



FUTURES in practice

Smarter thinking for a better future

December 2017

This is a short summary of key actions that practitioners can take forward following the CIHT FUTURES initiative that involved over 200 members of our profession across the UK in workshop sessions. CIHT FUTURES explored the implications of different future scenarios for transport policy and practice.

For more see: www.ciht.org.uk/futures



Beware of Decision Biases

We are all subject to unconscious biases in how we make decisions: awareness of this can help guard against such biases compromising our shared thinking

Self-serving bias – We attribute success to ourselves and blame failure on external factors. This bias protects our self-esteem but stops us from learning from our mistakes.

Top tip: Have people around you who can ‘call you out and keep you grounded’.

Cognitive fluency – More easily processed and understood ideas are rated higher (regardless of the true position).

Top tip: If something sounds good, it should be questioned (and things that are harder to grasp should also be given due consideration).

Sunk-cost fallacy – aversion to loss means we may extend a previous unsatisfactory approach, allowing sunk costs to influence decisions.

Top tip: Focus should be placed on the future costs and benefits without letting previous loss influence a decision.

Confirmation bias – We only search for evidence that confirms our beliefs.

Top tip: Search actively for contradicting evidence.

We should acknowledge and address these biases as they may well be playing a significant part in shaping the way in which, as transport professionals, we interact and exchange information and make decisions.

Top tip: Give a voice to different generations in examining the future to guard against biases.

**Top tip: Share this 5 minute video with your colleagues:
<https://www.youtube.com/watch?v=3Ux3pm6UfCo>**



Game changers: technology and innovation

There is a sense of collective uncertainty about the prospects of how and to what extent technology may disrupt transport in the future

Technology change is driving major changes across the globe—from automation, artificial intelligence, electrification to virtual reality.

All of these shifts, and others, *could* fundamentally disrupt transport in the future.

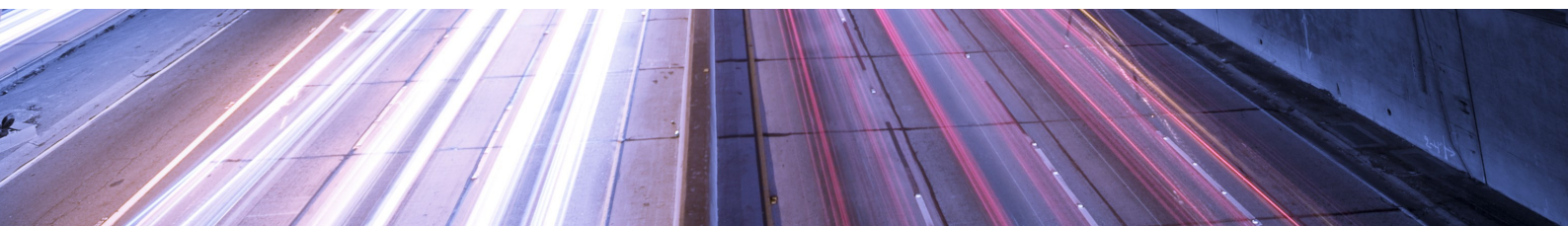
There are various projections for the future, from the expected transition from petrol/diesel to electronic vehicles, to how ownership models could change with people not owning cars in the future but purchasing ‘mobility as a service’. When looking at technology we should consider its scope to change both the supply of, and the demand for, transport.

The type and numbers of vehicles on our road networks in the future is facing a much greater degree of uncertainty than previously. In the CIHT FUTURES workshops the question was asked: “*do you believe that in 30 years’ time at least 1 in 5 vehicles on our roads will be self-driving?*” The responses from CIHT members varied; in some regions a strong majority answered ‘yes’, in others the answer was ‘no’. Collectively this underlines an uncertainty about the prospects for one (currently hyped) transport technology that may (or may not) be a major disruptor for future transport.

The demand for transport *could* shift, caused by further urbanisation and through a greater desire to connect virtually (virtual reality might accelerate this further). What could this mean for future generations and how they travel? There is a strong need for future proofing infrastructure—master planning, land use, layouts and infrastructure developments should take account of the unknown influence of technology and innovation. We must not be seduced by the ‘siren song’ of technology but must critically examine the opportunities and threats. New technologies are means not ends and we should be clear on the ends we wish them to serve and support.

Top tip: Develop a ‘technology watch’ strategy to selectively keep abreast of emergent technology and draw upon both evangelical and sceptical sources to guard against cognitive fluency and confirmation bias.

Top tip: Develop a ‘social trends watch’ strategy too and help avoid the trap of thinking that tomorrow’s technologies will be serving today’s social and business practices.



Expose uncertainty instead of concealing it

Scenario planning stretches thinking through embracing and visualising different plausible futures

Scenarios can lead people to initially infer the depiction of 'extreme' futures, but this is often moderated through discussions, albeit with an enduring acknowledgement of significant differences between alternative plausible futures.

Scenario planning is a means to expose and embrace uncertainty about the future. It was developed by Shell in the 1970s. It is contrasted with forecasting which, while commonly used in the transport profession and other sectors, tends to conceal uncertainty and give a misplaced sense of confidence in the future.

Begin by identifying your focal question, e.g.: "How could or should our transport system evolve in order to support mobility in the future?". Then identify the drivers of change that are most important to this question but which have high uncertainty.

Critical uncertainties such as: 1) 'What will society want to do in future?' namely, society's collective accessibility preference, ranging from a greater preference for connecting physically to a greater preference for connecting virtually; and 2) 'What will society be able to do in future?' another critical uncertainty and this focused on the relative cost of energy (as this is a key determinate for car travel). *Forecasts for world oil prices during 2014 were predominantly ones of increase: by the end of 2014 world oil prices began to plummet.*

Critical uncertainties then create a pair of axes or a 'canvas' upon which to paint a picture of the types of future that could emerge depending upon how the two chosen critical uncertainties play out. A future scenario is developed for each quadrant.

Since CIHT FUTURES was published, the DfT has been developed their forecasting work to embrace the use of scenario planning. This is still at an early stage but demonstrates the value CIHT FUTURES thinking is bringing to the transport sector.

Top tip: Don't let a lack of familiarity with scenario planning prevent you from trying it out – give it a go, even in a 'quick and dirty' way to help challenge your thinking on a project or stress test ideas and options.

Top tip: Follow how others are exploring the use of scenario planning to improve your own.



Decision pathways

Greater upfront investment in a more flexible design of a scheme could pay a longer-term dividend by being able to respond to uncertainty

Participants at the CIHT FUTURES workshops were introduced to two alternative pathways of decision making. The first is called *regime compliant*, this involves elements including: prediction, weak planning, cost-benefit analysis, and a focus on transport as the principal enabler and consequence of economic prosperity.

The second is called *regime-testing*. This pathway involves elements including: scenario planning; strong planning; real options analysis; and a focus on multiple enablers of economic, social and environmental prosperity.

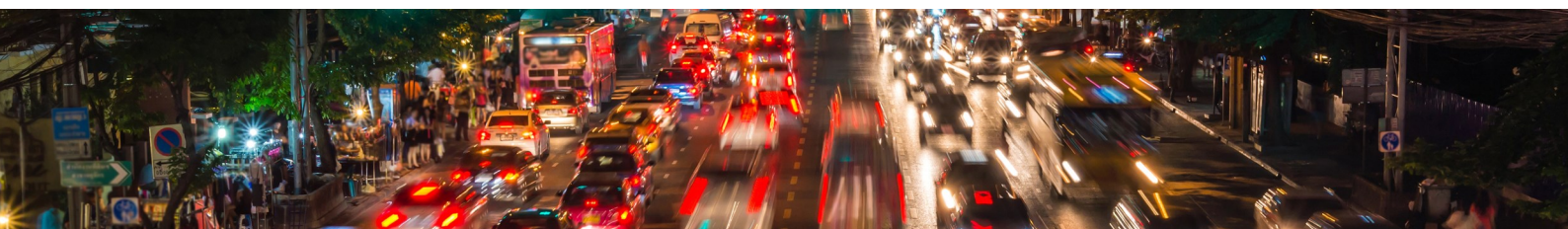
Each pathway begins by building upon the notion of decision biases by identifying the dominant preconceptions of the actors involved in the process of informing and making decisions.

The regime-testing pathway introduces real options analysis (ROA) as an alternative to cost-benefit analysis. ROA concerns considering how greater upfront investment in a more flexible design of a scheme could pay a longer-term dividend by being able to respond to uncertainty. ROA examines building in the option to do something at a later date if circumstances become appropriate. A simple example was used to explain this in the workshops – a parking facility where ROA is used to consider the merits of designing the structure at some greater expense to be strong enough to accommodate vertical expansion (i.e., building additional floors) should future demand exceed projections.

Top tip: Download the decision making pathways learning aid [available at www.ciht.org.uk/futures] and in relation to your own work ask: what pathway are we currently on and which pathway should we be on?

Top tip: Identify (small) achievable steps that you can take to move from the pathway you are on closer towards the sort of pathway you would like to be on.

Top tip: Share your experiences of rethinking and reworking your approach to decision making with others to help evolve our collective professional practice in appropriate ways.



Know your limits

When reporting figures - beware of false precision and ensure you responsibly reflect the level of confidence in accuracy

A simple step we can all take in helping to better embrace and reflect uncertainty in our transport analysis is to subscribe to a 'know your limits' approach. Look around you and keep an eye out for analytical results or projections about the future which are plainly over-reaching in their level of implied confidence in terms of accuracy. Resist falling into this trap yourself of concealing uncertainty.

Some examples of false precision:

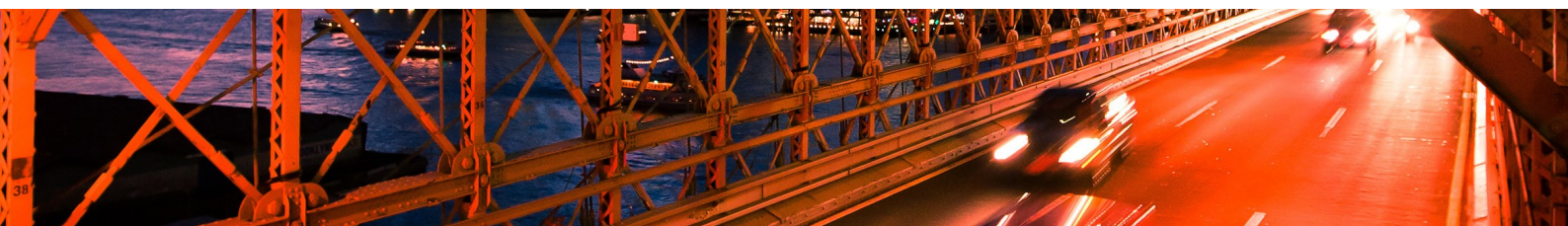
"The global market is expected to reach USD 131.9 billion by 2019." Really? How about "could be around USD 130 billion"? #CIHTKnowYourLimits

"In our survey of 117 people, 38.4% said they would buy a..." Really? Be brave and say "about 40%" #CIHTKnowYourLimits

"Traffic growth is predicted to be roughly 44%". Really? Not maybe "roughly 40%"?! #CIHTKnowYourLimits

Top tip: Challenge your own reporting to ensure you know your limits – and be prepared to challenge others.

Top tip: If we all do our bit we can start to encourage more responsible reporting of figures – when you come across an example of bad practice, share it with others using #CIHTKnowYourLimits





With thanks to:

- **Lynn Basford BA (Hons) MA MRTPI FCIHT**
- **Professor Glenn Lyons BEng PhD FCIHT MTPS TPP**
- **Neil Johnstone BSc CEng MICE MEng FCIHT**
- **Justin Ward MA (Hons) DipFM MCIHT**

CIHT FUTURES will continue to work with key organisations in the transport sector to establish changing practices for changes times.

Future developments include: working with the CIHT Young Professionals Network and the CIHT Corporate Partner Scheme to build personal and professional capacity in planning for uncertainty.

