

SUBMISSION TO THE 2009 DIGITAL ECONOMY FUTURE DIRECTIONS CONSULTATION PAPER TO CREATE AN DIGITAL ECONOMY ECONOMIC STUDIES INSTITUTE

This submission argues the need for an independent Digital Economy Economic Studies Institute (“DEESI”) dedicated to the provision of information and knowledge on the role Information and Communications Technology (ICT) plays in innovation, productivity and the Australian economy. The rationale for the formation of DEESI is taken from the very nature of the questions posed in the discussion paper:

- What markers of success can government, industry and other stakeholders establish?
- How will we know when we have maximised the potential of Australia’s participation in the digital economy?
- How might we best focus our efforts for good outcomes for this nation in the decades ahead?
- How better can we support diffusion and take up of new technologies and innovative processes across industries and the community?

These questions can only be answered through a sustained, updated, independent, rigorous database of information, and through the services of appropriately qualified experts. Policies and investment can only be grounded in fact if a fact base is created and interpreted. Treasury officials will only be convinced to invest in technology if a return can be clearly demonstrated. Policy can only be co-ordinated across multiple organisations (public and private) and jurisdictions (state and Federal) if relevant information is accessible. An independent body, constituted jointly by government and industry will ensure that a non aligned view is developed.

The proposal ties in, integrates and leverages work undertaken in a sporadic, fragmented and disconnected manner by over 20 separate institutions (including the Australian Bureau of Statistics, the Productivity Commission, industry associations, academic institutions and private sector consultants) who between them, have released over 250 reports in this area in the last 10 years, most of which have sunk without trace or impact¹. Here, the role of DEESI to stimulate debate, encourage interpretation and strategy formulation as a well-respected, independent, rigorous and inclusive institution is key.

The DEESI will assist all stakeholders understand the role of ICT in productivity and innovation and help focus strategies and activities for a better return on investment addressing the ICT Domain expressed in Figure 1 below.

¹ See www.blue-tongue.biz for a mashup of many of these reports

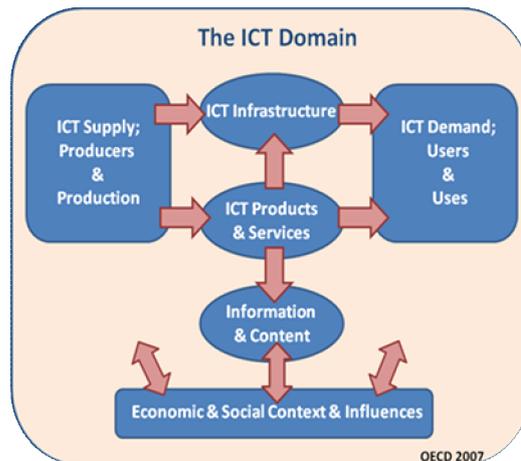


Figure 1: The ICT Domain

To establish DEESI the Federal Government needs to act as a sponsor and facilitator.

- Budget is required to establish an advisory council, form an interim secretariat and develop a business plan.
- Longer term funding should be jointly from industry, academia, state and federal government. It should consist of endowments, in-kind contributions, research grants and fee for service work.
- DEESI should take advantage of existing studies organisations and capabilities, and operate on a “hub and spokes” model.

Relevant models for DEESI can be seen in the following organisations; [Australian Business Foundation](#); the [Strategic Policy Institute](#), the [Australian Bureau of Agricultural and Resource Economics \(ABARE\)](#) and the [Intellectual Property Research Institute of Australia \(IPRIA\)](#).

This proposal is consistent with, and builds on, recommendation 12.13 of the 2008 [Venturous Australia](#) green paper commissioned by the Hon Senator Kim Carr:

A National Centre for Innovation Research should be established to advance knowledge of the innovation system through high quality, independent research which is strongly relevant to policy and practice.

The proposal is also consistent with the [December 2008 government response](#) to recommendations of the House of Representatives standing committee on economics, finance and public administration inquiry into the current and future directions of Australia’s service export sector:

The committee recommends that the Government commission research into innovation in the services sector and its implications for productivity.

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1 ICT CONTRIBUTION TO THE DIGITAL ECONOMY

ICT has a huge impact on the Australian economy. It is therefore an imperative that it receives adequate analysis through an organisation such as DEESI so that its impact can be maximised.

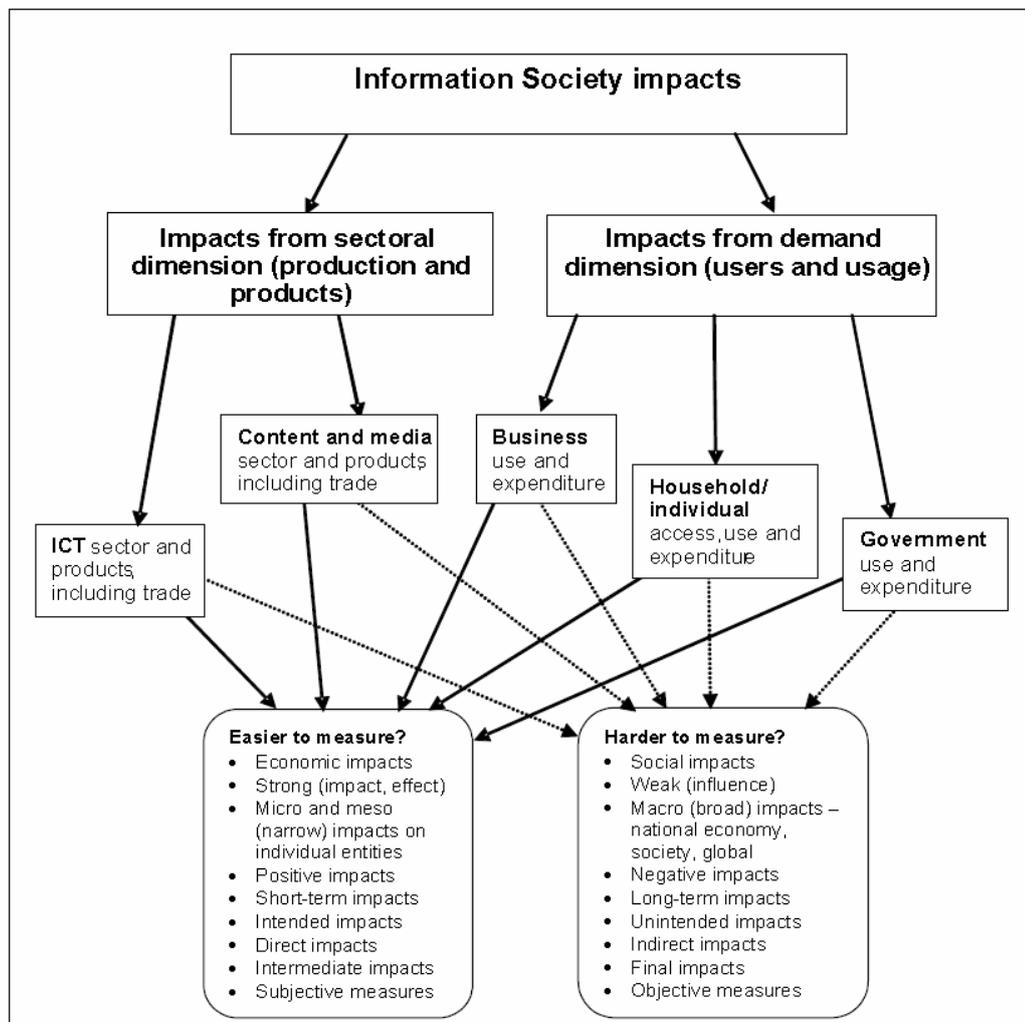


Figure 2², Information society impacts measurement model

1.1 ICT ENABLED PRODUCTIVITY

Defining, let alone measuring, the productivity impact of ICT is challenging. OECD data shows that in Australia the contribution of ICT to GDP averaged 0.915% per annum between 1995 and 2003, when the total productivity increase averaged 2.2%. In certain industry sectors (eg. Financial Services) ICT dominates as *the* single most important productivity measure.

² Information society impacts measurement model page 8, "Measuring the impacts of ICT using official Statistics DSTI.ICCP/IIS(2007)1

DBCDE's predecessor, DCITA, has produced reports examining productivity growth in manufacturing and some service industries over the 17 years from 1984–85 to 2001–02 (NOIE 2004 and DCITA 2005a). These industries jointly cover about 53 per cent of Australia's GDP.

DCITA's studies show that ICT has a major influence on productivity via its effect on Multi Factor Productivity ("MFP") growth – through technological changes, capital investment in ICT and the effect of falling ICT prices. In service industries (including telecommunications, finance, wholesale trade and electricity), 35-65% of MFP growth is estimated to have been driven by technological/ICT factors. In manufacturing (including electronics, medical and scientific instruments, petrochemicals, basic metals and motor vehicles, the range was 45-75%.

1.2 CONTRIBUTION OF THE AUSTRALIAN ICT INDUSTRY TO THE ECONOMY

The consultation discussion paper takes current economic significance of the ICT industry for granted and your own department's data shows³:

- Total ICT spending in Australia in 2006 was forecast at just under US\$50 billion, making Australia the twelfth largest ICT market in the world, while being only ranked 52nd in the world by population;
- ICT industries in Australia earned total revenue of \$103.3 billion in 2004–05. ICT specialist firms accounted for 89.1 per cent of this total. Telecommunications services accounted for \$34.9 billion, computer wholesaling for \$20.7 billion and computer consultancy services for \$19.5 billion;
- In 2002-03, ICT gross domestic product (GDP) accounted for 4.6 per cent of Australia's total GDP. In relative terms, this places ICT alongside the Australian mining industry, and larger than the Australian agricultural sector or the whole of the Australian transport sector (*i.e.*, road transport and storage together with transport services and storage)⁴;
- Australia is the fifth largest ICT market in the Asia-Pacific region, after Japan, China, Korea and India. The 24,000 ICT businesses in Australia generate revenues in excess of A\$80 billion;
- Australia imported \$17 billion of ICT goods and exported \$2.17 billion in 2005-06;
- According to the Australian Bureau of Statistics (ABS) Labour Force Survey there were approximately 371, 150 people employed in ICT related positions in August 2006. Nearly 92 per cent of these people were employed full-time. Of this, males represented 84.5%;
- 19% of professional settlers arriving in Australia during 2004-05 were computing professionals;

³ See

http://www.dbcde.gov.au/communications_and_technology/publications_and_reports/2006/november/overview_of_the_australian_ict_industry

⁴ Source : ABS 52060, ABS 5259.0, CIER Industry sector contributions to Australian economy (Gross Value Add)

- ICT represented 25% of total gross expenditure on R&D (R&D) expenditure in Australia, at nearly \$3 billion per annum. Organisations outside the ICT sector are responsible for more than half of all ICT R&D expenditure. ICT R&D accounts for 98% of the finance and insurance sector's R&D expenditure; it accounted for 36-43% of annual private sector R&D expenditure over the last three years; ⁵in 2002-03 business accounted for 86% of total ICT R&D expenditure. The Australian Government accounted for 7% and the higher education sector 7%.

This surely warrants focussed and sustained attention to the detail underpinning these data points.

2 WHY A DIGITAL ECONOMY ECONOMIC STUDIES INSTITUTE (DEESI) IS NEEDED

Section 6 of the consultation discussion paper mentions the need for additional data and goes further, referring to recommendations within the National Innovation Review. The Pearcey Foundation contends that in doing so, the consultation discussion paper misses the point. The questions posed in section 6 focus on data collection but miss the bigger picture of analysis, communication, interpretation, and strategy formation.

Over the last 10 years more than 250 reports have been written about the impact of ICT on the Digital Economy. These have been substantially ignored by industry stakeholders because of perceived conflicts of interest, a lack of cohesion, poor stewardship, incomplete datasets and limited vision. This is not addressed (and therefore will not be answered) by the questions posed in section 6 of the consultation paper. Defining extra datasets and increasing the budget of the ABS will not address the primary issue.

The proposed DEESI not only addresses data collection (See section 4.1.1 below) but importantly, also encompasses benchmarking (section 4.1.2), analysis and research (section 4.1.3) and stakeholder engagement (section 4.1.4).

DEESI is needed for a number of inter-related reasons;

- to accelerate technology-enabled innovation and productivity in Australia in the longer term;
- to ensure Australia has a globally relevant ICT capability;
- to underpin the knowledge economy (and reduce Australia's reliance on growth through primary industries and natural resources);
- to facilitate meaningful information flows amongst stakeholders within the digital economy.

Through the DEESI, a broader analytical capability for assessing the impact of ICT becomes available, and stakeholder support for common goals and common strategic initiatives, becomes

⁵ Less than 16% of software development expenditure in the business sector is classified as business R&D and the share of software business R&D is around 7%. Most software and information system implementation work is not classified as R&D usually because it involves applying known software tools innovatively to solve problems, rather than to develop new software itself. .

significantly more achievable. By quantifying and measuring ICT's impact, the DEESI will help develop understanding of how this nation can exploit ICT to its maximum advantage.

2.1 COMPARABLE MODELS

Relevant models for DEESI can be seen in the following organisations:

- [Australian Business Foundation](#).
- [Strategic Policy Institute](#).
- [Australian Bureau of Agricultural and Resource Economics \(ABARE\)](#).
- [Intellectual Property Research Institute of Australia \(IPRIA\)](#).

In each of these institutions, there is a government and/or industry funded research entity that is recognised as a source of current, comprehensive information focusing on a specific industry sector, with associated analytic capability used by governments, industry, media and other stakeholders.

2.2 WHY ANOTHER ECONOMICS STUDIES INSTITUTE?

Firstly, Australia does not have an economics studies institute researching the impact of ICT in Australia. [NICTA](#), [CSIRO](#), [DSTO](#) undertake ICT research but have no remit, experience or resources devoted to the study of ICT's economic impact.

The role of this institute is not to compete with existing institutes for ICT R&D funding. Its researchers and directors are not undertaking ICT R&D; they are undertaking research that stimulates debate on economic impact, investment and policy. They are stimulating a constructive commentary to all stakeholders on how best to facilitate a "smart Australia" underpinned by investments in ICT so as to secure the future of this nation's digital economy.

It is noted however that many institutes have overlapping briefs with the proposed institute. Further to the development of a business plan (see "Initial Steps" section 5 below), it is essential that an **INCLUSIVE** approach is taken that leverages the scattered, fragmented capability currently in Australia, and links to relevant global study groups. The proposed institute should follow a "hub and spoke" model, incorporating and leveraging capability in existence in other institutes.

2.3 PROPOSED MODEL FOR THE INSTITUTE

It is proposed the institute be co-located with a nationally recognised academic institution, leveraging the staff, infrastructure, relationship network, capability and reputation of that institution. Leading institutions in Australia would be invited to bid to become the host.

The institute will be non-political, bipartisan and supporting the needs of all stakeholders.

2.4 ROLE OF THE PEARCEY FOUNDATION IN DEESI

The [Pearcey Foundation](#) is a not for profit organisation concerned about the future of Australia's ICT industry. It is a catalyst to the establishment of the institute. It does not seek to establish the institute itself and anticipates an elected, independent body drawn from a broad group of stakeholders to work through a tender process to establish the institute.

3 THE DIGITAL ECONOMY ECONOMICS STUDIES INSTITUTE (DEESI) IN DETAIL

What follows is a (high level) practical description of how such an institute might operate and what could be the scope of its proposed undertakings. It is hoped that the Digital Economy Consultation Review committee will view this proposal as providing one very practical way of securing this nation's future in ICT.

It is suggested that the institute might focus initially on four areas, as follows:

3.1 DATA COLLECTION⁶

To ensure that there is sufficient focus on the institute's efforts to generate valuable outcomes, it is imperative that all parties share a total understanding of the nation's current ICT capabilities and shortcomings, across the public and private sectors, as well as in industry and academia. It is contended here, that as a starting point, a total picture needs to be developed which describes Australia's ICT capabilities in detail from the bottom up. While, broadly speaking, a top-down view does exist today, it only exists in statistical form. Given a full understanding of the current situation for the Australian ICT industry, the institute would then be positioned to suggest answers to key questions. For example, it could ask... "How will Australia, as a relatively small country, prioritise its innovation efforts to optimise outcomes in the digital economy?" This, in turn, will be an input into the ICT research directions for CSIRO, NICTA, and other Government funded research organizations.

A sustained long-term data collection effort is proposed which is to be broadly focused on:

- a) Capturing enterprise data, including product capabilities, workforce and skills;
- b) Understanding the role of exports and imports including global linkages (i.e., building an understanding of the Australian ICT food chain);
- c) Geographic and sectoral mapping;
- d) Forecasting;
- e) Detailed mapping of what R&D is being undertaken by whom and where, and with what intended impact;
- f) Extracting value from the 180 (or so) prior studies undertaken on the ICT industry in Australia over the last four years;
- g) Identifying and assisting in data collection wherever gaps in information are identified;
- h) Assisting with international data collation and interpretation (eg with the OECD ICT Directorate).

3.2 BENCHMARKING

To ensure progress can be quantified, accurate measurement would need to be undertaken, covering at least the following:

⁶ *In all cases, it is intended that the institute would exploit all existing repositories and ensure that duplication of effort is avoided, wherever practical.*

- a) Inter-state, National as well as International benchmarking;
- b) Measurement of the level of enablement provided by ICT in all sectors of the digital economy, including healthcare, education, energy & resources, environment, entertainment, manufacturing, transport, financial services, primary industries, government services;
- c) Progress against industry targets (annual, tri-annual, 5 year, etc).

3.3 ANALYSIS AND RESEARCH

Research staff at the Institute would also undertake collaborative analysis and research based on the captured industry data and information, including such activities as understanding and publicizing:

- a) National and International trends and business climate-related issues;
- b) Industry performance and competitiveness;
- c) Cross-sectoral issues;
- d) Providing potential Policy Options, along with associated opportunity and risk analysis;
- e) Skill needs and forecasting, gender issues, etc.;
- f) Exploring research priorities and ICT infrastructure needs for deployment;
- g) Economic and other ICT industry analysis of trading partners and competitor nations.

3.4 STAKEHOLDER ENGAGEMENT AND INFORMATION DISSEMINATION

An important role for DEESI is to stimulate debate on the role of ICT in the Digital Economy. Data and analysis is only meaningful if it is communicated and stakeholders are engaged in thought provoking dialogue.

3.5 FEE FOR SERVICE ACTIVITY

As an established and universally recognised source of information and skilled knowledge on the Australian ICT industry, DEESI clients will logically include:

- a) Governments (Federal, State, and local);
- b) Industry Associations (both within the ICT sector and without);
- c) Media;
- d) Educators and researchers, including 'education' of federal, state and local policy makers on drivers of the knowledge economy and in order to assist in new and informed policy generation;
- e) Australian Investors and Corporations;
- f) ICT professionals, managers, end-users;
- g) International customers and investors.

Within the limits of maintaining an unbiased, independent position across the ICT industry, the institute should undertake assignments on a contracted basis. This is an important part of ensuring a high quality output, and in building an institute sustainable over the longer term.

4. CRITICAL SUCCESS FACTORS FOR THE DIGITAL ECONOMY ECONOMIC STUDIES INSTITUTE (DEESI)

Most observers of the ICT industry are well aware of many earlier enquiries and surveys, of past and existing investments in various economics research institutes and in centres of excellence, etc., all associated with ICT. However, the proponents contend that what is being proposed here differs significantly from all of these previous endeavours. Critical success factors include the following:

1. This proposal represents a fully inclusive approach. It is one that will exploit all existing capabilities and initiatives fully and to suggest policy alternatives, wherever ICT is involved.
2. DEESI should be established not only as an independent centre, but also as one linked closely to one (or more) academic institution(s), thus embracing all those who are already prominent and competent in the field, and then drawing them together more closely under the auspices of the institute.
3. The institute's exact form be decided by a body of individuals drawn from the industry (government, academia, industry groups, as well as some industrialists), who are best suited to make this determination.
4. Strong support from ICT industry leaders, industry associations and governments at all levels, and particularly from the many departments within the Federal Government who have various interests in the future of ICT. State government departments will also be key to ensuring the success of this initiative. In particular, it is hoped that this proposal will be one that binds interested parties together, and certainly that it will not be one that further splinters them.
5. This proposal must not be viewed as a threat to any ICT group, sector or individual. It is important that the Institute is able to embrace all interested parties and vested interests from the outset. The institute must be outward looking and able to generate support for the industry through measuring and proposing approaches that can maximize ICT's enabling impact across Australia's diverse and sophisticated economy.

5 CHARACTERISATION OF THE DIGITAL ECONOMY ECONOMICS STUDIES INSTITUTE (DEESI)

5.1 DESIRED FEATURES

- The inspirational leader of the institute will be a full time professional who is committed to implementation of the institute's vision, as defined by a board of highly respected ICT notables;
- There will be a small executive group reporting to the leader;
- At the heart of the institute, there will be a lead group of researchers spanning economics, business, law, technologies, and, over time, PhD student researchers;
- Whilst the home base for DEESI will most likely be an east coast academic institution, there is no perceived need that all of the institute's staff would be centrally located. The concept proposed here involves connection through the institute to the best researchers in the business, regardless of their physical locality, i.e., a distributed telecommuting organisation;
- The economics studies institute will seek to exploit all existing areas of available expertise. It will embrace and include areas of competence already recognised across

the Australian ICT community, be they at any particular University, in an existing federal or state government department, or in a private economics studies institute (such as the [AIIA](#), [ACS](#), or another industry body), the [ABS](#), or the [Productivity Commission](#);

- Over time, a measure of the institute's success will be the level to which it becomes recognised as a national unifying policy forum for ICT and all of its constituent elements.

5.2 MANDATORY FEATURES

- The board controlling and directing DEESI must be truly independent and have no real or perceived vested interests outside this field of endeavour;
- The research methodologies and processes followed by the institute must be academically rigorous, of high quality, and be transparent;
- The institute should have close linkages with all appropriate international peer bodies;
- The institute will have close working relationships with Australian ICT industry groups, including the ACS, AIIA, AIG (AEEMA), NICTIA, NICTA, CSIRO IT, as well as with appropriate State and Federal government agencies and departments;
- A key goal of this institute must be to ensure that it is viewed, over the long haul, as the definitive source for ICT industry information and knowledge.

6. FUNDING THE DIGITAL ECONOMY ECONOMIC STUDIES INSTITUTE (DEESI)

DEESI requires seed funding from all industry stakeholders to establish itself, including grants, endowments, in-kind contributions and fee for service work. However, once established, the institute may become self-funding, at least to some degree. For example, it could “sell” certain results of its work. It should be noted though, that it will be critical that any objective for long term self reliance will have to be counterbalanced by the fundamental requirement that the institute remains able to provide (and be perceived to provide) a fully independent and balanced view.

Therefore, it is proposed that the Federal Government should consider the provision of seed funding as follows:

- \$100,000 funding in 2009 for a detailed feasibility study and development of a business plan for the institute.
- \$5m in endowment funding from 2010 onwards, subject to an agreed three-year business plan. The Federal Government may wish to see this support complemented by additional funding, sourced from other founding-stakeholders.
- A commitment of \$500,000 per annum for 3 years for fee-for-service work, subject to agreed deliverables being achieved.

7 INITIAL STEPS TO CREATE THE DIGITAL ECONOMY ECONOMICS STUDIES INSTITUTE (DEESI)

The proponents believe that four basic steps will be needed to bring the institute into existence:

1. Secure broad interest and agreement with this proposal across all relevant stakeholders (government, industry and academic);
2. Secure seed funding from the federal government from which a business plan can be developed;
3. Establishment of an interim committee that steers the business plan and seeks competitive bids from leading institutions in Australia for the formation of the institute;
4. Federal Government and broader stakeholder support for the institute through endowments, research grants, sponsorships, in-kind support, and committed fee-for-service work allowing a self-sustaining institute to be formed.

The Pearcey Foundation would be prepared to steer the initial planning of this institute if all parties agreed that was desirable. We do not seek to 'control' this entity rather work as a member of an industry wide team to ensure its success.