



Australian Government

Chief Scientist

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CSIRO “Big Bang” Gala Dinner

High-concentrate advice

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**Melbourne Town Hall
MELBOURNE**

Last month I was filling out my Census form. And I hit the section about employment.

Question: In the last week, what was the person's occupation?

Answer: Chief Scientist. Australia's Chief Scientist.

What are the main tasks that the person usually performs in the occupation?

Attends meetings. Listens. Talks.

What are the main goods produced or services provided by the person?

I wanted to say: inspiration.

I settled for: advice. Because 'inspiration' didn't have a suitable ABS code.

And then I clicked some more buttons and came to that final box: SUBMIT... but that's another story, for another day.

It was a five-yearly wakeup call. The experience got me thinking about what I do, why I do it, and how to know if I'm doing it the right way.

As it happens, one week later I found myself listed as one of the headline speakers at last month's Financial Review Innovation Summit in Sydney. So I thought I'd try an experiment for a change: a little bit of social media in the flesh and blood world.

I asked all the people in the room to put their hands up if they were confident that they could name just five Australian scientists – any scientists, as long as they were both Australian and currently alive.

Quite a few hands went up.

Then I asked them to leave their hands up if they were confident for an usher with a microphone to come by, and give them a chance to share their list.

I saw two hands left in the air. And one of them belonged to the CEO of Science and Technology Australia.

That confirmed something I have long suspected: you can talk up and down the country about science – and next time what you say will still be a pleasant surprise.

But what do we think would happen if I went to a research conference, and asked for the names of five venture capital firms? Five Chief Technology Officers of major companies?

In all likelihood, the same phenomenon, back the other way.

So the first bit of wisdom I'd like to dispense: don't assume that all the smart people you talk to are talking to each other as well.

I have the privilege of inhabiting multiple worlds, as does the CSIRO. The take-home message is clear for both of us – we have to *talk* about what we can see, if we want others to share our excitement about the view.

The second bit of wisdom I've acquired: there are at least 27 essential secrets to successful innovation.

I discovered this at the recent Nature Research symposium in Canberra, where I counted them. And I say 'at least', because my plane into Canberra had a mechanical problem and I missed the secrets that emerged in the morning session.

All 27 of these secrets struck me as good advice. But there are only so many secrets that any one brain can be expected to hold.

If the Prime Minister were to ring me tomorrow, and say: "Chief Scientist, give me the secrets to startup success" – I would have to say, "Mr Prime Minister, how long have you got?"

"And more importantly, have you got a pen?"

I've learned to think about advice the way that school children think about hydrochloric acid: the more concentrated, the better.

So here tonight, I am rolling out the Alan Finkel High-Concentrate Formula for Success. It has four parts – for which I apologise, I was aiming for three. But if pre-schoolers can cope with four Wiggles, then the nation can cope with a four-point formula.

ONE: Leadership commitment

TWO: Effective regulations

THREE: Human capital

FOUR: Financial capital

As a leader, you need these four things in your organisation. As a Prime Minister, you want to build these four things for your country. And when I look at CSIRO, I see potential for this agency *and* our country in spades.

Let's begin with formula ingredient number one: leadership commitment.

And here I want to acknowledge Larry Marshall, David Thodey and the Minister for Industry Innovation and Science, the honourable Greg Hunt.

As the leaders of the organization, CEO Larry Marshall and Chair David Thodey, have to carry the weight of the CSIRO's legendary status. That's not easy.

As the key stakeholder, Minister Greg Hunt has to set the expectations and provide the political leadership. Again, not easy, but the minister brings to the task deep understanding of the issues.

I am confident that Greg Hunt, Larry Marshall and David Thodey have the leadership capacity, and more importantly the leadership commitment, to ensure that CSIRO is effective as the nation's innovation catalyst.

With all the opportunities that the National Innovation and Science Agenda presents, the bar for the CSIRO is set very high.

The Commonwealth Science Council met last week and set the bar even higher through its consideration of the future. The future of science education, the future of our science policies, the future of our research infrastructure and the future impact of game-changing technologies peeking at us from over the horizon.

The challenge for leaders is to keep the bar high – and then support the troops to deliver.

It takes breadth of vision and superb operational skill. I am confident that CSIRO can be the model of both.

Let's continue with ingredient number two: effective regulations.

As I see it, regulations exist for two purposes. First, to protect the public. Second, to facilitate commerce.

Let me repeat that, because it's important. Protect the public; facilitate commerce.

Everybody knows the first purpose. But there is widespread unawareness of the second purpose.

They're *both* important.

There is no conflict between them.

There is no need to compromise.

Get it right, and effective regulations are the business person's best friend.

Australia's record is mixed – and the World Bank would agree.

We rank 13th in the world for ease of doing business – not up there with Singapore, but still ahead of Canada, Germany and Ireland.

It's easier to start a business in Australia than it is the United States. It's easier to obtain bank credit than it is Israel.

So it can't be *all* bad. Which is not to say it's universally good.

Exhibit A: vocational education and training. So loose it left student victims.

Exhibit B: medical device approval. It takes too long to process Australian designed medical devices. But I am very pleased to note that last week, the Government signalled that it will act decisively to remove these regulatory constraints.

What we need is Exhibit C: more successes like in clinical trials, where our regulations for ethics approval are perhaps the best in the world. Protecting the public and facilitating commerce. Without compromise.

So to ingredient number three: Human capital.

CSIRO is chock full of it – and just as importantly, CSIRO invests in the development of the human capital fund.

At every level, from your scientists in schools program, to your industrial PhD program, to your support for your own post-docs, and the ON Accelerator program for staff, all of you at CSIRO carve pathways for

Australian potential. And you help talented people reach for opportunities in industry that they might not otherwise see.

We know these programs work! Our challenge is to scale up the impact. And I look forward to working alongside CSIRO on these and other programs.

And now to the final ingredient in the formula for success: financial capital.

I use the term ‘financial capital’ broadly, to capture all sources of innovation funding: from government grants, through debt financing, profit reinvestment, private equity and Venture Capital.

The financial capital needs to be generous, at scale, and invested without forced marriages – otherwise known as artificial collaborations.

I’m excited about the potential of the CSIRO Innovation Fund. If we do our jobs right and communicate the outcomes, Australians will be as well.

So remember how important CSIRO’s voice will be in the national debate. And bear in mind just four bits of high-concentrate advice.

Raise your hands if you feel confident you can now reel off all four... if I don’t see every hand, I’ll never get over my existential despair!

But just to be safe:

- leadership commitment
- effective regulation
- human capital
- financial capital.

It’s a formula. Like a recipe, it needs a magic ingredient to make it work.

So let’s get out there and pursue our true occupational mandate: *to inspire*.

Enjoy your dinner, and thank you.