

# In Defense of a Systems Planning Approach to Improve the Passenger Experience

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Today's airport publications have focused heavily on the passenger experience with headlines such as "Passenger First," "The Passenger Journey," and "Passenger-Centric Solutions," which discuss the need to rethink how we do airport design. However, modern airports present many unique challenges, such as unprecedented growth in the number and type of enplanements, rapidly increasing complexity in technology, growing passenger expectations, and the need for a highly secure environment.

## So how exactly do we transform our current airports into these airports of the future?

The passenger induction process (how a passenger gets from curbside to plane) is the best place to start. For most airports, congestion starts as you enter the airport terminal, with lines forming at bag drop, then the security checkpoint, and finally the boarding gate. Similarly, congestion at International Arrivals occurs at baggage claim, customs and immigration, recheck, and departure. Waiting in lines consistently impacts passenger flow, and therefore, the passenger experience.

Most passengers blame airport congestion on the Transportation Safety Administration or the airlines for not being appropriately staffed, when in fact, the problem is that airport terminals must perform as an organic whole, rather than an assembly of parts as they do today. A proper systems planning approach is the solution to the congestion problem.

To emphasize this point, look at the challenge presented by the International Air Transportation Association (IATA) One ID program that focuses on a single identification, end-to-end solution for the entire passenger journey. It provides an opportunity for the passenger to streamline their journey with a document-free process based on biometric recognition:

**“The process depends on biometric validation and the use of the One ID everywhere in the airport, as well as throughout the system. It could allow auto-bag drop to be combined with check-in and ID Control, making the passenger induction process smooth. It could enhance movement through the airport, simplify boarding and arrival, and make bag claim and customs seamless” according to the IATA website at [iata.org](http://iata.org).**

To achieve such a level of service requires complex data management solutions along with multifaceted equipment and spatial designs. It means eliminating human intervention in order to provide both convenience and reliability, and it also means that

traditional building systems must evolve. We may be a way off from the ultimate IATA One ID program goal, but the goal is clear: In the highly complex world of modern airports, comprehensive design must be included.



Passenger flow solutions can be represented at a higher level of detail and intelligence as envisioned under true BIM standards, but BIM cannot capture the dynamic environment and complexity of the airport processes. It is this fluid and complex nature of airports that must be addressed with future designs. Major vendors within airport operations, and the myriad of vendors who supply and support them, all act independently of each other.

These critical supply chain factors must be addressed using spatially appropriate simulation tools. Data-driven tools can provide detailed analytics about the processes for correct spatial alignment of operational elements, proper equipment selection, and the most efficient passenger flow. Simulations can be used during planning and throughout design to test the many operational scenarios that are likely to occur in real life. Process simulation should be completed for IT systems architecture as well as for the design of the physical space and the equipment used in that space.



Design is not the only place for simulation tools. If properly executed, simulation models enable operational analysis for continuous process improvements throughout the life of the facility. In any operating setting, real-time data from connected sensors or external data sources can detect and respond to varied operational behavior patterns of both people and equipment. Opportunities improve operations, whether for the prime security functions, building maintenance, or ramp operations.

Ultimately, passenger service should drive design and that is best accomplished utilizing simulation tools that capture the inherent flow of airport processes.