Transport and urban governance in a platform-driven world

Kevin Webb, November 7, 2019
@ UMN Center for Transportation Studies Research Conference

The “platform” questions we’re grappling with today are fundamentally about how **“connectivity” shapes our communities.**

Let’s unpack “connective platforms” three ways…

1. Connectivity as a technology
2. Connectivity as a business
3. Connectivity as a public good

1. **Connectivity as a technology**
2. **Connectivity as a business**
3. **Connectivity as a public good**

MaaS

?

“Connectivity” is not the “the Internet”

We’ve dealt with the impact of connective technologies before.

Proximity is a form of connectivity

Cities are fundamentally a connective technology

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New connective technologies change how we experience proximity

They lessen our dependence on spatial proximity, allowing us to organize around new forms social and conceptual proximity

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Connective technologies change more than just how we connect or move: they reorganize the spatial, social, and economic structures of how we live

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CAUDALÍE
LOUIS VUITTON

1. Connectivity as a technology
2. **Connectivity as a business**
3. Connectivity as a public good

Connectivity is infrastructural:
its purpose is to enable others to do more

Businesses that operate infrastructure raise unique questions:

1. How do we decide who operates infrastructure?
2. How do we ensure infrastructure serves the public, *and the public good*?

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UBER

prime
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While railroads laid the foundation for modern infrastructure regulation, **communications technology has changed the mechanics and role of connective infrastructure**

We have move from coordination via control of physical infrastructure (supply), to **coordination via demand aggregation**

Supply-side vs demand-side coordination

Uber

amazon.com

Infrastructure coordinates

Supply-side vs demand-side coordination

Uber

amazon.com

Coordination as infrastructure

The turning point from supply to demand coordination: **airline ticketing**

AMERICAN AIRLINES

SABRE

How push-buttons-to-computers speed air travel reservations:

1. Passenger requests seat reservation by telephone or in person at ticket counter from any of nearly 3,000 American Airlines' agent positions serving more than 50 cities.

2. Agent places card listing all flights to AA destination specified by customer on display rack of desk-size console, keys in number of seats and date requested and presses "send" button. . .

3. Which in turn over long-distance lines queries the SABRE computing center at Briarcliff, N.Y., 30 miles north of New York City, for a seat on a specific flight.

4. Computer instantly selects appropriate inventory record from its files. If requested seat is available, computer immediately flashes confirmation to agent and at same time automatically records the reservation and subtracts seat from inventory for the particular flight and date.

5. If requested flight is not available, computer responds instantly by activating lights alongside the card, informing agent of alternative flights which are open.

6. Briarcliff center confirms sale by automatically typing out on printer in front of agent the flight number, date, number of passengers, departure and destination cities, and scheduled departure and arrival times.

7. Agent then uses the console keyboard to type into computer record the passenger's name, home and business telephone numbers, ticketing arrangements and other pertinent information.

8. Computer automatically checks and confirms this additional data for completeness and electronically files the information as part of the passenger's record until his itinerary is completed, changed or cancelled.

9. The agent receives a printed "ok" message, including the time filed, when the transaction is completed.

In addition to controlling seat inventory and maintaining passenger records, American's new IBM system also:

- notifies agents when special action is required, such as calling a passenger to inform him of a change in flight status.
- maintains and quickly processes waiting lists of passengers desiring space on fully-booked flights.
- sends Teletype messages to other airlines requesting space, follows up if no reply is received, and answers requests for space from other airlines.
- provides arrival and departure times for all the day's flights.

The system will speed handling of American's daily flood of information requests. In a typical day, American Airlines receives 70,000 telephone calls, including:

- 26,000 for passenger reservations;
- 21,000 requests for space from other airlines;
- 11,000 inquiries for flight arrival and departure information;
- 12,000 requests from other sources (American's own offices, travel agents and key accounts).

IBM 7090
DATA PROCESSING SYSTEM

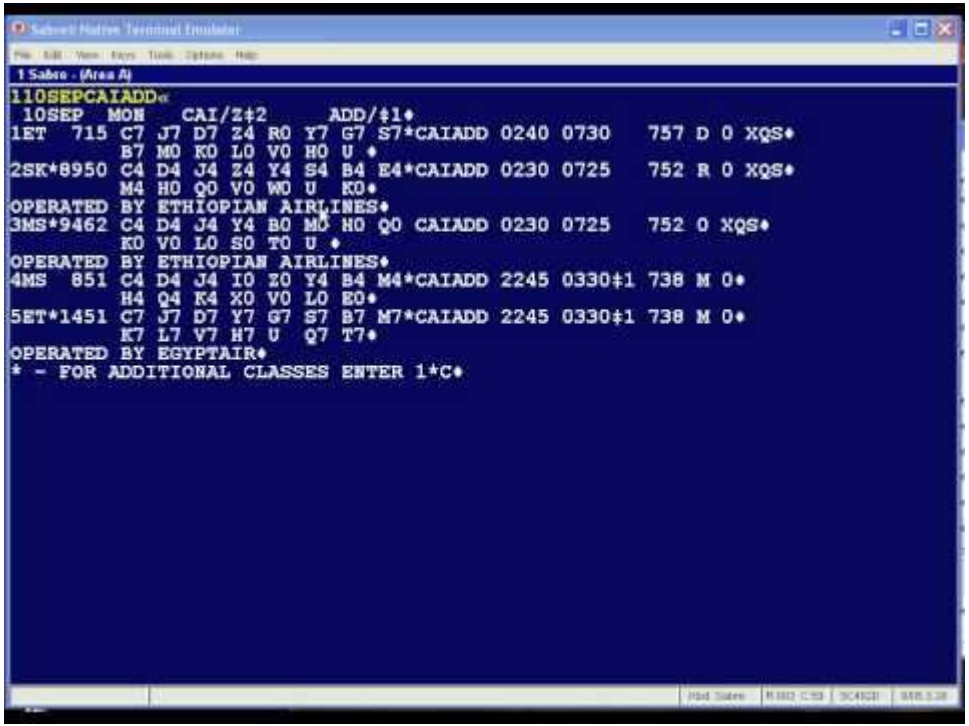
Global Distribution Systems (GDSs) and "Screen Bias"

AMERICAN AIRLINES
SABRE
Reservation System by IBM

United

PAN AM

DELTA AIR LINES



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Airlines & Airports

The freedom to market, sell, serve and operate the way airlines want

We develop and implement a broad range of software and data solutions to help airlines market themselves, sell their products in both the direct and indirect channels, serve their passengers and operate efficiently. We work with major network carriers, hybrid airlines, low cost carriers, cargo companies, charter airlines, corporate fleets and airports across the globe. Our travel marketplace, the Sabre global distribution system, provides airlines access to millions of travelers worldwide. This invaluable distribution channel is used by more than 435,000 global travel agents.

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IATA Resolution 787: Enhanced Airline Distribution: Order to Show Cause

IATA_Res_787_showcause.pdf

About this Order

On March 11, 2013, the International Air Transport Association (IATA) filed with the Department under section 41309 of Title 49 of the United States Code (the Code), and Part 303 of the Department's regulations, an agreement that adopts new Resolution 787(Enhanced Airline Distribution). The agreement was adopted at the 34th meeting of the Passenger Services Conference (PSC) in Abu Dhabi, October 18-19, 2012. Resolution 787 establishes a process for developing a technical standard for data exchange in the air transportation marketplace using Extensible Markup Language (XML). Resolution 787 additionally establishes certain goals associated with using the new technical standard, including capability to provide personalized pricing offers to consumers who shop for air transportation. These goals are called the "New Distribution Capability" (NDC). IATA seeks Department approval of IATA Resolution 787.

Contact Us

Office of Aviation Enforcement and Proceedings
Aviation Consumer Protection Division
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Travel

Customized airfare: Should airlines be able to offer individualized prices?

By **Christopher Elliott**
July 3, 2013

Should your airline be allowed to offer you a customized ticket?

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And it hopes that the answer is "yes."

The airline industry, represented by the International Air Transport Association (IATA), wants to establish a new standard for selling airline seats, called the New Distribution Capability (NDC).

Resolution 787 would, among other things, allow an airline to collect personal information such as your address, birthday and frequent-flier information and offer you a special or custom fare based on what it knows about you.

Back to Programs

DISTRIBUTION & PAYMENT:

New Distribution Capability (NDC)

- NDC Registry
- NDC Matchmaker
- NDC Educational Videos
- NDC Airlines
- Supporting NDC
- NDC Solutions
- NDC@Scale

ONE Order

Settlement with Orders (SwO)

New Distribution Capability

Together, Let's Build Airline Retailing

NDC (New Distribution Capability) will enable the travel industry to transform the way air products are retailed to corporations, leisure and business travelers, by addressing the industry's current distribution limitations: product differentiation and time-to-market, access to full and rich air content and finally, transparent shopping experience.

ABOUT | INFO | LEADERBOARD | STANDARD | PLAYERS | CERTIFICATION

The NDC program

NDC (New Distribution Capability) is a travel industry-supported program (**NDC Program**) launched by IATA for the development and market adoption of a new, XML-based data transmission standard (**NDC Standard**).

The NDC Standard enhances the capability of communications between airlines and travel agents.

Need Help?

Contact us

NDC Matchmaker

Search, Compare and Connect with your NDC Partners!

Related Links

Airlines. Magazine

Selling a travel experience

As airline ticketing evolved it combined two market-coordinating superpowers:

1) Aggregating demand to coordinate supply
2) “Personalized” distribution and pricing

Demand-side market coordination and personalization techniques pioneered by the airline industry now define the modern Internet economy

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CEMETARY
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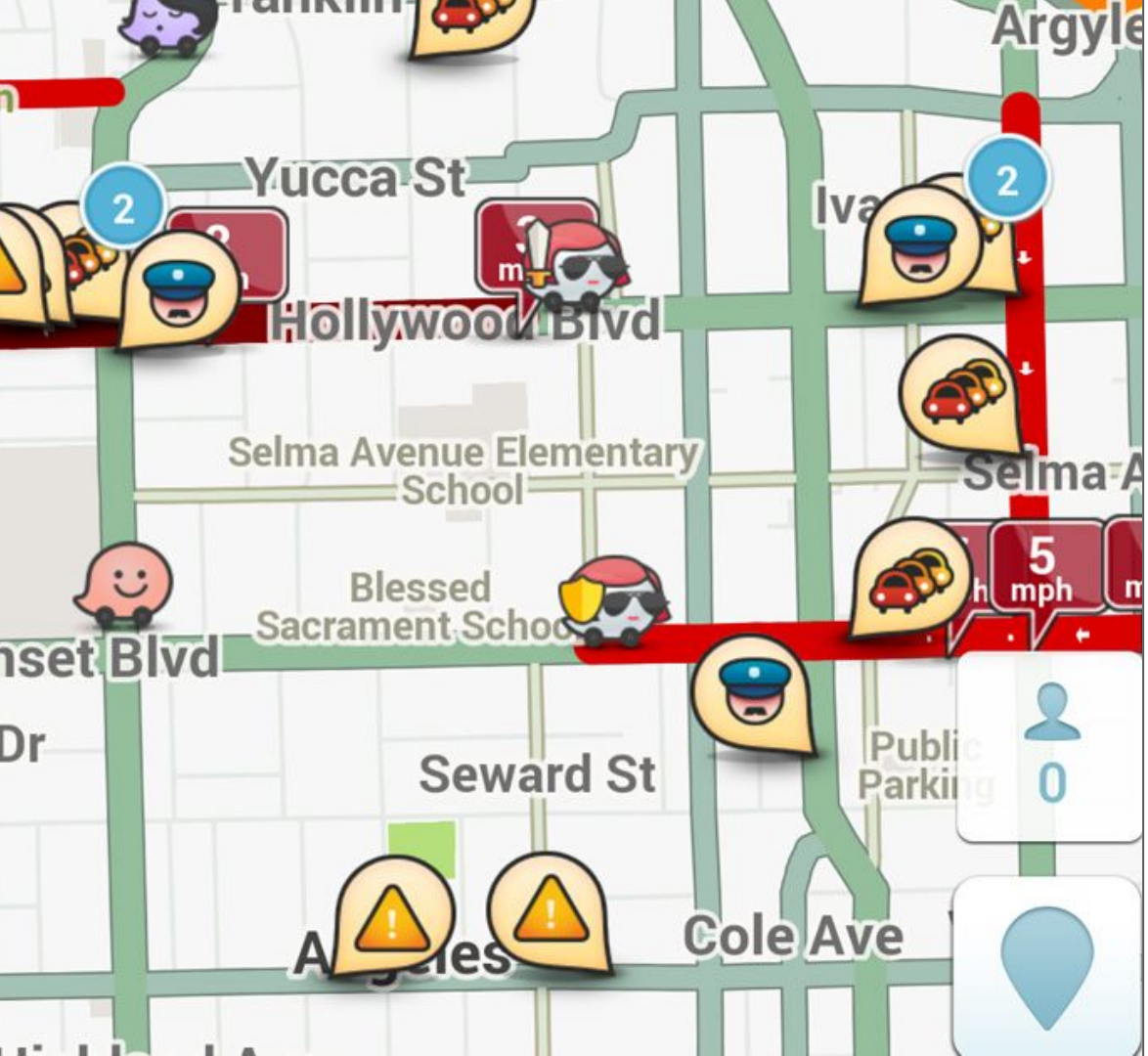
CEMETERY
FOREST

These “maps” are at the core of emerging forms of urban connectivity and coordination

But the word “map” is inadequate for describing the thing we’re actually building

It’s part yellow pages…

(discovery infrastructure?)

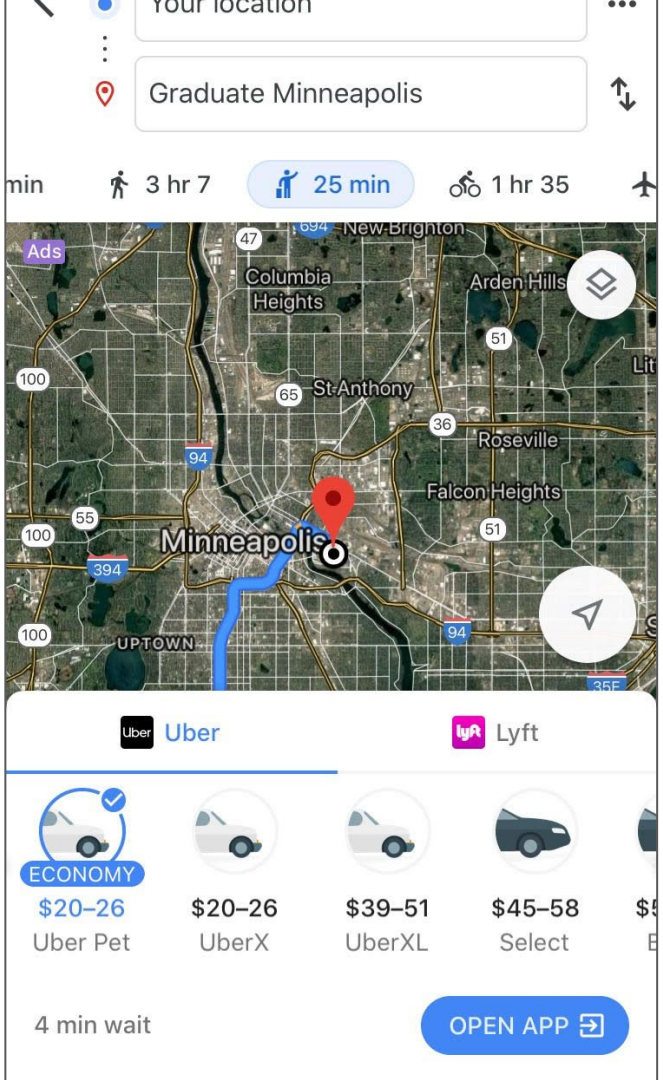


It’s part social network..

(information coordination infrastructure?)

It’s part marketplace…

(distribution infrastructure?)



And, weirdly, **the modern “map” doesn’t yet have a business model…**

1. Connectivity as a technology
2. Connectivity as a business
3. **Connectivity as a public good**

Changes in connective technologies, and emergent connective business models force us to confront these questions:

1. How do we decide who operates infrastructure?
2. How do we ensure infrastructure serves the public, *and the public good*?

Good news:

None of these questions are new.

We’ve got this...

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Existing leverage points:

Physical infrastructure

Existing leverage points:

- **Capital investment**
- **Street/curb regulations**
- **Pricing and subsidies for infrastructure use**

Existing leverage points:

People, Vehicles & Goods

Existing leverage points:

- **Driver and vehicle licensing**
- **Operating subsidies for services**

Existing leverage points:

Markets & Business structures

Existing leverage points:

- **Pricing & utility regulation**
- **Labor & consumer protection**
- **Antitrust**
- **Public Investment**

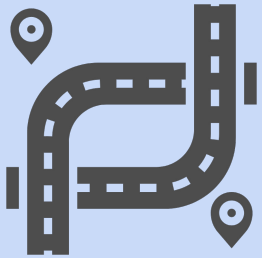
Existing leverage points:

Regulation of infrastructure/space

Existing leverage points:

Regulation of business/markets

Important (but limited) tools



- Capital investment
- Street/curb regulations
- Pricing and subsidies for infrastructure use

- Driver and vehicle licensing
- Operating subsidies for services

Proven yet under discussed tools

- **Pricing & utility regulation**
- **Labor & consumer protection**
- **Antitrust**
- **Public Investment**

Fair pricing, transparency, and competition:

Limit rent-seeking, discrimination, and ensure markets allow competition wherever possible

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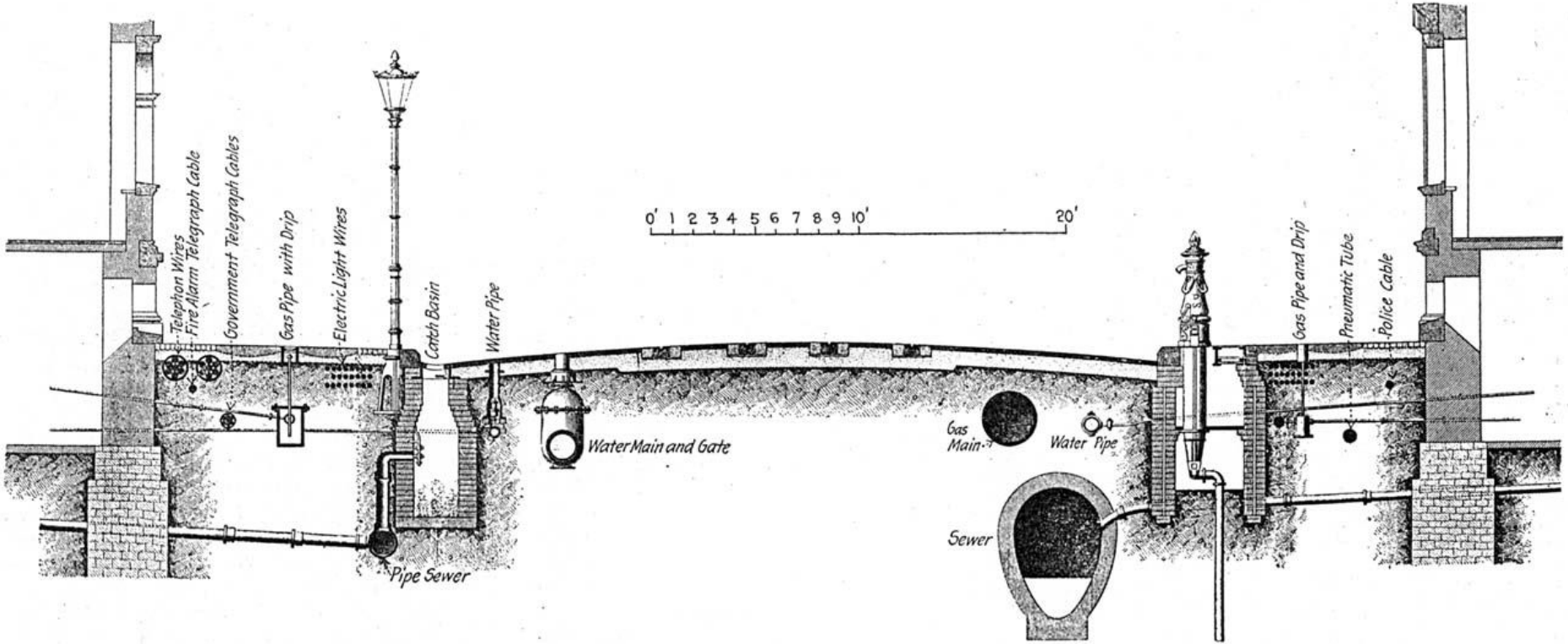
NEAPOLIS
&
ST LOUIS

We need innovation in pricing regulation

Industrial-era pricing regulations are focused on supply-side coordination and reducing power of supplier trusts. Today we need demand-side pricing regulation.

Create new kinds of public utilities

Ensure that core infrastructure, particularly where there there are efficiencies from centralization, or opportunities for capture



STANDARD CROSS SECTION OF STREET; BERLIN, GERMANY.

We need a more dynamic approach to infrastructure regulation, and innovation in governance

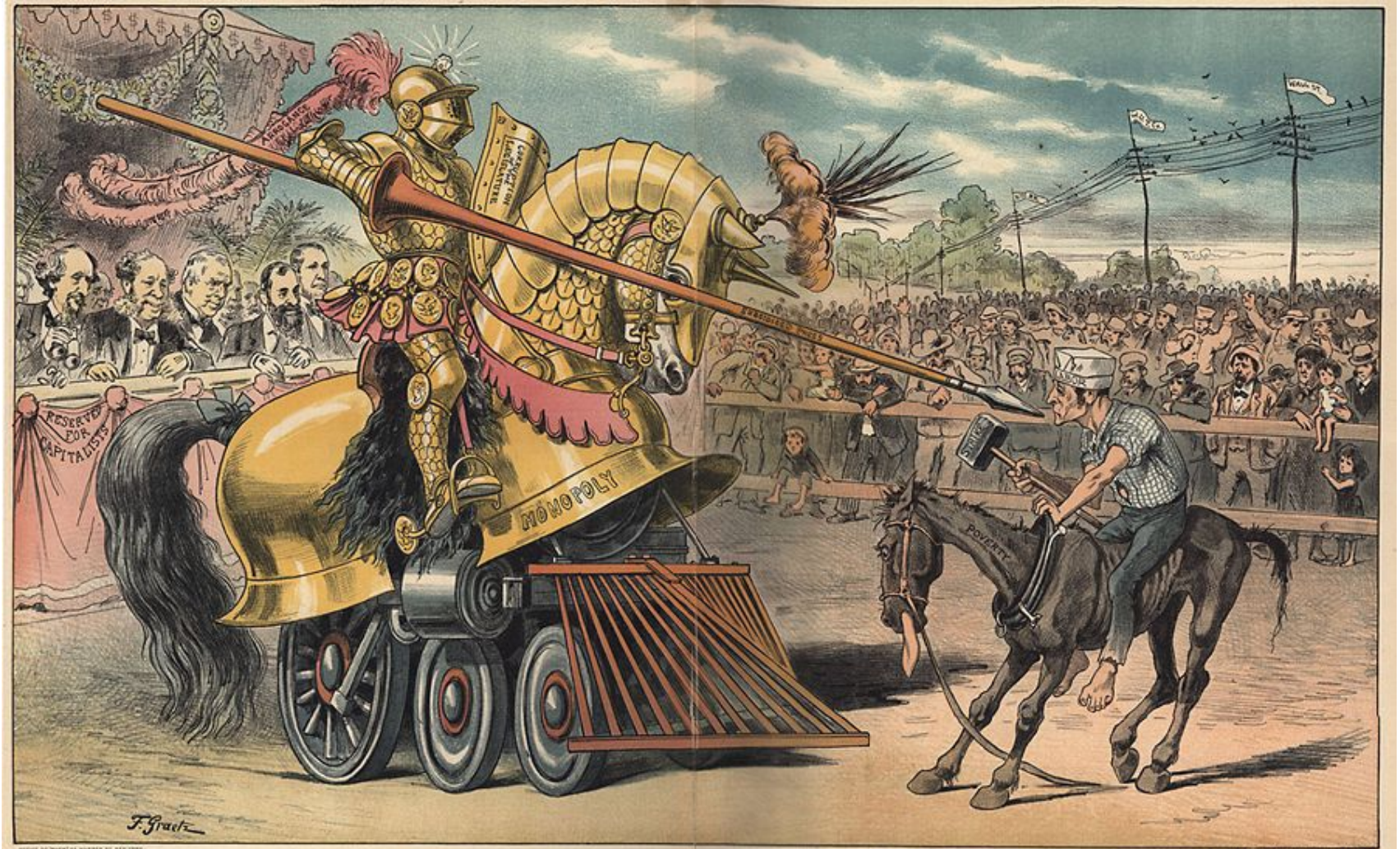
Picking the right layers of infrastructure is crucial, as is knowing when/how to unwind

Complex, tightly integrated systems are capturable

Instead of top-down “platforms” we need bottom-up infrastructure, that enables everyone to do (and understand) more.

Labor protection/regulation is a powerful lever

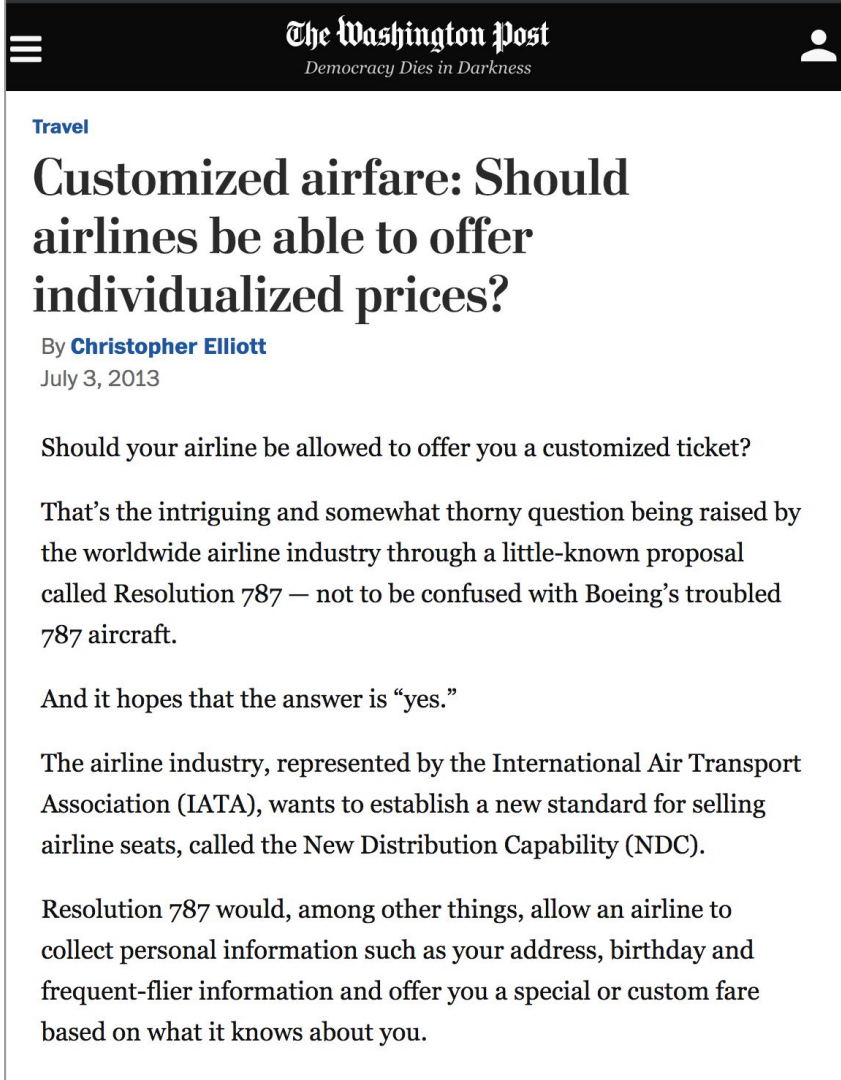
Today’s emergent urban technologies have redefined labor obligations, just like past



THE TOURNAMENT OF TO-DAY.—A SET-TO BETWEEN LABOR AND MONOPOLY.

Privacy regulations are consumer protection regulations

They reduce information asymmetries, amplify pricing regulation, and enable transparent, open competition.



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As part of defining our right to personal privacy, **we need to define a right to collective action and communal agency through insights derived from personal information.** These are two sides of the same coin.

Emerging forms of algorithmic governance depend on collective insight and data. If we build those systems on privacy-protecting approaches to measurement, everyone can participate.

We need to make bold public technical investments in that **commodify core infrastructure**, ensuring it serves as a building block for others, and prevents capture.

The opportunity: we have the tools we need to understand and manage the power of “connective platforms”

The risk: we miss the forest for the trees, and treat today’s challenges as a technical problem