



Lockstep Technologies Pty Limited
11 Minnesota Ave
Five Dock NSW 2046

ACN 109 313 411

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Secretariat to the Expert Panel,
Review of the National Innovation System
Department of Innovation, Industry, Science and Research
GPO Box 9839
Canberra ACT 2601

Dear Secretariat,

Submission: Review of the National Innovation System

Lockstep Technologies Pty Ltd welcomes the new government's review of the innovation system in Australia and is pleased to make this submission.

Administrative information as requested

Author	Stephen Wilson BSc BE Elec Hons (Managing Director)
Organisation	Lockstep Technologies Pty Ltd
Type of organisation	Privately held developer of cyber security products
Address	11 Minnesota Ave, Five Dock NSW 2046
State or Territory	New South Wales
Email	swilson@lockstep.com.au
Phone	0414 488 851

Declaration of any Interests and Affiliations

Lockstep Technologies Pty Ltd researches and develops new solutions to identity theft and online fraud, centred on smartcards and Public Key Infrastructure (PKI). Sister company Lockstep Consulting Pty Ltd provides independent advice, analysis and management consulting in cyber security policy and strategy, authentication and privacy.

Current and recent government clients of Lockstep include the National eHealth Transition Authority, Medicare Australia, the Australian General Practice Network, and the Australian Government Information Management Office (AGIMO). I am a current member of AGIMO's Gatekeeper Policy Committee, the Australian Law Reform Commission Emerging Technology Subcommittee, the Australian Industry Group (AiG) Digital Technologies Forum, the National Association of Testing Authority (NATA) IT Testing Accreditation Advisory Committee, and Standards Australia IT Security Subcommittee IT-12-4.



In October 2007 Lockstep Technologies was awarded an AusIndustry *Commercialising Emerging Technologies* (COMET) grant in support of our smartcard-based privacy and identity security products.

Further background to Lockstep Technologies

The privately owned Lockstep Group was established in early 2004 by me, Stephen Wilson, a noted international authority on identity management and information security. My background includes 12 years experience in cyber security as a consultant and product development manager. Prior to that, I spent 10 years in software R&D with the CSIRO Division of Textile Physics, and with the pioneering medical technology company Telectronics Pacing Systems, in Australia and the USA. I am a scientist by training, and by many measures would now be considered an archetypal technology entrepreneur/inventor.

Lockstep Technologies has been working for over four years on a suite of innovative solutions to the problems of identity theft, web fraud, phishing, e-health privacy, and age verification online. We have published widely on cyber security, privacy, e-health and related topics, and have previously made detailed submissions to government inquiries into the Human Services Access Card, the Privacy Act, spyware, and the draft national health privacy code. See www.lockstep.com.au/library and www.lockstep.com.au/technologies.

We have invested a significant six-figure sum in R&D, funded in the traditional entrepreneurial mode by a second mortgage and our personal savings. All start-up companies in our market – especially SMEs – would probably agree that commercialisation of online safety and security innovations is difficult. Buyers of security products are characteristically conservative; they tend to respond cautiously and slowly to new products, and the sales cycle is usually very long. It is a major challenge for small companies like ours to stay afloat long enough for our innovations to become recognised, let alone profitable.

In this submission, I confine my comments to Information and Communications Technology (ICT), especially the sub-sectors of cyber security and Internet technologies, which happen to be critical to the development of the digital economy.

Observations with respect to innovation policy

The role of government in stimulating R&D

As an innovating SME, we regard 'efficient' sources of government assistance such as the COMET program as attractive and valuable. COMET is 'efficient' insofar as it requires a modest contribution on our part (just 20% of project cost) and also has light reporting overheads. Other AusIndustry assistance products such as Commercial Ready are less accessible to SMEs like us, for they require much larger financial commitments. The R&D tax deduction is important but it should be noted that it does not help with cash flow, and frequently costs a relatively large amount of money to access, in terms of accountants' fees.

Stimulating R&D through purchasing policy

Over and above financial assistance, we suggest that government could do more to stimulate R&D by being more accessible as a potential customer of innovative Australian technologies.

Governments – both federal and state – of course remain the most important buyers of ICT in Australia, especially technologies of strategic national importance or relating to infrastructure. Major projects like state driver licence technology upgrades, the erstwhile Human Services Access Card, the national broadband rollout, and national e-health systems, could be ideal environments in which to preferentially select next generation, home-grown products, thus stimulating domestic R&D and advancing an innovation culture.

Obviously government must be prudent when it spends public money on new technology, and must manage the attendant risks. Yet at the same time, there is a public interest argument in favour of selecting newer solutions: in the rapidly changing online environment, citizens stand to benefit from the latest innovations, bred in response to the very latest threats and challenges.¹

Keeping dialogue open in relation to new technologies

Continuing the theme of government as keystone buyers of ICT, another impediment to being able to access government purchasing power is the difficulty private businesses have engaging agencies in candid discussions about new technologies when a project is in or near the tender stage. We stress that we do understand the need for probity and transparency especially during tenders; clearly agencies need to resist (and be seen to resist) undue influence by commercial interests. And yet the principal ‘weapon’ for protecting independence is very blunt – it is to withdraw from all dialogue with the private sector. When tender processes are protracted, potentially valuable input to architectures and government policy is arbitrarily locked out, sometimes for years at a time.

Crucially, in a small market like ours, it is inevitable that private sector experts – almost anyone with something important to say about technology – will be involved in some way with larger commercial interests. It is not in government’s interest to forego all input from Australian experts simply because they have a commercial involvement. Indeed, there is evidence that some past government projects have worked themselves into positions beholden to idiosyncratic advice from isolated specialists or overseas consultants.

We believe there must surely be ways to maintain close contact with industry, even in the midst of a tender, so that government remains alert to the latest developments in R&D, and

¹ Consider for example e-health security. Large sums of money are currently being invested by Australian health authorities on critical infrastructure including personal health identifiers. While the banking industry is moving rapidly to “two factor authentication” which affords better protection against cyber crime and identity takeover, no such moves are mirrored in the health sector. Indeed, occasional opportunities to leverage security technologies in health – such as utilising the erstwhile Human Services Access Card to integrate e-health services – have been shunned by “technology neutral” policy makers. The result is that the security and privacy of Australian citizens’ health records on current indications will lag that of their Internet banking services, by five years or more.

industry experts have the opportunity to bring important news to the table that might contribute to better outcomes. Such dialogue could be constructed in various ways to defuse the possibility of undue influence being exerted; for instance, it could be mediated by respectable industry associations (see below).

We would urge government to keep channels open at all times, to support dialogue around leading edge innovations that might have a positive role in programs like e-health, smart technologies, broadband and so on.

Mechanisms for active engagement between industry & government

Rather than attempt to elaborate a complete solution here, I prefer to outline some possible elements of a more active engagement between government and industry, that I suggest would better foster innovation for the benefit of all concerned.

- There exist respected and well managed industry groups that constitute significant bodies of ICT expertise that could be used as touch points throughout a technology project's lifecycle. One example with which I am familiar (and associated with) is the Australian Industry Group (AiG) Digital Technologies Forum, which specialises in information security, smartcards, RFID and the like. The AiG imposes a rigorous Trade Practices Act Compliance Protocol to the running of the forum, the deliberations of which can therefore be assumed to be free of undue commercial influence.
- At present, the only access that small innovative companies have to government as potential customer is through tender processes in which we play small and largely ineffective roles as consortium partners under large prime contractors. We need to sell our proposition first to the big players, in the context of a tender that normally has already been frozen. This curtails our ability to demonstrate something innovative and unexpected to government.
- It could be beneficial all round if potential buyers in government – large agencies like Human Services, ATO, Defence and so on – could routinely be introduced to a portfolio of new technology companies that are 'on the books' at AusIndustry thanks to COMET and similar programs. That is, if a company has been qualified through COMET or similar processes as being innovative and well positioned for success, then some sort of introduction to relevant interested agencies could follow automatically. Perhaps AusIndustry could convene a regular showcase event in Canberra, at which recent grant recipients could present their offerings.
- We wonder if a fraction of the infrastructure and resources of NICTA could be applied to seeking out, evaluating and incubating intellectual property originating from Australian SMEs. We appreciate that this might represent an extension to NICTA's mission, but as an existing concentrated engine room of commercialisation, it seems like a logical place for an IP 'clearing house' that could help progress innovations by



way of extra prototyping, bench testing and the like, and showcase them to the broader ICT community.

I trust that these observations will be useful in the innovation system review. Lockstep Technologies would be very happy to participate in further discussions as appropriate, to explore the issues further and to help refine government's response.

In closing, I wish you well with this most important work.

Yours sincerely,

A handwritten signature in black ink, appearing to read "S. Wilson".

Stephen Wilson
Managing Director

By e-mail.