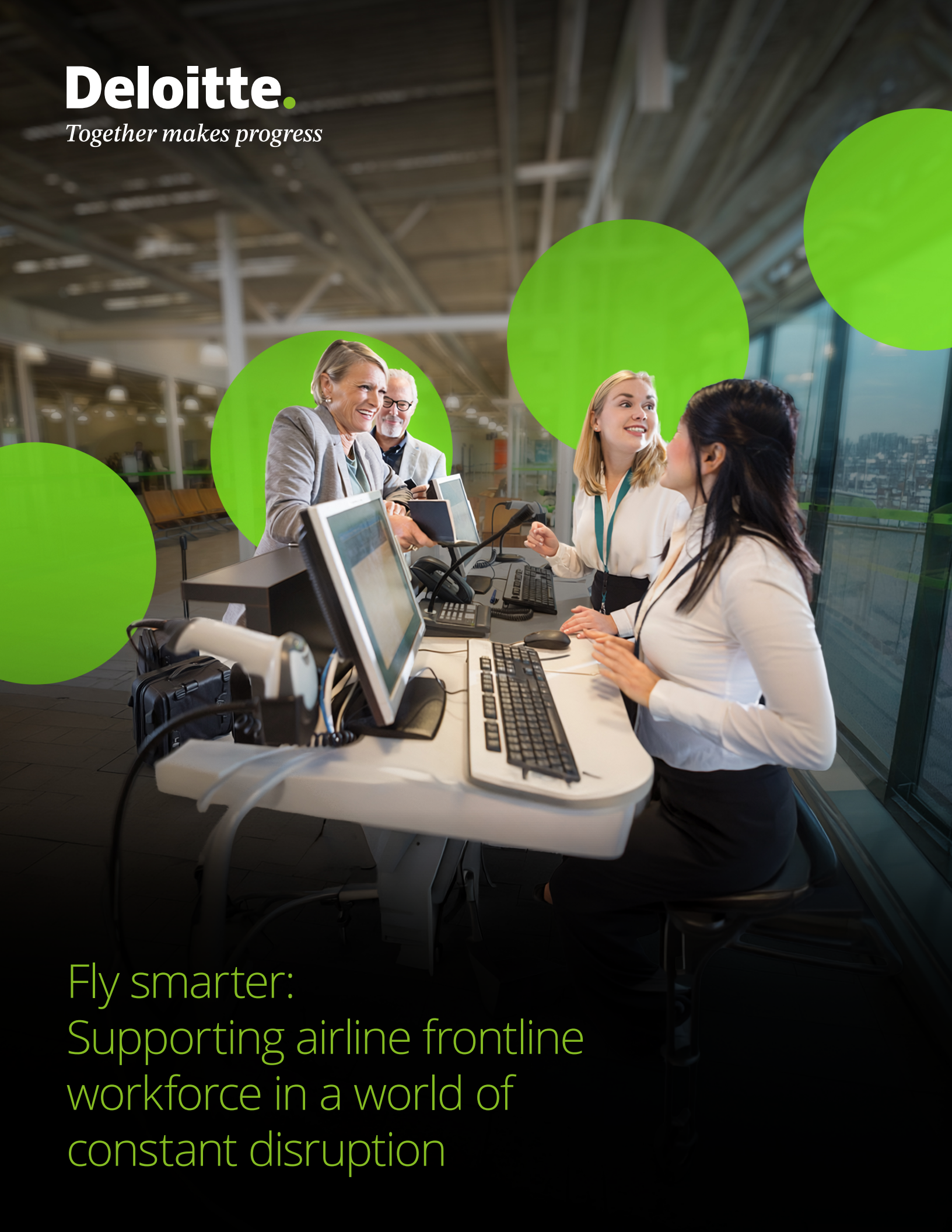
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Together makes progress



Fly smarter: Supporting airline frontline workforce in a world of constant disruption

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Introduction

How digital tools can help airline frontline teams work more efficiently, better, and safer, without losing the human touch.

The turbulence airlines navigate

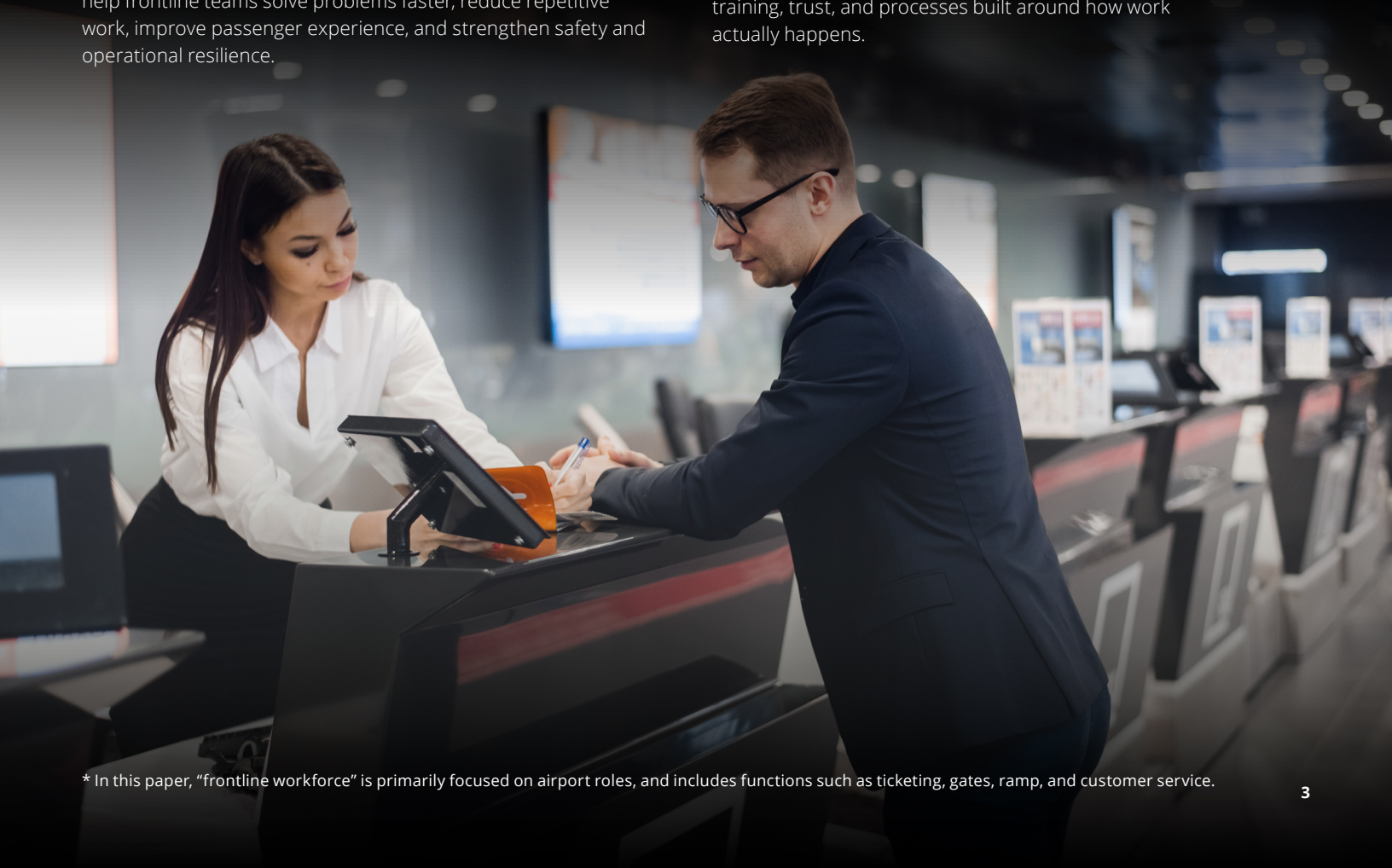
Airlines operate in a reality where the plan changes by the minute. Weather, air traffic flow constraints, maintenance events, gate changes, misconnects, and staffing variability all converge in a moment that matters: when a customer needs a clear answer for their journey. In those moments, the frontline workforce* is the first line of defense for protecting operations.

Airport ecosystems are equally complex. Frontline workers must coordinate passenger service, baggage handling, facilities, maintenance, and disruption response in real time, often using multiple systems that were never designed to speak to each other. The pace is unrelenting, and the cost of a missed handoff is visible immediately.

That is why airline and airport technology should not be framed only as a customer experience story or an operational reliability story. It is first and foremost a frontline-enablement story: tools, automation, AI, mobile workflows, and training systems that help frontline teams solve problems faster, reduce repetitive work, improve passenger experience, and strengthen safety and operational resilience.

Airports are continuing to invest heavily in digital capabilities, from self-service check-in and automated bag drops to operational systems and AI-assisted scheduling. Industry data consistently shows that digital investment is accelerating, driven by the pace of technological change, high load factors in post-pandemic travel recovery, and rising passenger expectations.[1] The question is no longer whether to invest. It is whether those investments are designed around the people who actually run the operation and engage with those passengers every day.

Deloitte's frontline and aviation research reinforces a critical point: The biggest gains come when technology is paired with reskilling, trust-building, and redesigned workflows, not just through deploying new tools.[2] For employees to succeed, they require technologies that support their day-to-day activities and empower them with information and the capabilities to succeed. Airport technology can of course help frontline workers do their jobs more efficiently, better, and safer, but the greatest value can be achieved when tools are combined with training, trust, and processes built around how work actually happens.



* In this paper, "frontline workforce" is primarily focused on airport roles, and includes functions such as ticketing, gates, ramp, and customer service.

Frontline coordination keeps operations on the ground

Empower your frontline teams with systems that help make decisions, not just automate tasks

Frontline workers are a direct determinant of customer experience and operational performance. They shape service quality and operational continuity in ways that are enduringly human. They keep the network (and airports) running smoothly as they have the information, tools, capability, capacity, and judgment to manage it.

However, many frontline workers still face real technology gaps. Coordination relies on phone calls and manual logs. Decision-making relies on conversations and historical knowledge, rather than data. New tools are often layered onto old workflows rather than redesigned around them. The result is a workforce that is expected to perform at a high level without the infrastructure to do so consistently.[3]

A mistake many airlines are making is focusing only on automating tasks. A stronger impact can be driven by how well technology improves worker decision-making, coordination, and situational awareness. When the conversation shifts from cost reduction to performance improvement, it can produce better outcomes for workers and customers alike.

This perspective also aligns with broader aviation guidance. International Civil Aviation Organization's (ICAO) human performance and safety frameworks have long emphasized the interaction between people, processes, and systems as the foundation for operational safety.[4] Technology deployed without that lens can introduce new risks even as it attempts to reduce old ones. For example, the Boeing 737 Max was originally designed to automate certain tasks for pilots; however, this automation turned out to create additional workload for pilots during emergency situations. The National Transportation Safety Board (NTSB) concluded that the automated system didn't allow pilots to easily understand what was happening in their flight deck.[5] A lesson for investing in technology is clear: Design with, not for, the frontline workforce. Engage them on reimagining processes, not just automating over existing challenging processes.

Engaging employees to design their experience can drive operational improvements

A major US airline recognized an opportunity to engage employees in a redesign of their shift management and schedule management tools. They conducted employee listening sessions, and worked with Deloitte to design a solution that addressed the biggest pain points.

The new scheduling tool for airport employees allowed for increased self-service to do peer-swaps for shifts. It increased transparency and traceability, and employees reported that they felt more in control of their schedules. The implementation of the new shift-management and schedule-management tool drove improvements across operational performance, employee experience and customer experience.

Efficient operations: The right way

Airlines and airports must balance the pressure between managing costs, improving customer experience, and strengthening the employee experience—all at the same time.[6] While daunting, this is not an impossible task. If airlines prioritize improving operational efficiency, enhancing service and disruption management, and strengthening workforce capability, they can achieve efficient operations with less delays in service.



Automation that unlocks higher-value work

How connected systems free frontline workers for the moments that need people

New automation is transforming airport operations at unprecedented speeds. Autonomous baggage vehicles, eGates, connected sensor networks, AI-assisted scheduling, and integrated operating platforms are already handling work that previously required manual effort and physical presence. The operational case for automation is clear. What is less often asked is the more important question: What, then, is the role of humans? When a ramp agent no longer needs to drive bags from gate to carousel, what should that person be doing instead? What is the role of a gate agent during boarding when customers use eGates?

Airlines have an opportunity to shift activities and get additional value out of their workforce. Frontline workers freed from repetitive, low-judgment tasks can be redeployed to work that requires more human presence: managing disruptions, supporting passengers in complex situations, coaching less experienced colleagues, and maintaining the relationships with ground handlers, vendors, and airline partners that keep operations running during irregular operations (IROPs).[7]

Marriott's Renaissance Hotels offer a useful parallel. The brand launched RENAI by Renaissance, an AI-powered virtual concierge, but explicitly designed it to amplify rather than replace the role of "Renaissance Navigators," hotel associates who build deep local knowledge of restaurants, bars, and neighborhood experiences.[8] The technology handles information retrieval and delivery. The human staff provide the judgment, the curation, and the relationship. The result is a shift from transaction processing to higher-value work, and the associate's role becomes more meaningful, not redundant.

The same logic applies to airport operations. Connected sensor networks and modern asset-monitoring platforms can detect equipment issues faster, reduce manual inspection cycles, and surface problems before they escalate.[9] For frontline workers, that means less time on repetitive checks and more capacity for coordination, exception handling, and passenger-facing work that automated systems cannot do. The question leaders should answer is how thoughtfully they are willing to redesign the roles of their workforce.



Frontline teams as early warning systems

Connectivity that turns ground-level signals into faster decisions

Today's airline passengers often have more information than the agent standing at the gate. Flight tracking apps, third-party rebooking tools, and real-time notifications mean that a traveler walking up to the counter may already know their connection is tight, their bag is delayed, or their inbound aircraft is delayed. Agents who are working from slower, fragmented systems could be caught in an uncomfortable position: less informed than the customer they are trying to help.

That information gap is solvable. But closing it requires treating frontline workers as active participants in the operational picture, not just the people responsible for delivering whatever decisions get made above them. Historically, frontline airline roles have been structured around execution: follow the process, serve the passenger, escalate when needed. That model made sense when most of the work was transactional. It fits less well when the work is exception handling and the exceptions are happening faster than central operations can track.

The more powerful reframe is to treat frontline workers as early warning indicators. A gate agent cannot decide which aircraft pushes next or reroute traffic around a delay. But they can see things that central operations cannot: the cleaning crew running behind schedule, the jet bridge with a mechanical issue, the inbound crew that landed 20 minutes ago but has not appeared at the gate. That kind of ground-level signal, surfaced quickly and routed to the right decision-maker, can be the difference between a recoverable situation and a cascading delay.

A European airline has built this kind of connectivity directly into its turnaround process. The airline implemented a platform that automatically creates shared chat channels and task lists for each turn, connecting station operations control, central operations control, gate agents, ramp agents, pilots, inflight crew, and customer service in a single operational thread. Teams check off completed tasks in real time and flag delays as they emerge. What previously required a chain of emails, calls, and texts now happens in one place, with full visibility across functions. The result is faster decision-making and a frontline that is genuinely part of the sensing and response loop, not waiting at the end of it.

Rather than just centralizing communication, it applies real-time task management to IROPs handling itself, automatically optimizing tasks as events unfold and learning from actual task completion patterns over time. Instead of static checklists, the system adjusts task priority and sequencing based on what is happening on the ground, giving frontline teams a plan that keeps pace with the disruption rather than one written before it started.

That is the shift worth pursuing: from frontline teams that are told to deliver, **to frontline teams that help the organization see.** When agents have access to a single source of truth and a clear channel to surface what they are observing, disruption management becomes a shared, distributed capability rather than a heroic effort by whoever happens to be closest to the problem.



Strengthening training and workforce capability

Reskilling, adoption, and human factors

Most airline training programs are designed for the job as it looks on a "blue-sky" day. Procedures, systems, service standards, compliance. That content matters. But it does not prepare a gate agent for the moment a flight cancels with 200 passengers at the gate, three connecting banks in jeopardy, and a system that is running slow. The gap between what training covers and what the job actually demands is widest precisely when it is most consequential.

The imperative for airline and airport leaders is not simply to invest more in training. It is to redesign training around the conditions where frontline performance is most tested.[10] That means building for disruption scenarios, not just standard operating procedures. It means practicing the judgment calls and communication demands that irregular operations create, not just the workflows that apply when everything is running on time. The most effective frontline workforce is one that knows what to do in a challenging environment.

The tools to do this at scale now exist.[11] Mobile learning platforms make it possible to deliver development content in the windows that actually fit a shift schedule, a 20-minute preboarding briefing, a slow period midafternoon, a debrief at the end of a shift. Simulation environments can re-create the time pressure and ambiguity of a real IROP and allow for significant what-if scenarios, helping workers understand how to make decisions—not just follow process.

Envoy Air, an American Airlines subsidiary, became the first US carrier to receive FAA approval for virtual reality (VR) in pilot training, using headsets to simulate preflight walkarounds and cockpit procedures.[12] A version of the software is also available on personal devices, so pilots can train on their own time wherever they are. AI-enabled coaching tools can give frontline workers personalized feedback on their decision-making in a way that a one-size classroom session cannot.[13] Reskilling for new technology, which Deloitte research identifies as one of the top three workforce concerns in aviation, can be embedded into the rhythm of work rather than scheduled around it.[14]

Airport Cooperative Research Program (ACRP) safety research reinforces this: Human factors and preparedness are foundational to performance in safety-critical environments.[15] Training design is not secondary to technology design; it is equally important, and in aviation, where the cost of a poor decision under pressure is measured in operational disruption, passenger trust, and sometimes safety, it may be more important. However, the training that matters most isn't about memorizing procedures. It's about teaching frontline teams how to think under pressure, how to engage passengers when plans fall apart, and how to support the other functions they're now connected to. Airlines that treat training this way—as a capability that builds judgment, not a compliance box to check—are the ones building both operational resilience and a passenger experience that holds up when it needs to most.



What airline and airport leaders should consider next

A frontline-first modernization agenda starts with prioritization. Identify the operational moments that matter most, then redesign technology, workflows, and learning around them. Five areas provide a practical starting point:

- **Prioritize technology that solves concrete frontline problems.** Start with the moments that drive recovery and trust. Map day-of-travel scenarios, including misconnects, long delays, reaccommodation, baggage exceptions, and gate changes, and identify where frontline time is lost and where errors or inconsistency show up most often.
- **Fix the workflow before digitizing it.** Use technology to remove avoidable steps and clarify decisions. Digitizing a broken workflow produces a digital broken workflow. The process redesign should come first. Engage with your frontline workforce to solve for the issues with the biggest impact.
- **Build an integrated digital ecosystem.** Prioritize interoperability across operational, customer, and workforce systems so frontline teams are working from the same information. Point solutions that do not connect to the broader operating environment create new silos as often as they resolve old ones.[16]
- **Design for safety and human performance from the start.** Apply human factors principles to alerts, escalation paths, and decision support, especially for turnaround management and airside-adjacent processes.[17]
- **Make reskilling part of the business case and treat it as change management.** Technology can pay off when frontline teams use it to do more, think differently, and engage differently, not just operate it. Fund upskilling as a core part of every rollout, plan rollouts in waves, and measure more than adoption: Track how the tech is changing what teams can do and how airports run. Don't assume new tools mean people will figure out the rest. Reskilling requires airlines to articulate the future vision to their frontline, including what the work looks like and why, then iterate on their feedback. The return on any tool is largely set by the quality of the adoption program behind it.



- **Extend the model beyond the frontline.** The same logic applies enterprise-wide. Deloitte's work with airline clients has shown that giving frontline workers more control over their schedules can meaningfully improve both employee experience and operational outcomes from coverage to safety performance.[18] That same thinking can extend to other functions: faster turns for catering operations, clearer visibility into direct and indirect maintenance, repair, and operations (MRO) costs and lower days sales outstanding (DSO) for tech operations, more transparent pilot and flight attendant pay for flight operations, and what-if cost scenarios for workforce planning. Better-enabled people drive better outcomes, no matter the function.

Beyond these immediate priorities, a longer-term measure of success is worth establishing early. Worker productivity, service recovery rates, employee experience scores, and safety outcomes together provide a more complete view of what frontline enablement is actually delivering over cost metrics alone.

The future airline runs on a better-enabled frontline

Airline technology is most valuable when it augments frontline workers rather than simply automating around them. The aviation ecosystem's safety and modernization guidance reinforces the same message across different bodies and frameworks: resilience and performance come from how well people, processes, and systems work together, particularly under disruption. That is where the real return on investment lives.

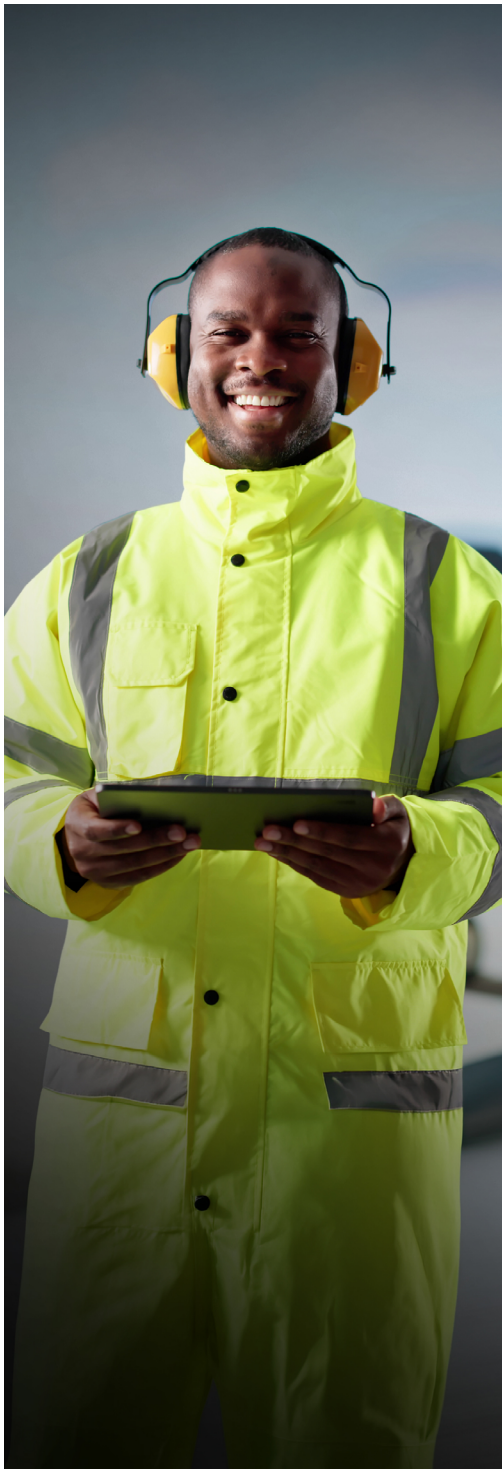
Airlines and airports that invest with a frontline-first lens will likely see the returns in places that matter: fewer breakdowns during irregular operations, faster recovery times, improved passenger experience, and a workforce that is capable and confident.

The future airport will depend not just on smarter systems, but on a smarter, better-enabled frontline workforce. Technology that is designed with those workers in mind, deployed with care, and supported with real training and change management will be a competitive advantage for the carriers and airports that get it right.



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