

University of South Australia – graduation address

Firstly, I wish to acknowledge the traditional custodians of the land we are meeting on, the Adelaide plains...the Kaurna people.

Chancellor, Vice-Chancellor, members of Council, academic colleagues, ladies and gentlemen and most importantly ...graduands.

I am delighted to be here at the University of South Australia to present this graduation address.

The Productivity problem

I'm going to start by talking about an issue which is receiving considerable public attention of late, and one that I talk about a lot.

And that is productivity.

If you listen to economic debates you know Australia has a productivity growth problem.

To understand the productivity story - and why it is all over the news, every day - one first has to go back to a particularly prosperous point in Australian history.

In the late 80s early 90s Australia was in the midst of experiencing some major social and economic policy reformlargely instigated in the preceding decade by the then Commonwealth Government.

This was important reform including financial deregulation - the floating of the dollar, microeconomic and industrial relations reform through the union accord, a strengthening of national competition policy and in education and research.

These significant reforms yielded higher national productivity.

The 1990s saw massive productivity growth and an upsurge of new ICT products, services and capabilities due to the rise of the Internet and then - later in the decade - the beginnings of social media.

At this time Australia's productivity growth was above OECD average for the first time. The 1990s saw the highest underlying

productivity growth and the longest period of continuous productivity growth on record (9 years).

The possibilities were limitless. Or so it seemed.

In 2012 we find ourselves standing in a very different light to that of the 1980s and 1990s reform era. From about 2003 Australia began to decline in productivity to almost zero and is now going backwards.

In the most recent productivity growth cycle (2003-04 to 2007-08) there was an overall decline in Australia's productivity. Yet output, employment and average incomes have continued to increase throughout the last decade. Australians are earning more for doing the same.

We simply aren't being as smart or efficient as we could be.

And while Australia has escaped the worst of the global recession and its unemployment rate is one of the lowest in the OECD, we must be mindful that things can and do change rapidly andperhaps as a self-perceived 'lucky' country we are not always pushing ourselves to be the best we can be.

Indeed many commentators are forecasting national economic struggles once the current commodity boom runs its course.

So Australia may have a psychological problem.

Granted, there is a general acknowledgment that we must collectively face up to the challenges we are confronted with ... including an ageing population....the threat of climate change ...and the huge associated workforce implications and economic consequences of these problems.

However there is a characteristically Australian feeling of 'ease' that we will indeed meet those challenges, seemingly in lieu of any hard decisions being made – along the lines of those longer term visionary reforms of the 80s and 90s.

And unless we produce enough skilled people to think about doing things differently – then the problem becomes yours as the citizens of tomorrow.

We need more engineers, technologists, more scientists. And we need more people who are informed about science and maths – not afraid of it.

This presents another worry as statistics are telling us there is a declining level of interest in science and maths at school and university levels.

So what does all of this mean for you promising young people?

It means you are a vital part of the solution – a vital part of securing Australia's future.

The importance of Innovation

As Barack Obama famously said on the campaign trail the year he was elected president:

"Change will not come if we wait for some other person or some other time. We are the ones we've been waiting for. We are the change that we seek."

We must be innovative.

We must be innovative in the private sector and we must commit to innovation in the public service.

It is widely acknowledged innovation is the great driver of productivity. And I want to make the clear distinction here between good and bad productivity. What I'm talking about is not working harder but working smarter.

And the good news is.... to help you along your way.... the march of technology is accelerating and constantly evolving.

Let me give you a great example:

Kaggle

The Australian company 'Kaggle' – created in 2009 - is an innovative solution for statistical/analytics outsourcing which uses data modelling and prediction competitions to achieve the best outcome to a proposed problem.

....So companies, governments and researchers present datasets and problems – and people from around the world, people who ‘do data’ then compete to produce the best solutions. Prize money is exchanged for the winning model’s intellectual property.

By exposing the problem to a wide audience, with different people using different methods, it becomes a race to the very best solution.

The NSW Roads and Traffic Authority was the first Government agency to run a Kaggle competition. The competition required participants to predict travel time on Sydney's M4 freeway from past travel time observations. The idea is to keep commuters informed of traffic conditions and improve the general efficiency of the road transport system in Sydney.

Participants in this competition were required to forecast the travel time on the freeway with the NSW Roads and Traffic Authority making available 2 years' worth of historical data on road use between 2008 and 2010.

\$10,000 was offered for the winning model. There were 364 teams competing – a fantastic response. The Government is now working on releasing the algorithm behind the winning model.

The winners were Costa Rican-born PhD students at Carnegie Mellon University (arguably world's top computer science school) and the University of British Columbia. The second placegetter was a Russian-born physicist who works at Harvard Medical School. Third place was a Brazilian Masters student who specialises in artificial intelligence.

This is about adapting technology in a clever way with interesting combinations of products and services ... and always with an eye on the global picture.

This style of competitive high-skills resourcing and problem solving is spreading across the online landscape with vigour and loads of promise.

Innovation is no trivial matter nor is it just a technical matter.

Innovation in all we do – be it in business models or in managing community groups - is not only intrinsic to our economic prosperity, but to maintaining our quality of life and improving the quality of lives less fortunate than ours.

Innovation can be incremental innovation or it can be breakthrough innovation, often of a scientific or technological nature.

Matthew Todd

A really inspiring example of breakthrough innovation, and clever utility of the Internet to achieve innovative solutions, is the impressive work being carried out by The University of Sydney's Dr Matthew Todd - the Recipient of the NSW Science & Engineering Award 2011 in the category of Emerging Research.

Dr Todd is part of a new approach to science and research which I see as the way of the future. He is a pioneer of open research to source solutions to world health problems.

Dr Todd led a project that discovered a new way to make medicine used worldwide for the treatment of Bilharzia, a terrible parasitic disease that afflicts millions of the world's poorest people.

To do this, he deploys 'open research' methods online to source experimental input and subsequent solutions to global health issues. This involves the sharing of scientific information at a pre-competitive level, with research proceeding at a faster rate due to the open nature of the research approach.

This creative and collaborative approach is not only important for productivity because it saves time and money, but most significantly, it's helping the health of nations and improving the quality of life for many.

Failure

Part of the innovation journey means accepting that it necessitates failure. Thomas Edison was quoted as saying "I failed my way to success."

In 1989 when John Howard was asked if he would try again for the Liberal party leadership after being ousted by his own, he replied:
"Oh that's like Lazarus with a triple bypass".

And we all know what John Howard went on to do.

And in the private sector, perhaps the most famous success story from failure has come from 3M's humble post-it note – evolved from a glue substance simply not being sticky enough! It took a few years before the low-tack substance was embraced by some creative minds who came up with the re-positionable notes which are now a fixture of our daily lives.

So one should have an 'innovative' approach to failure too.

What we can take from these stories is perhaps not just a stubborn will to succeed ... but a creative response to *not immediately* succeeding... an ability to reinvent one's method or approach to better adapt to factors not originally anticipated. Factors only recognised through the process of failure.

Failure tends to get a bad rap in society but if you look at it this way, failure is a good thing.

Message to students

So whether you're taking away an engineering degree today, an information science degree, or you're now the expert in computing, telecommunications, maths, IT systems, or natural and built environments..... the message is the same to each and every one of you.

Today you've been given a gift. A gift earned through your own hard work and commitment. Not only your knowledge but your skills in knowledge-handling will equip you to do remarkable things.

You must take these new skills into the future with a steady confidence in your capabilities and a commitment to approach every challenge with an innovative and creative mindset.

Australia has a problem and you are part of the solution.

As the finger-pointing Lord Kitchener poster exclaimed: "Your country needs you!"

Congratulations and all the best for the future.