A framework for understanding the Intangible Capital Value of ICT investments

Dr Derek Binney
Professor James Guthrie
Christina Boedker
Foaud Nagm
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Dr Derek Binney – Director, CSC Office of Innovation and Chief Technology Officer – CSC Australia

Fact File

Years in Industry: 31

Derek recently completed a research Phd in the adoption of KM at the Macquarie Graduate School of Management in Sydney

Derek has published a number of papers on KM and KM strategy and represents CSC Australia on a number of CSC internal and public forums. Derek also presents at public conferences and in academia

In his role as Director CSC Office of Innovation

Derek represents all aspects of the CSC Office of Innovation (OI) in Australia. The principal objective of this role is to focus on CSC's innovation agenda and ensure that CSC is recognized by its customers, employees and market analysts as the bench mark company for innovation in the IT services industry. Derek does this through a practical approach of demand driven applied innovation, which leverages CSC's global intellectual capital and unique capabilities, to deliver tangible business results for CSC and our clients.

In his role as CTO for CSC Australia,

Derek considers emerging trends in IT technologies and issues affecting ICT investments and the management of ICT organisations. Derek provides advice to business on the implications of these trends, and the opportunities they represent, for organisations in the region. Derek's guidance is sought within CSC and by CSC's clients to design, assist in justifying and/or review significant ICT investments and/or investment proposals. Areas of Derek's current focus include: the emerging best practise of Customer Advocacy as a measurement of IT effectiveness; Web 2.0; the Intangible value of ICT investments; Business Process Management and Green IT.

Objectives

EXPERIENCE. RESULTS.

Present recent research conducted for the Australian Government Information Management Office (AGIMO)

‘Extrapolate the standardised language and approach required to describe structural, relational/social and human capital elements of information, communication and technology (ICT) investments, such that the language and approach can be used for preparing business cases by Australian Government agencies’

Introduce the developed framework which leverages the Tripartite Model of ICT Investments

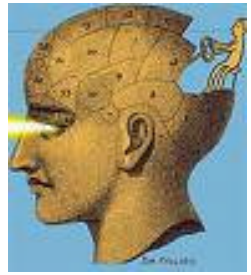
Australian Government
Department of Finance and Administration

Problem

Competing investment options

Dept A

Dept B



Financials* say ‘Investment A’
- Higher ROI
- Shorter payback
- Business case restricted to single department

Intuition says ‘Investment B’
- Perceived value beyond business case
- Foundational investment
- Leverage beyond originating department

* Australian Federal government departments currently use financial based investment models

Research Method

EXPERIENCE. RESULTS.

Part 1 – Intangibles literature review

- Professor James Guthrie

Part 2 – Current state of treatment of intangibles

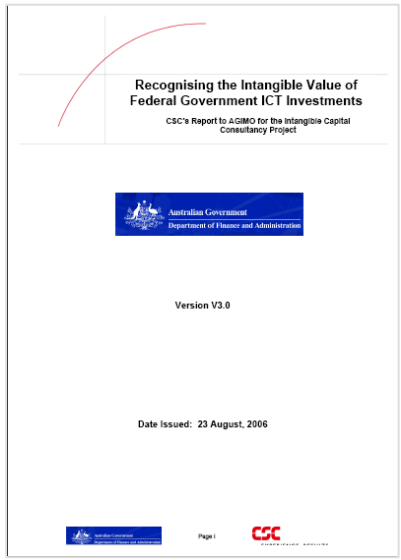
- Christina Boedker

Part 3(a) – Review of current ICT evaluation methods

- Fouad Nagm and Dr Derek Binney

Part 3 (b) – Development of IC framework for ICT investments

- Dr Derek Binney et al


Recognising the Intangible Value of Federal Government ICT Investments

CSC's Report to AGIMO for the Intangible Capital Consultancy Project

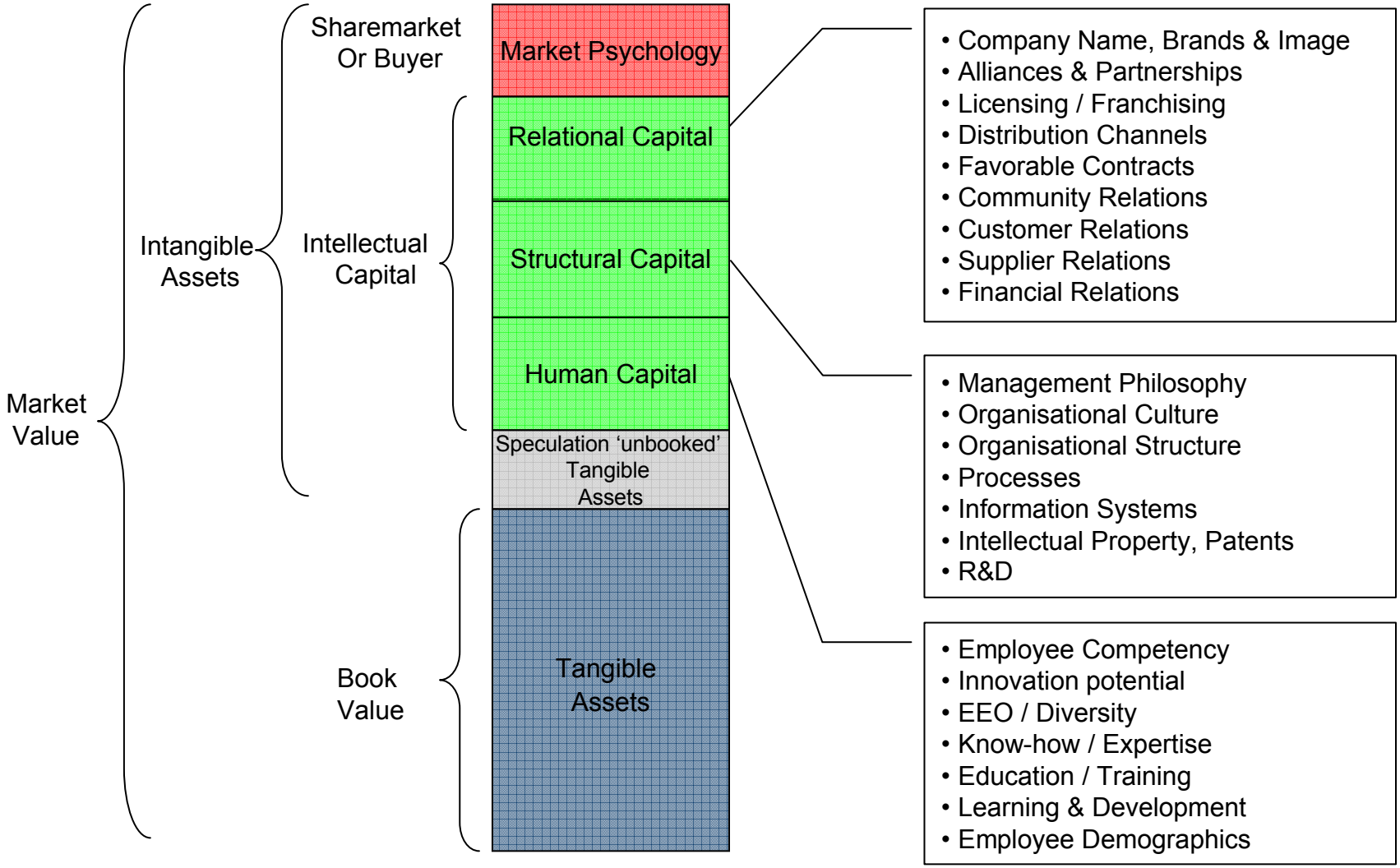
Australian Government
Department of Finance and Administration

Version V3.0

Date Issued: 23 August, 2006

119 page report

Value of Organisations – Brief Overview



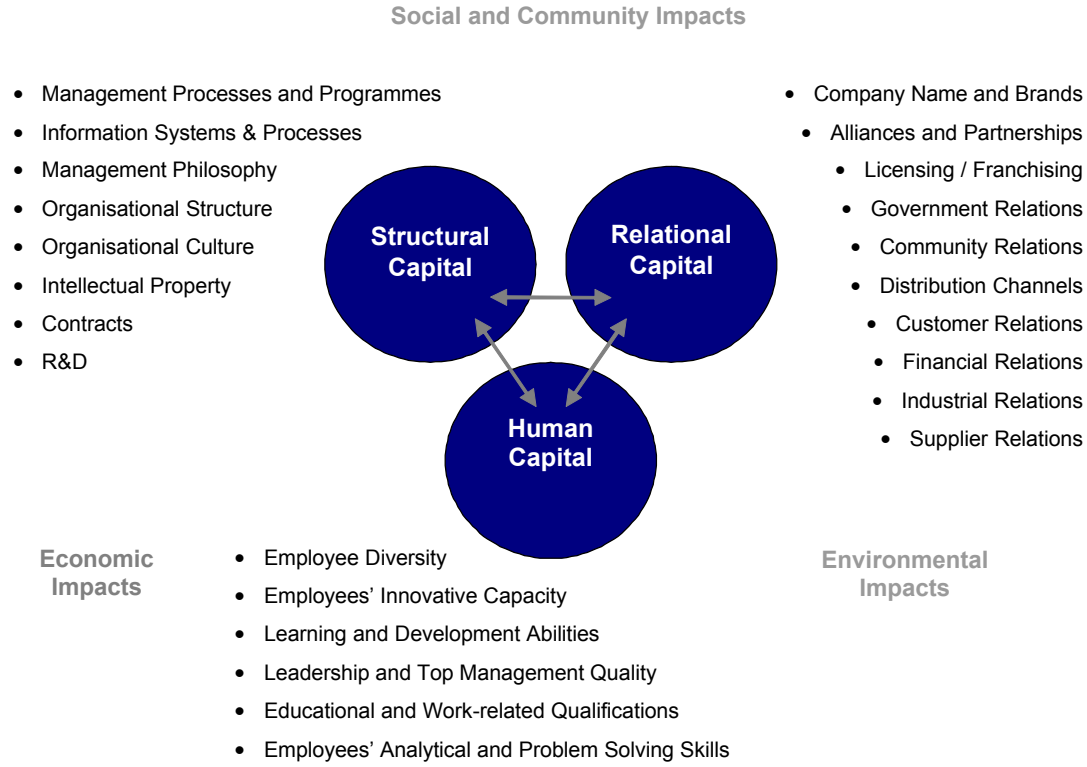
Evolved by Derek Binney from work by Karl-Erik Sveiby, Daniel Andriesson and Rene Tissen. Examples from Boedker, Guthrie and Cuganesan

Intangibles – Review and Current Treatment

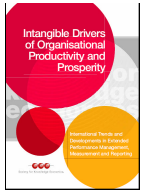
EXPERIENCE. RESULTS.

Part 1 – Intangibles literature reviewed drivers of change and the new factors of economic production

Part 2 – Current state of treatment of intangibles reviewed and synthesized 16 global, national and organizational initiatives concerning Extended Performance Management, Sustainability Reporting and the treatment of Intellectual Capital.



The Tripartite Model of Organizational Intangible Resources



The Tripartite Model of Organizational Intangible Resources emerged as most representative and has been adopted by the Australian Society of Knowledge Economics (SKE)

ICT Evaluation Methods Literature review

The **traditional evaluation techniques** identified included: Discounted Cash Flow Analysis (DCF) (Clemons et al. 1990; Dos Santos 1991), Net Present Value (NPV) (Ballintine et al. 1998; Dos Santos 1991); Internal Rate of Return (IRR) (Bacon 1992); Payback Method (Murphy et al. 2001); Return on Investment (ROI) (Ballintine et al. 1998; Farbey et al. 1999); Cost Benefit Analysis (CBA) (Farbey et al. 1999; Murphy et al. 2001); Real Options Theory (Dos Santos 1994); Return on Management (ROM) (Farbey et al. 1999).

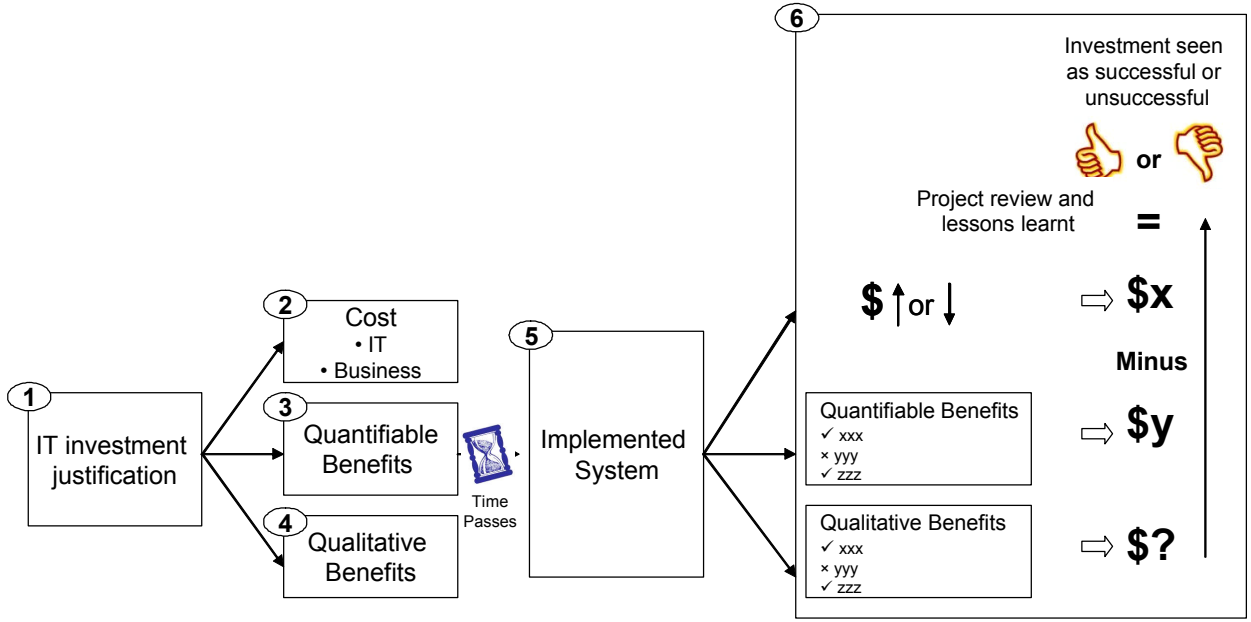
Evaluation methods used to **consider the qualitative dimensions** of ICT investments: Weighted Scoring Methods, Information Economics (Farbey et al. 1999; Lin et al. 2001; Wiseman 1992) , Categorisation Methods, Multi-Criteria Methods (Stewart et al. 2002), Multi-Objective – Multi Criteria Methods (MOMC) (Farbey et al. 1992), Multi-criteria Decision Making (MCDM) (Limayem et al. 2000) and Application Portfolio approaches (McFarlan 1984; Ward 1990),

Methods using 'Partially Objective' techniques (Remenyi et al. 2000): Relative competitive performance; Work study assessment; Economic Assessment; User Utility Assessment; Value-Added Analysis, and 'Fully Subjective' techniques (Remenyi et al. 2000): Strategic match analysis and evaluation; Value chain assessment; User Attitudes; Proportion of management vision achieved; Value for Money.

Observations

1. Most methods in use are financial in nature
2. Inadequate when considering qualitative benefits
3. In the main do not refer to Intangible or Intellectual Capital Value
4. Lack consensual support when considering qualitative benefits
5. Often limited in scope of business case

Prototype Model of the ICT investment Lifecycle



Prototype Model of the ICT investment Lifecycle

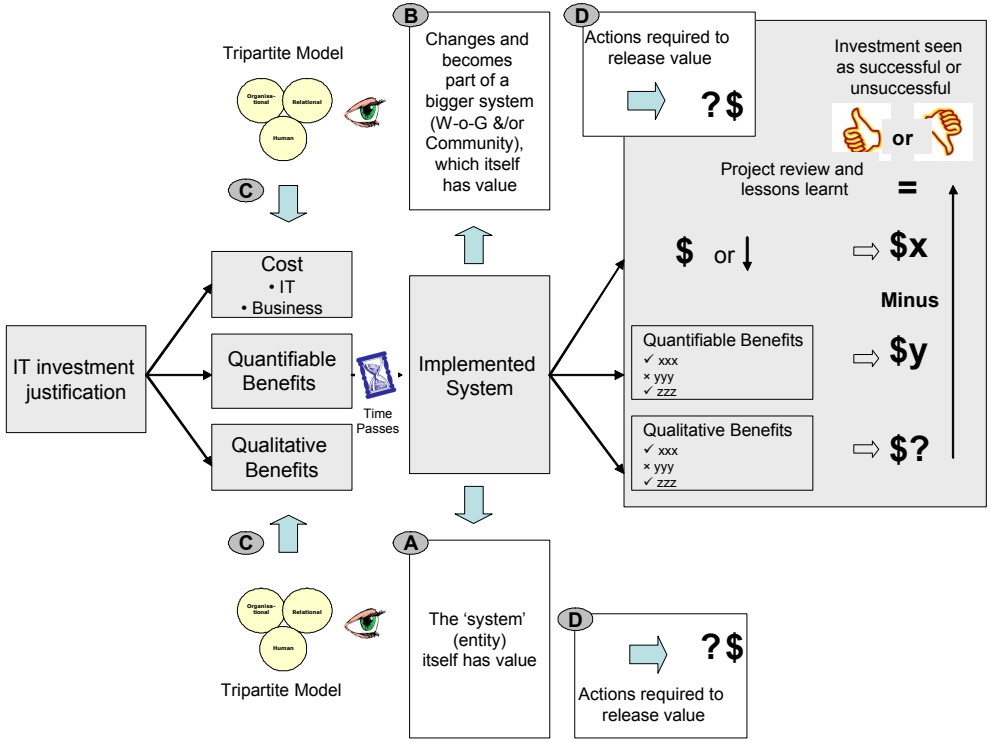
1. Most investments require some form of justification – the study focused on non-business survival (Remenyi et al)

2, 3 & 4 Justification is built in stages through out the ICT planning process.

- Decisions mostly taken on cost vs quantifiable benefits over a defined period of time
- Qualitative benefits considered soft and secondary
- Based on 'construction industry' i.e., predictable costs vs R&D methods

5. System developed and implemented often with little consideration of original business case
6. Post implementation review may revisit original business case to see if met – passive vs active review
   - Question of attribution arises
   - Secondary benefits often not pursued

Proposed ICT Investment Lifecycle

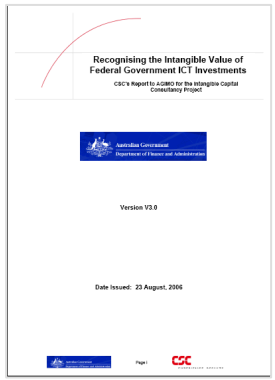


ICT Investment Lifecycle Considering the Intangible Value of the Proposed 'System'

A. The system which results from completing the ICT investment will have intangible capital value in its own right
B. The system may be part of a 'bigger' system e.g., whole of government, cross organisational
C. The Tripartite Model represents a lens for considering this future intangible value and including this in the original business case
D. Actions are required to release the intangible value of the changed 'system' at all levels

Using the Tripartite Model as a 'lens'

1. Tripartite model provides intangible capital value elements to be considered e.g., supplier relations, employee diversity (and skills) = rows in the framework
   - Information Systems and Processes decomposed to 11 sub-elements e.g., User Interface, IT Architecture, Infrastructure etc
2. Each tripartite model element i.e., row
   - Instantiated and discussed in the ICT context
   - Related outcome of benefit identified (tied back to ICT evaluation literature review)
   - Comment on applicability to 'system'
   - Comment on applicability to 'bigger system
   - (Each are columns in the framework)
3. Submitted for peer review - evolved
4. Submitted to AGIMO - accepted



Tripartite Element	ICT Tripartite Value Element Discussion	Related Outcome/Benefit	Applies to the 'system'	Applies to the 'bigger system'
Company Name and Brands (Relational Capital Example)	Does the ICT investment re-enforce, support or detract from the organisation's desired image? Any given ICT investment, however small, may have an affect on the image of the organisation. For example the use of a new technology may enable new and easier forms of services supporting an organisational image which is innovative, progressive and associated with good customer service, whereas a badly implemented IVR system may re-enforce a negatively 'bureaucratic' or 'impersonal' view of an organisation.	Improving organisational image Supporting branding, including repositioning and changes to customer perceptions.	Yes	Yes, if the result of the investment is also associated with other services, or parts of the 'extended' organisation.
Information Systems and Processes (Structural Capital Example)	User Interface: Will the ICT investment result in a simpler or more complex user interface to the ICT systems? There are two dimensions to the user interface intangible value element. The first has to do with the 'design of any given user interface' – is it simpler, easier to use or moving towards a standard user interface. The second concerns the number of user interfaces – will the ICT investment increase or rationalise the number of user interfaces?	Improved end-user experience Improvement in end user efficiency	Yes	Unlikely, unless there are cross-organisation standards.
Employee Diversity (Human Capital Example)	Does the ICT investment support the IS organisations need for employee diversity? In the ICT context this can for demographic diversity– especially if an IS organisation facing issues of aging workforces; and technology diversity – where an organisation wishes to create a portfolio of technology skills and lessen exposure to risks associate with legacy or potentially obsolescent technology skills. ICT may also help collaboration across geographies thus providing access to skills not accessible in local markets.	Increased technical skills and competencies Employee engagement and development.	Yes	Possible, if there is a mechanism for sharing staff between organisations.

Illustrative extract from the IC Framework. The complete framework is 15 pages.

Contributions

EXPERIENCE. RESULTS.

- ✓ Framework grounded in an intangibles model gaining financial community acceptance
- ✓ Considers the intangible value of a future ‘system’ at multiple levels
- ✓ ‘Complete’ consideration of potential aspects of future intangible value
- ✓ Applies the tripartite model (relational, structural and human capital elements) for the evaluation of ICT investments – in doing so it makes an original contribution to the development of the department’s argument.
- ✓ Contributes to the Intangible Capital Investment Methodology project as requested by providing contemporary material to support the department’s underlying argument and emerging models for considering intangibles, and providing models, frameworks and checklists for the application of the Tripartite Model in the ICT context.

From Here?

EXPERIENCE. RESULTS.

- Collaboration space established for public comment and review
  - https://www.govdex.gov.au
  - Register
  - Go to Collaborate
  - Locate ‘Valuing the ICT Investment’ space
    - Framework can be downloaded
    - Use discussion thread for comment and feedback
- Comments and feedback will result in V2 of framework
- V2 will be
  - Gradually incorporated into the Federal Government Investment methods
  - Made available to the public through the SKE

Further Questions?