David Block-Schachter

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CTO@MBTA | CTO AND CHIEF SCIENTIST@BRIDJ | PHD@MIT

- I believe **we can use technology** in our data-rich environment **to make transportation work better** for everyone.
- I spend as much time as I can showing people how much better cities can be with great transit.
- Lately, I've been busy figuring out how to help buses go faster by building the future of transit fares, making real time location more 'real', improving bus predictions and countdown clocks, meeting new friends, and hanging out in front of old trains. So far, so good.
- I wrote a thesis on the single mode man, and a dissertation on the relationship between the old streetcar system in Boston and the current urban systems that retain its imprint.
- I still believe in **changing the world**.

Experience | Transportation & Technology

Massachusetts Bay Transportation Authority

Chief Technology Officer February 2016 – present

Created customer focused "startup-like" department within public agency to bring software-first design thinking principles and strategic direction to 1.3 million daily customers. Recruited and retained 40+ engineers, designers, and product managers, who share the mission and values of creating and sustaining a more equitable and efficient transportation system through technology. Responsible for negotiations with existing partners to increase flexibility and reduce vendor lock-in, and for procurement strategies to capitalize on those opportunities. Accountable and responsible to Fiscal Management & Control Board.

Selected accomplishments include:

· Conceptualization and direction of first-in-the-nation Public Private Partnership for Automated Fare Collection, procuring a best-in-class account-based, open payments system with groundbreaking payment APIs and privacy-by-design structure. System will increase bus speeds up to 10% by moving to an all-digital payments infrastructure and removing cash from on-board vehicles, while increasing the number and scope of retail and on-street locations where customers can use cash.

· Consolidation and integration of existing department responsible for fare collection, improving time-to-fix while reducing budget by more than 20%.

· First agency partnership with real-time transit partner, Transit App, ensuring full user data access for planning purposes, while improving the discoverability of real-time information for riders; an increasingly replicated model for public agencies.

· Redesign of 2007 webby-award winning website to focus on user needs and accessible and responsive design principles.

· Internal and external tools, including improving the dispatch of the Green Line and an innovative use of beacons to help the solve the "last 30 foot" problem for blind and visually impaired users.

· Standardization of tooling and test driven development of internal and external facing codebase that formerly had no test coverage, allowing for increased development velocity and more secure applications.

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Bridj

Chief Scientist and Chief Technology Officer May 2014 – February 2016

Co-founder and technical lead for the first venture capital backed mass transit startup since the original electric railway companies. Led team designing and building Bridj's proprietary system for planning and routing mass transit vehicles. Focused on the integration and use of external and internal sources, and the evolution of vehicle routing based on integrated user requests. Responsible for the hiring and management of a team of scientists, designers, and programmers. Worked with industry and government to provide value-added partnerships and update the regulatory structure in order to operate a privately funded service.

Massachusetts Bay Transportation Authority

Director of Research and Analysis January 2014 – May 2014

Responsible for the aggregation and dissemination of information related to customer usage and perception of the system, and for the direction and implementation of targeted programs to improve MBTA operations and planning processes. Act as an internal expert on all data collection and reporting efforts. Supervise university and private industry partnerships. Recommend technology investments to increase pervasiveness and accuracy of data in order to improve the quality and quantity of knowledge about the customer experience. Projects include the development of a real-time system for reporting current and predicted operations performance, the design of a dispatch support system for operations control, and a comprehensive panel survey of riders perceptions of the MBTA system tied to automatically collected traces of passenger movement.

Massachusetts Institute of Technology Transit Research Program

Research Associate July 2012 – January 2014

Supervised graduate student research with Massachusetts Bay Transportation Authority (MBTA) focusing on the use of automatically collected data to improve system performance and analyze policy changes. Managed MIT employees embedded at MBTA. Responsible for developing innovative projects and nurturing their progress within the agency. Research projects include

(1) The impacts of fusing disparate open access real-time data sources into a single well-designed application to simultaneously influence the operational strategies of public transit networks, and behavioral change by riders.

(2) Transforming underutilized pervasive data to support and change transit agency processes, most of which developed decades or centuries ago in an era where data was sparse.

(3) Using modern techniques to create and analyze historical data sets—focusing on transportation networks and land use from 1850-1950—to explore the relationship between transportation infrastructure, the built environment, and travel behavior over extremely long time frames.

Additional research with Masdar Institute on strategically adaptive sustainable mobility systems and the effects of uncertainty on modeling and planning the transportation land use system, and with the Department of Urban Studies and Planning (DUSP) on innovative auto ownership policies in China.

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EDUCATION | GRADUATE WORK

Massachusetts Institute of Technology
Ph.D. in Transportation, 2012
Dissertation: Hysteresis and Urban Rail

Master of Science in Transportation, 2009
Master of City Planning, 2009
Thesis: The myth of the single mode man

EXPERIENCE | TECHNOLOGY

Digitas
Lead Interaction Designer June 2005 – August 2006
Collaborated with clients to unify and clarify business and user experience requirements. Prepared and managed the preparation of interface documentation. Led interaction design projects for Small Business and Consumer Cards divisions of American Express.

R/GA
Interaction Designer October 2004 – June 2005
Worked with clients and internal teams to refine and synthesize complex requirements. Led interaction design team in writing user interface standards for all rich-media pieces for IBM. Led interaction design for clients including Sharp Aquos and Nestle Purina.

Sharpe Partners
Senior Producer – Information Architect November 2000 – October 2004
Established information architecture department in boutique New York digital marketing agency. Designed & moderated in-house usability testing. Directed 3rd party quantitative and qualitative research. Led information architecture and user research, and performed contextual task analysis and content restructuring for clients including Fujifilm, Minute Maid, Aramark, and W.J. Deutsch.

Dress for Success
Freelance Web Guru March 2001 – November 2003
Architected, designed and built website to communicate non-profit's mission and solicit donations. Designed and built Content Management System and Newsletter Management tool for 75+ worldwide locations. Led requirements gathering and systems design of Management and Reporting tool.

Internet Appliance Network
Web Producer January 2000 – November 2000
Coordinated and built all web materials for New York based B2B. Built and supported all customer acquisition and retention campaigns. Managed relationships with design contractors and agencies.

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EDUCATION | UNDERGRADUATE WORK

Columbia University
B.A., Urban Studies, 2006 (coursework completed 1999)

PUBLICATIONS

Block-Schachter, D. & Zhao, J. Hysteresis and urban rail. EJTIR, 15(1), 2015, p. 78-91.

Chow, W., Block-Schachter, D. & Hickey, S. Impacts of Real Time Passenger Information Signs in Rail Stations at the Massachusetts Bay Transportation Authority. Transportation Research Record. No. 2419, 2015, p. 1-10.

Kamfonik, D. & Block-Schachter, D. Quantifying the Impacts of a Commuter Benefits Program: The MBTA Corporate Pass Program Case Study. Accepted for presentation at the Transportation Research Board conference, 2014.

Tribone, D., Block-Schachter, D., Salvucci, F., Attanucci, J., Wilson, N.H.M. An Automated Data Driven Performance Regime for Operations Management, Planning, and Control. Accepted for presentation at the Transportation Research Board conference, 2014; Presented at Thredbo 2013; Accepted for publication in Transportation Research Record.

Welsh, B., Baird, T., Zhao, J. & Block-Schachter, D. A Web App Design to Implement Travel Behavior Nudging Using 'Moves'. Accepted for presentation at the Transportation Research Board conference, 2014.

Zhao, J., Chen, X. & Block-Schachter, D. Superficial Fairness in Beijing's Car License Lottery Policy. Accepted for presentation at the Transportation Research Board conference, 2014

Zhao, J. & Block-Schachter, D. Behavioral Impact of the Financing Collection Mechanism on Accessibility: Two Cases from Chinese Cities. Publication in Volvo Research & Educational Foundations Financing Urban Access forthcoming.

Zhao, J. & Block-Schachter, D. Lotteries vs. Auctions: China's Experiments in Managing Automobile Growth, Asia Pacific Memo #215, April 2013.

Brakewood, Rojas, Robin, Sion, Jordan, and Block-Schachter, Forecasting Mobile Ticketing Adoption on Commuter Rail. Presented at the Transportation Research Board conference, 2013

Block-Schachter, D. & Attanucci, J. Employee transportation benefits in high transit mode share areas. Transportation Research Record. No. 2046, 2008, p. 53-60.

References available upon request.