

Singapore Changi Airport

What is being organized?

All of the services provided at an airport are being organized to improve the experience for the traveler. This begets the question: what are the resources and how are they categorized? With traditional airports, services are limited to basic necessities: security, gates, bathrooms, baggage claim. However, as the world becomes increasingly interconnected, the landscape of travel is changing at a rapid pace. More people need to travel for business, relationships, visiting family, or fun. As travel becomes easier and more common, the number of people entering airports continue to rise. As the scale of airports changes, the services it provides need to be reorganized.

At the forefront of this innovative new design is Changi Airport. Consistently rated as one of the World's best airports by Skytrax, Changi airport is transforming the traditional organization of an airport and redefining the resources the airport provides. Services that are organized at Changi airport go beyond the basic necessities to include a multitude of resources. Changi has gardens and artwork for visual pleasure, restaurants, playgrounds, child care, shops, health care services, prayer services, meeting rooms, beauty services, swimming pools, and slides. These resources are interchangeable and can be replaced, however each type of service meets a specific need, and therefore would be replaced by a similar service. The resources should be replaced frequently enough to keep up with demand. For example, Wi-Fi services should change with the technology to keep visitors satisfied.

Why is it being organized?

The airport needs to organize the services in a way that eases users', the travelers, experience and supports interactions that make time spent at the airport more enjoyable. Given the number of delays and increased flight congestion, Changi Airport puts more emphasis on making the time spent waiting for a flight and during layovers more enjoyable than in traditional airports. An airport can be the source of much anxiety from finding the correct flight to getting through security on time, and Changi organizes to mitigate this.

Before Changi Airport was built, Singapore's only airport was Paya Lebar International Airport. However, in response to high travel demand, the government decided to build a new airport to account for the growing market. The organization of the airport had to take account for economic factors. With travel being a significant portion of Singapore's GDP (10.9% in 2014), and with the high number of expatriates that work in Singapore, a well-designed airport could have a great impact on its economy.

How much is it being organized?

In a traditional airport, there are fewer resources, thus less organization is required. With Changi Airport, the number of services have increased, thereby increasing the number of different resources and the granularity of the resource categories.

All the services are categorized by the organizing principle of what needs the service is providing. In this situation, with the exception of shops, it is beneficial to place resources near items of different categories. For example, if the resource is meeting an aesthetic need, it is in one category. Aesthetic services are dispersed across the terminal, and are not too close to any other member of the same category.

In addition to category granularity, question arises over the granularity of the definition of the resource. What is an “entertainment” service? To one traveler, this resource may be different than to another traveler. The resource definition must be granular enough to distinguish items within one category to improve the placement of those services.

This definition and categorization affects the airport services layout because if two resources are too similar and are placed too close to one another, this may waste money or decrease the popularity of that service. Putting two entertainment resources side-by-side would be excessive and may decrease the value a user will receive from the interaction with that resource. If the definition isn't specific enough, the resources may end up in places that do not promote the most interaction with both of them.

In addition, since Changi is a large airport, its security system is organized more granularly. Instead of just having 1 security line as traditional airports do, it has a security line at each gate.

When is it being organized?

Organization occurs during the design of the airport. Since building an airport is a grand endeavor, much thought must be placed into how the resources should be organized before the resources are actually made. The airport needs to anticipate the travelers' needs and design the terminal to satisfy them. Knowledge of how passengers will interact with the various services and the growth needs of the airport are pertinent for this process. As a result, the organization of what services are provided is extensive at the beginning of the design.

Because of the intense pre-planning that occurred before construction, Singapore Changi Airport's layout is simple and easy. This is a benefit of design before organization because other airports that have expanded at different periods of time have confusing layouts.

How, by whom, or by what computational processes is it being organized?

Changi airport was designed and organized by the CPG Corporation, previously the Singapore Public Works Department. The airport was organized in such a way that would allow for the expansion of the airport and to handle the growing number of visitors. The party responsible for the organization of the airport affects the style immensely. Like all other landmarks in a country, the design reflects the culture of the people who live there. With Changi's sleek, efficient design filled with extravagant artwork and every need a traveler could desire, the airport mirrors the welcoming, people, high quality lifestyle, and clean country.

Other Considerations

Since this organizing system is so difficult to alter after it is built, it will be interesting to see how Changi airport changes when the demand surpasses its capacity. Will Singapore build a whole new airport? Will the organization of air travel be optimized to fit in more airplanes and travelers? And if this happens, the services in the airport would need to be optimized as well. With such a costly venture, new technology is key to further expansion of the organizing system.

Artifact:

This artifact shows the Changi map and describes some of the interactions that take place, and that were discussed in the case study. Further airport maps can be seen at the Changi airport website (changiairport.com).

As an example of the Changi layout, the airport map below reveals the interactions that the airport enables. As shown in Changi's map, interactions are unavoidable as travelers roam the airport. Since all of the gates are towards the edge, travelers can experience all forms of enjoyment in the center of the airport before going to their gates. This separates the pleasurable interactions from the typically unenjoyable interactions.

As a distinguishing quality at Changi's airport, aesthetic services have been highlighted on the map to show how services are strategically placed. These are dispersed evenly throughout the central of the airport. Travelers can't reach any gate without passing by these experiences, thus ensuring interaction with them. All of these resources are physical and placing them strategically allows for direct interaction.

A key detail is the lack of security on the map. Security is done by each gate, instead of in one large section prior to entering the departure hall. The intentional arrangement of these security sections is designed to organize the interactions it supports - ensuring plane safety - in an efficient way.

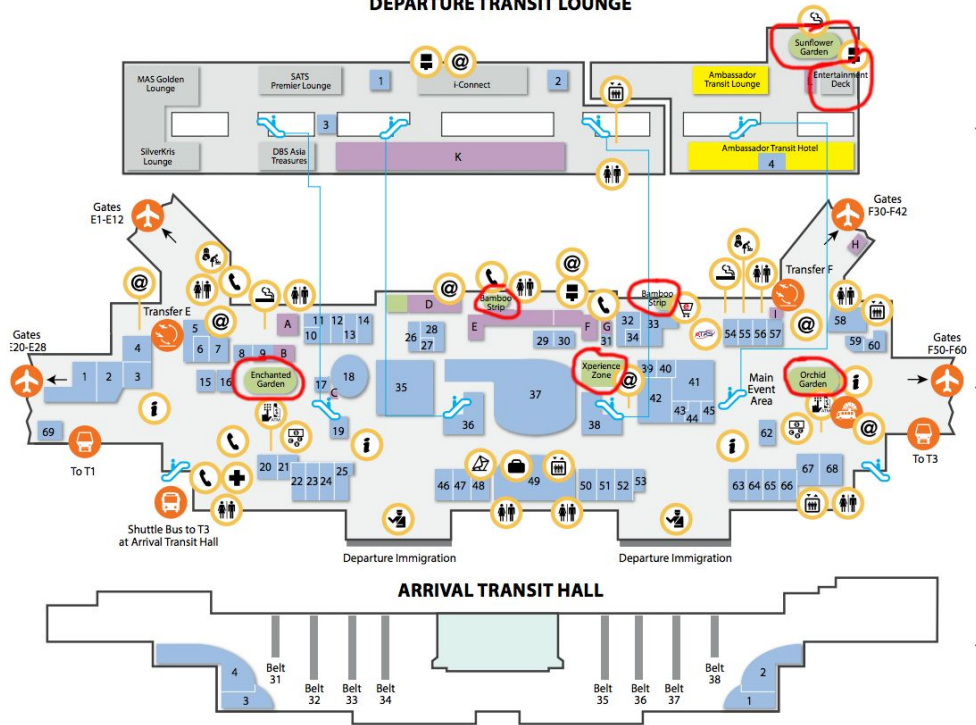
A few services are infrequent on the map. There are not as many baby care and smoking rooms as there are shops, for example. This reveals how all interactions must be understood prior to being built. A resource expected to have more interactions has higher frequency than others.

Overall, the simple layout promotes travelers to find the resource they are looking for. It also promotes exploration, and unplanned interactions, which may provide the most satisfaction for users. Travelers are consistently forced into interactions that ideally improve their mood and make for a great experience at Changi Airport.



DEPARTURE TRANSIT LOUNGE

- Dining
- Shopping
- Pay per use services
- Free Singapore Tour
- Gates
- Shuttle Bus
- Skytrain
- Transit Lounge
- Lifts
- Automated Teller Machines (ATM)
- Baby Care Room
- Free Internet
- GST Refund
- Immigration
- Information
- iShopChangi Collection Centre
- Laptop Access
- Money Changer
- Postal
- Public Phone
- Smoking Area
- Toilets
- Unaccompanied Baggage / Left Baggage



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