



I first met Dean Zabrieszach in 2011 when I sat opposite him in his VicRoads office in Melbourne pitching my then-company's new smart phone app for traffic information. It was however another five years before we got to know each other at the ITS World Congress in the same city and realised we'd talked before. By that time Dean had departed the public sector and joined HMI technologies and was promising big things. I caught up with him ahead of the Copenhagen Congress to talk about those big things...

Ohmio goodness

INTERVIEW BY PAUL HUTTON



You always seem to be smiling, you're a great advert for someone who lives in the world's most liveable city

Thanks Paul. I am not so sure that I am always smiling! But I do enjoy my work. I loved all of my 31 years at VicRoads and I am especially thrilled about the exciting times we are going through at HMI so that might explain it. In addition, I get to be involved in so many exciting initiatives and meet so many people, both in my day job at HMI and also as President of ITS Australia. So why wouldn't one be smiling?

Regarding the world's most liveable city – yes, Melbourne is a pretty special place. I have lived here since migrating from Italy as a little baby in 1959 and it has undergone an amazing transformation since then and continually keeps evolving, for the better. I remember the "world's most liveable city" phrase from the hugely successful ITS World Congress that we at ITS Australia hosted in 2016. By the end of the Congress, I think many people had heard it enough. To win it so many years in a row, though, means that we must be doing something right here in Melbourne. I think we have a good balance between many of the elements that people consider in the



liveability discussion. Of course, we have a pretty modern city with modern facilities, we have a good transport system – not the greatest, but a good one and one that is being quickly expanded as we grow. We have great outdoor activities, parks and gardens and fabulous restaurants. On top of that the weather keeps you guessing so it's a bit of fun and to top it off, our sports culture is as good as any in the world.

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I enjoy promoting Melbourne. It is good to be proud of the country and the city in which you live.

Q Obviously one of the key things about making a city liveable is good transport and I like Melbourne for its ease of getting around on the trams. My experience of the roads there is limited, how good is the road network?

You are right, our tram network is second to none. It is very large and we have been fortunate to have it for such a long time. On top of that, we have a very good suburban rail network and the state government is actively removing rail level crossings to ease congestion and improve road safety. This will mean that all of our rail crossings will be grade separated in the not too distant future.

The road network is an interesting question. As you know, I have and continue to travel to many parts of the world. I have seen some heavily congested cities. In fact, I have seen some cities that are constantly grid-locked. When it comes to perceptions about traffic, everyone complains about traffic, whether it is a five or a 50 minute delay. The same applies in Melbourne. Many users of the network will complain about congestion and delays, but it is all relative to what they know and where they live.

Having said that, we have a good network of freeways, the majority of which are part of our managed motorway network, where VicRoads has implemented a dynamic ramp metering system and lane use management system. Unlike many other cities around the world, our dynamic ramp metering system allows upstream and downstream ramps to communicate with each other to optimise the amount of traffic that is allowed to enter the freeway at any ramp. This has led to significant efficiency improvements, improvements that are equivalent to the addition of lanes but without the high price tag. I understand that our friends in Colorado and other states in the US are looking at implementing a similar system to Melbourne.

Our arterial roads are controlled by the SCATS traffic signal system. SCATS has served us very well for close to forty years in controlling traffic congestion but it is starting to feel the pressure.

I think that overall our transport system is good, but needs improvement. The government is doing a great job in prioritising projects with limited resources. In a perfect world, we would complete a handful of road network gaps and also add a significant amount of public transport capacity – perhaps an extension of an underground network and an airport rail link. That would then leave us with a very, very good transport network. As most of us in the traffic and transport and technology game know though, you must continue to invest in improvements to the network – the job is never finished.



A younger Dean at his desk at VicRoads

Q When you were Director of Road Operations, and in your previous jobs in Vic Roads what were the challenges?

I filled the role of Director Road Operations and its earlier titles for the last 10 years of my time at VicRoads and it was challenging. The greatest challenge was meeting the expectations of the customers – the road users. That was often a “no win” situation. As you can appreciate, when an incident occurs, that is when a road network comes under pressure and if that incident occurs in peak hours, then that pressure is amplified.

My challenges were based on how to make a bad situation a little easier for the customers – whether that be by finding alternative routes or by simply providing enough information and explanation to appease any dissatisfaction that existed.

Of course, the media also loves reporting on congestion and uses it as a means of trying to force action on previously unfunded projects. So dealing with the media was fun. I had a very good team around me that worked very hard to deliver the best service they could for our customers.

Another challenge that we constantly faced were planned events – such as major events like F1 or Commonwealth Games or fun runs or even massive maintenance programmes over holiday periods. These were challenging in a different way in that we had time to plan, communicate, implement and continue to communicate. We had some of our most satisfying days in those circumstances.

The final challenge in such a job was to convince others that it was time to implement innovative treatments to handle the increasing pressure on the network. That was not a simple thing to do as priorities such as maintenance of the network and limited funds tend to get in the way of new initiatives and additional funding. I had some wins and some

losses, so overall it was a pretty good time and a great role for innovation.

Q And the thing about Australia is you have a vast country with most people crammed into a few cities on the coast and then lots of sparsely-populated areas with huge distances to travel. How do you serve both those very different requirements?

That is a key differentiator between Australia and other countries. We have enormous space but very little population and hence vast distances between capital cities. Fortunately, our road network between Melbourne, Sydney and Brisbane and Melbourne, Adelaide and Perth is very good. Our main challenges associated with such long driving distances is road safety, both for passenger vehicles and freight. As a result, a lot of effort is going into road safety improvements such as wire rope barriers, tree removals and more recently the installation of technology on these interstate highways.

More and more, we are seeing variable message signs, truck rest area information signs, travel time signs, speed cameras and Bluetooth warning beacons being installed on these roads. We also have a very robust regulatory system for heavy vehicles with stringent requirements associated with driving hours, log books and in many cases, electronic tracking of vehicles.

The National Heavy Vehicle Regulator was created to ensure uniformity of practices across the continent.

Q When did you start using ITS as part of your delivery of safer and more efficient roads?

I joined VicRoads in 1984 and we were already doing some really good work back then. We rolled out SCATS – a dynamic traffic signal system – in 1984-1986 and we were one of the first cities in the world to do so. We started rolling out travel time information systems on the Melbourne Freeway network in the 1990s, we started testing a Dynamic Speed Advisory System in the late 80s/early 90s that would advise you of the speed to travel at in order to get through the next signalised intersection. This is something that connected vehicles and signal phase and timing are trying to resurrect now.

In Melbourne, we were one of the first cities in the world to implement a fully free flow tolling system in 1999 and then expanded on that by ensuring interoperability across tolling systems in Sydney and Brisbane. This year, we held the 13th National Electronic Tolling Conference in Melbourne, which is a legacy of the great work done in the early years.

As I mentioned earlier, we now have a managed motorway network with

◀ communication between freeway entry ramps and finally in recent years we have been undertaking autonomous vehicle trials on our toll ways in Melbourne and Sydney. In addition, we are running autonomous shuttle trials all over the country so I would say, we are pretty well connected into the ITS space and have been for a long time. That is probably why Australia has hosted two ITS World Congresses – in fact, the only country in the southern hemisphere to have hosted a World Congress.

Q What were the most memorable innovations that made a difference?

I think the Travel Time Advisory System is the one that sticks out the most. It was implemented as a dedicated signage system across our freeways well before we had mobile phones and apps. Now cars have navigation systems and phones have all sorts of travel time information – involving all of transport of course, which is great – but the Travel Time Advisory System is still there and is a great guide for motorists.

Q We talk all about funding. I often talk about how people with ideas to reduce congestion can struggle to find the funding because there's a direct cost but only an indirect, estimated benefit. How did you succeed in funding innovative new projects?

That is a really good question! I remember say 20-30 years ago, when we were rolling out the first ITS innovations at VicRoads, it was managers at the time that were able to find some spare cash in their limited budget to do the research and implement some concepts. When that got traction, some limited funds would be made available for small scale deployment. Then when large projects, say greater than \$500 million, were being rolled, if ITS could get 1 per cent of that funding, it would be doing well.

Today, I think the tide is turning. Certainly, you still need to have the facts, the data, a positive cost-benefit analysis and the political support, but we are seeing ITS being placed top of mind now, rather than the last add-on. We have governments now that have realised that technology can deliver enormous benefits at a lower cost than civil infrastructure improvements.

A lot of credit needs to go to ITS Australia and the work that our Directors and CEO have done for a very long time in changing government perception on the benefits of ITS. It is still hard work to extract the funding, but it is much more acceptable than it was in the past.

Q So you're now in the private sector with HMI. When I first heard of the company I thought they made VMS and the

like, now you're doing autonomous shuttles...

HMI has traditionally been a technology company that focused on delivering ITS solutions to customers using electronic VMS, lane use management signs, school speed limit signs and other types of electronic signs. We continue to do that in Australia and New Zealand and Taiwan. In recent years, we started to develop our range of Bluetooth sensors, both for collecting data and also for disseminating information via a mobile phone app. This business has served HMI very well and continues to do so. In fact, apart from our initial presence in New Zealand, upon joining HMI in 2015, I opened our first office in Melbourne and now we also have offices in Sydney and Brisbane, as well as our representative in the UK (Europe) in Richard Harris, our International Development Director.

In the last two to three years, we decided to move in the autonomous vehicle space and we have developed our very own Ohmio Autonomous platform. We launched the platform in September last year in Christchurch on a fairly basic 4-6 seater vehicle, called the Ohmio HOP. We see great uses for such a small vehicle at golf courses, retirement villages and the like. In the past year, we have been actively marketing our Ohmio Lift, Ohmio Ride and Ohmio XT variants, that can carry 20, 30 and 40 passengers respectively.

In April this year, we signed an MoU to deliver 150 Ohmio vehicles to the City of Solaseado, south-west of Seoul in South Korea. That is an enormous project for us and one we look forward to delivering. In June this year, we also had a massive breakthrough in China, announcing a US\$20 Million Joint Venture in the City of Heshan. As part of this JV, we will establish a manufacturing facility for autonomous vehicles and an Artificial Intelligence Transport Research Centre in Heshan. Despite all this, we do not see ourselves as a vehicle manufacturer, rather a technology company with a product that can be turned into any vehicle the customer needs.

For instance, we could manufacture 30 seater passenger shuttles, but we could also manufacture aircraft container ferrying vehicles, using the same autonomous platform.

We believe that these slower moving types of autonomous vehicles that can be operated in lower risk environments have the potential for earlier adoption than the higher speed highway vehicle versions and we are seeing enormous demand from airports, universities, theme parks, newly established residential developments and smart cities. I am really excited about the future of the company as we move into this this stage of our development.

Q What's next for Ohmio?

We are looking to establish our presence in China, at Heshan, but equally we don't want that to be the end of our development. We are looking at setting up an array of research points across the world – having started in Auckland, then having a presence in Sydney and now China. We would ideally be looking at the US and Europe both for an R&D presence, but also for a local manufacturing presence. We have a lot to do, but we have a good team of people, actually good people, in the company that will stand us in good stead as we grow the product.

Q And what can we expect to see in Copenhagen, another place where they pride themselves on their liveability?

As you know, the World Congresses are an enormous event to attend and to experience. I am biased (of course) in that I think Melbourne put on the best World Congress ever. But seriously, we are all looking forward to Copenhagen this year, in a city that really prides itself on healthy living and sustainability. Through the various ITS Committees that I am on, I have been fortunate enough to visit Copenhagen twice in the past 12 months. I think they have a very strong programme, with an emphasis on liveability, autonomous vehicles and mobility as a service.

I think they will have an excellent exhibition with many, many European companies and companies from all over the world exhibiting.

On top of that, the High Level Policy Roundtable continues to grow from congress to congress and I understand this year will be no exception with Ministers and Mayors from many countries discussing the hot topics in ITS.

The networking opportunities at a World Congress are also second to none, either via the exhibition area casual drinks or the enormous social functions that we are fortunate to attend. I am really looking forward to Copenhagen and I hope we have a record attendance.

Q Finally, as an Englishman to an Aussie I'll just say, thanks for not mentioning the cricket...

I don't know why you would say that Paul. I think England has some bragging rights at the moment. Our boys are going through a very lean trot at the moment (we won't mention the reason for that!) and England should be on top of the world after setting a record one day score and beating the Aussies by a record margin. BUT, we will be back, and of course we hold the Ashes!