TOPICS AND PRESENTERS

FUTURE FORWARD!

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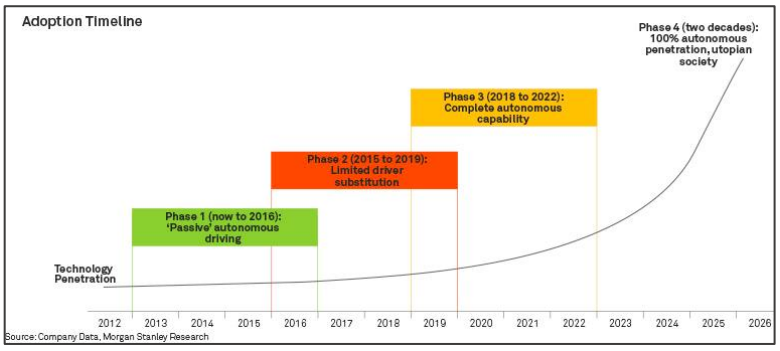
FUTURE FORWARD!

OUR SHARED AUTONOMOUS FUTURE: LINK

TOM FISHER, DIRECTOR, MINNESOTA DESIGN CENTER

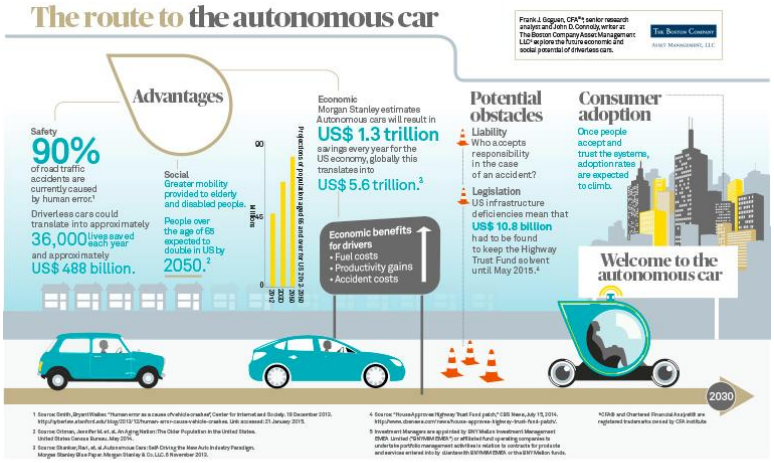
100 years ago, we removed an animal from the transportation system switching from horses to automobiles. We are about to remove an animal again–humans–for the same reasons. It's cheaper, safer and cleaner.

- This is not entirely new technology. We are bringing old aerospace tech to the automobile.
- We are entering "Phase 3: Full Autonomy." Current estimates place full autonomy replacing humans at around 10-15 years from now.
- Insurance is what flipped the industry 100 years ago, and it will do so again. Human drivers will become an increasingly expensive high-risk pool.
- As more people switch to autonomous vehicles (AVs) as a low-cost option, the pool of human drivers will get smaller, driving up cost to insure.
- A network of shared autonomous vehicles will be must less expensive than current individual ownership models. As an example, Google may offer free rides in exchange for watching advertising.
- Lower costs/free transportation could have a big impact on equity outcomes.
- There will be a dramatic decline in deaths and injuries that result from poor human drivers.



Automobile manufacturers will move from goods producers to service providers. Many are already preparing for this transition.

- This is part of a larger shift toward the "sharing economy."
- Producers will own the vehicles, and electrification will make them much cheaper to own, operate and maintain.
- Car companies will offer "mobility service contracts." For example, a small car may pick you up and take you to work each day, but if you need a truck to haul something then it will be provided as part of your contract.
- As a service provider, companies get constant touch points with consumers as opposed to making a big sale once and hoping they come back when they need to replace a vehicle.



Public rights of way will change first and must be adapted

- Curb space will become very valuable for cities. AVs will need drop off areas, and cities will need to determine where and how to allocate it.

- AVs need much less space, meaning many lanes can be eliminated and those that remain can be narrowed. Google research shows that anything more than four lanes–two in each direction–is too wide.
- National League of Cities estimates 30% of current land usage will come available, primarily through reduced demand for car storage.

Challenges in our autonomous future

- There are liability issues to work out. Who accepts responsibility in the case of an accident?
- There may be new needs for regulating pedestrian behavior. If an AV can be expected to stop for a pedestrian no matter what, what incentive do pedestrians have for acknowledging vehicles?
- Regulations that are barriers and/or not adapted to autonomy may slow adoption.
- Revenue models need to change. Cities are estimated to lose $129 per capita annually due to diminished parking meter use, fewer fines, fewer vehicle registration fees as people move to shared ownership, etc. Parking needs will decrease and parking ramps will lose revenue and need to find other uses. Ramps not designed with flat floors will be rendered obsolete while others may be able to adapt.
- Gas tax funding is already insufficient, and the efficiency of autonomy and electrification will further erode it.
- About 5 million people (3% of workforce) work in driving-related industries. What will happen to displaced workers?
- As auto companies become service providers, how will cities respond when a company wants to become their "mobility provider?" Ford City Solutions is proposing exactly this model.

Opportunities that autonomy will bring

- Because AVs need less infrastructure, cities, transport agencies, etc. have an opportunity to reclaim a lot of land on public rights of way and determine how it can be better used. Much of this will be higher-value, taxable land.
- These changes will be most profound in suburban communities where wide, multi-lane roadways and abundant surface parking are most common.
- As examples, highways could be lined with solar farms and bike trails. It may be possible to build affordable housing, new park space and/or improved environmental features along narrowed roadways.
- Displaced workers may find new positions arise to offset losses. They may not drive the truck anymore but perhaps they will still ride in it as a sort of mobile maintenance worker.
- Homeowners will gain both interior and exterior space as the need to store vehicles declines.
- AVs will complement, not replace, transit. Sharing data among agencies and service providers can help people make better decisions about what modes are the fastest for a given trip. AVs can help solve the "last mile" problem.
- Because shared autonomy can dramatically lower transportation costs, it can improve equitable transportation outcomes; however, it could also increase inequality without planning ahead for how it will serve those who need improved transportation most.

LOOKING AHEAD AT MNDOT: LINK

BRIAN ISAACSON, DIRECTOR OF PLANNING, PROGRAM MANAGEMENT AND TRANSIT. MNDOT

Thinking beyond the car

- MnDOT is testing autonomous vehicles, most notably through the autonomous bus demonstration associated with the Super Bowl. Phase I testing took place at MnROAD and Phase II will take place on Nicollet Mall.
- AVs currently struggle in winter climates. This testing is designed to get data to make improvements to their performance.
- Two interesting learnings to emerge already: 1) the autonomous bus registered blowing snow in front of its sensors as an "animal," causing it to stop. 2) AVs need to "see" things to tell it where to go. It was necessary to add guideposts at MnROAD to tell the bus where it could safely operate.

State Transportation Innovation Council

- Associated with the Federal Highway Administration (FHWA) "Every Day Counts Initiative"
- Sets aside a small amount of operating funds to find ways to streamline MnDOT activities and make timelines shorter.
- This is a state-led initiative that involves public/private coordination

Community Connections

- MnDOT has increased its outreach and collaboration with community organizations.
- As an example, MnDOT worked with ULI Minnesota for Technical Assistance Panels looking at how MnDOT can improve the utility of the land it owns, particularly as highways are rebuilt, including building freeway lids.
- Key ULI MN recommendations include making infrastructure development ready, connect communities to improve health including economic and housing opportunity, and create a task force to form a public/private partnership.
- MnDOT is studying projects in other communities like Klyde Warren Park in Dallas, TX and Long Street and Union Station in Columbus, OH as well as local examples like Minnehaha Parkway over Hiawatha and Leif Erickson Park.
- Community partnerships can help with securing funding, advancing community goals like equity and green space, and developing models for maintenance and operation of facilities.

XCEL ENERGY'S VISION OF THE FUTURE: LINK

KELLY BLOCH, REGIONAL VICE PRESIDENT DISTRIBUTION OPERATIONS, XCEL ENERGY

Xcel Energy Accomplishments

- No.1 wind provider in the country
- Leader in conservation and emission reductions
- Building solar capacity
- Strong reliability

Energy Industry Trends and Grid Modernizations

- The economics of the industry are changing, customers have increased expectations as our lives include more and more devices that need reliable electricity and charging, and the policy landscape is increasingly uncertain.
- Xcel anticipates game changing energy efficiency advances.
- These advances will affect batteries and storage, electric vehicles, solar, and smart technologies.

Xcel's definition of resiliency includes three facets: Prevent Outages, Fix It Fast, and Community Sustainment

- Prevention includes spending lots of money on vegetation management, primarily tree trimming. Downed trees and vegetation are the most common causes of power outages during storm events.
- Prevention also includes storm hardening by focusing on rerouting power during outages and finding vulnerabilities. An example of hardening would be the switch to stronger poles rated for higher speed winds and replacing pole cross arms with fiberglass instead of wood.
- Micro grids are a subset of the system that can isolate themselves when the larger grid is down. Some can perform for just an hour or two alone while others can go for days. These add resiliency to the system during larger outages.
- "Fix It Fast" involves constant monitoring of weather and other threats to system continuity. Improving system design also helps with fixes when they are needed. Things will break, so you try to design so the "right" things will break. Xcel wants the wire to break, not the pole, for example.
- Modernizing the grid is important. This includes increased automation of grid distribution, automatically isolating problems, and increasing redundancy to enable redistribution of power when needed. The goal is to have linemen in the field making repairs, not identifying and isolating problems.
- "Community Sustainment" reflects an increased focus on communication, prioritizing power restoration, and restoring normalcy during outages. Mobile charging stations allow people to charge phones and devices that help make things feel more normal. Xcel focuses on restoring power to emergency services and critical infrastructure first.
- By communicating more clearly around expected time to restore service, customers have clearer expectations. Rather than saying everyone will have power in 3 days, Xcel now relates what percentages will be restored within more granular timeframes.

EXECUTIVE DIRECTOR'S REPORT

MAYOR TERRY SCHNEIDER: "RCM IS ONE OF THE BEST THINGS TO HAPPEN IN THIS REGION"

- Terry Schneider, the outgoing mayor of the City of Minnetonka, spoke at the beginning of the meeting on the occasion of his last meeting as a mayor, though not the last he plans to attend. He thanked the Regional Council of Mayors for being a valuable resource during his time in office saying, "this body is one of the best things that has happened to this region in the 40 years I've been around." Mayor Schneider said the RCM brings together an incredible pool of talent, knowledge and ideas, and he thanked ULI MN Executive Director Caren Dewar, the rest of the staff, and everyone else who contributes for making the meetings so valuable.

THE NEXT MINNESOTA MAYORS TOGETHER MEETING WILL BE IN DULUTH ON FEB. 8-9

- Following on the successful first session in Bemidji last October 11-12, Minnesota Mayors Together will convene in Duluth February 8-9 at the invitation of Duluth mayor Emily Larson. Minnesota Mayors Together seeks to break down urban/rural divide by bringing MN mayors together in conversation to build civic trust. The goal is to shift a negative culture, not to build a structure. See who participated in the first session **here**.

JANUARY 8TH ATTENDEES

MAYORS

James Hovland	City of Edina (co-chair)
Molly Cummings	City of Hopkins (co-chair)
Mike Maguire	City of Eagan
Elizabeth Kautz	City of Burnsville
Jim Adams	City of Crystal
Doug Anderson	City of Lakeville
Kirt Briggs	City of Prior Lake
Bob Crawford	City of Elko New Market
Jerry Faust	City of St. Anthony
Jacob Frey	City of Minneapolis
Shep Harris	City of Golden Valley
Kathi Hemken	City of New Hope
Marvin Johnson	City of Independence
Denny Laufenburger	City of Chanhassen
Peter Lindstrom	City of Falcon Heights
Chris Lund	City of Hamburg
Dan Lund	City of Newport
Julie Maas-Kusske	City of Maple Plain
Tim McNeil	City of Dayton
Rhonda Pownell	City of Northfield
Paul Reinke	City of Oakdale
Terry Schneider	City of Minnetonka
Mark Steffenson	City of Maple Grove
Nancy Tyra-Lukens	City of Eden Prairie
Lisa Whalen	City of Minnetrista
Brad Wiersum	City of Minnetonka
Janet Williams	City of Savage
Gene Winstead	City of Bloomington

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Farveh Makhssous	Sambatek
Paul Mellblom	MSR Design
Diane Norman	RSP Architects
John Shardlow	Stantec
Ellen Sahli	Family Housing Fund
Amy Wimmer	Hines

GUESTS

John Adams; Kelly Bloch; Peter Dahl; Kevin Frazell; Debbie Goettell; Michael Huber; Brian Isaacson; Burke Murphy; Emily Nachtigal; Mel Reeder; Josh Stowers; Mark Casey; Samantha Crosby; Christopher Heineman; Ben Martig; Bruce Nordquist; Jennifer O'Rourke; Jamie Verbrugge; Schane Rudlang; Ellen Richter;

ULI MINNESOTA

Aubrey Albrecht, Cathy Bennett, Caren Dewar, David Baur

NEXT MEETING

Monday, February 12th, 2018
11:30 a.m. to 1:30 p.m.
Seattle Room at Dorsey & Whitney, 50 South 6th Street, Minneapolis, MN.