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## **Senate Economics Committee - Inquiry into Innovation**

### **Good Evening Senators,**

This submission responds to the media invitation to individuals at p2 The Australian, July 2, 2014.

#### **The Submission**

This submission fits in with the committee's terms of reference in that it deals with innovation, science, engineering and research on a topic involving exciting opportunities for our nation to be a world leader in helping to solve previously intractable problems with congestion in our cities. The solutions presented will help create jobs and make us a richer nation (but the project is too big for an individual). Innovation's importance for our nation's economic health is paramount.

#### **Aim**

The aim is to establish, under the leadership of a Senator, a Project Team (of about 6) to: investigate; trigger action; and pursue the ideas for utmost potential benefit to our nation.

#### **Submission Comprises Two Parts**

The full submission is comprised of the information below together with the small book "Goodbye Gridlock", included in this mailing. (Additional complimentary copies may be provided to you on request.)

For convenience the label "**Project A21T**" has been used. The "A" is for Australia (our nation taking a lead), "21" for a 21<sup>st</sup> century concept and "T" is for transport (in the sense of efficiently moving commuters).

I would be happy to appear before a Senate Committee as an advocate for these ideas, especially: to flesh them out; to ensure all of the many benefits are fully aired; and to explain any technical matters where senators perhaps see obstacles. The project has merit and I ask for it to be carefully considered. I'll be eighty when this happens and I'd like to contribute before I lose my marbles.

Enjoy the challenge "to think outside the square", respectfully, Brian.

### **Project A21T - Innovation to Improve Life in Cities – the "SPEC" System**

#### **Executive Summary**

This submission argues for innovation in the way we move people about in cities. It calls for bold vision in the nation's interest to tackle the problems of traffic congestion with its attendant ills of pollution, time wastage, accident trauma, productivity loss, fuel wastage and negative impacts on amenity. It looks at the big picture but at the same time details a practical, achievable solution,

within our capabilities. It respectfully requests Senators to take the ideas seriously and give them close consideration. (They will work!)

The submission proposes a practical solution to what has previously been regarded as an intractable problem. One that we just have to endure. It explains why the issue is so important in helping our nation to be internationally competitive and sets out the multiple benefits that will flow from fixing the situation.

A possible way forward is presented, along with arguments regarding the way effective action will create jobs, deliver economic boosts and place Australia at the leading edge of efforts worldwide to deal with clogged cities. We in Australia have a proud history of innovation and we should not rest on our laurels.

A specific concept, called the **“SPEC System”** is described, together with an explanation of how it will work and why it is worth development. Whereas mass production of components (that would rescue our car industry) may not gain support (on the grounds of best being done overseas), there is great merit in us pursuing prototype development with attendant creation of value in intellectual property. Much may be done with home-grown solutions and design of significant value for things inherent in the **“SPEC System”**, given that it is not just about a new vehicle (although that is involved), but is a total concept for an entirely novel system, unlike anything anywhere in the world. There is potential for successful proven designs to be marketed worldwide (for all of the world's great cities suffer the same problems) and this would benefit Australia's economy.

The way to proceed needs leadership from government in partnership with academics and captains of industry.

## **1 What are the problems?**

Firstly, our cities suffer from traffic congestion, largely due to our love affair with the car resulting in economic inefficiency. (The car is great for point-point travel, flexibility and comfort – but we need free flowing arteries as well - to take commuters off the roads so that those who have to travel by car can do so with reduced congestion.) There are two dynamics that will ensure the situation gets worse and they don't seem to be reversible – the drift from rural to urban living throughout the world and increasing world population where overwhelming preference is to live in a city. Growth in the size of cities results in many becoming **“mega-cities”** with populations exceeding ten (and quite a few twenty) million. Existing travel modes are no match for congestion.

Secondly, Australia's jobs and manufacturing capabilities are under threat and we need to foster clever innovation to compensate. [We need as much national economic efficiency as we can muster and opportunities for jobs in **“clever”** fields. **“SPEC”** has design challenges/opportunities galore.]

## **2 Why do we need a radical fix?**

The efforts being made everywhere to conquer traffic congestion are failing. They are based on technology that we had before 1900 which has been improved but not radically changed in nature

as we fiddle at the margins. We buy some extra buses or build some more motorways but that is not working. Roads still suffer traffic jams and the situation will worsen. Often, travel by car in cities is at average speed below that of 30 years ago.

### **3 What could a radical approach deliver?**

If we thought outside the square we could apply the technology we have (we don't need some elusive breakthrough) to deliver an experience to commuters unlike anything they could hope to find anywhere. The starting point for a radical fix is to specify what we want. (This is quite different from taking something that we know to attempt to enhance it – only to fail). We should aim to give everyone a seat, provide on-demand service 24/7, make it safe, quick (maybe 100 km/h constant speed?), in a system that cannot clog (because of the way it functions).

### **4 Is it possible to achieve such travel?**

If you told NASA engineers that is what you wanted, we could be confident they would design something novel that functioned as desired. Compared to space travel it's a snip. But no-body has challenged them for designs to meet the earth-bound commuter's ideal specification.

A home-grown version is fully described in "**Good-bye Gridlock - SP Express Commuter System**", Seaview Press, 2006 (**copy attached**). In this book a radical but do-able system is set out together with answers to question such as "but what about ...?" that inevitably will be raised by doubters.

### **5 Why a submission to the Senate?**

The concept is too big for an individual. It is not like developing a clothes hoist, a lawn mower, nor a vaccine. It will re-shape cities. It will require land allocation for rights-of-way; structural, mechanical, electrical and control systems; vehicle design; and more. The important thing is to have a common aiming point with input from all of the disciplines. "Goodbye Gridlock" clearly spells this out. It is big – with potential to change cities and make them better places in which to live.

Top levels of government are needed to progress the effort. All three levels of government have to be involved and there are challenges for politicians, academics and captains of industry to set up a project team containing all disciplines needed to get on with the job. Something like the Snowy Mountains Team in the 1950's (of which I was a proud member). It was well led with clear project goals and we need something like that as an outcome of this discussion and debate.

### **6 Action Plan – What is this Submission requesting?**

It would be great if careful consideration by senators of all the details presented in this submission resulted in increasing the number of "champions" working to implement the ideas in an organised manner. *The primary aim of the submission, stated earlier, is to establish a Project Team for **Project A21T***. This should be led by a Senator and consist of perhaps another six people. The required attributes should be threefold. Firstly, a team member needs to be sold on the idea leading to commitment to make it happen. Secondly the person needs some technical or business skill. Thirdly

the possession of some clout and influence in business or academia is needed. One possible action plan for the team would be:

- a) Have a 3D Virtual Reality presentation made that showed (in the manner of computer games) how the system worked. This could show route layout for a theoretical situation then show how vehicles join and leave the main routes – which is one of the important features that differentiates the concept from any modes of travel now in existence. Contrasts could be illustrated with free flowing arteries of SPEC and the clogged arteries of present modes. The aims would be for use in “marketing”, education, explanation, mind opening (to possibilities) and for challenging (to solve tough problems). This stage need not be terribly costly.
- b) Enlist support from our car manufactures to develop vehicles and test track from design to construction of a prototype. The use of 3D Virtual Design will help contain costs here.
- c) Challenge bright students and staff from our best universities to help solve technical problems whilst at the same time generating much needed challenging projects for student research.
- d) Provide support to people (scientists, engineers etc. who become sold on the “holy grail” solution to congestion and contribute to the success of the project by working on the nuts-and-bolts challenges) to take out patents for their inventions and combine as a team to set the project up for financially rewarding Intellectual Property Rights that are marketable globally. Help these people to reap appropriate financial rewards.

### **Conclusion**

I hope that **Project A21T** has an exciting future. It won't change the world overnight (but think of the humble birth then spread in the history of railways) – and we should not be deterred by the challenge. It needs your support.

Please invest time in reading the book carefully (it is an easy one-morning read),

Be visionary,

Brian Garsden