

Aging with Options: Universal Mobility - A New Vision for Person-Centered Transportation

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Transportation is vital to help people with mobility limitations live as independently as possible in their communities. But access to transportation poses a major barrier for people who do not drive. In most American communities, there are inadequate transportation options and, where they do exist, service often is fragmented and difficult for riders to identify. Despite decades-long federal and local efforts to coordinate specialized transportation, progress has been slow.

But the major disruptions currently occurring in the transportation sector allow for hope that the aging services sector can harness emerging technology to modernize transportation services and deliver higher quality service for older adults and people with disabilities.

A New Vision: Mobility as a Service

Enter the much talked about concept of Mobility as a Service (MaaS). Many players in the transportation sector are working toward MaaS, with the ultimate goal of providing a comprehensive package of transportation services to replace personal vehicle ownership. The aim is to make transportation alternatives so appealing that even the most car-dependent would choose new ways to get around. These players are diverse—large transit authorities (LA Metro), ride-hailing companies (Lyft, Uber) and even car manufacturers (Ford). They intend to achieve MaaS by using applied technology to make trip planning, booking, payment and modes of transfer easy.

Such a new world order could be life-altering for people who are unable to drive, but it will only happen if their needs are considered during planning phases. This requires that transportation actors think as much about specialized services as they do about modernizing regular public transportation, and to offer new on-demand services like Lyft, electric scooters and bikes.

A Cost-Effective, More Human-Centered System

Demand-responsive transportation is a set of public and private services in which individual passengers, agencies or healthcare providers that subsidize clients' travel can request transportation from an origin to a destination at a specific time. Vehicles do not follow a fixed route and most passengers share rides to minimize costs. Many older adults are dependent upon this form of specialized transportation because of frailty, disability or inadequate public transportation service coverage in their communities.

Building "universal" into Mobility as a Service requires modernization of demand-responsive transportation, and one approach could be modeled after FlexDanmark (tinyurl.com/y7rgsw6d), a global model for coordinated, demand-responsive transportation.

Twenty years ago, FlexDanmark, a nationwide software company owned by Denmark's five regional public transportation authorities, began to integrate and coordinate all of the country's demand-responsive transportation. Initially, the task was to more efficiently provide medical transportation.

Prior to the establishment of FlexDanmark, transportation authorities carried out the federal mandate to provide medical transportation to qualifying citizens by arranging transportation for clients via private taxis. While the cost of transportation was just a fraction of the total spending on healthcare and other services, on the aggregate, by itself the transportation subsidy still was huge, motivating regional transportation authorities to discover a more efficient means of delivering the service, thus paving the way for FlexDanmark.

Since its early days providing medical transportation, FlexDanmark has integrated additional services into its FlexTrafik platform. FlexHandicap is a service for individuals with severe mobility impairment.

Under federal law, Denmark's regional transportation authorities must provide at reduced cost 104 one-way leisure trips per year to citizens with severely reduced mobility because of disability or frailty, at an out-of-pocket cost no higher than the cost of public transportation.

Most municipalities invest in FlexTur, which allows any citizen to arrange demand-responsive transportation through FlexTrafik. FlexTur riders share the cost of transportation with their sponsoring municipality. Many older adults who do not qualify for FlexHandicap subsidies take advantage of FlexTur to get around their communities with ease.

How FlexDanmark Works

To best coordinate Denmark's demand-responsive transportation services, FlexDanmark's regional call centers are integrated through a central nationwide dispatch system. Its IT system automatically finds the lowest cost transportation provider available to complete a given trip and then matches the customer with a given vehicle; trip requests can be assigned within seconds. More than 550 unique private transportation providers participate in this single system, which serves both urban and rural customers. And hospitals, medical offices and human service agencies can easily connect their clients using the FlexDanmark portal.

Different categories of FlexDanmark customers are transported in the same vehicles (the service is open to all citizens) at the same time, thus the regional transportation authorities can transport more passengers in fewer vehicles, and offer them shared—and shorter—trips. Trips may be booked with lead times ranging from two weeks to two hours, and because each of the regional FlexDanmark operation centers are part of the larger national system, geographic boundaries are not a barrier.

What makes this coordination possible is that all players agree to exchange data about each trip in a common data format, automating the task of assigning a customer to a vehicle. The data standard has lowered barriers for private transportation providers to enter the market, because they no longer have to purchase a specific scheduling and dispatch software, but can choose one appropriately scaled for their business.

Furthermore, FlexDanmark's transportation authorities negotiate contracts with numerous providers on behalf of regional governments and each municipality. As a result, FlexDanmark has significantly lowered the cost of demand-responsive transportation. Ninety-five percent of the 16,000 trips provided each day are on time, defined as a vehicle arriving no later than 15 minutes after its scheduled arrival time (and never earlier). This convenience and cost-savings benefit customers who pay out of pocket for the service, as well as the hospitals and municipalities that subsidize travel.

FlexDanmark is fiscally driven by technology that accurately distributes costs among payers. Passengers, hospitals and municipalities are billed according to clear cost-allocation formulas built into the IT platform, based on rider eligibility and subsidies provided by the public sector.

Adapting the Model for America

Though there are many differences between Denmark and the United States (most obviously, geographic size and political orientation toward social welfare), the FlexDanmark model is transferable. By applying it at the regional level, the United States could benefit from improved market competition. This competition, in turn, could lower the cost of providing transportation service.

In many respects, the pre-FlexDanmark medical transportation system resembled that of today's Medicaid Non-Emergency Medical Transportation (NEMT) in the United States. Only 0.40 percent of the federal Medicaid budget goes to transportation; however, that translates into \$1.5 billion in annual spending—the largest human services transportation outlay of any federal agency, surpassing that of the Department of Transportation.

As a result, numerous states, which are responsible for sharing the cost of Medicaid NEMT, are exploring ways to lower transportation costs. Some have put in place transportation brokers that tap multiple providers in the community. But none employs the underlying data specification that facilitates efficient, automated discovery of available vehicles, trip scheduling and payment among numerous independent transportation operators.

In 2018, the **National Academies of Science** built a common data specification modeled on that used by FlexDanmark and other Scandinavian countries. Now, we need demand-responsive transportation providers and their funding agencies to pilot the code and measure its benefits in terms of cost-savings, service-quality improvements and improved beneficiary health. The technology would enable door-to-door transportation providers such as senior shuttles, paratransit buses, taxicabs and ride-hailing platforms like Uber and Lyft to be linked. Implementing this specification would foster coordination of transportation services.

Current U.S. demand-responsive transportation players have at best modest incentive to revamp the system, given that human service agencies and the people they serve would be the big winners. Thus, the aging services sector must push the transportation sector to be better. It is the path forward to bringing the U.S. demand-responsive transportation system toward improved customer service. This is an essential step toward realizing **Universal Mobility as a Service**.

Learn more about FlexDanmark's coordinated transportation program at: <https://www.aarpinternational.org/the-journal/current-edition/flexdanmark>