

The cars of the future?

St. Albert man encourages governments, industries, to consider the impact of autonomous vehicles

BY VICTORIA PATERSON
Staff Writer

Imagine a world where you can wake up and order a car to be at your door in 10 minutes.

It's not a taxi. It's not a carpool. It's not your chauffeur and limo. There's no driver at all – it's an autonomous, self-driving vehicle.

You get in, and the car drives you to work. Instead of focusing on the road, you're able to start your workday while still en route.

It drops you off at the office door, and skedaddles off, under its own power, to park itself, go home or even provide rides for people throughout the day.

You don't have to own or park a car, saving you money. You can incorporate your workday to your morning commute, hopefully saving you some time.

Ideally with computers at the wheel, everyone is safer. Paul Godsmark can imagine that world, and he can see it arriving as soon as the next decade.

"Even though it's a hot topic, people still haven't realized how transformational it's going to be," Godsmark said.

A St. Albert resident and chief technology officer for the Canadian Automated Vehicles Centre of Excellence, he is a civil engineer with 25 years of experience doing road design, construction, highway safety and intelligent transportation systems work.

He developed a passion for automated vehicles – driverless or self-driving cars – before arriving in Canada more than three years ago, after learning more about the potential for the vehicles.

"I realized that these vehicles would potentially do me out of a job," Godsmark said.

It seems fantastical, but automated vehicles are coming and will nearly certainly be on the roads in the coming decades.

Many car manufactures are working on self-driving cars, and Google has been testing self-driving vehicles on open roads.

A handful of states already have put legislation governing autonomous vehicles on the books. California is supposed to develop rules so the public can use them by Jan. 1.

While Google is estimating its technology could be in public hands before 2020, Godsmark said that technology will not work everywhere all of the time yet.

"So in terms of Canada, the figure I've been telling everyone is expect autonomous vehicles capable of all-year-round operation by 2023," he said.

There are also different technologies out there – Godsmark is an enthusiast for the fully autonomous vehicle, but there's also what Godsmark calls a "parallel technology," connected vehicles.

Connected vehicles communicate with each other, but also the infrastructure and a central "brain" that



Supplied photo

NO DRIVER NEEDED – Paul Godsmark with one of Google's driverless cars.

will optimize everything.

The Edmonton region will be playing host to testing for connected cars and related technology via the Active-Aurora project, a joint initiative led by the University of Alberta and the University of British Columbia.

While some assert the connected car "piece" is needed, Godsmark said he agrees with Google that it's not required to get self-driving cars on the road.

"The Google model has no infrastructure changes," he said.

Godsmark can see many benefits stemming from the introduction of automated vehicles to the transportation landscape.

Those benefits include increased safety as most car accidents are caused by human error. There could be savings in the billions of dollars if collisions are reduced, he said.

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There's also the benefit of time, with the vehicles easing congestion and the ability to better use your drive time on work or other activities.

It's also more sustainable, Godsmark said.

"World's resources are not sufficient to provide everyone a vehicle like the current North American lifestyle dictates," he said.

If people can be persuaded to share autonomous vehicles, there can be further cost savings and reduced congestion, he said.

Some of the benefits are similar to the argument for using transit, though Godsmark points out that it can be tough to get work done on transit.

Transit also doesn't come and pick you up from your home.

"You get a door-to-door service. I can't understand why transit people don't realize this is transformative and is both the biggest opportunity and the biggest challenge for transit," Godsmark said. "This is essentially becoming a hybrid of the car and transit."

Then there's accessibility for the young, old and everyone in between who can't or don't want to drive but who would like the independence of being able to access a vehicle on demand.

Those are some of the benefits, but Godsmark can also see some potential downsides to the technology.

That ranges from fears a malicious hacker could take control of a fleet of cars – "they could do untold damage," Godsmark said – to the job displacement caused by the shift.

Jobs could be displaced from the obvious industries – like taxi and truck drivers – but the auto insurance industry and even health care could be impacted.

Godsmark also worries about what introducing an automated door-to-door vehicular ride service could do to encourage the obesity epidemic, as it might discourage some from taking more active forms of transportation like walking or cycling.

Either way, he's hoping various levels of government, including municipalities, start thinking about the impacts and changes automated vehicles or their close cousins, the connected vehicles, could have on Canada's roads.

"If we start putting policy in place now, then we can steer the technology in what we think is a societally acceptable direction. But if we just go hands off and see what happens, it could be a mess," he said.

The City of St. Albert, with its "smart city" directive, is more open to Godsmark's message to at least consider

the implications of new driving technology than some other governments, he said.

The city will be spending the next year or so working on revising its transportation master plan.

Transportation manager Dean Schick said that part of that document should address the potential for emerging or new technologies to be incorporated into the city's road network.

"It definitely is a benefit to the municipality to recognize that these are out there and that infrastructure ultimately needs to be maintained to align with this," he said.

Schick did note there needs to be some action on regulations from other levels of government around autonomous cars.

On the provincial level, Alberta Transportation is "assessing the benefits and challenges associated with autonomous vehicles, but no decisions have been made," said Christine Wronko, a spokeswoman for that department.

She stated in an email that Alberta Transportation is developing a 50-year "multi-modal" transportation strategy incorporating a variety of ways of travelling that will be finalized in 2015.

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and to enjoy every moment!!
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