodology

This paper was commissioned by Amadeus.

Our sincere thanks to the interview participants from the following companies:

Accenture
Advantage Travel Centres
American Express Global Business Travel
ANA
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Flight Global
Gatwick Airport
IATA
Miami International Airport
PATA
Pink Elephant Communications
Small Luxury Hotels of the World
Southwest Airlines
Star Alliance
Swiss
Yas Viceroy Abu Dhabi

*“The world is a book
and those who
do not travel read
only a page.”*

Saint Augustine

T2RL

Travel Technology Research Ltd, trading as T2RL, is an independent research and consulting company that specialises in the market place for IT systems. Based on data gathered and analysed since the year 2000, it has defined and tracked classifications of airlines and their IT providers. Its research is used by airlines to enable them to make informed choices of systems and vendors, and by the vendors to help them develop products that best meet the current and future needs of the airline industry.

About the author

Ira Gershkoff is the Principal Consultant at T2RL. He has more than 35 years' experience with strategic and operational information systems in the airline industry. At T2RL, he is responsible for market analysis of operations systems used by airlines around the world. He is a recognised expert in analysing disruption problems and has written more than 20 technical papers and trade magazine articles. Prior to joining T2RL, he was the Chief Information Officer at Polar Air Cargo, a \$350 million international air freight company. He also held executive positions at Sabre, United Airlines and American Airlines.

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Foreword



The number of annual global air passengers will increase to 7.3 billion by 2034 – that's more than double the 3.5 billion passengers that will travel this year. Growth is great news, but it is a dizzying thought when one thinks about the challenges that lie ahead in order to accommodate and streamline this volume of passenger travel.

It is in the interest of every party in the travel industry to think about how we can move things forward. Airlines may appear to be at the heart of operations, but it is imperative to recognise that we, as an industry, are a symbiotic network when it comes to getting passengers from A to B. If disruption hits one of us, it will hit the rest of us further along the journey.

Moves are already being made to streamline protocols and IT systems that need re-thinking, and it's encouraging to see signs that the realisation is dawning on travel providers – it's one thing to perfect our own operations and IT solutions, but how does that help when disruption strikes an interconnected party? We are a global travel ecosystem and need to find a way to act more like one. I believe the interlining of systems and standards is the only way we can effectively improve our response to disruption.

Disruption management is emerging as a higher priority for the investment and the involvement it requires to develop, as evidenced by the findings of this report. I hope you will find some useful perspectives, a new awareness of the Return On Investment (ROI) on improving our responses to disruption, and some hope that progress is on an upward curve.

We may never be able to prevent all causes of disruption, but we can work together to ensure that when it happens, we are ready to respond with up-to-date strategies, effective operations and confidence that we can serve passengers more effectively than ever before.

Hazem Hussein

Executive Vice President, Head of Asia Pacific, Eastern Europe and Turkey, Airline IT, Amadeus

From the author



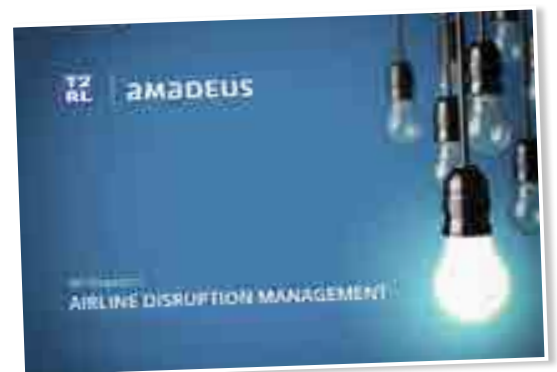
This is the second of two papers on the disruption problem that airlines around the world often face – dealing with the consequences of cancelled or delayed flights. Usually resulting from bad weather, these disruptions reduce airline profitability and impose considerable delays on airline customers.

The first paper, *Airline Disruption Management*, focused on the clinical aspects of disruption and highlighted potential systems solutions. The estimated cost to airlines and their customers is up to \$60 billion per year, or about 8% of worldwide airline revenue.

This paper concentrates more on the personal side of the disruption problem, in terms of how we can orchestrate collaboration amongst managers of various independent organisations affected by a disruption event. The customers – the travellers themselves – should also be consulted for their input on how to manage the operating schedule.

Improvements are needed on both fronts. IT systems must account for what has already happened and indicate possible solutions for the future. The managers affected by disruption are in the best position to construct a coordinated response across all the affected organisations.

During the research of this paper, everyone we talked to expressed some degree of excitement that this longstanding problem for airlines and travellers is finally being addressed. They were proud of their contributions thus far and looked forward to further progress. If this paper can stimulate a few more ideas and move things forward even a little bit, it will have done its job.



Ira Gershkoff

Principal Consultant, T2RL

Executive summary

Everyone has had the experience of arriving at the airport for a departing flight, only to find that their flight has been **cancelled or delayed**.

When multiple delays are caused by a single event, passenger itineraries and airline schedules are seriously damaged. Airline personnel scramble to reschedule flights and rebook passengers on other flights.

Often, the **disruption problem spreads virally, because the flight that was cancelled in one city was supposed to provide the aircraft for a departure from another city**. The problems tend to keep growing and it is not long before everyone is unhappy. **The estimated cost of disruption to airlines is 8% of airline revenue, or \$60 billion worldwide.**

This problem has existed for the entire history of aviation, described in the industry as irregular operations (IROPS), yet solutions have been hard to come by. While much time is spent in planning the efficient allocation of limited resources of aircraft and crews to produce a profitable schedule, there are few tools available to put the schedule back together again once it is disrupted.

Attempts to solve this problem through automation have not had much success. There are a variety of reasons for this, but the common theme is the underlying complexity of all of the component parts. For example, the passengers on a flight to or from a major city can be travelling on 40 or more distinct itineraries. Aircraft and crews often go in different directions on completion of a flight, because each is subject to different regulatory rules and physical limitations. It is like a massive jigsaw puzzle, where many of the pieces change shape as a result of unpredictable events.

Disruption – and especially weather disruption – cannot be prevented completely. But if a satisfying solution to the problem were available, it would have a number of positive impacts on various people within the airline community.

It is also important to remember that travellers are not merely pieces on a chessboard. They are travelling with a particular need – be it a business or a personal one. The end goal of disruption management is to help them get on with their lives more quickly after disruption occurs.



In this report you will find:

- KNOCK-ON EFFECTS OF DISRUPTION
- PERSPECTIVE OF THE PASSENGERS
- KEY CAUSES OF DISRUPTION
- CURRENT AND FUTURE TRENDS
- EXECUTIVE INSIGHTS
- RECOMMENDATIONS
- END TO END DISRUPTION MANAGEMENT

By the time you have read this report, airlines using Amadeus solutions could have helped **4,000 passengers** recover from the effects of potential disruption.

To find out how, see page 26 and 27 and visit amadeus.com/managingdisruption

This report will look at disruption from the perspective of many areas that are affected by it. For the purpose of the paper, disruption will refer to delayed or cancelled flights.

It will feature comments from professionals involved in disruption management and operations, and will identify the major areas where improvements can make a real difference in mitigating the effects of disruption.

As well as outlining the developments taking place to innovate and better integrate IT solutions to disruption management, this paper will take a look at how things are moving forward in other areas of disruption management, including: airline logistics, airport operations, infrastructure development, passenger care, communicating information to the public and the press, hotels and hospitality.

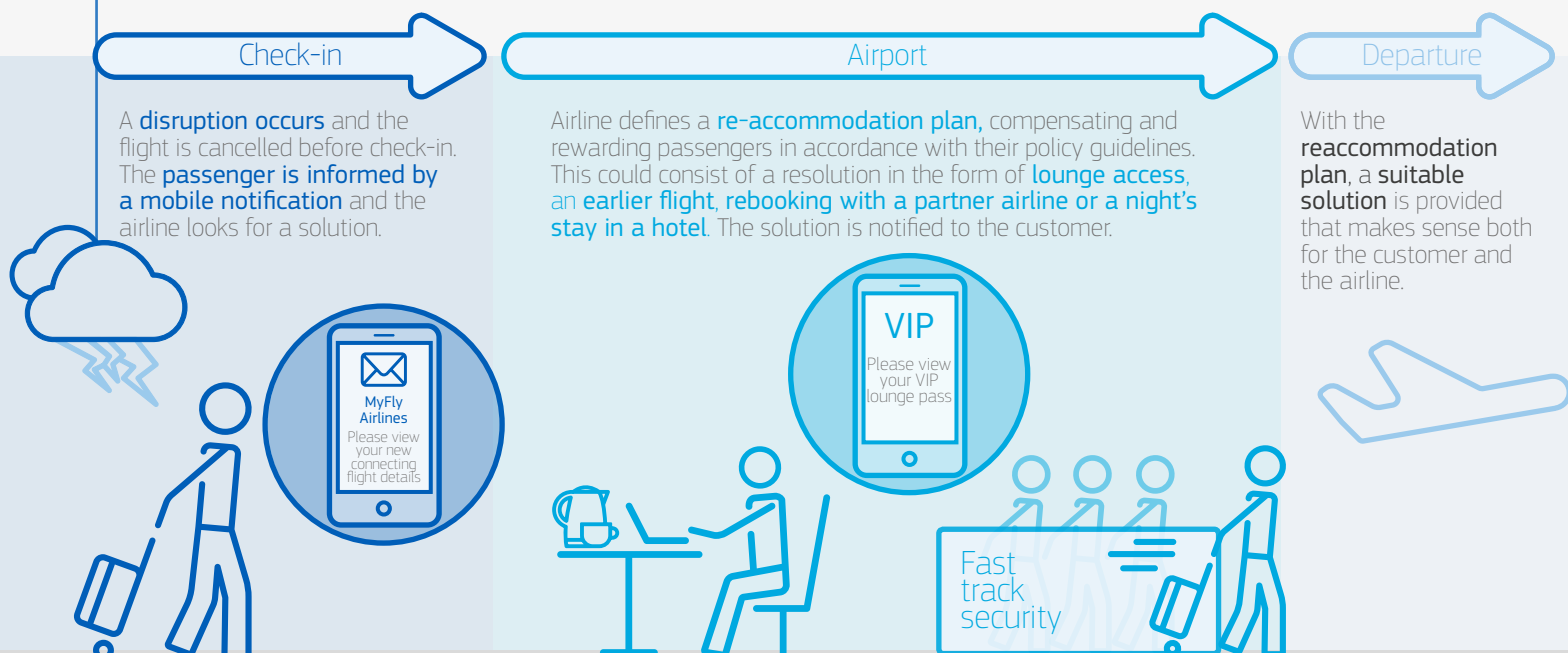
Finally, the report will highlight areas where the industry is progressing towards more holistic IT solutions to disruption – how different parties fit together and can better collaborate to enhance recovery and the mitigation of the effects of disruption.

We are entering a new phase of disruption management, and this paper will document the small yet significant steps that are being made towards a more collaborative, more automated approach.

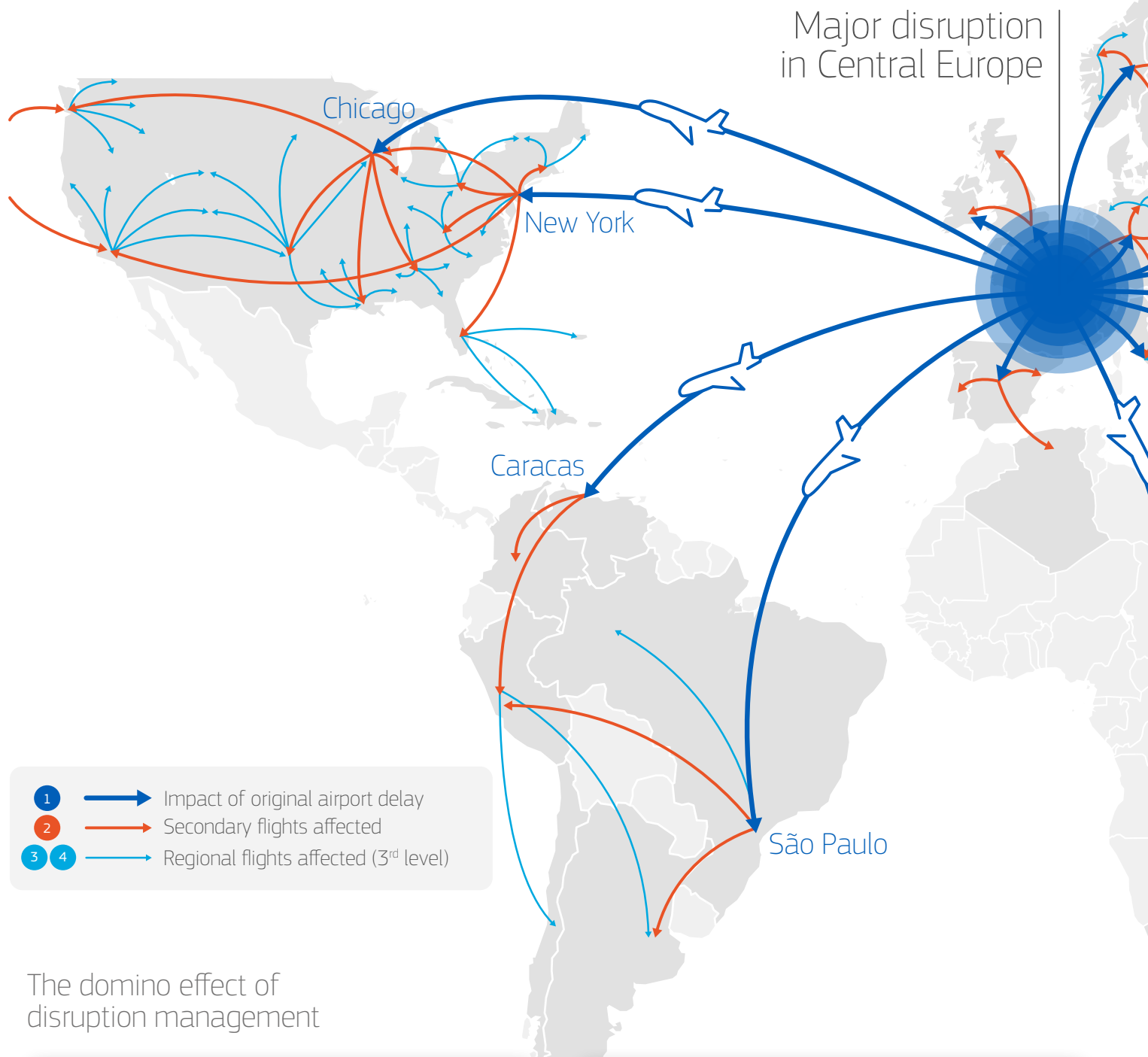
Everyone benefits from improved disruption management solutions

- Airline customers** will see faster resolution of disruption and more transparency in the information they receive. They will have a better sense of when their problem will be resolved and the steps necessary to do so.
- Airlines and airports** will see lower costs of disruption and less damage to customer satisfaction and loyalty.
- Travel partners** (e.g. suppliers, airports, hotels, local transportation) will have better visibility of events and increased ability to make resources available when most needed.
- Families and businesses** will benefit from more efficient information that affects their loved ones or employees who are travelling.

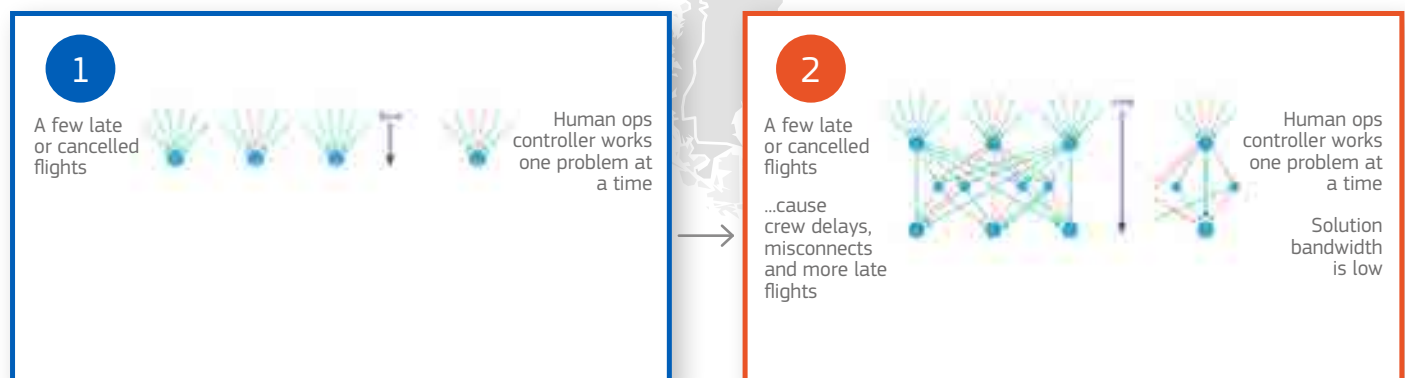
How an airline's passengers can be reaccommodated during a typical disruption...

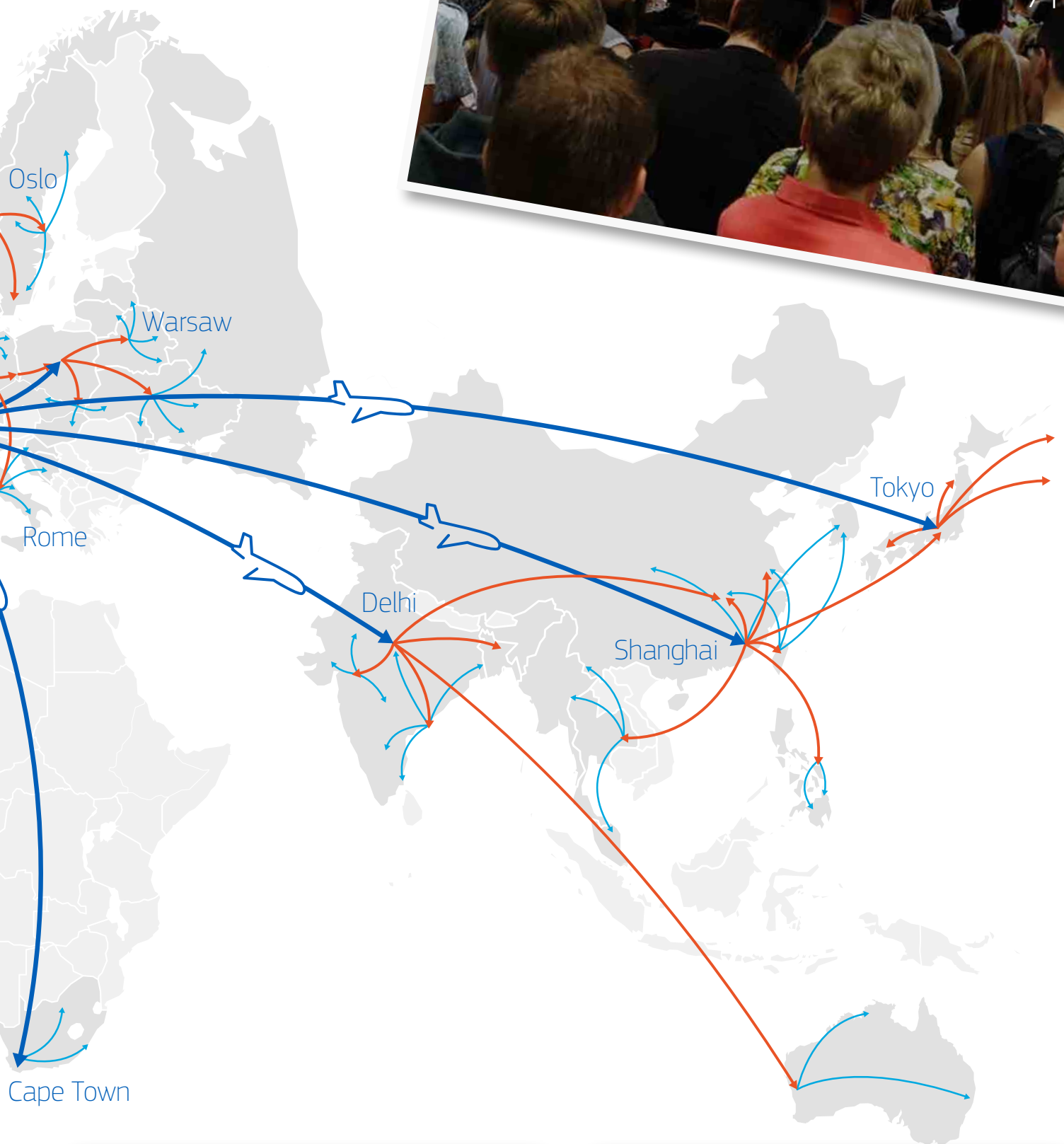


The knock-on effects of disruption



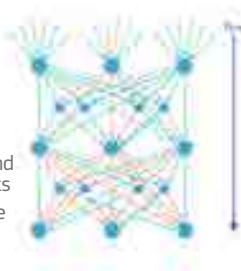
The domino effect of disruption management





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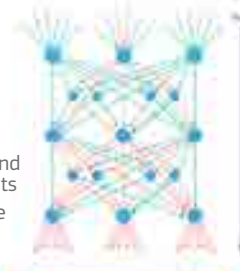
A few late or cancelled flights
...cause crew delays, misconnects and more late flights
...which cascade to threaten integrity of the entire operation



Human ops controller works one problem at a time
Solution bandwidth is low
Problem keeps growing

4

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Human ops controller works one problem at a time
Solution bandwidth is low
Problem keeps growing

Minimizing the impact of the disruption

Maximizing the use of resources

Voice of the passenger

“Gone are the days when airlines knew everything and their customers knew nothing. Thanks to smart devices, customers can now have a real-time relationship with airlines, that offers more honest and meaningful transparency.”

Jonathan Keane,
Managing Director,
Aviation Segment Lead,
Accenture

“Disruptions and delays used to be like death and taxes - passengers felt as though there was nothing they could do about them. Today, with access to online information, passengers feel empowered, so they expect more from airlines.”

Kevin O'Toole,
Head of Strategy,
Flight Global

...to an airline



@AIRLINE Stuck on tarmac for an hour in 29°C heat. Air conditioning not working properly. Why board passengers in these conditions?

← ↻ ♥ ...



Hey @AIRLINE what's the point in texting someone their flight is delayed after check-in time has opened! I'm in the airport I can read boards

← ↻ ♥ ...



Oh @AIRLINE I want to keep using you but three delays in a week. Time to go @AIRLINE city to city. #delayedagain

← ↻ ♥ ...



@AIRLINE Come on, get your act together. Botched handling of a crisis with my flight now threatens our holiday. Who is sorting it?

← ↻ ♥ ...

...to an airport



Seriously @AIRPORT we've already been delayed 3hrs, now PLEASE give us our bags

← ↻ ♥ ...



@AIRPORT no excuse for having incorrect information on your site. Flight from Dusseldorf, delay 1 hour, but not so on your arrivals page.

← ↻ ♥ ...



@AIRPORT please find my missing case! Staff at Malaga airport have confirmed luggage was put on plane.... Where is it???

← ↻ ♥ ...



@AIRPORT what is going on at baggage reclaim, been waiting ages, it's 2.55am! We have young children and want to go home!!

← ↻ ♥ ...

...to family and friends



Just found out my flight is cancelled, sleeping on @AIRPORT floor & will miss my baby's first day at school :(

← ↻ ♥ ...



Je viens juste d'apprendre que mon vol est annulé, donc je dois dormir sur le sol @AIRPORT et surtout je vais manquer le 1er jour d'école de mon bébé :(

← ↻ ♥ ...



للأسف لقد ألغيت رحلتي، سوف أنام الليلة على أرض المطار وسيفوتني أول يوم في المدرسة لابني

← ↻ ♥ ...



刚发现飞机被取消了，现在只能睡在机场。我也不想陪宝宝去上第一堂课了，真失望！

← ↻ ♥ ...

A tale of two different travellers during disruption



Family leisure traveller

“As a working mum who travels extensively for business and leisure, when I experience disruption on a work trip, I thank myself that I’m not with my family. It’s one thing to worry about fixing things for yourself, but it’s another if you have kids – they’re crying, they’re tired and they want a resolution now!

“If our flight was cancelled, the first thing I would need to know about is being rebooked. Rebooking one single person going on a business trip is very different from rebooking four of us going on a leisure trip. I would feel like business travellers would be more of a priority, so my first worry would be that as a family of four, we would probably have cheaper tickets than corporate travellers, and therefore, we’d be more likely to spend the night sleeping at the airport – without feeling secure or comfortable.

“The second thing would be accessing information rapidly. Queuing at the customer service desk is the least favourable option with young children. So I would want to know the best way to reach out to the airline without queuing – be it the call centre or my travel agent.

“What I would like when I experience disruption is for my travel providers to recognise me and know my needs. I’d like the airline, for example, to understand that if I bear the same surname as my children – and even if I didn’t – my kids and I need to be rebooked so we’re sitting in the same part of the plane. Or to find us a conveniently-located hotel. I want them to know more about my preferences, and to give us the feeling that we’re being cared for.”

Frequent business traveller

“My primary needs are for information and timeliness. I realise that the nature of airline travel is that problems will happen: I just want to be kept informed when they do. To me, there is nothing more frustrating than being kept in the dark. I also would like the problems to be addressed in as quick and efficient a manner as possible.

“I would like my status with the airline to be recognised when they make their decisions. I tend to pay fares that are higher than average and fly lots of miles with the airline and so I want that loyalty to be taken into account.

“I would like my travel management company (TMC) to be available to make changes and answer questions, but I expect to be notified about the problem directly from the airline. They are the ones providing a service to me. In addition, I expect other providers like hotels and rental cars to be sensitive about the fact that problems happen with airline travel and be flexible with me when that occurs.

“I hate it when I’m at the gate waiting to board my flight and the plane isn’t there yet, but the flight still shows as departing on time.

“I appreciate being given choices. If my morning flight is cancelled, I don’t want to be automatically rebooked on the flight at midnight – maybe I could accept a flight to a nearby airport that leaves in one hour.

“Over time, I have seen a few airlines acting in a more proactive manner and being quicker about making their decisions. I still think there’s a lot of room for improvement, though. And when I see this kind of improvement, I’m happy to reward it with my loyalty.”



Ten common causes of disruption



1. Weather

Fog, ice, snow, or heat can negatively impact infrastructure



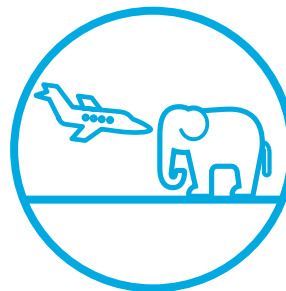
6. Civil unrest

Rioting and terrorism. Any threat to passenger safety will bring operations to a halt



2. Strike action

Staff from the airline, airport ground handling company or local public demonstrations



7. Local anomalies

Regional problems – animals obstructing runways, for example



3. Third-party issues

Problems with local transport networks connecting to the airport, for example, can lead to a build-up of late passengers in departures



8. Mechanical and technical problems

Technical issues with aircraft or support systems that take time to resolve



4. Crew logistics

Legal measures to protect staff can prevent them from working overtime to tackle disruption. Flight crews have duty limitations that must be observed



9. Operational issues

Incidents affecting the airport or airline operation systems



5. Natural disasters

Strain on operations involving mass evacuation during treacherous weather conditions



10. Health

Passengers being taken ill can cause delays or the spread of a major viral infection can isolate a country or region

Current market challenges

The disruption solutions market is very immature at this point. Airlines are not sure of the approach to take to meet this complex problem, and there are no proven procedures or best practices yet. A few large airlines are working on testing solution improvements which, if successful, will produce solutions customised to their needs.

However, they must be careful with this approach, as most airline IT departments are not particularly adept at running in “test” mode. Technology developers, both in-house and IT suppliers, have the burden of forecasting where the market is going, and if they do not get it right, they may develop something with little or no value.

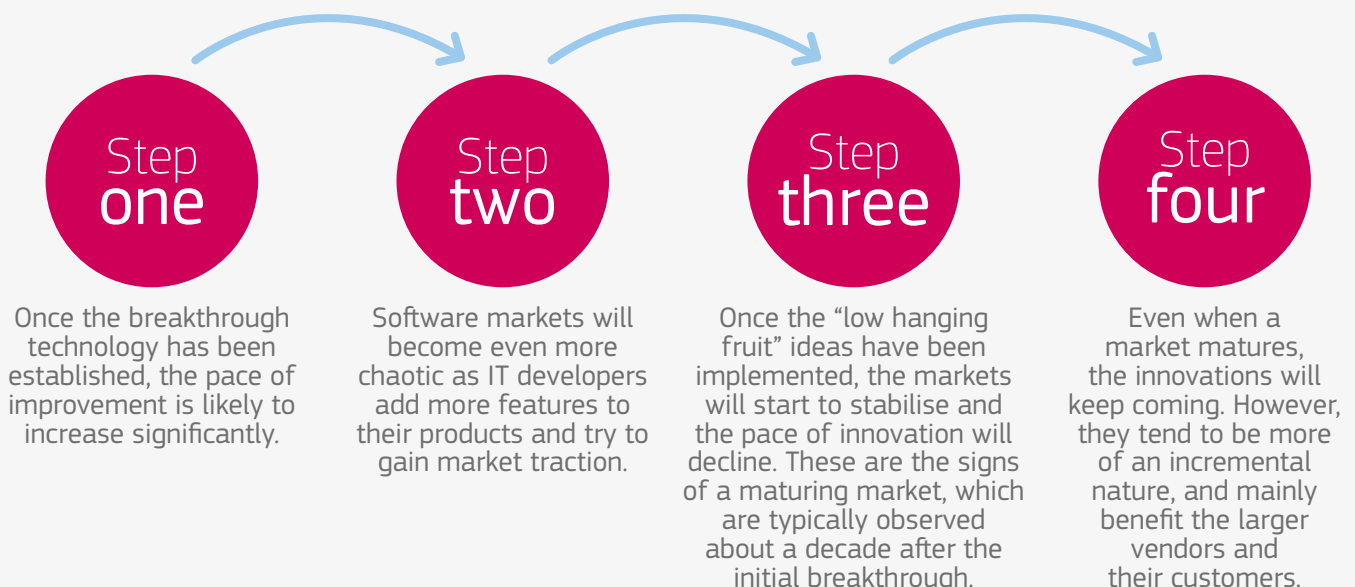
On the plus side, there is a lot of development activity going on right now. Both airlines and IT companies are investing in solutions that attack various aspects of disruption, including support for rebuilding aircraft routings, reassigning crew and rebooking passengers. New IT solutions are emerging at the fastest rate in decades, and we are witnessing a “breakthrough” in terms of technology.

The relatively high level of investment in these capabilities is a positive indicator that progress will happen sometime soon. As long as investment in IT solutions stays strong and airlines remain committed and financially interested, progress is a certainty.

Why are we heading for a breakthrough with disruption management?

1. **Rising passenger numbers** – as some airlines and airports are running at near full capacity, the effects of disruption are only becoming compounded. Therefore, now is the time to approach the issue, before even more passengers take to the skies over the coming years.
2. **A stronger passenger voice** – thanks to social media, companies are being taken to task daily when disruption occurs, in a very public arena. This places increased pressure on airlines and airports to tackle disruption management and avoid damaging their reputation with consumers.
3. **The cost** – now that there is more awareness about the true cost of disruption, anything that can potentially eat away at 8% of airlines’ total revenue needs to be addressed, notwithstanding tight budgets.
4. **More airline partnerships** – due to the increase of alliances and joint venture agreements, airlines are taking a more collaborative approach than ever before. This bodes well for continued investment in IT solutions from different parties, and the willingness to integrate their systems.

Prediction: What will happen after the technology breakthrough?



Disruption market outlook: Who's doing what?

As the central players in air travel, the airlines will lead most of the initiatives, with each carrier having a slightly different and independent approach. For the most part, advances will be incremental in nature, and will remain proprietary to the airline that invents them.

However, the game will change in the not-too-distant future - perhaps three to five years from now - when one airline creates a breakthrough technology that has a dramatic and visible impact on disruption recovery performance. This will make competitors take notice and attempt to emulate the innovation. When that happens, the innovation becomes an industry best practice.

A number of major airline industry innovations have followed this development pattern, such as advance purchase discount fares, connecting complexes at major hubs, revenue management, and crew pairing optimisation.

Airlines OPS

Airlines are:

- Attempting to develop standard procedures for common disruption situations
- Responding to regulations such as the tarmac delay rule (in the US) and mandatory compensation for cancellations (in the EU) with faster, more proactive decisions
- Collaborating with Air Traffic Control facilities, airports, travel partners, and sometimes even competitors to expand their view of resources, identify available options, and respond faster to events.

IT solutions

IT Companies are:

- Developing solution prototypes and seeking to place them with airlines interested in being launch customers
- Improving the productivity of airline flight controllers and field managers.

Big data

The academic community is conducting research on new mathematical formulations that could help reduce the impact of disruption and/or enable faster recovery.

Passengers

Passengers affected by disruption are demanding greater visibility, more information, and personal input into the resolution of their own situation.



“Market outlook is therefore very upbeat. If innovation patterns prove to be true, we can expect continuous, meaningful improvement in disruption recovery systems – which will translate to higher airline product quality and profitability. Today, in 2016, we are at the very beginning of this uptrend.”

Ira Gershkoff
Principal Consultant, T2RL

The result of all this activity will be the steady advancement of state-of-the-art disruption recovery techniques over the next few years.

*“Vision without action
is merely a dream.
Action without vision
just passes the time.
Vision with action can
change the world.”*

Joel A. Barker



Industry trends: Future vision

Significant improvement in the airline industry's handling of disruption will result from small improvements to various aspects of airline operations.

At the same time, better communication between operations managers and their counterparts in the airline service companies will lead to a more collaborative environment. Even airlines that compete vigorously with each other day-to-day will be able to find common ground to work together when disruption happens.

As system and procedural innovations improve technical capabilities, the people side will evolve as well, making better decisions and executing coordinated responses. The likelihood is that significant progress will be made over the next several years. We will be able to look back and see a series of small steps that collectively made a big and noticeable difference.



Jim Crites

Executive Vice President of Operations, Dallas/Fort Worth Airport

"In five years, you're going to see new relationships in place. Where airports have previously been a silent, unacknowledged partner, you'll see them being an integral partner to all air carriers. The carriers are going to be working in real-time with these airports to create better outcomes in terms of when an aircraft is diverted and how it's serviced, and there'll be an ability to recover hub operations more efficiently and effectively."



Bob Montgomery

Vice President of Airport Affairs, Southwest Airlines

"Our service culture is focused on trying to have all employees exhibit a warrior's spirit, a servant's heart and fun-loving attitude. We continue to try and integrate this culture and talk about it at every opportunity."

"We hope we've shown that passengers can serve themselves electronically during disruption, for example, by calling our reservations centre – we are opposed to people standing in line and feeling frustrated. A lot of our automated systems are designed towards helping customers help themselves, rather than getting somebody to wait on them."

"We're doing all kinds of things so that when disruption happens, we can respond very quickly. A lot of this involves technology – we have scores of teams working on hundreds of individual problems, so that we can respond better."



Southwest 

Industry trends: Changing mindsets



Evan Konwiser

Vice President, Digital Traveler, American Express Global Business Travel

"We believe that travellers expect to be proactively helped, not reactively helped. This means getting solutions delivered to them at disruption time, not having them call and wait to look at options.

"The airlines have become much better at this; certainly the larger carriers are starting to get much better at re-accommodating people, and are creating digital, self-service touchpoints for re-accommodation, which is still relatively new, and drives a lot of satisfaction for folks when they're disrupted. But the TMC plays a major role here as well, such as looking across airlines to get travellers to their destination.

"Proactivity is something we are investing a tonne in. We are making all of our contact centres outbound as well as inbound – we want to reach out to travellers when there's a disruption, not just wait for them to call us. Pivoting our entire infrastructure to do that is one of the things we're working on. We're rolling out a Proactive Traveler Care service across our network."

Jim Crites

Executive Vice President of Operations, Dallas/Fort Worth Airport

"The airlines are now moving to the next stage of trying to work out the details and optimising where their aircraft are going – and they're starting to map out disruption plans, in ways so that they won't adversely impact one another.

"We're at the rudimentary stages of this right now. We're at the leading edge of bringing airports into the world of collaborative decision-making, and having support for software that can enable better decision-making in real time."



Ken McLeod

Corporate Director, Advantage Travel Centres

"During disruption, our members can organise a private plane to get people home if necessary – one of our members did it for £5,000 from France one-way for six passengers during a two day traffic control strike. So it cost under £1,000 for each of them, which becomes a lot more manageable. If it's for four corporate travellers or more, then the option of a private jet becomes very real indeed – especially during a strike, as a private plane can get round that obstacle."



Industry trends: The passenger



Greg Chin

Communications Director, Miami-Dade Aviation Department

"Recently, we had our worst thunderstorm in the past three years, with more than 100 flights delayed or cancelled. We activated an area for stranded passengers to stay overnight, a hospitality area that, when we have a large disruption of service and passengers need somewhere comfortable to spend the night, we can open it up.

"The area is at our busiest concourse, Concourse D. It's an auditorium that we'll open up in extreme circumstances, where people can lay down in cots, have some space for their kids and try and get a good night's sleep until they get rebooked.

"We also work closely with the media, and we use social media to alert passengers to expect delays and cancellations while the airlines get caught up."



Bob Montgomery

Vice President of Airport Affairs, Southwest Airlines

"We orchestrate our turns so it's almost like a pit stop at a Formula One race. Everybody converges on the aircraft to do the provisioning, the water service, to take the trash out, to clean the airplane, to bring on snacks, to get passengers off and on.

"And that's just the way we operate on a regular basis, with that mentality of having a sense of urgency, of trying to cut as many prudent corners as you can in order to do things quickly. All those things add up. And when we get into disruption, they become more important.

"But do we just want to be a bunch of automatons that just get the plane off the ground on time? Our customers have needs, and sometimes those needs are in conflict with that aim. You have to be comfortable with facing up to those tensions."



Eddy Bierman

Concierge at The Dylan Amsterdam, a member of Small Luxury Hotels of the World

"When a guest has experienced disrupted travel, we automatically prioritise their room, so that it is ready upon their arrival. After a gentle airport pick-up in our limousine, with refreshments adjusted to the taste of the guest arriving, the driver gives the hotel a two-minute warning, so that upon arrival, the concierge is standing outside to immediately assist the guest with their luggage."



Paula Tannous

Director of Sales and Marketing, Yas Viceroy Abu Dhabi

"Our team works very closely with all partners to ensure they stay abreast of flight disruption – especially for our Grand Prix guests, who have paid for expensive tickets.

Our sales team are always in direct communication with our partners, who provide specific details about guests' estimated arrival times to ensure we are always fully up-to-date and can make all necessary arrangements."



Industry trends: Innovation and automation



Christian Draeger

Director of Customer Experience, Star Alliance

“We’re already starting to engage with customers who experience what I call “almost disruption”, for want of a better word. We have Connection Centres in airports, which identify customers who are likely to be exposed to disruption. We have the ability to shortcut the operational system at an airport by expediting these passengers: picking them up on arrival, giving them a direct transfer to their next gate and assisting them. We have opportunities to expedite the baggage, so that it will take 20 minutes instead of 45 minutes to go through. We already feel that it’s important to offer our customers the possibility to prevent disruptions which are on the horizon.”



STAR ALLIANCE

Natsuki Yoshida

Manager of Passenger Services, Planning Operations and Airport Services, ANA

“Previously, all the disruption care was handled by the airports. Now, we are sharing the responsibility with the airport when it comes to helping passengers. Last December, we opened an interior 24-hour organisation for disruption handling in our Tokyo headquarters, which has approximately 15 agents dedicated purely to rebooking, ticketing and last-minute aircraft changes.”



Stéphan Copart

Head of Strategy, Industry Services Transformation, IATA

“We have a number of procedures and standards in place today that cover how to use inventory from other airlines, i.e. how to re-issue tickets from one airline to another during disruption. We have put in place initiatives such as Fast Travel, addressing directly proactive IROPS recovery through one of its six projects which is called Flight Rebooking.”



Chris Wilson

Head of Stable Operations, Gatwick Airport

“In today’s world, passengers crave real-time information and updates. We are constantly investing and evolving our IT systems so that we can provide new ways of communicating with passengers. The development of a community wide app across the airport means that all staff and airport partners now have access to real-time information which they can share with passengers.

“Investment in new technology, such as the roll-out of the world’s largest self-service bag drop area and the introduction of e-gates for returning passengers, is helping to reduce queue times and ensure passengers can take greater control of their journey. This is particularly important during times of disruption, as it frees up vital staff resources to assist where it is most needed.”



Dan Agostino

Assistant Aviation Director of Operations, Miami International Airport and Miami-Dade Aviation Department

“We use a device called SafeGate which – during inclement weather, when the ramp crews are brought inside – allows the aircraft to dock itself. It tracks the plane down the centre of the tarmac, and basically tells it when to stop and park. At that point, you can put a jet bridge on and offload the passengers with literally nobody on the ground, so at least the passengers can get off the plane.

“We have the whole North Terminal equipped with this device, and we’re looking to extend it to J Concourse. I personally believe it’s essential as we move forward in the environment that we’re in, with frequent lightning.”



Industry trends: View from the boardroom on collaboration



Dan Agostino

Assistant Aviation Director of Operations, Miami International Airport and Miami-Dade Aviation Department

"I think in Europe, collaborative decision-making has been a practice for quite a few years. We're now seeing the first steps of it here in the US. I think Europe moved a little quicker because airport capacity there is a bit more restricted, so their ability to communicate collaboratively was probably more of a need than it was for the US. We're not moving forward at a fast pace yet, but I think we have to."



Christian Draeger

Director of Customer Experience, Star Alliance

"For us to manage disruption at an alliance level, we need to ensure there is an alignment. We facilitate dialogue between our member airlines, where we get them together and allow them to share best practice and common processes. We also share operational data with them, so that they understand where the main transfer channels are, where you have a certain amount of predictability in terms of disruption – due to weather conditions or being more exposed to air traffic delays. We have this kind of data mining that allows us to predict disruption."



Jonathan Keane

Managing Director, Aviation Segment Lead, Accenture

"Airlines are striving to improve the way they manage both minor and major disruption. Industry consolidation, increased competition and improved capacity discipline have, however, all contributed to higher load factors that make accommodating the sheer number of disrupted customers on occasion exceptionally challenging."



Stephanie Jaun

Director Head of Customer Irregularity Operations Management and Service

"The collaboration between airlines during disruption management is essential to SWISS. As a mid-sized airline, and with today's high seat loads throughout the industry, we frequently need the remaining capacity of other airlines to offer a quick alternative solution for our disrupted customers. SWISS is currently engaging in the industry to further strengthen and find new, quicker forms of collaboration, and which strive to set new standards in the way of thinking within the industry."



Mario Hardy

Chief Executive Officer, Pacific Asia Travel Association (PATA)

"I can understand why in the US and Europe, disruption management is an important issue, whereas in Asia, the concept of consumer protection isn't widespread and therefore there is less pressure on businesses to compensate. It will likely change in the future as the ASEAN Economic Community further integrates. It will probably take some time for each of the different policies to be common between countries. As the middle class in the region continues to expand, tourism numbers will grow and air traffic congestion will become more common. This will increase pressure on infrastructure and consumers will push their government for more protection against flight disruption."



Stéphan Copart

Head of Strategy, Industry Services Transformation, IATA

"We have an airline data model that we are trying to push as part of our Simplifying the Business programme. It helps make all the airlines speak the same language and work with the same IT format, so that would help with the exchanging of messages by automating the process. When it comes to operations such as ticketing, reservations, revenue accounting and billing, it's important to have common standards and procedures for airlines to work to."



Jim Crites

Executive Vice President of Operations, Dallas/Fort Worth Airport

"As the airlines worked towards more sophisticated solutions for their operations management, we were doing it independently of them. Now we realise that we need to integrate. If we really want that next level of capability, we've got to have shared solutions."



Chris Wilson

Head of Stable Operations, Gatwick Airport

"Collaboration with our airport partners is a key priority and an important tool in minimising disruption. One such example is our collaboration with rail companies, where in times of disruption, we have been able to prioritise the routes between London and Gatwick to minimise any impact on our passengers. We try to be as proactive as we can in working with a wide range of third parties to ensure the best passenger experience."

Ten rules for communication during disruption

Bill McFarlan, Managing Director of Pink Elephant Communications, shares expert strategies for communicating effectively during irregular operations:



1. Establish the facts

We need to drill down, and get the facts about what happened and decide who needs to know them. That makes us think about the team we need to assemble and what channels of communication we are going to use.



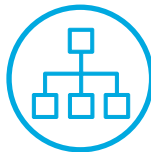
2. Separate public from private information

There will always be things we can share, and information we must hold back - whether that's because it's market-sensitive or security-sensitive. **What we say must be truthful and accurate.** Write two lists: one of things you can definitely say, and the other of questions that may well be asked.



3. Say what you can as fully and as soon as you possibly can

A lot of organisations are afraid to share information in case they say the wrong thing, but most passengers and travel agents would complain that they were kept in the dark. The companies that are proactive in telling what they know immediately are the companies that start to win back trust.



4. Always lead with what's most important to each audience

We have to categorise facts and say, "These things are most important to travel agents, these are most important to passengers, these are the most important to shareholders." Put the things most important to each audience at the top of each category. How are they going to be affected, and how is their problem going to be solved?



5. Say sorry

Some corporate lawyers say that saying sorry means admitting liability. What we're actually doing is empathising with people. The repercussions will come if we fail to say sorry.



6. Be optimistic

It's easy to tell people defensively what we don't know, and that's actually unhelpful and frustrating. Instead, say, "We've yet to establish why the plane is being delayed, we're looking into all possibilities, and as soon as we know what is going to happen, we will let you know." By staying optimistic, we help people to look for the possibility of positive solutions.



7. Avoid "watering down" words

Words like "hopefully" and phrases such as "we're doing our best" cover a multitude of sins. We should only tell people that things are done, not that we're trying. The words passengers want to hear are ones that convey certainty: "We're committed to getting you at the earliest possible opportunity to the airport." "We're determined..." "We have a clear goal to..." Not only are we committing to the outcome, we're committing to an attitude.



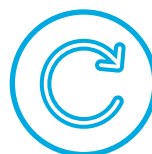
8. Answer direct questions with a background explanation

If we're asked, "Will this plane leave today?", and we don't know the answer, we can respond with: "It's too early to say. We're doing x because of y. If x works, we'll be able to get airborne. Otherwise we'll do z. We will get it sorted and we will let you know at the earliest opportunity when the plane will take off."



9. Keep abreast of changing information and reaction to your news

Although we need to know what customers are saying on Twitter, we need to avoid individually reacting to every single gripe from each passenger. Instead, come up with a statement with the latest fresh, accurate, honest information, and share it via these channels. Keeping people informed at each stage keeps them calm.



10. Update regularly and manage expectations about progress

Having a team of people who are constantly checking that the correct information is being passed on through the correct channels is essential. We need to keep on telling people what we do know, and keep updating them with the latest information, remaining calm, friendly and apologetic.

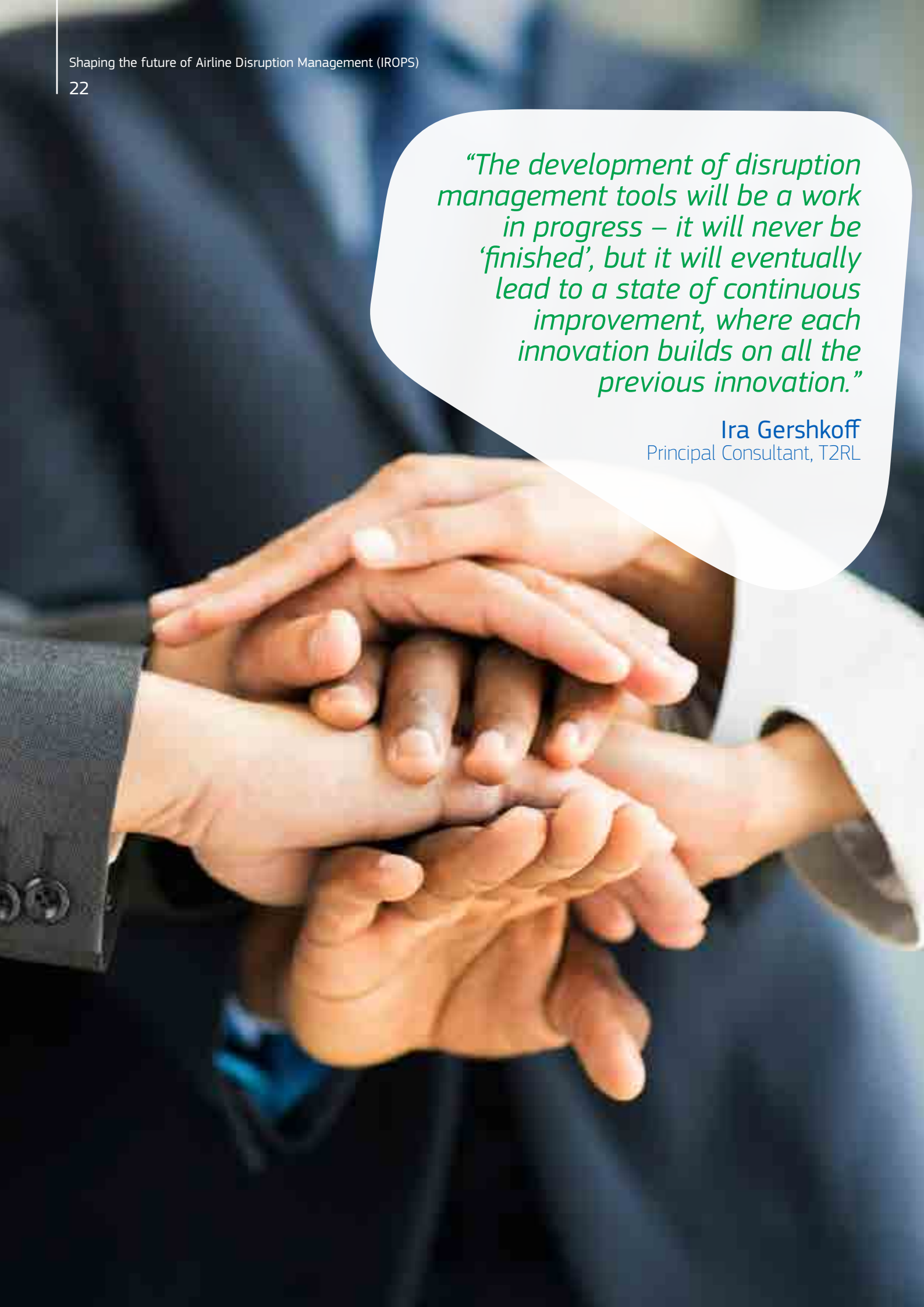
*“Expect the best, plan
for the worst, and
expect to be surprised.”*

Denis Waitley

“The development of disruption management tools will be a work in progress – it will never be ‘finished’, but it will eventually lead to a state of continuous improvement, where each innovation builds on all the previous innovation.”

Ira Gershkoff

Principal Consultant, T2RL



Collaboration: Continuous industry improvement

By finding ways to integrate IT solutions, the potential for tackling disruption when it occurs, and mitigating its effects, is much stronger than if airlines maintain systems that only work independently. Here's how:

Preventing the spread of disruption

As disruption management tools improve, and airlines become more proficient at addressing the most difficult problems resulting from disruption, additional capabilities will emerge to address secondary problems.

For example, if London operations are disrupted by a fog, this is likely to have an impact on other European airports. A solution that would keep London aircraft flows balanced – through cancellations and flight consolidations – would isolate the problem, keeping it from growing and spreading. Such a solution might be offered to airlines as an add-on to their operations control system.

Sharing passenger information to recover from disruption

With shared application program interfaces (APIs), the reach of the disruption tools could extend to suppliers and travel providers at different stages in the journey cycle – such as hotels, airport managers and ground transport providers.

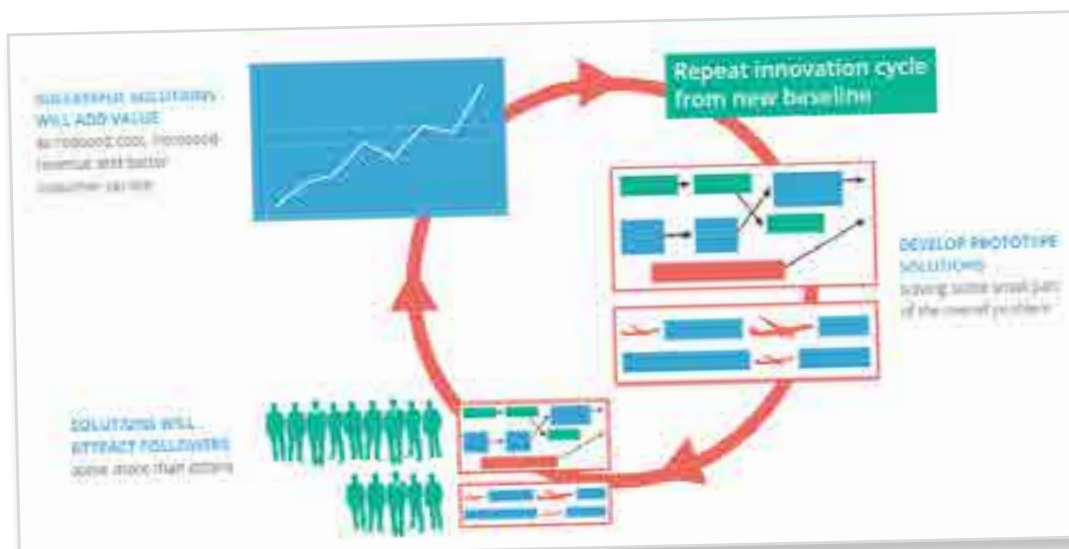
Airlines are privy to useful passenger information that, if aggregated in the right way and passed on to third parties that are also serving the passenger, could provide ample opportunity for reducing the knock-on effects of disruption by giving other providers the chance to recover some of the damage.

The passenger needs to “opt in” for data sharing that enhances their travel experience, and the process must work within a framework that respects data security and privacy.

Maintaining end-to-end luxury travel

This is particularly relevant for the luxury travel industry, where the expectations of high-spend travellers are much higher, and therefore, disruption is more detrimental.

As mentioned previously, it will never be possible to guarantee that passengers will avoid disruption, whatever they spend. What could make the difference in maintaining the trust and custom of these valuable customers, is for airlines to work with third parties to offer a service that compensates for disruption in an appropriate way.



Continuous improvement/innovation cycle for IROPS solutions

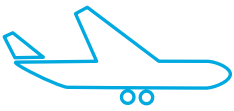
Collaboration: One size does not fit all

An airline's adoption of disruption tools and procedures will depend on where that airline is in its corporate life cycle. Nevertheless, airlines of every size will have options for improving their responses to disruption.



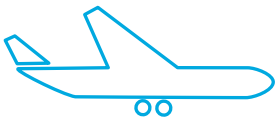
Start-up and early-stage airlines (1-30 aircraft)

- This group is not likely to address disruption solutions very much. Their focus is on building a brand and customer base, plus generating enough cash flow to survive.
- This does not mean that small airlines should ignore the problem; rather, they should develop some simple, manual recovery procedures to use when disruption occurs.



Small airlines (20-80 aircraft)

- Small airlines are likely to adopt interactive tools from IT providers. They have an established brand and customer base, so their short-term survival is not a key worry.
- However, they will not have the resources, skills or inclination to develop tools themselves. They are most likely to be attracted to tools marketed by the same IT provider that has provided them with their operations control/dispatch solution. This avoids handling multiple systems.
- Progress beyond interactive tools will be difficult for them at this size, because the business case will be relatively weak.



Medium-size airlines (50-200 aircraft)

- Airlines at medium size will already have considerable experience in working with IT providers, as they do not have sufficient IT bandwidth to consider in-house development.
- They will create a framework for implementing disruption management tools by adopting a provider's data management architecture (which enables integration with existing systems).
- They will start with interactive tools and then possibly progress to automated solutions if the business case is sufficient to justify it. They are at an ideal size for innovating on their procedures for managing disruption, but not to customise their approach.



Large airlines (150+ aircraft)

- The largest airlines have the bandwidth, resources and flexibility to customise their disruption strategy.
- These airlines can choose to develop their own tools if they have the right in-house skills and feel they have unique requirements (as some have done so, already), or they can integrate vendor tools into their existing infrastructure.
- Because of their scale, they are more likely to be able to show more benefits from relatively small, incremental changes than smaller airlines would.
- The disadvantage large airlines have is inertia. They will find it difficult to alter established procedures because even simple changes require a major implementation effort.

The ideal IT solution for disruption management

Re-accommodation is complex – it becomes a jigsaw puzzle with multiple different answers, some better than others.

Databases must be integrated into the methodology, and the data will come from sources both inside and outside the airline. Since rebooking inventory is limited, the available inventory must go to the most valuable customers. However, determining which passengers are the most valuable is a difficult problem, and the answer will vary based on a number of parameters.

As re-accommodation capabilities improve, the integration of other datasets both inside and outside the airline will continue to grow in tandem, and the infrastructure of connected databases will enable additional capabilities.

In ten years time, the integration of the Passenger Service System (PSS) and its associated commercial systems on the airline operations side will have matured to the point where a change in one database or system will be immediately reflected in the activities of the other systems.

IT Systems

Full integration of IT tools, including:

Passenger Service System (PSS)

Departure Control System (DCS)

Airport Operation System

Passenger Recovery Tool

Flight Recovery Tool

Customer Experience Management

Frequent Flyer Databases

Inventory of Ancillary Services

Schedules of Other Airlines

Bag Handling and Tracing

Passenger Compensation Management



These feed into the operations systems of the crew and ground handling company

1. Re-forecast

- Understands how valuable each passenger is and why – their revenue contribution to this journey, their revenue history, their frequent flyer status, the cabin class they are travelling in, the purpose of their trip (business or leisure), outbound or homeward bound.
- Obtains data on partner or competitor airlines' booking levels and available capacity, in order to analyse rebooking options (with competitors, this may mean relying on algorithms based on real-time market load factors).
- Identifies possible connection opportunities when a suitable direct flight may not be possible, including the option for the passenger to land at another airport.
- Highlights whether operations will need to arrange a one-off flight to transfer disrupted customers to another airport (for example, in inclement weather conditions).

2. Rebuild

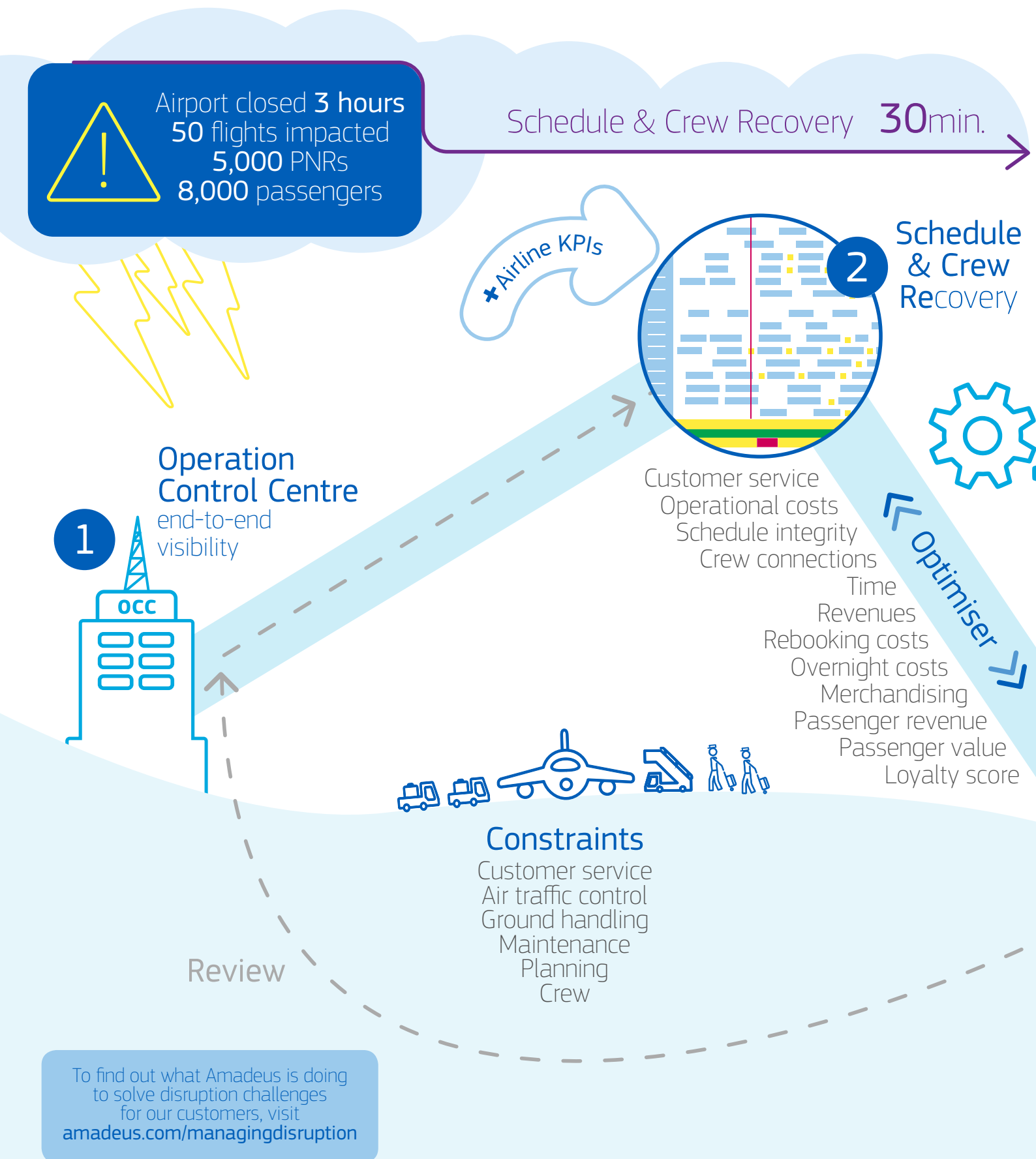
- Attempts to rebook the passenger onto another suitable flight with the airline. This is always the preference, but if not, follows the following hierarchy:
 - Subsidiaries – airline used for rebooking is in the same corporate family
 - Joint venture partners – if two airlines have an agreement to pursue a market jointly, then re-accommodating a passenger on a partner carrier helps both
 - Alliance partners
 - Codeshare partners
 - Bilateral agreement partners
 - Airlines not competing with the original booked airline
 - Competitors to the original booked airline.
- Recognises whether the traveller has paid for an ancillary service, such as a seat upgrade, and the need to maintain this service when rebooking, if at all possible.
- Generates a number of possible options to present to the traveller.

3. Recover

- Gives the passenger the option to choose from a few suitable re-accommodation options. If they refuse options, these will be used as inventory for other passengers.

End-to-end disruption management

Case example of disruption management recovery timings using Amadeus Solutions



Passenger Recovery 40min.

Solution found for all passengers within 70 minutes



Digital



Airport agent



Self-service



Reaccommodated passenger notified

4



Recovery Plan

Reschedule, Rebook, Reissue, Re-route bags, Re-accept on DCS (Departure Control System) based on each passenger profile

Passenger Recovery

3



+ other airlines' availabilities



Recommendations

If we view disruption development projects as parts of a complex system involving implementing applications software, systems integration, database management, personnel training, continuous improvement processes, and executive oversight, then **the implementation process is very different from that of a mature, proven system**, such as corporate accounting.

It requires a different management approach and mindset, independent of whether an airline chooses to build its own tools or partner with IT developers. Airlines that are upgrading their IT disruption mitigation capabilities may find the following guidelines helpful:

Beware the hidden costs of training

Most managers know that they need to budget time to train personnel. In addition, extra staff will be required to manage the operation during the first few weeks after a new system is implemented.

Once the needed systems are in place, practise!

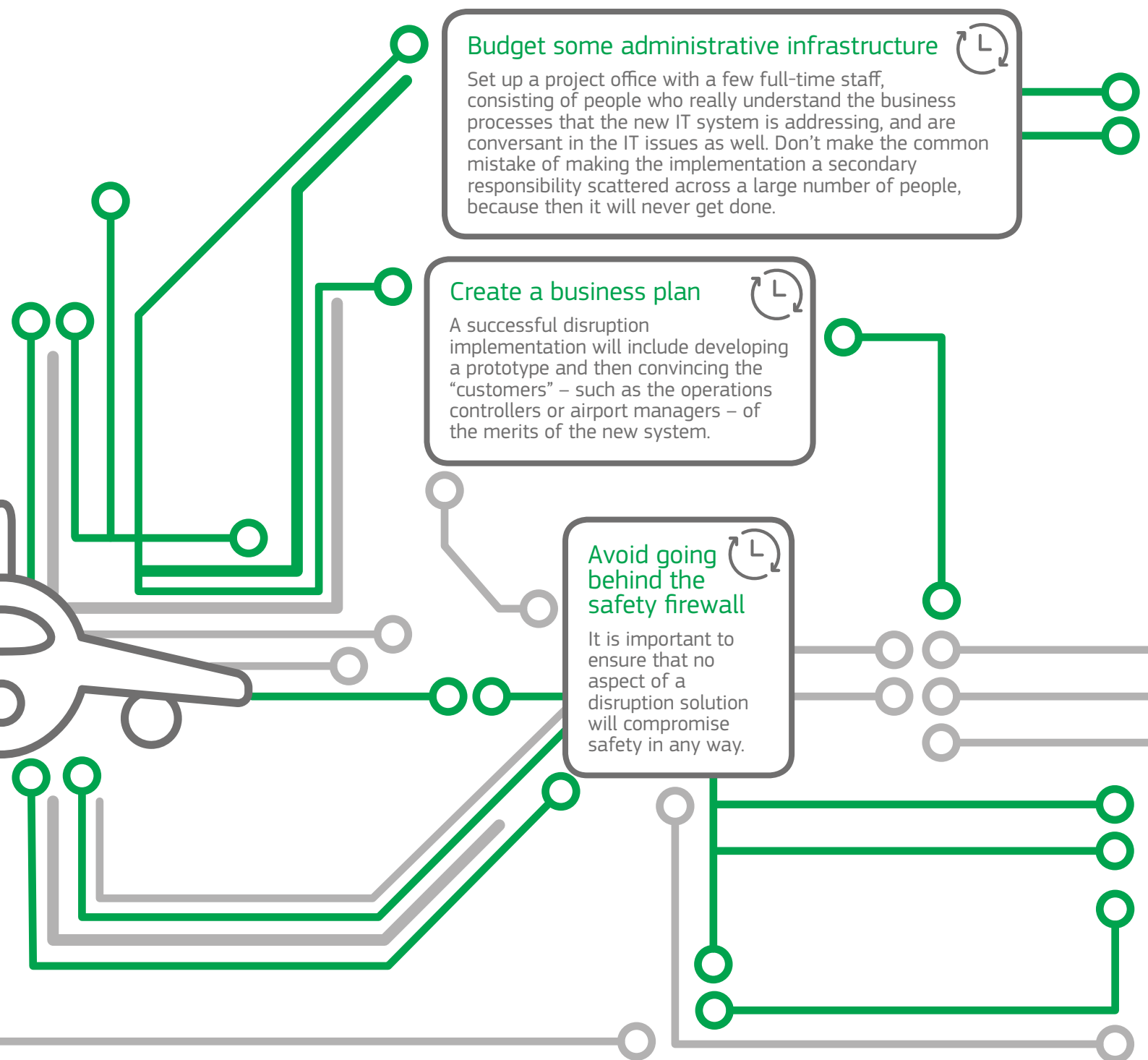
Airline operations personnel need to practise new drills. The inevitable result of skimping on practice sessions is unreliable performance, driven by a collection of preventable mistakes that adversely affect operations and customers.

Judge success not by achieving savings or performance goals, but by continuous improvement and learning

Some improvement ideas will produce weak results or fail outright, for unforeseeable reasons. Those represent dead-end paths to be avoided in future efforts, not fundamental flaws in the approach. Scaling back the implementation efforts just because expected benefit goals have not been fully achieved is almost never a good idea.

Manage development of performance metrics, in parallel with everything else

Metrics are crucial for assessing how well solutions are working, as well as providing the benefits side of a business case. They will help with acceptance of the business case for the IT system by senior management.



These guidelines represent a formula for airlines seeking to improve their disruption capabilities over time, starting from a point of little or no computer support – i.e. using manual recovery processes – and evolving incrementally to having a systems portfolio that will provide real value in terms of recovery capability and cost reduction.

It's important to progress in manageable small steps, because there are too many moving parts at any airline to orchestrate a "Big Bang" type of transition. Even though each step is small, the overall improvement in capability over time is likely to be very significant.



“First impressions are important, but the last impression we leave with the customer will leave the most lasting impression.”

Shep Hyken

Conclusion

This report sought to represent current perspectives and trends in disruption management for airline IT systems, by gathering insights from professionals working across a range of roles in aviation and other segments of the travel industry.

It has been encouraging to see the shift in how the industry views disruption management, and this paper illustrates how developing disruption mitigation tools is becoming much more of a priority, with solutions being sought in a variety of areas – from moving to automated rather than manual back-end processes, to finding ways to serve passengers in more efficient, proactive ways. All in all, it's clear that all parties have started to see the return on investment of disruption management tools.

What's also positive, is the change in the willingness of airlines to find ways to collaborate with each other (even competitors) and other third parties to facilitate better responses to disruption. As more and more passengers take to the skies over the coming years, being able to mitigate the impact of disruption will become a more crucial aspect of customer service. The fact that current levels of investment in IT systems integration and tools remains high is a good sign that significant progress is not far off.

Change will not happen overnight, and continued enthusiasm for tackling disruption is necessary for maintaining momentum and staying on track. Nonetheless, by making small, gradual changes in the right direction – towards a more collaborative, more integrated and more traveller-friendly, industry-wide approach to handling disruption – we should see some strong results in the years to come. The beneficiaries will include not only airlines, but also airline service companies, suppliers, and – most importantly – the travelling public. All will share in the recovery of that \$60 billion annual cost of service disruption.

Find out more

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