

Accelerating Mobility—The Utility Perspective

—SUNNY ELEBUA

Exelon Corporation, Chicago, IL 60680-5398
USA

IEEE DOI 10.1109/EMR.2019.2902343

INTRODUCTION

IN September 2018, over 30 participants gathered at the Chicago Connectory to discuss the mobility revolution as part of The World Innovation Network (TWIN) Global, an annual gathering of innovation and growth leaders from across sectors and geographies. Participants included visionaries from inside and outside the transportation and energy sectors, with representatives from industry leaders such as Ford Motor Company, Bosch, Exelon and ConEdison, as well as other leading companies through multiple sectors, premier academic institutions, think tanks, incubators and investors all driving change in the mobility space.

The following is the second in a series of Technology Managers Notebook articles on insights and implications for managing technology and innovation in mobility from the session. This article focuses on utility perspectives on the future of mobility.

MOBILITY AND THE ROLE OF UTILITIES

In recent years, the effects of climate change, the sharing economy, and advances in new technologies like electric and autonomous vehicles have driven mobility to the forefront for business, technology and policy leaders. The mobility challenge is even more pressing in cities, where consumers demand solutions to problems like congestion, pollution and deteriorating infrastructure. Mobility is evolving beyond simple transportation to transforming and redefining work, travel and lifestyle. As such, mobility solutions will require a multi-stakeholder approach,

involving cities, policy makers, technology players, users/customers, and others to solve key issues around collaboration, infrastructure and social equity. With its role in managing the electricity grid and the regulatory compact to serve all customers, utilities are in a unique position to address some of those challenges in mobility and unlock the potential value of these new technologies and business models for customer and community benefit.

THEMES AND TAKEAWAYS

Consumer Needs for Mobility Solutions and New

Infrastructure While technology will play a key role in the evolution of mobility, especially for electric vehicles, consumer insights and a vision for integrated mobility are necessary to provide effective mobility solutions and optimize infrastructure investments. For instance, while annual passenger electric vehicle sales have increased, the rate of adoption remains slow due to factors such as higher upfront costs, availability of EV models, consumer awareness, range anxiety and the availability of charging infrastructure. By investing in the charging infrastructure, utilities can help optimize charging infrastructure deployment and utilization to help communities plan a network of integrated charging stations, balancing long-dwell charging at home and work with short-dwell locations on-route.

The Role of Cities: Engagement &

Education To support beneficial smart mobility solutions such as electric vehicles, utilities must interface and collaborate with

regulators and policy makers. Services like charging stations, fleets of electric vehicles for shared mobility, and autonomous vehicles require thoughtful policies to ensure safety, accessibility and fiscal responsibility. Policy makers have unique insights on community needs and can form coalitions to ensure those needs are met. These groups can ensure technologies are integrated with the city's design, culture and norms, so that these new technologies are actually adopted and used.

Cities also play a valuable role in educating citizens on new services and even shifting norms on how these services are integrated into everyday habits. For example, adopting or learning a new habit around best times to charge a vehicle may have overall economic benefit to the customer and optimize the use of the grid. Policy makers can help citizens and utilities communicate and bridge that knowledge gap, facilitating better business-community relations.

Utilities to Empower Communities Technology costs will play a significant role in the adoption of smart mobility solutions. High upfront costs can create an economic barrier to entry and inequities in the distribution of the benefits of electrified transportation, such as reduced air and noise pollution. Utilities can help increase access to new transportation systems for all socioeconomic classes. Democratizing mobility can also help democratize access to education, jobs, and homes, empowering individuals across all classes. Cities

must paint a vision that inspires possibility and engagement in the benefits of new mobility for every citizen. As regulated entities obligated to serve all customers, utilities have the opportunity to work with cities to involve citizens and communities in a co-creation process to better understand neighborhood needs for new mobility solutions. Doing so also creates an educated and empowered consumer base, opening valuable channels of trust and transparency for future mobility projects.

Near-term opportunities include targeting electrification of port authority fleets, short-haul buses such as those at airports, and municipal fleets. These three opportunities have the potential to deliver near-term value to low income communities and play a key role in creating social equity by reducing noise and particulate emissions in likely economically-disadvantaged areas.

THE WAY FORWARD

Design to Vision and Goals, Not a Technology Endstate Smart mobility solutions and the underlying technologies are rapidly advancing, and designing technology solutions towards a predetermined outcome in an environment of disruption and transformation will be counterproductive. Rather, a better approach is to design with a vision and goals in mind. Through an iterative process of testing and learning from concepts in demonstration pilots, a solution can be designed with real applications to imminent challenges. These solutions are more valuable for

consumers and amenable to changes along the design process. Mobility will look different in every city, with distinct constraints, innovation needs and successes, although they should be grounded in the same fundamental principles that recognize demographics and infrastructure requirements in the design goals. Utilities and other contributors to mobility solutions must design with these constraints in mind, and shape solutions that can learn, evolve and adapt to fit changing dynamics or new needs.

Grassroots Engagement Mobility in cities affects a wide variety of people. Solutions, therefore, should involve a wide range of stakeholders. As companies develop, experiment and deploy mobility solutions such as transportation electrification, they must engage not only with visionary leaders and thinkers, but also with the people who live in those cities to create tailored products and services. Grassroots engagement will be the key to creating lasting value for consumers and communities. New mobility has great potential to transform lives and create integrated and connected communities, and utilities can play a role in social equity by improving access to those services through investment and development of transportation electrification infrastructure. A mark of success isn't necessarily how many new technologies or products are churned out, but how useful and usable those solutions are to everyday individuals from all walks of life.

Sunny Elebua has been with Exelon since 2008 and is currently the Vice President of Corporate Strategy, overseeing a wide range of strategic and technology-driven responsibilities.

Prior to this role, he worked on Exelon's Corporate Development team for several years, managing the evaluation and due diligence of a number of M&A transactions. Before joining Exelon in October 2008, Sunny worked as an Associate in Wachovia Securities (Investment Banking) in the Energy & Power Group from 2006 where he covered primarily the energy and power sector.

He received his MBA from the Wharton School at the University of Pennsylvania in 2006. Prior to business school, Sunny started his career with Arthur Andersen in the Assurance & Business Advisory Group and later joined a Private Equity firm with funds Africa.