Future Urban Transport Systems

Dr Alexander Erath | 18th February 2014 | stars Singapore Symposium
The urban mobility challenge

Mobility demand
2010-2050 [trillions pkm p.a.: %]

Future Infrastructure

Theses:

Densification of cities continues, spread slows down.

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Infrastructure will incrementally be enhanced to serve certain applications.

Studio Roosengarde (2013) http://www.studioroosegaarde.net/project/smart-highway/info/
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Value capturing will become a revenue for financing transport infrastructure and operation.

The allocation of urban public space will re-negotiated.

Infrastructure will incrementally be enhanced to serve certain applications.

Transport infrastructure will continue to have long lasting impact on the functioning of the city.

Schweizer Landestopografie (2014) http://map.geo.admin.ch/
Future Vehicles

Theses:

Vehicles will be connected with each other and the infrastructure to increase road safety and boost capacity.

http://articles.latimes.com/2014/feb/05/autos/la-fi-hy-v2v-nthsa-safety-20140204
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Vehicles will be connected with each other and the infrastructure to increase road safety and boost capacity.

Vehicle technology will continue to make travelling more convenient and hence lead to longer travel distances.

Image source: http://www.itechwhiz.com/2012/05/future-cars-legally-blinds-google-cars.html
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Vehicles will respect the imperatives of global warning and urban form.

Image source: www.superpedestrian.com
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Most people in cities will travel by bus.

Image source: Dario Hidalgo - http://thecityfix.com/blog/transmilenio-a-retrospective/
**Future Policy**

**Theses:**

Transport policy will aim at distribute transport demand temporally more equally.
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Technology will be an enabler of demand-based pricing.

### Challenge | Infrastructure | Vehicles | Policy | Technology | Behavior

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Image source: www.sfpark.org
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New policies will be introduced as pilots.

Image source: www.ehcitychallenge.org/peopleschoice/city/stockholm
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New policies will be introduced as pilots.

More mayors will be photographed on / with a bicycle.

Image source: http://www.stodgell.co.uk/?p=1940
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More mayors will be photographed or with a bicycle.

Open Data and the social internet will lead to new forms of participative planning.

Image source: biketransit.shareabouts.org
Future Information Technology

Theses:

Information technology will further boost innovation in urban transport.

Image source: http://www.2cents2share.com/review/driving-my-wheels-without-owning-a-car/
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Information technology will democratize innovation but monopolies services.

Image sources: www.waze.com
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New services will challenge existing policy frameworks.

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Any form of mobility will leave digital traces.

http://www.flickr.com/photos/jmhuttun/7905025482/
Future Behavior

Theses:

More people will adapt an urban lifestyle.

Mode shares (by trip) for 19-29 year old in Germany

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A connected world will fly more.
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An ageing society will pose new demands to infrastructure, vehicles, policy and technology.

Our contribution: agent-based transport simulation MATSim

Video available at: http://vimeo.com/65878227
Questions:

1. How can we redesign cities for more sustainable mobility?
2. Will autonomous cars be the new public transport?
3. Who is in charge of the world and the city, and how can we overcome those conflict?
4. How to shape a public policy makes technology an enabler of sustainable mobility?
5. How can we nudge people to take up a more sustainable mobility lifestyle?
THANK YOU

Alex Erath
erath@ivt.baug.ethz.ch
@alex_erath
www.futurecities.ethz.ch