As part of our Movement Matters series, our specially-selected expert panel discussed the future of intelligent mobility, its benefits and how it will impact on transportation demand management, data insights, transit operations and whole journey information and payment systems.

Alex Fay (AF), Vice President, Syncromatics
Ashley Hand (AH), Co-Founder, CityFi
Antoinette Meier (AM), Transportation Demand Management Program Manager, SANDAG
Jennifer Dice (JD), Sr. Digital Communications Manager, Sound Transit
Craig Nelson (CN), Associate, Steer (moderator)

Q1: Sharing economy has created a number of new mobility options, but what does intelligent mobility mean to the panel? Is it a tool to bring all of the modes together, or does it go deeper and do we need technology to solve problems?

AM: From a TDM perspective, new technologies are exciting and they can be important tools for changing behavior, however we have a long way to go to be an “intelligent” society. An intelligent system could look like a door-to-door, shared and autonomous service, integrated into a unified platform with hassle-free trip planning and payment for users. We have come a long way, but innovation has still yet to occur, and we can’t say that we’re operating in an intelligent mobility environment at this time.

AF: Alex points to the number of technology applications on our phones as a demonstration that our technology approach to mobility is clearly not integrated. However, when you work to unify functions, you unify on the lowest common denominator. The tradeoff for integration is a lower quality compromise. Often it is assumed that a single solution is going to be the best of all individual solutions – but in practice it is the most median.

JD: We are not organized to be intelligent at this point. It has become the standard where technology comes in with what’s available and just makes the best of it. Take the example of One Bus Away which was developed by a graduate student, and although it is a valuable service, the way it's organized is on wobbly sands. We need to become ourselves more intelligent about how we approach technology strategically.
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AF: Alex offers the example of smart homes – the technology for these operates as a closed eco systems, in order to be certified technology providers and users have to opt in to certain standards. This method is to ensure quality, but the tradeoff is that it is not all inclusive.

AH: Intelligent mobility is not necessarily focused on technology itself, but instead is more user-centered in nature. As someone with young children, her ability to move around city is different, and mobility need is different. It is necessary to evaluate from a user perspective – safety, is it a comfortable place to make a shift between modes etc. Intelligent mobility wraps all of this together, understanding changing needs, constantly checking other aspects of lives of users, and continually improving service and experience. In the case of Linden Neighborhood in Columbus, Ohio where there is a great socio-economic divide, part of their smart cities scheme employed mobility as a service to improve mobility and access to jobs. However, this strategy did not address the much deeper needs of the community – limited access to jobs because there were few jobs in the community. Technology is not a silver bullet to solve complex issues.

CN: Craig comments on user happiness, connection to physical environment (ie. stations and streetscape) and that all of the best apps in the world cannot remedy if the user experience isn’t there.

Q2: Where is this being done right? Where are things not going well, and what are lessons learned?

AH: There is not a complete system anywhere: everywhere is building on old infrastructure and legacy systems, we have cultures and travel behaviors that require change on a systemic level. Pointing towards Europe as an example is common but it is often not applicable to local communities, where the context and political/governance models are different. The US is in fact a good testing ground because of aging infrastructure and complex city and regional governance, which has created challenging environments to work within. There is an opportunity to think about how we rebuild and reinvent our infrastructure and good practice examples like the complete streets movement and new design guidelines. The other opportunity on the governance side is to rethink the future role of transportation departments as a mobility manager who orchestrates an ecosystem of transportation to respond to the needs of a community. Different communities require different strategies to improve mobility.

AM: San Diego had the first electric carshare service in the country with Car2Go, which launched in 2011 and grew to be several hundred vehicles and a well-utilized service, until this past December when Car2Go pulled out of San Diego region. The City’s bikeshare has been struggling and, as an unsubsidized service, it relies on tourism and cannot focus on meeting needs of commuters and providing first last mile solutions. Antoinette pointed to DC and Chicago as best practices, using shared mobility as an extension of the public transportation system, supporting the system with funding and planning to compliment public transit. San Diego has been a pioneer in shared mobility but its experience is a lesson on governance structure for shared mobility; where to be involved and where to step back and let innovation happen. SANDAG is in the process of developing a regional mobility hub implementation strategy that will help cities develop supportive policies and practices for implementing shared mobility.

AF: One reason programs do not work is that government operations are designed to lose money and businesses are designed to make money. The private sector will invest into putting clever services out on the street but if they do not make money they will not last. Government program managers need to dig into the economic business case, and cannot simply take the private sector’s word for it when they say they’re going to be self-sufficient. They may not know if it’s going to work or not, it is incumbent on the government partner to do just as much diligence as an investor would. Governments invest years and opportunity costs and when schemes fail it is expensive to recover. Additionally, there is a discussion in terms of regional equity vs. locating services where private companies feel that they will make money. The public side needs to make
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Sure providers are making money or be prepared to subsidize them – public transit itself is highly subsidized and it is unreasonable to expect private operators to have the same offer and be self-sufficient.

**JD:** Public agencies need to improve coordination before they are prepared to partner with other entities. The smart card (ORCA) program has been very successful. However, they are not organized to know how to bring other entities ie. TNCs or bikeshare into the fold. For example, employer TDM regulations don’t extend beyond offering transit incentives to employees. In the case of Pronto, Seattle’s failed bikeshare, similar carshare or bikeshare programs in the future can be subsided through facilities, with public agencies building structures and providing space that accommodates the service.

**Q3: Where do major employers fit into intelligent mobility? Is it something that excites them? Will it replace traditional TDM approach or support it?**

**AM:** San Diego no longer has commute requirements for employers and TDM participation has become voluntary, and as a result SANDAG has invested into TDM outreach. Much of the region is not well served for transit and although services like vanpool have been viable, choices are limited and marketing/outreach of limited choices is difficult. Intelligent mobility is a huge opportunity for TDM: employers are excited about it, and even more important, commuters are excited. SANDAG has partnered with Uber and Lyft to offer free Uber pool and Lyft line, and Uber is now a partner for guaranteed ride home. Ridesharing for first/last 4 miles is more affordable to SANDAG and employers than subsidizing a shuttle. SANDAG is currently working on app-enabled carpool incentive project.

**Q4: We’re seeing TNCs overlap with transit – is this a good idea and are the lines starting to blur between traditional transit and multi-modal transport?**

**AH:** There are some generational preferences that influence choices, some transit agencies are more proactive to integrate and provide more options. There are some players who are quite clearly trying to undermine transit and the investments in these systems. It is essential not to walk away from traditional transit systems too early – there will never be a more efficient way of moving large amounts of people in and out of urban centers. There is a huge equity issue in turning mobility over to the private sector; it is essential to consider what would be forfeited with impacts on equity, and it should be concerning to public agencies, whose responsibility is commitment to the public good. We don’t yet understand enough about behavior, how mobility hubs are used, and mode shifts from a user perspective. There is a place for P3 and for private mobility services, but it is essential to be vigilant, ask the right questions and not walk away from transit investments for fear of missing out on a model that will have a better impact on the region in the long run.

**Q5: There’s a lot of data being captured – is the data your system producing shared with public, do you see that happening in the future?**

**AF:** The data Syncromatics generates and collects goes to the city. It’s surprisingly not necessarily the standard, but as the city pays for the technology infrastructure it makes sense that the city should have the data. With TNCs like Uber it’s a bit different because Uber is investing in the service rather than the City paying for it to be provided. They operate in a competitive market, so being able to control access to that data is a baseline expectation. The user privacy argument is a red herring to avoid sharing data for reasons of competition. UC Davis has set up a clearing house to anonymize data and protect the various competitors while still providing benefit for cities – this will likely be the model that will be the most successful.
Q6: How important is Data Quality and what battles have you had?

JD: Sound Transit elected to maintain data store and add data sets over time, with the idea of opening it up to private developers to hold API keys and create apps. The agency has limited ability to do development themselves (challenging to competitively to hire developers) so instead they opened up the data to let the community create applications. However, one big challenge is that schedule data was never intended for public use, it was meant for bus operations and never meant to power signs. There is significant re-engineering needed. Another challenge is the time it takes creates GTFS data, so reroutes aren’t included – when there are problems, One Bus Away just stops working. Exploring how to work with partners to re-engineer the data and nimbly insert updates.

AF: Metro faces the same problem trying to install real time information at bus shelters, uses real time data but falls back to schedule data if necessary because real time data system on the buses are old and don’t work very well. Alex shares an anecdote about “pinks” at Metro demonstrating the challenge in incorporating the antiquated practice of handwritten notes and the absurdity of trying to make real time data reflect that.

AH: Return to the discussion on competitiveness and access to data – it is important to point out that these services would not exist without access to public infrastructure which government funds. There is a disconnect across the country on what using public infrastructure really means and how its paid for, and regulators are not using this to their advantage when it comes to requiring access to data of services that are operating on those investments. There is a similar issue with social contract in that we are in the habit of regularly forfeiting data to use services, and should look to restructuring city charters towards the sharing of public data; people would be willing to forfeit data to governments if it would be used to improve their quality of life. It is also necessary to be intentional with the data collected and refrain from just collecting data for the sake of data.

Final question round: when we get back together next year what will we be talking about?

AH: Connected infrastructure and infrastructure project which are underway in Los Angeles.

AM: Autonomy and connectivity. The outcomes of mini pilot programs (and best practices from those).

AF: Possibly the exact same things. Technology time moves faster than government time or infrastructure time (ie. have to keep buses for 12 years).

JD: Integrated systems and regional trip planners.