



Vision On

The ITS United Kingdom Vision for ITS in the UK

2008

Vision On:

Introduction

At an ITS (UK)/ DfT Workshop exploring the next steps in the DfT Technical Architecture Project, many attendees felt that there was a need for a clearer vision of what ITS should provide in the UK long term, over and above the short-term DfT policy framework already in place. This would complement and future-proof the valuable work already underway developing the framework with emphasis on short- and medium-term factors.

Many present at that workshop were involved in work already developed within their organisations' research programmes or as part of specific projects to define a vision of the future for ITS. They felt that there had been enough work already done developing visions and that more should be done to generally exploit existing work. The challenge would be to bring together the many disparate approaches to support the Technical Architecture in one coherent vision.

As a result, Professor Phil Blythe and Andy Graham volunteered to capture existing vision documents, distil common key features and provide a commentary on implications. This brief paper records the results of this work, with the objectives of:

- Finding a shared vision of the future of ITS in the long term;
- Identifying future changes and disruptors that architecture developments must address;
- Assessing where further work may be required to future proof the DfT's approach.

This paper is deliberately brief, yet wide ranging. It covers urban and interurban transport, public and private modes and large and small-scale organisations. The views presented here are the authors' interpretation of documents kindly provided by a variety of stakeholders acknowledged in appendix 1.

Capturing Visions

Prof Eric Sampson wrote to a wide range of UK and worldwide organisations known to have developed ITS visions. We thank them all for their help.

The visions we received ranged from international blue sky thinking, structured research, national views and local authorities' visions through to views from individuals about their future travel.

The Common Messages

Firstly, many people in their visions are at last **thinking about outcomes – policy, customer and business – and not technology**, but there is still a view amongst many of the respondents that we can achieve many of these aims (eg safety, less pollution...) simply by having the right bit of kit.

These outcomes are often consistent between visions - safer **roads, reliable journeys, reduced carbon impact**, better **freight management, joined up travel**. But few visions look for **sustainable businesses or services** that people want to use and invest

in. Fewer still looked for services that can provide wealth or benefit the economy. Often ITS was seen as needing a business case in itself, rather than simply being a set of **tools within a wider transport context**. **The Internet has delivered a wide range of tools without such a business case, simply because people want to use it**. **The conventional business case of direct costs being less than benefits has been thoroughly blurred**.

We think this means that DfT, in its technical architecture, is indeed right to focus on how various technologies can be made to work together to deliver sustainable outcomes, not on what those technologies should be.

Many visions noted the need to **break down barriers** (between and within organisations, vehicle and roadside, public and private sector, central vs personal infrastructure). An often shared vision is that ITS simply becomes part and parcel of everyday living, not as a bolt-on to when you are travelling. This reflects that buying something from the Internet is an everyday activity, it is not thought of as a technical activity in "e-commerce". To achieve this outcome many visions suggested starting with an **enterprise / service wide view of ITS** rather than a technology driven one. This means "ITS" as we know it adapts to permeate our day-to-day lifestyle. It can make the entire business of moving people and things smarter, more sustainable and more robust to disruption.

Some visions argued that ITS must become **part of a "connected infrastructure"**, delivering a world where people, vehicles, infrastructure and services all link together seamlessly. Such a world could deliver a pervasive intelligence that impacts everything from how traffic signals change, where to park your car or the best means to deliver freight. The difference from now is that the intelligence is shared evenly and does not require thinking about using – it is there when you want it, just like the Internet. You do not know that it is called ITS and you do not care; nor do you have to do anything special to use it. It is just better Transport.

We think this means DfT need to refresh the 2005 ITS Policy Document. It needs to reflect **living and travelling in the 21st century as** envisaged in Towards a Sustainable Transport System and the Foresight Intelligent Infrastructure Vision. This work on Intelligent Futures is one of the few to see transport as being affected by the far bigger picture of economy, society, technology and land change. Many visions simply look at transport in isolation but the pace of change is so fast that outside disrupters have not been thought about. Transport is itself highly complex, but it is only one thread in an interwoven world. This means we do not need to look too far ahead before technology will provide us with many of the tools we want – making them work together is the challenge.

Many noted in their visions a need for **flexibility** and **easy adaptability** to support changing technology and policies. ITS can "piggyback" on wider technology (eg wireless comms) but the way technology is used needs to be in line with transport policy. There are transport policy driven challenges (productivity and competitiveness, climate change, safety and security, quality of life and opportunity). But technology is not the answer in itself. Many visions looked at what technology

would do in the future rather than at the business of transport (in its widest possible sense).

We think this means DfT need to **focus only at technology that is specific to transport**, to ensure its interoperability, flexibility and policy support. It needs to continue to identify where there are policies not supported by technology but not worry about wider issues of communications, consumer products and services that the wider market is going to provide anyway. An example here is that mobile phones now provide email, internet, video, music, payment and voice calls, and so are a channel for transport charges and sharply tailored personalised information.

Others noted, refreshingly, that their vision is not simply about technology and services. They saw a **key element being the people involved**. This includes training people to provide technology, to operate and maintain it and then persuading the public to use it, to benefit themselves and wider stakeholders. Education of users about benefits was seen as a key area for the future. This means DfT needs to re-examine the policy framework to make sure that it looks at how the entire **"enterprise" of future funding, new people and innovative operations** that will evolve ITS into part of day to day life.

We were privileged to look inside many people's thoughts and dreams and also their nightmares. But whilst we saw some great ideas, we are a little concerned that there is **a lack of maintenance of** some of the visions - many are based on historic views, not today's state of the art. Rapid technology and policy changes have made some visions even obsolescent. DfT is uniquely placed to guide forward-looking visions, by continuing to sponsor Horizon Scanning with wide stakeholder support.

This also means DfT needs to ensure its policy framework reflects what will be in place anyway, while its technology framework develops. DfT needs to focus on managing the interfaces with the outside world as it develops, continuing not to second guess technology outside transport but see how transport can benefit from such wider developments. All visions saw that the UK has to adopt international standards, products and services.

Many saw that transport is going to be a much higher cost driver for business in the future, and so ITS will have a real role in reducing costs for industry (through freight management, route optimisation, allocation of one use vehicles, smarter delivery and better use of assets). Many talk of supporting freight but some saw further at **supporting through ITS the whole business that relies on freight**. This means DfT need to look at how transport **costs in the widest sense can be impacted by technology**. **Again, this is another part of a complex interrelationship.**

Many saw that the way users pay for transport is fundamental not just to policy but to this theme of business and life generally. Congestion charging and road pricing is the "nasty side" of ITS but one being developed as it as a true business. Such technology could also support many other services and products **that might sweeten the pill of charging and deliver the evolution of ITS**.

There was a feeling that the current short term view of the public to ITS might change with a few well-constructed schemes, well "sold" and with benefits outweighing

downsides. These might tip the balance for “pay as you travel” to become the norm. There was a wide assumption that travel charging will – at some stage – provide the “piggy” other services can join onto. The DfT Technical Architecture therefore needs to enable piggybacking of new and developing ITS services, in the same way smartcards now are being used for travel, cash and credit and DfT’s Concessionary Travel smart cards will be used for library loans, leisure services *etc.* **Bundling ITS into everyday life is a continually repeated vision but this needs to be actively driven by DfT, not just left to evolve naturally.**

There were some comments on the role of government in balancing public and private services (for example Transport Direct or stand alone Satellite Navigation). The issues of speed of deployment vs accessibility and inclusivity of services, joining up of standalone devices and checking against policy outcomes were often mentioned. All agreed a key role for government - that no one else can do - is to drive **joining together services and technology and sell the wider benefits of doing so.**

Where next?

The clear message from all these visions is that **ITS is going to have to evolve and the Technical Architecture has a pivotal role in delivering the right outcomes for all stakeholders, not simply transport users.**

ITS is something that needs to be woven seamlessly into future design of transport operations, enterprises and services, rather than just a bolt on. **ITS needs to be drawn into mainstream transport, not remain as a specialist niche and the Technical Architecture can support this.**

Hence we propose that:

- Work be undertaken to refresh the ITS Policy Document to be a clear vision of how ITS could weave in – at a policy level – with everyday life and business, not just transport policy (implementing Eddington’s recommendations);
- This also needs to consider people in ITS – why the next generation of developers, innovators and researchers will choose to invest money or intellectual property in ITS and why the public and businesses will buy into it. Even the technical architecture can consider how to lever in best practice from other sectors such as consumer product design, formula 1 and aerospace;
- The DfT technical architecture takes an enterprise wide view of ITS, and focuses only on the specific technology only transport needs and interfaces between systems rather than technology systems themselves; and
- We look to a future where there are no visions of ITS, simply visions of life that use “the stuff previously known as ITS”.

Appendix: Suppliers of Visions or other Material Used in this Document

- Amey
- Centaur Consulting
- Faber Maunsell
- Foresight Intelligent Infrastructure
- Highways Agency
- IDT Ltd
- ITS Austria
- ITS Netherlands
- ITS Norway
- ITS South Africa
- ITS Sweden
- John Miles
- Leeds City Council
- Mouchel
- Peter Jesty
- Roads Service (Northern Ireland)
- Sheffield City Council
- Transport for London
- Transport Merseyside
- TRL
- UTMC Development Group

Invites were sent to all ITS (UK) members to contribute. Many individuals also gave their own personal views, both within the above organisations and separately; the authors appreciate their sharing off the record thoughts and experience.

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