

# High Tech, High Touch

BY MATTHEW RICHARDSON

With technology advances promising to transform airports, Gensler designers are promoting a smaller, more efficient terminal paradigm: one that enhances the passenger experience of air travel.

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Since 2001, airports and air travelers have improvised heroically to multiple challenges. In response, Gensler's airport practice has focused its R&D efforts on developing the next generation of passenger terminals. To compare that future against the present, the practice developed two conceptual models of a terminal serving 10 million passengers per year. One concept reflects current assumptions, while the other anticipates what is likely to be in place in most airports in the second half of this decade.

Technology is the catalyst for contemporary airport evolution, practice leader Bill Hooper explains. He cites a 2010 survey of air travelers carried out by SITA, an air-transport communications specialist. "While online booking and check-in are nearing their full potential, there is now clear demand from the travelling public for self-service on other steps of the passenger journey," SITA found. Of those surveyed, nearly 70 percent said they are willing to use self-service devices to print bag tags, change flights, check bags, board planes, and purchase additional services like bag fees or meals.

That's a significant uptick from 2009, when only 58 percent of those surveyed indicated a preference for self-service technology. "Travelers are ready to take control of their journey—whether online, at terminal kiosks, or through their mobile devices," Hooper says. "As people self-direct their travel experience, airports will change—becoming much more user-friendly and efficient."

SITA's annual passenger survey is one of a number of sources that Hooper and his colleagues reviewed in developing a brief for the airport passenger terminal of the near future. Their research drew heavily on their own experience: Gensler's recent terminals shifted the paradigm by rethinking the departure sequence



This proposal for a new European airport reflects Gensler's Terminal 2015 concept.

in light of security requirements. They also reflect the idea of common use—that the airlines share facilities that the airports own and control, rather than having an exclusive right to them.

Most of today’s terminals reflect airline-centric priorities. With new technologies and the protocols they afford, airports stand to be less dependent on airlines for handling passenger processing in the future. Through common-use strategies, new or renovated terminals will become increasingly airport-centric, allowing airports to shape all facets of the passenger experience, short of flying the aircraft.

**Tomorrow’s Airport Journey**

“Airports are at an inflection point,” says Hooper’s colleague and fellow practice leader Keith Thompson. “Technology will affect every aspect of flying.” Along with the technology itself, change is being driven by new protocols like Common Use Passenger Processing Systems (CUPPS) and Common Use Self Service

(CUSS). They will allow travelers to check in and tag and drop off bags at remote locations—hotels, convention centers, rental car centers, and airport parking garages, for example—using kiosks or their own mobile devices. Shifting to tablets and smart phones “will redefine notions of self-service,” Thompson adds. “Until they board their planes, passengers will hardly need to interact with the airlines at all.” Some international airports are already using the technology to some extent, but its full potential hasn’t been realized.

“It will be a big gain for air travelers,” Hooper says. “If they can handle most aspects of the preflight sequence before they get to the airport, they will have more time, less stress, and greater flexibility.” Airports benefit from higher passenger capacity and lower pre-security congestion. And travelers who are at ease are more likely to take in the concessions rather than rush anxiously for their gates.

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**BENEFITS OF GENSLER’S TERMINAL 2015 CONCEPT**

Designed to reflect technology’s liberation of air travelers, the new terminal cuts size and cost while delivering a much better passenger experience.

**TODAY’S TERMINAL**

The current terminal paradigm gives more room to ticketing, less to security and concessions.

**TERMINAL BUILDING AREA**

square feet

**800,000**

**TICKETING & DEPARTURE LOBBY**

square feet

**32,000**

**SECURITY SCREENING**

processing lanes

**8**

**CONCESSIONS**

square feet

**44,000**

**TOMORROW’S TERMINAL**

Gensler’s Terminal 2015 triples security lanes, doubles concessions, and shrinks ticketing.

**TERMINAL BUILDING AREA**

square feet

**625,000**

**TICKETING & DEPARTURE LOBBY**

square feet

**25,000**

**SECURITY SCREENING**

processing lanes

**24**

**CONCESSIONS**

square feet

**84,000**

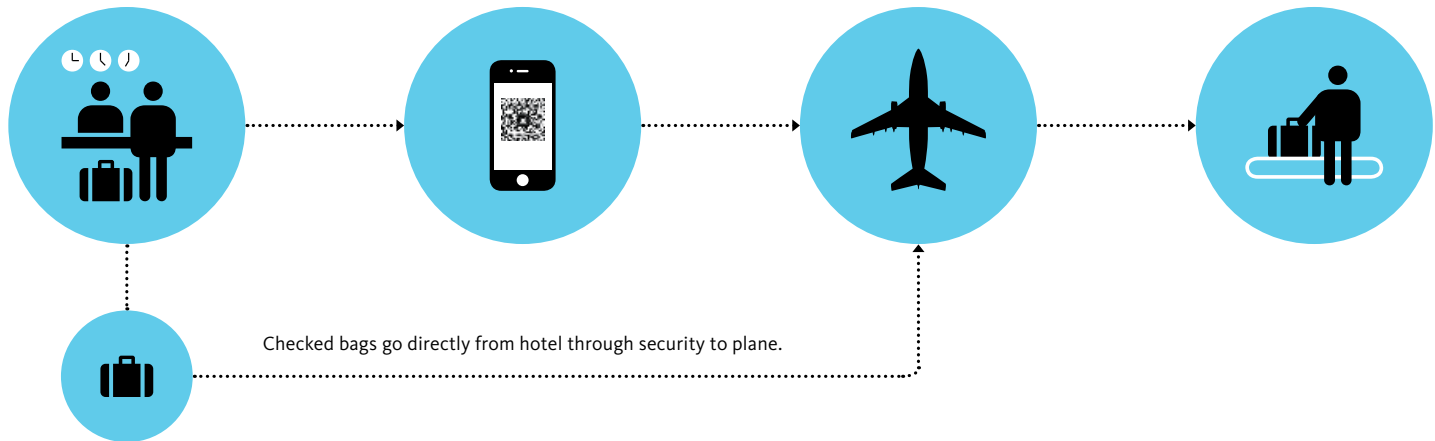
## 2015'S PASSENGER JOURNEY

Passengers check bags at hotel, take train to airport.

Travel documents are on mobiles: no ticketing, faster security, larger and better concessions.

Concessions are close to boarding areas, so dining, shopping, and mobile work are stress-free.

On arrival at destination, passengers pick up bags and find transit in the new welcoming hall.



### Imagining the 2015 Terminal

These changes led Gensler's airport team to question the current passenger terminal paradigm. "The ticketing lobby gained prominence as the point of sale for the airlines," Thompson says. "Now that passengers are pre-ticketed, the area is losing its marquee status. That the baggage claim area is below ticketing reflects the days "when it was simpler and cheaper to slide an enplaning bag down a shoot and drop off a deplaned bag on the ground floor," he adds. Given how technology is reshaping air travel, deplaning—arriving at your destination—may soon become a bigger event at airports than enplaning. "That has major implications for terminal layout and configuration," says Hooper.

Designed to accommodate 10 million passengers per year, Gensler's 2015 terminal breaks with the past by inverting the current two-level configuration in which baggage claim is stacked beneath a grandly scaled ticketing hall. To elevate the deplaning experience, baggage claim moves upstairs and grows about 40 percent bigger—a light-filled space that welcomes visitors to the city. With ticketing at the airport now a non-event, the pre-security aspects of enplaning relocate to a less-prominent area on the lower level. A third less space would be allocated to airline agent and baggage check-in positions.

Beyond inverting enplaning and deplaning, the reconfigured two-level terminal concept reconsiders other spaces, including security and concessions. Free of most airline-specific ticket

counters and bag drops, the landside departure area can accommodate a larger number of airport-managed self-service kiosks for self-ticketing and bag-tag printing. More important, there's room for a very substantial increase in security lanes to speed passenger processing.

Gensler's 2015 terminal concept encourages a quick transition from landside to airside, recognizing that passengers will be more comfortable if they can clear security screening quickly and smoothly. Once past security, travelers can anticipate having additional time to enjoy a centralized and expanded concessions program with a wider variety of restaurant and retail options. The 2015 terminal concept almost doubles the size of concessions compared to today's 44,000-square-foot average. "Human factors studies show that passengers want to stay within 250 feet of their gate," Hooper says. "Placing concessions in this crucial zone offers stores and restaurants more exposure to passengers. They in turn have more time to explore and enjoy." The waiting areas around the gates are almost 30 percent bigger, with the capacity to seat up to 75 percent of the passengers on an average flight.

Compared to today's model, Gensler's 2015 terminal is about 22 percent smaller while achieving the same capacity (10 million passengers per year). At a current construction cost of \$500 per square foot, that's a savings of about \$88 million. The building's carbon footprint is also correspondingly less.



Compared to a conventional terminal of the same capacity, Gensler's Terminal 2015 concept reduces the building area by

**2x**

**22%**

**The 2015 terminal almost doubles the area for concessions**

Tomorrow's terminal shifts space to where travelers and airports want it most. An expanded concessions program, including upgraded restaurant and retail offerings, enlivens the passenger journey, while generating more revenue for the airport.



Gensler's airport practice is actively discussing the 2015 concept with airport clients worldwide. "We expect to see technology take hold in airports by mid-decade," Thompson says. "Our concept anticipates that development, and offers a model ready-made to serve future requirements."

Hooper acknowledges that the concept is ideally suited to new terminals, but says there are myriad 2015 terminal elements that can be applied to existing airports. He points to Gensler's Aviation Performance Index (API) measurement and analysis tool as a means of discovering how an airline or airport authority can enhance an existing terminal. Modeled on Gensler's Workplace Performance Index (WPI), the API gauges airport terminal design effectiveness, evaluating passenger experience and operational efficiency from both airport employee and passenger points of view.

"Combined with our ongoing research, the API enables our airline and airport partners to improve terminal operations," Hooper says. "This not only presents opportunities to uncover untapped revenue, it elevates the airport experience, making the passenger journey as important as the destination."

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Gensler has applied the Terminal 2015 concept to major airports in southwest Europe (top), China (center) and Chennai, India (bottom), where a new international terminal is now in construction.