Redefining city transport

Forecasting technique projects

In Cologne, Germany *(above)*, the city can predict, better manage and in many instances avoid traffic jams and trouble spots with analytics.

The pilot scheme, conducted by the city and IBM, came up with some surprising results: city traffic engineers and IBM could predict traffic volume and flow with over 90% accuracy and up to 30 minutes in advance.

Working with IBM again, Rio de Janiero in Brazil has cameras that send information back to the control centre's hundreds of screens to show what is happening across the city in real-time.

Data analytics software is used to predict where traffic will flow, where accidents may happen and when flooding might hit.

The centre uses a weather and flood forecasting program that predicts emergencies up to two days ahead of time.

In 2011, the city of Aarhus in Denmark implemented a low-cost solution using Bluetooth technology.

This monitoring system gives a range of information about queues, delays, identifies problem areas and evaluates and calibrates traffic signals. It provides information on the capacity of existing roads, and detects changes in traffic patterns.

In a world of real-time information and an always 'on' society, **Iulia Chiperi** explains how new smart city models can bring fresh opportunities.

Cities everywhere are now finding themselves challenged on many levels: a slow economy, a growing but also ageing population putting existing services under strain, legacy infrastructure that is no longer fit for purpose and rapid technological change that has raised citizen's expectations about how services are being delivered.

Add to this the continuing reductions in funding for transportation infrastructure with the continued era of austerity still profiled for another eight years and the need to work smarter has never been more critical.

With these challenges comes the momentum and exciting opportunity to redefine cities that will secure sustainability and prosperity for decades to come.

The common denominator for economic growth, jobs, health and quality of life is all underpinned by quality transportation systems.

Amnick Social Enterprise – a group of ex-local government directors and senior managers – is developing research and studies towards the best smart city projects which can be implemented in the shortest period of time with the least funding and which offer greatest returns on investment.

It will shortly be engaging every local authority to take part in this initiative with a view to developing new smart city models for transportation that can bring new opportunities to allow cities to:

- Make it adaptable and more knowledgeable about themselves.
- Have the means to assign scarce resources in the most beneficial way.
- Create a future-proof city transportation system that is attractive to citizens, business, visitors and investors.
- Enable a culture of innovation and collaboration.

The challenge is to:

- Identify quick-win projects around smart cities in the UK, Europe and the world.
- Work with smart city partners to help implement these across cities more widely by utilising research, skills and experience within business transformation/social enterprise/technology and data management to create more value, savings and efficiencies by better integrating services across the city.
- Work with partners to develop new, innovative solutions leading to joint funding for research, the creation of new projects and programmes with governments from across the globe.

Cities across the world are quickly starting to better understand the power of data and technology and how when used intelligently this can lead to significantly more integrated and effective ways of delivering services, not just at local authority level but at city level.

This can lead to savings efficiencies on many levels and reductions in congestion, more reliable journeys, better integration of transport, safer transport and a better customer experience.

Countries like Spain, Singapore, Japan, Sweden, UAE (particularly Dubai) are all leading the way with smart cities.

To make smart cities transportation happen requires a new way of thinking.

Senior management needs to have more ambitious aspirations and willingness to learn from others.

They must become comfortable working with data at all levels – from big data, analytics and data warehousing.

• **Iulia Chiperi** is business development manager at Amnick Social Enterprise

Examples of smart cities highways innovation

Two Dutch companies are working together on the following projects:

Electric priority lane

Induction charging means cars can re-charge while driving and with the creation of electric priority lanes this can encourage sustainable transportation.

Dynamic paint

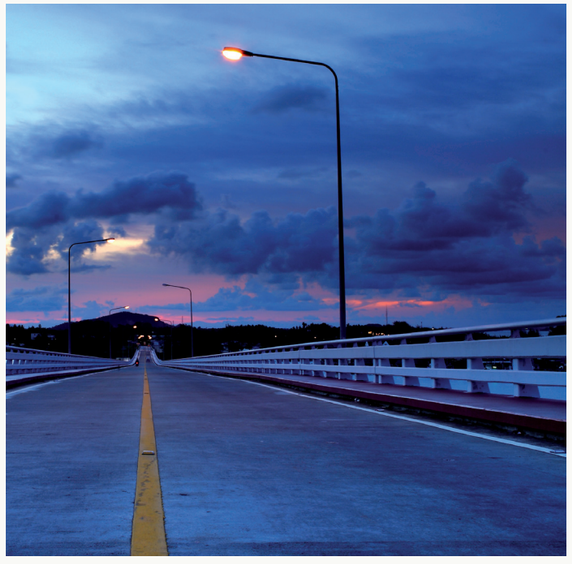
Temperature-controlled marking leads to paint lighting up when conditions are slippery and vanishing when the temperature changes.

Glowing lines

With glow-in-the-dark technology, lines absorb energy during the day and glow at night for as long as 10 hours – improving road safety on unlit roads.

Dynamic lines

Road deck markings can be flexibly adjusted to show a continuous line or a dotted line. Dynamic traffic control can be adjustable depending upon the situation. Dynamic lines contribute to capacity management.



Interactive light

Controlling lights by sensor allows for lights to only come on when traffic approaches in rural areas. This allows for a sustainable cost-saving alternative to conventional lighting.