

# What can a five-year old Productivity Commission add to a thousand-year old institution?



UC Connect Lecture

6 April 2016, Canterbury

**Murray Sherwin, NZ Productivity Commission Chair**

Thank you for opportunity to speak to you tonight.

[Slide 1 – Logo]

I'm going to talk about the Productivity Commission and about universities. I will introduce our newest inquiry – New Models of Tertiary Education – share some preliminary questions and thoughts, and – hopefully – encourage you all to become active participants in shaping our advice to Government on improving New Zealand's tertiary education system.

**The Productivity Commission has just turned five**

[Slide 2 – Our 5th birthday]

Last Friday, the Productivity Commission celebrated its fifth birthday. Let me start off tonight with some reflections on our experience to date.

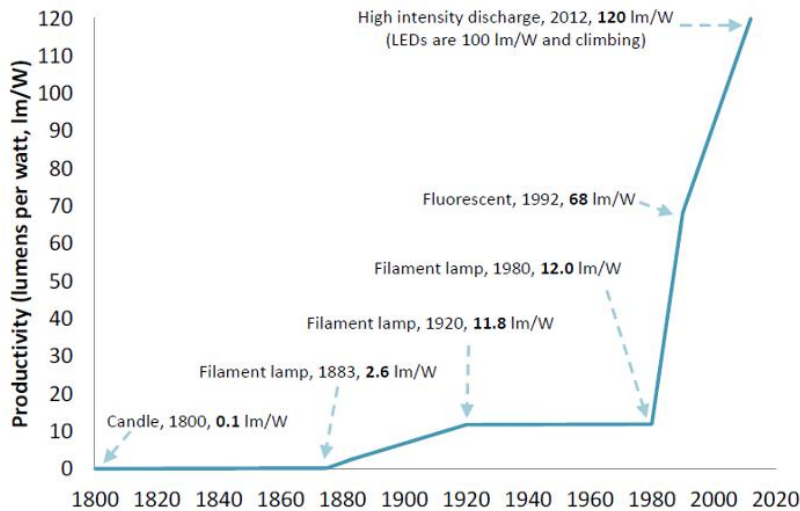
We exist because Parliament recognised that governments struggle to get some types of advice. That may seem surprising. After all, the government employs many smart, well-educated people. And there is no shortage of other people – including those in universities – offering free, and often unsolicited, advice.

The type of advice I am talking about spans issues and agencies. It addresses complex topics characterised by multiple stakeholders, incomplete evidence, and contested problem definitions and solutions. Quality advice takes time – to generate data and evidence, for research, development and testing. And, for credibility, it helps to come from an independent source.

But why a Productivity Commission? It's no accident that we were modelled on our Australian namesake. Their commission has a long history of independent advice, sometimes more independent than the government wanted at the time. Their research and advice is widely respected, and there is no question of its contribution to higher standards of public debate and evidence-led policy.

## Lighting productivity over time

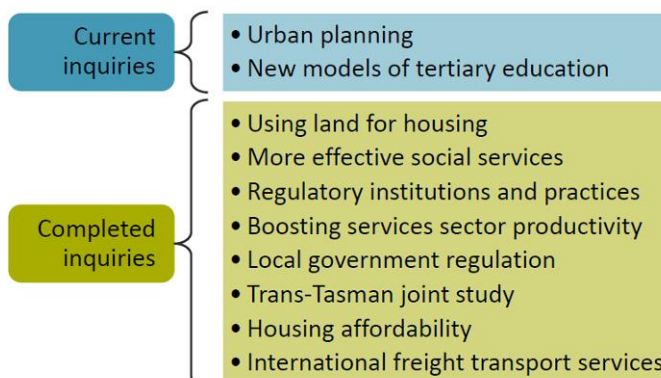
Productivity growth – producing more with less – is what separates us from our cave-dwelling, hunter-gatherer ancestors. Our progress over the ages, on every dimension of well-being – health, housing, leisure, security of food supply, access to education and choices of life-style – is derived from a relentless increase in the value and quantity of outputs per person. By way of illustration take one tiny, but also enormous, example. This lecture theatre would be lit, dimly, unhealthily and very expensively, by candles were it not for a string of innovations that has yielded a 900 times improvement in lighting efficiency since 1800 [1]. Such technological improvements are but one way of achieving productivity growth.



The term productivity for some implies being told to work harder or longer. That is not what we are about. Productivity is about producing more with less – working smarter, not harder. New Zealanders already work harder, in terms of average hours worked, than most of our developed country counterparts. That clearly is not the solution.

New Zealand has struggled to achieve productivity growth rates that match our peers over the past few decades. So a commission that advises on productivity growth seems to have an obvious place. Parliament, however, gave us a wider purpose – to provide advice on improving productivity **directed to supporting the overall wellbeing of New Zealanders, having regard to a wide range of communities of interest and population groups in New Zealand society.** And that purpose – overall, broad-based, wellbeing – drives our analysis, our advice and how we go about our task.

## Our inquiries to date



In its first five years, the Commission has completed eight inquiries on diverse issues including housing affordability, urban land supply, trans-Tasman economic relations, international freight services and the performance of our regulatory systems. Supported by a small self-directed research function our inquiries have given us a much better idea of the nature and sources of New Zealand's productivity challenges.

We've given government – and opposition parties – much advice to chew over. Perhaps more importantly, our work has helped change the terms of public debate. We identified the shortage in land supply as a leading contributor to inflated house prices in Auckland. And described a "democratic deficit" that allows current homeowners to benefit at the expense of future homeowners. We drew attention to the plight of New Zealand citizens living in Australia, paying taxes without social security supports. Recently we identified the ongoing failure of "joined up" initiatives to deliver effective social support to those in most need, and outlined a possible solution.

So I take some pride from what the Commission has contributed in its short history. But we can't and won't rest on our laurels. Our challenge is to improve our own productivity, to produce better quality advice and, most critically, to lift our positive impact.

## **The inquiry**

The Government specifies the topics for the Commission's inquiries. We think that's important, as it means the referring ministers have a stake in our advice. That makes our analysis and recommendations harder to ignore.

Our latest inquiry looks New Zealand's tertiary education system. Its scope embraces all providers of post-compulsory education – universities, polytechnics, trades training, wānanga and private tertiary providers. That's coverage of around 418 000 students – New Zealanders and internationals – enrolled at over 480 providers. Total expenditure on tertiary education – public and private – is about \$5.2 billion per year.

As I am speaking with a university audience tonight, my comments will concentrate on that important component of the wider tertiary education system.

[Slide 5 – human computers]

The inquiry has been asked to explore the big trends affecting the tertiary education system. Many of those trends are global – increasing student and staff mobility, cross-border competition for staff and students, demographics indicating declining numbers of local students, and changing student and employer expectations. Information and communications technology has disrupted many other service industries such as banking, retail and postal services. It is only just starting to shake up tertiary education.

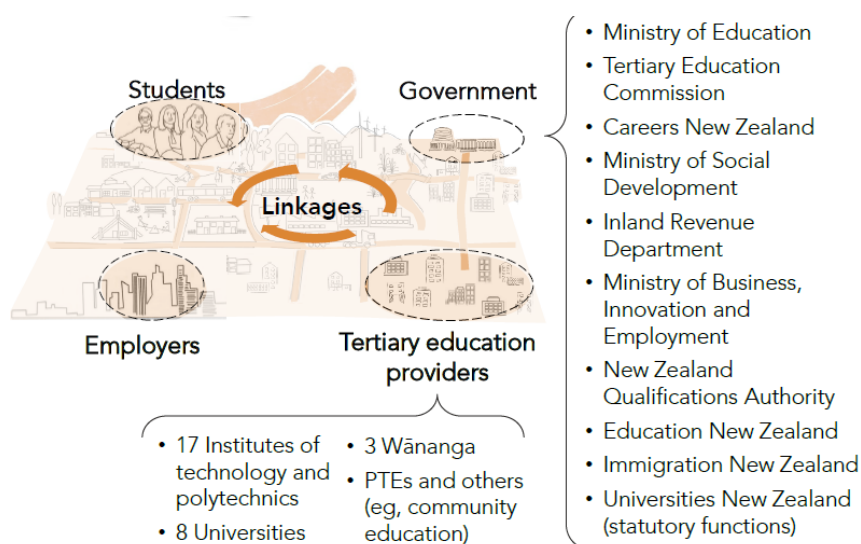
The rapidly falling price of ICT effectively undermines the value of existing assets, including business models, physical assets, and the knowledge and skills of people. A somewhat ironic example is the word "computer", which dates from the early 1600s. It described an occupation – those employed to perform mathematical calculations. Commercial availability of mechanical and then electronic computers made human "computers" redundant.

These trends present significant challenges for universities. We don't yet know their magnitude, nor how they will interact. But we can say, with some confidence, that the consequences will be far-reaching and – for many – uncomfortable.

The Government asked us to explore “new models”. We interpret this to mean new and improved ways of achieving educational outcomes. New models include improved ways of facilitating learning or better ways of delivering tertiary education. New models might also mean different policy, regulatory, funding and quality assurance arrangements. We will consider models that already exist or are emerging in New Zealand, as well as things happening in other countries that could be adapted to local conditions.

The inquiry will concentrate on educational outcomes generated by the system. This will require us to consider what a good tertiary education system looks like, and how that quality might be assessed.

### Participants in the tertiary education system



Universities like to claim independence. But their independence is not total or unconstrained. In particular, to operate they need inputs – students, staff, facilities and revenue. Government supplies the majority of revenue. Not surprisingly, the Government is also deeply interested in what it is buying, so it uses regulators together with funding and policy agencies to help monitor and manage its interests. But others have interests also. Students, their parents, whānau, university employees, local communities and, not least, employers, all have a stake in this.

So, as you can see from the slide, the system is actually rather complicated.

What the slide doesn't tell us is the higher purpose of the system. My starting point, perhaps naïve, is that its central purpose is teaching: imparting to students knowledge and skills that are valued by employers, by society at large, and by students themselves. Other views of the system's purpose include the production of basic research, the enhancement of cultural institutions, and being a “critic and conscience” of society.

Any system that pursues multiple purposes needs to deal with trade-offs – the pursuit of some goals is likely to come at the expense of others. It also needs to deal with performance

measurement issues. Measures of teaching, learning, research and other system outputs can be imprecise at best and misleading at worst. Some advocate against measurement for these reasons.

But where large flows of funding are being provided, the funders will want yardsticks by which to evaluate whether they are receiving good value. So our inquiry will seek the best available information on performance. We remain mindful, however, of the need for a tertiary education system whose design is robust to the inevitable imprecision of performance measures.

## **The long history of universities**

[Slide 7 – a mediaeval university]

Which brings me back to universities. Universities have been around since the 11th Century. Their key institutional innovation was teaching that was independent of kings, emperors and direct religious authority.

Universities spread to satisfy a thirst for knowledge and the belief that society benefited from scholarly expertise.

Universities survived and expanded because they were more productive than alternative ways of meeting this demand.

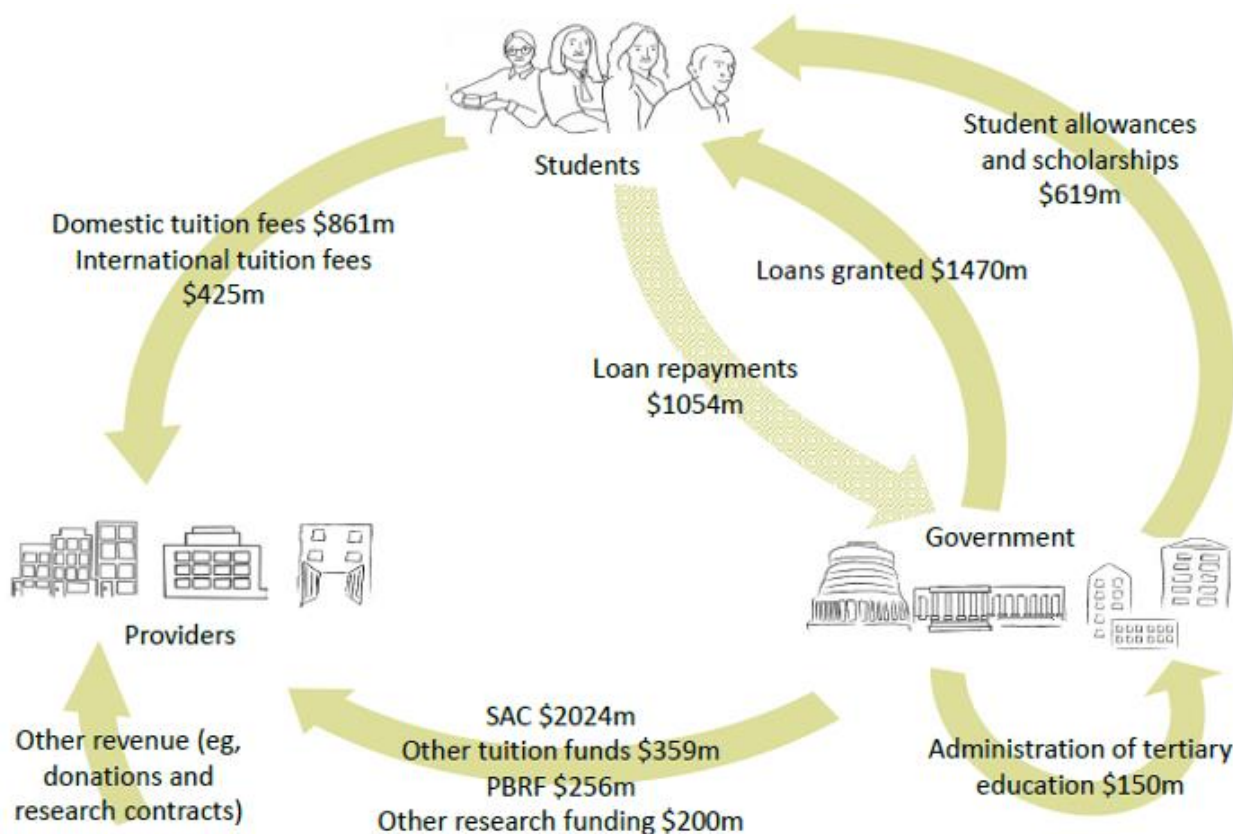
The term “Economies” provides one description of the ways of achieving productivity growth. Early universities exploited economies of agglomeration – academics together in one place could produce more than when scattered. They benefited from economies of scope – offering more fields of study than could military and cathedral schools. But importantly, they exploited economies of institutional design. Students as paying customers freed universities from the constraining control of sovereigns and the church. And that freedom allowed researchers to explore the deep underpinnings of our society and the universe.

The thirst for knowledge is unabated. And society has changed in ways that act to magnify the benefits of human expertise. Universities, while steeped in tradition and maintaining continuity with the past, have had to adapt in the face of economic and societal change.

## **What have we observed so far?**

We’re in an early phase of our inquiry. But let me share some early observations from our work to date. Some of these observations may prove incorrect – I’m fine with that. Better-informed people like your good selves will set us straight. It’s part of our operating model – tight loops of research and testing. We aim to be fast at generating insights and quick to eliminate those less useful.

## Follow the money



First, modern universities operate at a vastly different scale and scope to their medieval forebears. Their institutional design has changed to reflect their changing environment. Their customers have changed too. Since the 1960s, we have seen the extension of university education from society's elite to a mass audience. Universities have proved adept at exploiting economies of scale, as the cost of teaching an extra student is far less than the revenue received for that student.

A simple but powerful tool we use is to "follow the money". This slide demonstrates that, for New Zealand, the largest and unquestionably most powerful customer is the government.

Universities appear to be very responsive to changes in their environment. But let me qualify that. They appear to be very responsive to things that affect their finances. This shouldn't surprise anyone. After all, long-lived organisations are those that balance their books!

It follows that universities are very responsive to changes in government funding allocations and rules. But universities do not always respond in ways that the government expects or desires. Universities have choices in the ways that they respond to government actions, and they select the ways that are least costly to themselves – including lobbying against such changes! From a government perspective, this can look like inertia, intransigence or sheer perversity.

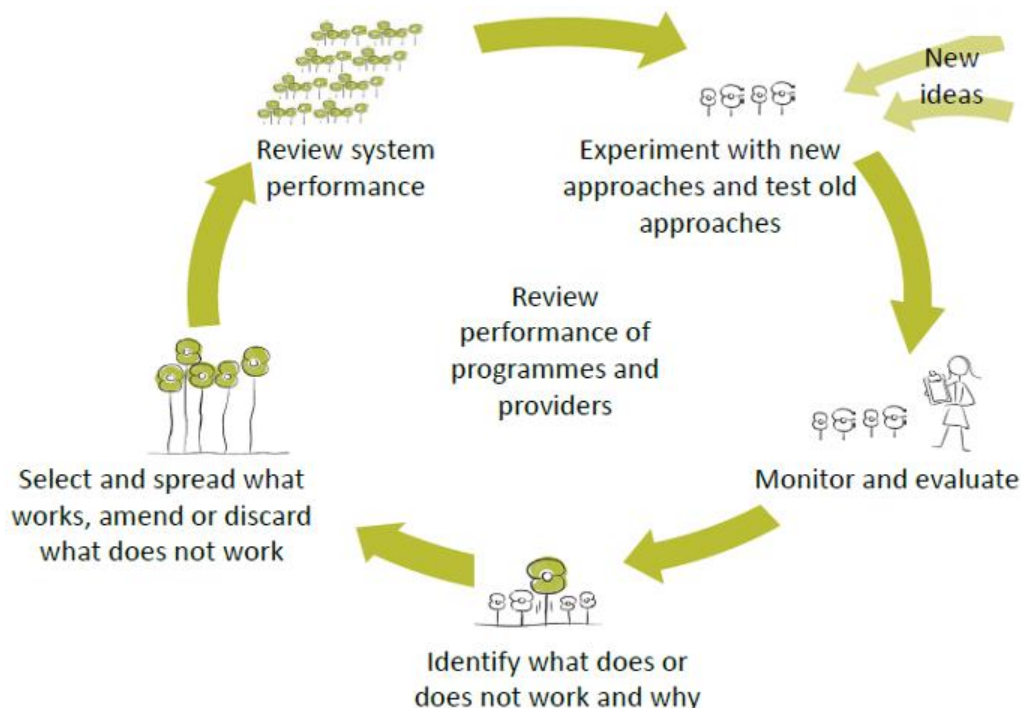
[Slide 9 – Levers of control]

Second, the government reacts through increasingly tight specification. It reaches for the "levers of control" – continually tweaks regulation, contractual conditions and funding incentives. This may address unintended and perverse consequences, but leaves providers trying to double-guess the

next round of tweaks. Tight specification also constrains the ability of universities to innovate to improve their own productivity.

Repeatedly, in our work in New Zealand's public sector, we have found examples where innovation is driven by mavericks – those who break the rules in order to respond effectively to the issues before them. That is what happens when compliance dominates innovation.

### A system that learns



Third, government finds itself with a dilemma. It might say it wants innovation to improve system productivity and boost student learning. But our current system exposes government to the financial and political costs of unsuccessful innovations. So government also seeks to minimise the risks of such failure, and thus restricts the experimentation, the testing and the feedback loops that characterise a “learning system”.

[Slide 11 – Mismatch of graduates to jobs]

Fourth, we expect educated workers to be more productive. Increased worker productivity is good for the economy. So we should spend more on education. That seems pretty obvious.

But, in our investigations so far, the evidence of actual productivity gains from education is weak. In particular, comparatively high levels of tertiary participation and attainment in New Zealand's working-age population have not translated into high levels of national productivity. Our issues paper touches on some factors that might explain this discrepancy [2]. Universities could be drawing in cohorts of students who performed less well in secondary school. Grade inflation could mean that today's degree signals lower skills than did yesterday's. Or our well-educated population might be poorly matched to employer demand. Our inquiry needs to unravel these issues.

[Slide 12 – Teaching teachers]

Fifth, the attitude of universities to teaching is somewhat perplexing to me. Universities train and certify our primary and secondary teachers. But strangely, they seem to offer little specific training – and no mandatory certification – of tertiary teachers. I have heard said that in academia, teaching is regarded as “punishment” for those who don’t produce sufficient research. While I presume that line is overstated, I suspect it has more than a grain of truth. Students devote at least three years of their lives to a university education. They deserve professional, competent educators, rather than researchers reluctantly reciting the required readings.

[Slide 13 – Team production replaces a cottage industry]

Sixth, even within these constraints, we are seeing a small but growing revolution in tertiary teaching in the form of team production. The mediaeval model had academics responsible for course content, lecturing, tutoring, assessment and pastoral care. Economies of specialisation – identified in the 18th Century by the economists’ favourite academic, Adam Smith – mean that a team of specialists often have higher productivity than a loose collection of generalists. Vast swathes of human activity have exploited economies of specialisation. Yet tertiary teaching has proven remarkably resistant to date.

The Open Polytechnic, the University of Auckland and others are employing specialists in learning design, content delivery, assessment design and media technologies to work alongside academics to deliver better teaching materials and faster, more relevant feedback to students. There is much promise in these developments. But they may be an uncomfortable fit with an institutional design that gives pre-eminence to the academic. And similarly, they present challenges for funding and regulatory institutions embodying outdated assumptions of the best way to organise tertiary teaching and learning.

[Slide 14 – Extinct occupations]

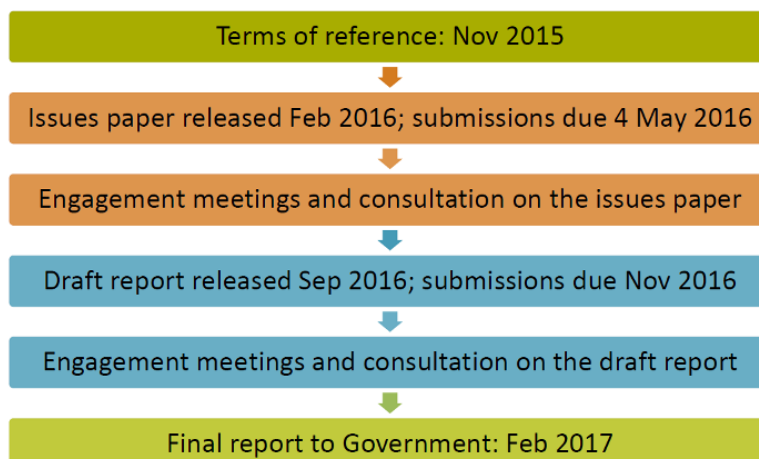
Seventh, there is a lot of public concern about the prospect of technology devaluating existing skills and reshaping of the nature of work. The predicted or actual extinction of specific occupations is nothing new. Typesetters, stenographers, lift operators, milkmen, typists, switchboard operators and other occupations have largely disappeared since I entered the workforce. But rather than mass unemployment, New Zealand has experienced increasing workforce participation. Jobs in new occupations outnumbered those lost. But these new occupations were not – and could not have been – envisaged fifty years ago. This makes me optimistic that society will find new and fulfilling ways to employ and remunerate our future generations in ways that are fulfilling and sustainable [3].

However, it is costly for a worker to move from a declining occupation to an expanding one. A West Coast miner, for example, may face barriers to employment in adventure tourism. Tertiary education can enable and ease this transition. To do that well, the tertiary education system will need to be more flexible and its services more personalised than it is today. Technology can assist, but needs to be complemented by institutional and policy change. Herein lies a challenge.



## Our inquiry process

### Inquiry timeline



To return to the question in the title of tonight's lecture: What can a five-year old Productivity Commission add to a thousand-year old institution? We're on the job. And I think we are up to the task, daunting though it is. While we have started to look in the right places, we will do best with active participation from those in the education system who know it best.

At five, the Productivity Commission may still be in its childhood. Tertiary education is our tenth inquiry and builds on our previous work. If I have piqued your interest then I encourage you to read our [issues paper](#). It asks a lot of questions. We are currently seeking submissions on those questions and anything else relevant to the inquiry – including questions that we have not yet asked.

Those submissions and further research will feed into a draft report scheduled for September. That will expose our thinking, and draft findings and recommendations to public scrutiny. We will seek further submissions before presenting a revised, final report to the Government in February next year. Our intention is a report that makes a convincing case for improvements – where warranted – in our tertiary education system, and robust recommendations to achieve those improvements.

## Conclusion

[Slide 16 – A Productivity Commission Team Production]

In the spirit of team production, I'd like to acknowledge the other contributors to tonight's lecture. But more than that, I'd like to engage you all in the co-production of our inquiry. I welcome your engagement throughout our inquiry process, and your comments and questions tonight.

## Notes

1. Nordhaus, W. D. (1996). "Do real-output and real-wage measures capture reality? The history of lighting suggests not." In *The economics of new goods*, pp. 27-70. University of Chicago Press.
2. See pages 34-35 in <http://www.productivity.govt.nz/sites/default/files/tertiary-education-issues-paper.pdf>
3. This optimism is shared by Eric Bartelsman, who was a keynote speaker at the Productivity Symposium in December 2015. The transcript will be available shortly: <http://bit.ly/innov15sy>