“Human Transit” Book Club - Week 7 - Summary Recap

Below is a brief summary of each chapter covered so far in the Transit Oriented Book Club on “Human Transit” by Jarrett Walker. For detailed chapter summaries, please visit the book club webpage at https://www.martaarmy.org/transit-oriented-book-club.

Chapter 1 | What Transit Is and Does?
- “Public transit consists of regularly scheduled vehicle trips open to all paying passengers, with the capacity to carry multiple passengers whose trips may have different origins, destinations, and purposes.”
- “The core challenge of transit design is how to run vehicles so that people with different origins, destinations, and purposes can make these trips at the same time and will be motivated to choose transit to do so.”

Chapter 2 | What Makes Transit Useful?
The seven demands of transit are:
1. It takes me where I want to go
2. It takes me when I want to go
3. It is a good use of my time
4. It is a good use of my money
5. It respects me in the level of safety, comfort, and amenity it provides
6. I can trust it
7. It gives me the freedom to change my plans
The seven demands are served by:
- Stops and stations
- Connectivity
- Frequency
- Span
- Speed and delay
- Fares
- Civility
- Reliability
- Simplicity
- Presentation

Chapter 3 | Five Paths to Confusion
- The common misunderstandings about transit come from:
  - Perceiving map area as population
  - Thinking about transit as if it works like cars and roads
  - Thinking about a spectrum as if it was distinct categories
  - Thinking that the world is divided into two boxes and that only one is meaningful
Chapter 4 | Loops, Lines, and Longing
● Directness of transit lines between two destinations is a big part in the travel time
● Transit lines can be direct, circuitous, or deviating
● Transit lines can be specialized to serve only some points of interest, circuitous to serve all points of interest without being direct, or multiple lines, each of which can be direct.
● Transit lines in loops do not reflect how people actually travel, most people would ride it for no more than half the circle. Other direct lines may be better if traveling on a loop. Loops also pose growth and logistical challenges

Chapter 5 | Touching the City: Stops and Stations
● As ridership increases, the distance between stops should increase to reduce the overall number of stops, consolidate boardings between multiple stops, and, thus, reduce the amount of time it takes to stop each time a rider wants to enter or exit.
● “Every stop or station has a walk radius, the area from which most people would be willing to walk to a stop.”
● The street network determines the size of the walk radius
● stop spacing is determined by two areas:
  ○ Duplicate coverage: The area that has more than one stop within walking distance
  ○ Coverage gap: The area that is within walking distance of a line but not of a stop

Chapter 6 | Peak or All-Day?
● Peak service carries more riders during peak commute periods than it does midday, evening, and weekend periods and often serves lower-density suburbs.
● Higher density areas tend to have all day service because people in these areas tend to rely on transit for a range of all-day travel patterns
● Peak service comes at a high cost due to labor and fleet costs

Chapter 7 | Frequency Is Freedom
● “Frequency has a direct role in meeting four of the seven transit demands”
● It’s the main measure of how long someone would wait for a transit vehicle to arrive
● “Span denotes the times of day when service begins and ends, on each day of the week”
● High frequency paired with long spans creates reliable service throughout the week, and on weekends, that can provide freedom, dignity, and empowerment to its riders.
● Doubling frequency and span doubles operation cost
● Transit maps can be more informative by showing the different frequencies of routes through line thickness, colour changes, or both.
● Branching lines always divide frequency

Chapter 8 | The Obstacle Course: Speed, Delay, And Reliability
Delay is the biggest problem facing speed and reliability. Delay is when transit operations are slowed down or stopped
  ○ Routine Delay: delay that is a typical part of the operations of a transit line.
    ■ Traffic Delay (2 types)
      ● Congestion (entire street or lane is slowed down by vehicles moving below their ideal speed)
      ● Friction (individual vehicles causing slowdowns)
    ■ Signal Delay- can be eliminated by signal priority programs
    ■ Passenger-stop delay (Add the first 3, multiplied by Stop Spacing)
      ● Dwell due to boarding/alighting
      ● Dwell due to fare collection
      ● Acceleration/deceleration
      ● Stop Spacing
  ○ Exceptional Delay: accidents, medical emergencies, extreme weather, work stoppages

Three classes of transit based on delay
  ○ A: Separated from traffic and cross traffic
  ○ B: separated from traffic but not cross traffic
  ○ C: Not separated from any traffic

Transit lanes are a good option to reduce delays caused by traffic and it might be difficult in environments with limited right of way.

Chapter 9 | Density Distractions
  ● Density is one of the main drivers of ridership, including service, walkability, and pricing.
  ● Residential density is more important than jobs or other activities because it creates the largest demand and it’s how our representative political system works.
  ● But it’s not everything- Paul Mees in Transport for Suburbia says that “Density is not destiny” and that transit advocates need to let go of the idea that good transit requires high density.
  ● Average density across a wide area does not matter. The important thing is the density around the stops and stations, especially those that offer high mobility and frequency.
  ● One way to measure is to calculate the percentage of citizens who live in a high density area.

Chapter 10 | Ridership of Coverage? The Challenge of Service Allocation
  ● Transit often faces a contradictory mission:
    ○ Serve all parts of a community
    ○ Maximize ridership with a fixed service budget.
  ● The first goal is a Coverage Goal. The transit agency must provide service to everyone in the area, regardless of usage.
  ● The second is a Ridership Goal. The transit agency must deploy service with the aim of the highest possible ridership for a given service budget. In areas where demand is high this goal provides intense service, conversely, in areas where demand is low agencies would likely provide no service.
The Equity Goal is mentioned as a possible compromise. Under this goal service is allocated proportional to population. In densely populated areas, service is more frequent. In sparsely populated areas service is less frequent.

Dense places have “more riders because it has more people, and more activities, in the fixed area within walking distance of any transit stop.”

People living in dense places are more likely to use transit because of various factors such as car ownership and walkability patterns in dense areas.