

From: David L Allen

DD: 30 April, 2018

To: Productivity Commission

Email: **financial.system@pc.gov.au**

Re: Competition in the Australian Financial System

Thank you for your kind invitation to submit on this important. My form with the Commission over the years is pretty good, although I note that clear definitions of key terms such as *Productivity* may still be difficult to find.

Form1: I provided a submission on Urban Water Efficiency and was invited to make a presentation in Sydney. While you may not be aware of the results, we did achieve some splendid results in Australia and abroad.

Form2: I provided a submission on Banking Competition several years ago and the suggestion was made that I should circulate my ideas. I may do this, although the economic situation has deteriorated markedly since then.

Form3: I make individual contributions to Government and Corporate policy and the results may be financially rewarding for the nation. Currently I am trying to lift our standards in Maths, IT Security, Due Diligence and Artificial Intelligence and it appears that progress is being made. NB: While the effects of DDoS attacks etc on Dutch banks are analyzed in their media, each new attack tends to surprise even our top Statisticians.

Form4: I recently made a submission about Youth Unemployment. It was interesting that their ToR contained no reference to important trends in our economy, with IT Technology being a major omission. Coincidentally I find no reference in your ToR to IT Technology etc. Perhaps this Inquiry is designed to fail.

The Commission is to review competition in Australia's financial system with a view to:

View1: Improving consumer outcomes. **Response:** ABS personal and foreign debt statics show that consumer outcomes are poor. To improve them, we may need to lift our standards as mentioned above.

View2: The productivity and international competitiveness of the financial system and economy more broadly. **Response:** We have made substantial progress in creating 'level playing fields' for massively large international organizations, resulting in a situation in which Australian organizations cannot compete. Top salesmen from international organizations use buzz-words that are not defined and they provide 'free' 'advice' to Government and to CEO's. This advice, which may be very poor, is then passed down through Australian organizations.

The advice is poor because the salesmen who provide the advice may not have any experience in the many industries that are financially interesting to them. They may

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indeed disregard their own advice when they are considering their own personal circumstances.

Business people who are obliged to follow such advice disadvantage their own organizations and the Australian community. Some business people may face severe penalties for following advice that is inflicted upon them.

Business people who follow such advice cannot understand it as the definitions may vary from product to product and from Salesperson to Salesperson. Such international Salespeople disagree massively with their competitors and all such Self-serving advice could be reported to the relevant authorities.

Artificial Intelligence (AI) provides an example of ever-changing definitions. I started studying AI during my Honors Maths degree many decades ago and definitions were generally accepted. I have quite a lot of experience in all IT fields. Nowadays there are such a large number definitions for AI that there is virtually no definition at all. Indeed top researchers may be focusing on products rather than AI. Australian business people may spend a very short time listening to international 'experts' and then declare themselves to be 'expert' and qualified to purchase the AI products that are on offer. NB: Australian lawyers adopted an alternative approach when confronted by massive job-losses due to 'micro processors' and Justice Kirby's "Reform the Law" is useful.

Interest in traditional skills such as Governance, Due Diligence, Cost / Benefit Analysis etc has declined and catch phrases such as Speed-to-Market take precedence. The quality of IT systems that have been built has recently been publically described as 'horrible' but 'there is always time to build them twice'. History indicates that quality will only improve when Quality Personnel are hired and Due Diligence is once again defined to be important.

It may be necessary to lift our Education Standards (especially Maths) and HR standards. Both Obama and Trump wrote about the risks that are associated with HR policies. Recent media reports amply confirm that HR risk is an important factor that needs to be urgently addressed.

NB: Education Reform is a very topical buzz-word and examples are provided from third world countries to show how various 'improved education models' can be used to lift Productivity in such countries and, by implication, in Australia. Additionally, lobby groups argue that our curricula are far too complex.

Reply1: In economically successful Holland, all students study four languages and are fluent in at least three. Their top students study another two languages and Dutch Maths standards are higher than ours. We might improve financial productivity by following the examples of the most successful countries.

Reply2: Australia has the potential to lead the world in at least one 'AI'-discipline at the flick of a switch, as we may have the requisite skills to improve its productivity.

Instead of addressing real issues, wealthy experts tend to concentrate on topics such as Tax Reforms that will probably have a negative impact on the wealth of most

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Australians who are already heavily in debt. A higher rate of GST appears to be a particular fixation, despite the fact that the large amounts of taxes that are raised may perhaps be simply wasted.

In a similar way, our vast quantities of natural resources are simply wasted. Never in human history have so few people exported c.q. destroyed such vast quantities of natural resources in such a short time in return for such an enormous per-capita debt.

View3: supporting ongoing financial system innovation, while balancing financial stability objectives.

**Response:** The term Innovation is not defined and this applies to other terms such as Resilience.

Many changes are happening in our financial systems. Massive organizations with massive marketing muscle are operating in Australia with few or any restrictions. A recent media report by a person who used to work for one such organization stated that it is probable that two of Australia's four main banks may no longer be operational in ten years time. That person may possibly work for one of these banks.

If this is Innovation, then we do not need it as we cannot afford it.

Financial Stability Objectives are not defined. Probably the term Unquestionably Strong may fill this void. It took me about two years to obtain a definition for this term and the CEO of a major bank did not know what the definition was even after legislation to support it had been rushed through Federal Parliament.

The definition that was eventually provided made little mathematical sense as it defined parameters for Australian banks. Assuming we met those standards, then they would also be applied to many other banks and we would again be caught short.

What appears to have happened is that our banks were declared to be Unquestionably Strong and then a new crisis hit and they were quite risky once again, despite the fact that the underlying economic situation had not changed.

One of our Regulating organizations sees its 2018 role to announce that our banks must be Unquestionably Strong although I have yet to see a definition for the 2018 product.

Without limiting related matters on which the Commission may report, its report to the Government should:

1. consider the level of contestability and concentration in key segments of the financial system (including the degree of vertical and horizontal integration, and the related business models of major firms), and its implications for competition and consumer outcomes. **Response:** If major international firms get their way, they will control most business in Australia.
2. examine the degree and nature of competition in the provision of personal deposit accounts and mortgages for households and of credit and financial

- services for small and medium sized enterprises. **Response:** Competition is diminishing at an alarming rate although statistics are not readily available.
3. compare the competitiveness and productivity of Australia's financial system, and consequent consumer outcomes, with that of comparable countries. **Response:** There is only one country that has a comparable economy – Canada and their media report that they “have enough debt to make an Italian blush”. NB: They made this statement soon after I sent a submission to their Financial Services people, indicating that they had even less gold reserves than Australia. Different South American countries experience economic hardship but they tend to recover as they work together. Australia does not have that luxury. An Argentinian joke was “How many pesos do we owe? All of them!”
  4. examine barriers to and enablers of innovation and competition in the system, including policy and regulation. **Response:** Deteriorating Maths standards provide a massive barrier to Innovation. I am currently trying to lift our Maths, Governance and IT Security standards and there are signs of success. I am also trying to improve our HR standards and again some success may be evident. Internationally I was accepted professionally by companies and by the Aristocracy as an IT talent when I went to Europe but different criteria apply in Australia and most of my recent work has not been paid for. NB: Apparently a woman trained many Aussies to do Security / Decryption work in the 1942-period on a pro-bono basis and this is surprising.
  5. prioritise any potential policy changes with reference to existing pro-competition policies to which the Government is already committed or considering in light of other inquiries. **Response:** It is difficult to identify any consistent and rational pro-competition policies in Australia. ‘Speed-to-Market’ is a buzz-phrase that is used and supporting infrastructure for such products might be considered at a later stage. I wrote to the RBA several years ago, suggesting that we could impose some sort of tariff-system as we were experiencing record terms-of-Trade conditions and record Balance-of-Payment deficits. The reply was that ‘this would not be wise’, despite the fact that all other countries employ similar techniques.

The Commission should have regard to the Government's existing wide-ranging financial system reform agenda and its aims to:

- strengthen the resilience of the financial system. **Response:** There is very little resilience as our trillion-dollar debt levels rise, Government budget deficits increase and we do not follow standard processes such as Cost / Benefit analysis as carefully as we used to.
- improve the efficiency of the superannuation system. **Response:** My Superannuation-submission several years ago may have saved a major company from bankruptcy after their submission was published on the 7:30 report. I did not receive any response from anyone associated with this topic and the money was slowly drained out of my fund until it was closed down. It appears that a trillion dollars of Australia’s superannuation money has been ‘invested’ in infrastructure in a foreign country as it was a magnet that was attracting quite a lot of international attention for several years. I have yet to see any indication that this money, with or without profits, will be returned to Australia.

- stimulate innovation in the financial system. **Response:** I have decades of valuable European, Australian and Asian experience in this important field. See Appendix-1 for an example of a small selection of the types Innovations that one person can achieve as this may provide insight as to what is achievable. Additionally Lewis' book "The Big Short" contains a few clues. He refers to an Ivy League education system, reflecting the words of intellectual giant Elvis Presley in his song by the same name. He also repeats statements made by a US Presidential Candidate and by an Australian Premier that some CEO's are incredibly dumb. While I would accept that most CEO's are physically intelligent, poor Governance and Due Diligence procedures can reduce them to making statements about topics such as AI or Balance Sheets when they may have almost no knowledge of such topics. It is difficult to appear intelligent when speaking about complex topics when experts within the company could be doing a much better job. The key is to improve Governance and Due Diligence procedures rather than attempting to educate very busy CEO's about very complex topics.
- support consumers of financial products being treated fairly. **Response:** This is an excellent idea, although different players might work with different definitions of Fairness.
- strengthen regulator capabilities and accountability. **Response:** Regulators in Australia tend to take instructions from international bodies when similar companies in other countries may choose to ignore them. As an example, a few years ago the Annual Report of a major European bank was declared to be the 'greatest work of fiction since Joyce wrote Ulysses'. We have different Regulators in Australia and their roles may overlap or underlap, depending on circumstances. I am not sure that any regulator is responsible for Education and this is one of our major industries. The Chief Economist said recently that "The future for Education in Australia, especially for our Universities, is chilling unless we raise our Maths standards". While I salute the brilliant Chief Economist on his noble statement, it is not his role (nor mine) to be trying to lift our Education standards. NZ, by contrast, does much better. They have produced three world class Mathematicians and they rank as number 34 on the Scientific American's list of innovative countries. One reason may be that NZ tends to respect their traditional mathematical skills. By contrast, Australian Maths text books contain the Mathematically and Historically false "1, 2, 3, many" statement despite the intellectual feats of Indigenous Australians over the millennia. The aerodynamics of hundreds of types of returning boomerangs delighted people across the globe over the last two hundred years. While the "1, 2, 3, many" label may have been applied to many peoples over the millennia, it appears to have stuck with a group of people from central Brazil although this may change now that archeology has uncovered the remains of a large and important civilization that used to live there until recent times.

NB: Governance in some European countries may be stronger than in others. Ex Philips CEO Jan Timmer recently expressed extreme disappointment about failure to provide ABN / AMRO with adequate support during the GFC. He also thought that his successors at Philips could have achieved more productive and innovative results. The two issues are linked in his mind, as they could be in Australia.

I wish the good folk at the Productivity Commission the very best of luck in trying to turn Australia's financial fortunes around in these challenging times.

Yours Sincerely

David Allen, Inventor of Things that Work.

## **Appendix-1: Case Studies / Innovation & Governance**

Maths skills may form the basis for identifying Customer-focused Innovation opportunities and then guiding them through to positive Cost / Benefit implementations. While I commenced my career as an Aussie bushie, I was innovative in England and the Dutch then invited me to work in The Netherlands.

1a: Maths & Stats. My first quasi-professional job was as a Four-Unit Maths teacher during my Honours year. I have spent about 10% of my professional life working as Mathematician and Teacher. My current drive is to lift Australia's maths and AI standards. My first break as a Mathematician came when I was working as head of OPG's Data-department in Utrecht. We were advised to upgrade two medium-sized computers to a much larger one but the Cost / Benefit analysis did not stack up. I analysed some technical data, altered the database organisation and re-checked the statistics. They were greatly improved and OPG was eventually able to rely on just one of the smaller machines, saving money and improving reliability. I am not aware that anyone had done a similar mathematical exercise at that point in time. My second Maths break came when I was asked to evaluate the processing capabilities of a computer system the Amsterdam Stock Exchange was proposing to purchase. My Maths indicated that the computer was too small for the task of innovatively displaying real-time prices on a mechanical board and tests confirmed my analysis. This was innovative as I was not aware that anyone had previously done this type of analysis although it may be standard practice nowadays. My next big Maths break occurred when the Chief Economist of a major bank responded to my public question about Maths standards with the words "The future for Australian Education, especially for our Universities, is chilling unless we raise our Maths standards". NZ has produced at least three world-class mathematicians and is number 34 on the Scientific American's list of innovative countries. We could do well to follow their approach and I have developed an innovative approach to teaching Maths.

Innovative Products: My comments may have assisted to get the equations back into the high school Physics curriculum and Mathematical Analysis shows the importance of both innovative maths and innovative teaching methods that produce positive outcomes. Maths may be essential for AI and IT Security. Expected costs are small compared to the projected benefits.
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1b: Artificial Intelligence (AI). My big breakthrough was when an English Maths professor came to UNE in Armidale to teach us about the principles behind the Theory of Machine Intelligence during my Honours Maths year. The fact that I could make Turing machines was my passport to Europe for the next two decades. My next breakthrough occurred when the Dutch RTA (RDW) asked me to improve the integrity of their reporting functionality, saying that I could do anything, even if that meant changing the compiler. I designed and developed a soft-AI product called the Matrix Approach that was loosely based on the concept of a Turing Machine. This was a success and my boss Piet Grooswagers called it a Mighty System. NB: The Approach I used is similar to that used by Chess-programs when they defeated the World Champion, although others may almost surely have invented this innovative technique years before I did. I later used a similar technique for a data communication system for Woerden, a Dutch LGA. My next big break happened after I managed the design and coding of a large geological database for Shell. Then they then told us just how many reports they wanted – almost everything by almost everything. Coding each report individually was impossible for a fixed price project so I ran my Matrix Approach concept past two excellent C-programmers from

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Management Share. They said they could 'cut the code' in an Oracle database environment if I wrote the specs. It worked as predicted and, interestingly, an article in the Scientific American about two months later stated that such an approach may have been difficult in an SQL database environment. As it is possible that my Matrix Approach initiative may have shown other companies how to make Generic Search products, I shall follow this up. Definitions for AI-terms are essential and my AI quality control at an AGM in 2017 may have resulted in the projected impact of AI on unemployment dropping from 47% to 20%. NB: According to at least two international experts, the risk posed by some popular AI-concepts is exceptionally small.

Innovative Products: It is possible to develop similar soft-AI products using this technique and I recently wrote to a few major financial institutions about one such possible product. Expected costs are small compared to the projected benefits.

1c: Health. My first professional job was as a Laboratory Pathologist in the ADF and I have worked in the Health Industry (IT) on several occasions. While I am a very healthy person, I have had a few injuries that the medical profession found challenging. My main Health Innovations relate to the reduction of mis-diagnosed heart attack risk. Mathematical Analysis shows that this type of research should have a strong chance of success with reduced levels of medical intervention. My big breakthrough in Public Health came when I did the maths on the 2008 Swine Flu 'outbreak' and this analysis may have saved Australia a substantial sum of money.

Innovative Products: It may be relatively easy to develop solutions to several health situations that weigh heavily on the national budget. Expected benefits may outweigh the projected costs.

1d: Manufacturing and Energy Efficiency. My first experience in a manufacturing environment was at Gestetner (see below). I later developed an automated Time Registration System for Fokker, doing most of the design, coding and technical DBA work. This innovative product was sold to Germany. I have worked for the Dutch Gas Company (NAM) and for Shell and this is where I produced the final stage of my innovative reporting system (see above). I participated in the University of Amsterdam's 1992 Conference of Mathematicians to discuss Dutch Sea Defences and my question about rising sea levels may have been 'on the money'. My big break in Energy occurred in Sydney when I posed a Mathematical question at a university meeting that was evaluating the feasibility of a Thorium reactor. My innovative question could not be answered and that stage of the Thorium project was cancelled. I applied similar mathematical principles in my home and my energy bill dropped by 50% about 18 months ago.

Innovative Products: There are at least two innovative Energy Efficiency products that could be developed based on this approach. Expected costs are small compared to the projected benefits.

1e: Finance. The ledger-experience at Gestetner (see below) was my first successful introduction to Finance transactions and I worked on several different finance and insurance projects in Europe and Australia. My breakthrough occurred when the ABN / AMRO bank invited me to build an innovative data-communication link between IBM's SNA and DecNet using data-communication protocols that were new in Holland. Just as I was testing the finished product, they decided that encryption would be a good idea. I had access to an excellent encryption-routine and a splendid C-programmer linked it into the data-communication protocol. Both the data-communication protocol and the encryption routines were almost certainly unique for application systems in Holland at the time. My next breakthrough in a Finance environment happened when Westpac invited me to produce Process Maps of their finance functionality. I suggested that we could make our own Workflow Metrics tool based on my RDW Matrix Approach to meet Westpac's actual requirements. The WorkFlow Metrics tool and the associated process mapping exercise were innovative successes.

Innovative Products: Governance standards in some organisations have declined and some senior managers feel overwhelmed by conflicting advice that may be given by the world's top salesmen. It

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is possible to develop soft AI products that can check the reliability of such information. Expected costs are small compared to the projected benefits.

1f: Governance / Due Diligence / IT Security / Governance / Audit. My first big IT break occurred when I was instructed to 'balance the Ledger' for Gestetner late one night. I knew how the program worked and decided that altering it was not feasible in the time available. Together with an excellent computer operator and under the guidance of my boss' boss, I managed to balance the ledger in a most innovative way. The important lesson was the way that Security and Governance were both applied to ensure financial integrity. The story impressed my next boss and he used to take me to a gentleman's club in London that would not have welcomed a recent British PM 'because he was not a gentleman'. It appears that exceptions are made for emerging talents and I was invited to work in Holland soon afterwards. Again, the 'gentleman' criteria applied and I declined the offer of an excellent job at the Amsterdam Stock Exchange and at other prestigious organisations. Security and Governance were ever-present considerations in all the many projects I developed in Europe. Nowadays the definitions of such important constraints may be difficult to produce for some locally developed initiatives. I have had a series of innovative successes that delivered major benefits in Australia when I realised that the requisite Governance and Cost / Benefit procedures were not being followed as rigorously as they may have been in Europe. Gadgets can never replace Due Diligence and it is important that the few Laws of IT Development and Implementation are always followed. My next major breakthrough was when my submission to the Basel Committee was accepted just after Brisbane's 'interesting' G20 meeting. The fine Basel-people registered me to attend 'on the spot' but I decided that costs were perhaps a bit too high so I sent my ideas to a few major financial institutions in Australia instead. I wrote to them again in 2018 after analysing the opinions of international AI-experts and providers, offering to build a soft-AI tool to assist them in evaluating the new products that are constantly appearing on the market websites.

There is always a trade-off between 'Speed to Market' urgency and an 'Analysis Paralysis' approach. Some European countries may have focused more on a due diligence approach in recent years and this may be the best way to get quality products Customers want into the market place quickly and at an affordable price. By contrast, a recent public statement by a senior finance person stated that some recently developed computer systems "are horrible" and my quality controls may confirm that there could be some validity in this statement.

Products: A soft-AI product could assist to ensure that due diligence is done for all major development-jobs. Without due diligence, the expected Cost to Benefit ratio could be exceedingly small for some international products. Expected costs are small compared to the projected benefits.