Welcome and introduction to Ric Simes, Access Economics

Good afternoon and welcome
We're here today to talk about the urgent need for us to Make Australia Smarter. And I'm not talking about education.

For the last few years, IBM has been talking about the importance of preparing Australians for work in a global economy.

But now we are faced with the far greater challenge of global recession…

To address this, the Federal Government's economic stimulus package is focused on fixing physical, traditional infrastructure – our roads and rail systems. This is all well and good – but we need to do the same for our digital infrastructure. We may be finally building a broadband network – but we are not investing enough in the devices that will allow Australians to get value from that network – we are not making it Smart.

We need to build digital infrastructure that will make all of Australia's systems Smarter – the systems on which our way of life depends: our broadband network, our economic systems, our energy grids, our traffic systems, our water distribution networks.

Right now these systems are 'dumb'. When I say 'dumb', I don't mean stupid or even poor… I mean 'unaware'. When a system is dumb, its parts are disconnected – you can't see what's going on; the system can't respond as a whole, and you don't have the control to stop it failing.

We saw a very clear example of that in the world's most recent systemic failure.

Last year, in the space of a few weeks, the world's financial systems went from apparent robust health to the verge of ruin.

As a result, in Australia, despite our strong local banking system, our 16 year run of economic growth has been brought to a grinding halt. Our currency has fallen. Our $20 billion surplus has been all but wiped out. Economists are predicting up to a million people could be out of work in 2010.

How could this happen? How could trillions of dollars of wealth be wiped out overnight? And worse, how could it happen without any apparent warning?

Time and again, in the early weeks of the crisis, respected economists and financial experts were interviewed by the media. Time and again we heard the same thing: I didn't know; **I never saw it coming**.

These were smart people – Nobel laureates, best selling authors, economic leaders, successful business people – and they didn't see it coming.

And this is what I'm talking about. They didn't see it coming: not because they weren't smart enough – but because the global financial system was dumb.

Which raises some important questions – not just for the world's financial institutions, but for anyone whose quality of life depends on a system. Because, right now, *all* of our essential systems are dumb: power, water, traffic... So we need to ask: are they at risk too? And what damage is being

done – unnoticed and uncorrected – because we can't see or control our systems?

Are they hurting our economy? Are they hampering our productivity?

To help us answer these questions we asked Access Economics to review the Productivity Commission's body of research in these areas.

Access Economics has found that Australia's productivity has been weak since 2004. Since then, our productivity growth has been significantly below average, falling by almost 1% over this time[1].

I'd now like to welcome Ric Simes[2] from Access Economics to share his findings on Australia's declining productivity and the potential for smarter systems, accompanied by supportive government policy, to help us get back on track.

Ric Simes is a Director of Access Economics and responsible for a range of public policy areas including matters related to finance, regulation and competition policy, the environment and superannuation. He is also chief strategist for Access Capital Advisers, providing advice to major superannuation funds on emerging developments in financial markets. Ric has held senior positions in the Commonwealth Treasury and financial institutions and was senior economic adviser to former Prime Minster Paul Keating.

ACCESS ECONOMICS PRESENTATION

[1] Australian Productivity: A Review, page 6. Access Economics, March 2009
[2] Pronunciation – "Symes"

Keynote Address from Glen Boreham

Thank you Ric.

So as we've just heard, according to Access Economics, the better use of technology – at a systemic level – is essential for developing a sustainable economy. Just as the global financial systems were riddled with risk – many of our other systems, like utilities and transport, are riddled with inefficiency. And these inefficiencies are a constant and growing drain on our economic performance. Unnoticed and, largely unremarked on, inefficient systems are pouring away billions of dollars of our precious resources – and hampering productivity growth…

So how do we stop this?

First, we need to recognise that: **we cannot fix this as individuals – citizens or companies.**

Today, we know the dangers of climate change mean we need to use less energy. And Australians are responding as individuals. We buy green light bulbs; we're looking into solar panels. Individual companies are installing green computer servers that cut their IT energy usage in half. And the government is providing financial incentives to put insulation in homes. Australia, as a country is investing millions in renewable energy technology.

And I applaud all of these efforts. But none of them will be enough unless we fix our energy systems. Because, as you've heard, the systems themselves are highly inefficient[3].

And it's the same story with **water**…

The worst drought for 200 years has taught Australians the value of water. And many of us do our part to conserve this vital resource. We install rain water tanks, we don't let the tap run, we buy water efficient appliances… And again, it's all great – but we need to do more.

And it is costing money. The Productivity Commission estimates that water restrictions are costing households about $1 billion a year[4] due to inefficiencies in managing water usage – this would be addressed with smart metering where households could monitor their water usage and manage it.

It is no longer enough for us to do the best we can in our individual homes or companies. That will do us no good if the systems we depend on remain dumb.

We need to make our systems smarter: we need to see how they are connected; when they are in danger of failing; and what we can do to prevent it. We need them to be intelligent.

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[3] *Australian Productivity: A Review, page 19. Access Economics, March 2009*

4 Towards Urban Water Reform: A Discussion Paper, Productivity Commission Research Paper, Melbourne, March 2008.

Right now, if you leave the lights on when you go to work – the grid will continue to power them. It doesn't have the intelligence to know that you aren't home and the power isn't needed.

But how do we give it that intelligence? Well, to be smart, a system needs to be able to **sense, communicate, analyse** and **respond**.

Now we already have sense and respond technology – we call them 'transistors' – embedded in an astonishing number of devices. Your car, your mobile phone, your camera, your fridge, your passport, the goods you buy at the supermarket… they all carry chips. And transistors are also in our infrastructure: in building materials, in hotel doors, in freeway tolls, in ticket machines…

The scale of this build out is phenomenal: By next year there will be one billion transistors per human. Within 2 years there will be 30 billion RFID tags...in virtually everything: from supermarket goods to livestock...

And, thanks to wireless technology and the internet, these objects can already "talk" to each other – and communicate back to us. We have 2 billion people on the net... but the net also connects over *a **trillion** things*

Think about the amount of data that will make available – it will be unprecedented: by next year the world's data will double every 11 hours.

So our world is already sensing and telling us information, but now we need to take the next step – to gather up all this data and analyse it so we can use it in an *intelligent* way

Because, every time those devices report back to us – it gives us a chance to do something better: to prevent failure or waste, to be more productive or efficient, to make smarter decisions.

Of course, analysing that incredible amount of information will take a massive amount of computing power.

But supercomputers already exist. Last year, IBM produced a supercomputer that can calculate one thousand trillion calculations per second. It's made from *the same chips that go into the gaming toys our children play with*.

You might think that sort of computer power costs a lot of money – that it would only be available to scientists or very large institutions… But, in fact, increasingly thanks to a phenomenon called "Cloud" computing, almost any business or organisation can afford to access enough computer power to analyse all that data.

In other words, most of the technology to make Australia Smarter is already here.

Think about it this way: every business has been busy building out its digital infrastructure for its own single-purpose reasons.

Car manufacturers put chips in vehicles to help with maintenance…they roll your car into a bay, plug it in, and the chip reports what needs fixing….

Mobile phone manufacturers put a whole computer in your phone – so it can deliver lots of useful services…

Builders put sensors into pipes so they can easily locate breaks or blockages once the pipe is buried underground…

As a result of this **we have stumbled upon a new platform for digital awareness** none of us envisaged…

The maintenance chip in your car can help it become part of a much larger, smarter transport system

The computer power in your phone can help you communicate with and control all the other devices in your life

The sensors in pipes can start forming a smarter water system

So, if we have all the technology to start making Australia Smarter – why aren't we starting to do that?

Well, we are. A few visionary organisations have already started down that path… and we have two experts here today, to talk about the projects they are working on.

After our main course we will hear from Ben Hamilton, General Manager, Corporate, Information and Technology Strategy for Country Energy, Australia's largest energy provider, which is already in the process of building an intelligent energy grid…

And Professor Iven (*Even*) Mareels, Dean of the School of Engineering, for the University of Melbourne, where a team is developing a Smart irrigation system to save the Murray Goulburn river.

I will leave you now to enjoy your lunch and then Glenn Wightwick, one of IBM's Distinguished Engineers and the head of our Australian Development Laboratory, will come up and lead the discussion with Ben and Iven.

Panel discussion with Ben Hamilton, Country Energy and Iven Mareels', University of Melbourne. Followed by Q&A for all speakers.

Call to action and close

As you can see, a few Australian organisations are already seeing the potential of smart systems…

And it was extremely encouraging to hear the Communications Minister, Senator Stephen Conroy talking at Cebit, about his vision for smart infrastructure. Where we equipped infrastructure with sensor technology to detect movement and deterioration, gather information and improve the way assets are planned, constructed and maintained.

So we have made a good start – but it is not nearly enough, we must look holistically at the systems that make up our economy

We won't solve our biggest problems by picking off individual pieces.

We've been trying that with our traffic systems for years. For the last two decades we've been adding new bridges, widening roads, making commuter lanes... and I'm sure it's all helped – but our traffic congestion has continued to get worse.

To fix it, we need to look at relationships across the entire system - and all the other systems that are touched by it: our supply chains, our environment, our companies, our cities...the way we live and work.

We can't do this as individual people, companies, industries or even states – as a country, we need to map out what we want a Smart Australia to look like, and start building it without delay.

We've already heard about the cost of our delaying a national broadband network. Telstra estimates Australia is losing $200 million every month the network is delayed.

Imagine how much more we are losing by delaying our investment in Smarter Systems.

We calculate that intelligent energy grids would lower emissions by 14% by 2020… That alone would meet our emissions reduction targets!

For every month that goes by without embracing Smarter systems: we will continue to pour away our resources: and we will continue to fall behind the rest of the world.

The UK has just passed an energy bill that will introduce a nationwide feed-in tariff, which ensures households with solar power systems are paid for any unused renewable electricity they feed back to the power grid.

Denmark's largest energy company has already built an intelligent grid that is halving outage minutes.

Right now, 6 million households in Germany can see the cost of power at any particular moment and make smarter decisions about how and when they use it.

In Stockholm, where traffic was growing by 18% every year, a smart transport system has cut traffic by a quarter and reduced inner-city carbon dioxide levels by 40%.

Singapore, which has one of the most advanced traffic systems in the world, is already using traffic prediction to reduce congestion in its CBD.

Australia may have come sixth in the Olympic medal tally in Beijing, but in terms of smart systems, I suspect we're not really in the running.

And I question ….. Why not?

We're a rich, developed country, with a strong economy and a massively talented and creative population.

And we can't use our size as an excuse. This is not a race you need critical mass for. The countries spearheading smarter systems don't have to have huge populations or major cash reserves.

They have vision – and cultures that drive a collaborative approach.

In Australia, we need to work together to get **clearer sight** and **more control** of the systems our lives depend on.

This is no time for band aid solutions to our economic problems – we need systemic change that will prepare Australia to compete and win in the digital economy.

We have the technology, we have world class talent and – as we saw in the response to the recent bush fire tragedy – we have the capacity to pull together as a nation.

Now we need our government, business and community leaders to form a joint vision for us to believe in and work towards – so we can start building the digital infrastructure that will create a sustainable future for us… and for generations to come.

Thank you for taking the time to join us today.