Onshoring IT-enabled Analytics activities to Australia and the critical need for an Australian apex body

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Contents :

5. Australia as a potential Onshoring hub for the IT-enabled Analytics sector – a strategic review

A. State of play in the IT-enabled Analytics Outsourcing industry

- Review of "inhouse" and captive offshoring models
  - *Texas Instruments offshore R&D centre*
  - *Morgan Stanley's Advantage Global Services ("AGS")*
- Review of the "third party" case studies – role models for the Australian IT-enabled Analytics Onshoring sector
  - *Gecis (formerly, a 100% GE Capital subsidiary) – largest Diversified analytics service provicer*
  - *Inductis Inc – a venture capital backed Data Mining analytics service provider*

B. Critical role played by NASSCOM of India in the development of the IT-enabled Analytics sector in India

C. Compelling factors for Onshoring IT-enabled Analytics into Australia

- Skillset Productivity – labour and infrastructure productivities
- Australian financial markets – size, sophistication and maturity
- Skillset availability and professional rigour
- Skillset updating and continuous professional development *(focus on globally leading MBA programs)*
- Skillset flexibility - Multi-lingual and multi-cultural capabilities

D. Technology Australia – the critical need for an Australian NAASCOM

9. Appendix : Further details and sincere acknowledgments

Section 1: Background to this research paper

Focus on IT-enabled Analytics Onshoring

The study is fundamentally about defining a "proactive" IT-enabled ***Onshoring*** solution for the Australian ICT community beset by the impending threat of significant Offshoring strategies about to be adopted by Australian companies especially in the banking and financial services area (a partial secondary analysis shows that the top 5 banks and 3 insurance companies are responsible for roughly 35% of the ICT jobs in Australia – directly and indirectly through outsourcing companies such as EDS, IBM, CSC and Accenture).

Amidst all the negativity surrounding large scale displacement of Australian ICT professionals, the study scopes (in considerable depth) the creation of a brand new sector of Offshoring - the **"Global IT-enabled Analytics Outsourcing sector" (also referred to as the Knowledg-Process Outsourcing, KPO, industry)** and one where Australian ICT and financial services skill-sets can be combined to create enormous future opportunities for the Australian economy.

Put simply, the study sets out in huge detail, how the Offshoring phenomenon can be smartly turned around and used directly (not indirectly in productivity terms) to create a *new export-oriented IT-enabled Global Analytics Onshoring industry*, here and now, in this country to benefit Australian ICT professionals especially those employed in the financial services sectors.

It's worthwhile noting that the study is NOT a theoretical exercise in postulates and hypotheses; it is based on a six month *first hand, formal and interactive research conducted* with 12 global players in the IT-enabled Global Analytics Offshoring as it obtains today.

It is also based on one of the first ever such substantive studies on the Global Analytics Outsourcing industry to be conducted anywhere in the Western world including the USA, Canada and the UK and therefore, has the potential to place Australian thinking on the impact of Offshoring way ahead of those countries.

Critical need for the creation of an apex ICT industry body – Technology Australia

Whilst Offshore-outsourcing of processes has so far been characterized by considerable community anxiety and apprehension, the report demonstrates that the IT-enabled Analytics Offshoring phenomenon is quite different, in as much as it has significant scope for ***Onshoring*** IT-enabled analytics activities **into** Australia.

As set out in this report, the IT-enabled Analytics Onshoring opportunity is of special significance to Australia as it represents:

- a significant and sustainable opportunity for the Australian community to showcase its skilled ICT workforce to capture large global opportunities

- a significant and sustainable opportunity for the Australian economy to reduce its Trade Defict and Current Account Deficit positions, over the medium to long term, by adding a potentially large "IT-enabled Analytics services export" opportunity to Australia

- a material growth opportunity for the challenging employment of highly skilled mature and experienced ICT professionals especially within the financial services sector impacted by major restructurings, on a sustainable longer term basis

- a major opportunity for Australian ICT associations such as the ACS to organize a joint platform with professional progams such as the various MBA programs, IAA and the ASCPA to showcase Australian ICT innovativeness and entrepreneurship to a global audience

The report also highlights the key role played by the NAASCOM of India, an apex ICT body focused on building "Brand India" globally and supports the ACS's articulated policy position of building **Technology Australia** - a similar apex level co-ordinating platform for the Australian ICT industry.

It is hoped that this report would serve as a comprehensive and leading edge consultative document for all major stakeholders (state and federal governments, the ICT industry and the various associations representing the ICT industry) in the increasing sophistication and prosperity of the Australian economy.

Research Methodology

The three fundamental objectives of this project are :

- to dimension the evolution of the IT-enabled Analytics Onshoring opportunity in the global banking and insurance sectors and establish its strategic relevance to the Australian industry, economy and community

- to demonstrate the scope and sophistication of IT-enabled Analytics Outsourcing industry through case studies of a few globally leading IT-enabled Analytics Outsourcing service providers as well as provide an overview of contribution of quasi-governmental apex associations (for eg. the NAASCOM of India) in helping drive this industry in those overseas locations

- to help evovle a "Strategic Case" for industrywide and governmental consultation and policy setting towards promoting the growth of this ICT sector here in Australia by creating a similar apex association here in Australia – Technology Australia

The underlying research for this study was a 18 week research process conducted by the authors, Swamy & Associates, comprising significant primary and secondary research, within Australia as well as globally (primarily with participants in the IT-enabled Analytics Outsourcing sector in the US, UK and India).

Section 2: About the Authors of this research report – Swamy & Associates

Sriraman ("Sri") Annaswamy
Founder and director

Sri is the founder-director of Swamy & Associates, an independent Financial Services Offshoring specialist advisory firm focusing solely on researching and advising banking and insurance clients on the development, evaluation and implementation of group-wide Business Process and Services Offshoring strategies. The current area of focus is around financial services Analytics Offshoring i.e. the offshoring of knowledge-driven analytics functions across the entire banking and insurance industry group.

He has spent the first two decades of his life in three major cities in India including two major Strategic Offshoring hubs – Chennai (Madras) and Mumbai (Bombay) and the next two decades working internationally in Sydney, London and the San Francisco Bay Area.

He has recently co-authored (along with Nick Selvaratnam and James Ellis of Credit Suisse First Boston's financial services research team***) a two-part comprehensive thematic report titled "Bank Offshoring – who will lead the next Profit Driver?"***, that addressed the impact of offshoring on Australian banking institutions from a strategic value creation perspective .

He was also the co-author (along with Michael Pain) of a recently published Accenture sponsored study ***entitled "Financial Services Strategic Offshoring – an Australian Road Map"*** that helped kick-start the offshoring debate within various Australian financial services organizations.

Prior to founding this organisation, he has held various senior management roles with the Group Strategy area at the Commonwealth Bank of Australia, the Financial Adivsory Services group of PriceWaterhouseCoopers as well as the International Strategy and Development group of eLance Inc. (a Silicon Valley based marketplace for offshore services).

He holds an engineering degree from the Indian Institute of Technology ("IIT") and an MBA from the Indian Institute of Management ("IIM").

Rajesh Govindan
Senior advisor
Financial Management Analytics Services

Rajesh Govindan has extensive experience in the financial services industry having worked for JP Morgan Chase, AMP and Westpac Banking Corporation.

Rajesh has also worked as a Management Consultant for Ernst Young where he was a team leader on a major consulting engagement at Commonwealth Bank. Rajesh's areas of expertise are strategic planning, financial analysis,

management reporting and financial accounting.

Rajesh holds a Master of Business Administration from the Australian Graduate School of Management and Master of Commerce from Macquarie University. He is also Certified Practising Accountant and a member of the Australia Society of CPAs (ASCPA).

Section 3: The IT-enabled Analytics Onshoring phenomenon – strategic relevance to Australia

Business Process and Services Outsourcing, also referred to as Offshoring, Global Sourcing or Offshore-outsourcing, has emerged as a signficant lever of impacting corporate performance within the various ICT based industries especially the telecommunications, financial services and high tech sectors.

The subject of "Offshoreability" i.e. what is offshoreable and the rate at which global companies would offshore processes has been the subject of several analyst and consulting reports in the recent past, as set out below :

- In Jan 2004, a McKinsey and Co analysis stated that approximately 25% to 30% of the cost base in respect of various ICT driven processes was offshoreable given the state of the Offshoring industry at that point in time.

- In June 2004 Deloitte Research conducted a global survey of 43 global banks and other institutions based in seven countries and came to the conclusion that an average of 20% of the industry's cost base would be offshored by the year 2010, based on the responses provided .

  In June 2004, CS First Boston Australia's research group co-authored an independent study along with Swamy & Associates and came to the conclusion that upto 35% of a typical Australian institution's cost base was offsoreable over a 3 year period, if these organisations decided to pursue an offshoring strategy.

  This translated to an outsourceable cost base of about $8billion on a cost base of $30 billion over a 3 year period.

IT-enabled Analytics Outsourcing is therefore the next significant step in the evolution of the outsourcing industry, as can be seen from the evolution path described below.

A. The evolution of Outsourcing strategies over the last decade

The late 80s to early 90s - IT and application mgmt. services

Outsourcing strategies became prominent primarily during the mid to late 80s when several global institutions began setting up IT systems maintenance and application development outfits ("captive IT centres of

excellence") in offshore locations such as Mumbai and Bangalore in India, Kuala Lumpur in Malaysia and Warsaw in Poland. (eg. COSL in the SEEPZ region in Mumbai)

The knowledge base and skillsets underpinning the captive IT centres of excellence were quickly disseminated within the domestic IT communities especially in India and gave rise to the phenomenon of "third party" offshore IT service providers (eg. Infosys, Wipro, Tata Unisys….etc).

The mid 90s to 2002 – ITES and BPO emergence

The encouraging results of IT and application development outsourcing strategies both through captive centres of excellence as well as third party service providers made organisations progress up the value chain towards the so-called IT Enabled Services activities ("ITES") and eventually, Business Process Outsourcing ("BPO").

ITES activities were fundamentally elementary processing, administrative and support activities such as managing customer records, standard mail-outs using customer databases, processing credit card statements and accounts receivables and voucher processing.

BPO activities also included significant voice based components such as inbound and outbound contact centre activities in addition to more sophisticated processing activities such as mortgage origination and settlement support, credit card collections, insurance new business and administration activities.

Again the trend was commenced by captives of global organisations (eg.eServe / Citi, GECIS / GE, Scope / Stanchart) and quickly adopted by several third party service providers (for example, Spectramind, EXL Services, 24/7, Daksh).

2002 to date – Emergence of IT-enabled Analytics Outsourcing

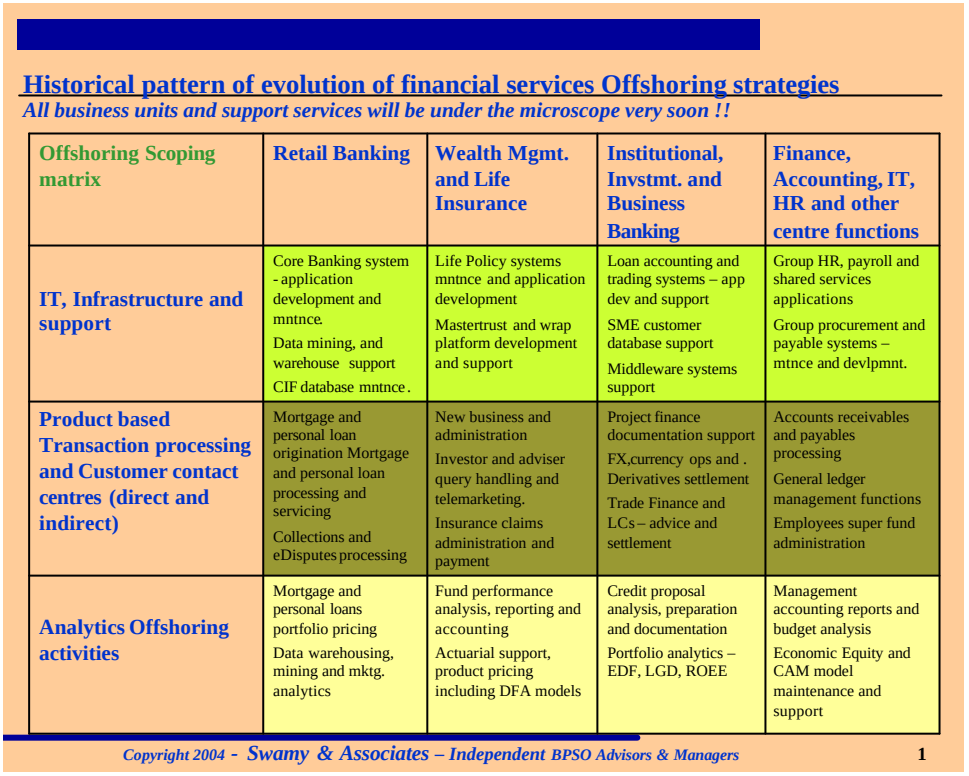
This period has seen an exponential increase in the sophistication of these strategies and the various service providers. Increasingly, the emphasis is on IT-driven "knowledge-based activities" ie Analytics activities requiring advanced qualifications, usage of sophisticated ICT platforms for analysis and most importantly, highly skilled and experienced staff.

It is these groups of IT-enabled Analytics activities that are ideally suited to being onshored to Australia as they are suited to Australian skill-sets in ICT and financial services as well as dependent on the availability of experienced project managers and analysts.

For example, in the the following chart provides a detailed breakdown of

this historical evolution pattern within the banking and insurance industries, in terms of activities being outsourced:

Table 1: Evolution of banking and insurance outsourcing strategies over the last decade



Historical pattern of evolution of financial services Offshoring strategies

All business units and support services will be under the microscope very soon !!

Offshoring Scoping matrix	Retail Banking	Wealth Mgmt. and Life Insurance	Institutional, Invstmt. and Business Banking	Finance, Accounting, IT, HR and other centre functions
IT, Infrastructure and support	Core Banking system - application development and mntnce. Data mining, and warehouse support CIF database mntnce.	Life Policy systems mntnce and application development Mastertrust and wrap platform development and support	Loan accounting and trading systems – app dev and support SME customer database support Middleware systems support	Group HR, payroll and shared services applications Group procurement and payable systems – mtnce and devlpmnt.
Product based Transaction processing and Customer contact centres (direct and indirect)	Mortgage and personal loan origination Mortgage and personal loan processing and servicing Collections and eDisputes processing	New business and administration Investor and adviser query handling and telemarketing. Insurance claims administration and payment	Project finance documentation support FX,currency ops and . Derivatives settlement Trade Finance and LCs – advice and settlement	Accounts receivables and payables processing General ledger management functions Employees super fund administration
Analytics Offshoring activities	Mortgage and personal loans portfolio pricing Data warehousing, mining and mktg. analytics	Fund performance analysis, reporting and accounting Actuarial support, product pricing including DFA models	Credit proposal analysis, preparation and documentation Portfolio analytics – EDF, LGD, ROEE	Management accounting reports and budget analysis Economic Equity and CAM model maintenance and support

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B. The strategic relevance of the Analytics Onshoring opportunity to the Australian economy and the community

As can be seen, IT-enabled Analytics Onshoring represents a major opportunity for the Australian economy and the community as there is an imminent opportunity for Australia to become one of the leading global hubs for the export of "high skilled" IT-enabled analytics services.

This is further highlighted when one considers the following aspects:

- *The Australian trade and current account deficit positions*

  Despite the unusual period of sustained economic growth enjoyed by the Australian community, the trade and current account deficits continue to be significant concerns *(as an indicator, the Australian trade deficit reached a level of $25 billion for the year ended December 2004).*

  Such significant deficit positions despite strong global economic conditions, strong demand for commodities from the China, Japan, India and other Asian countries and a

period of sustained low interest rates, has the potential to be a significant stumbling block for the Australian economy, if allowed to expand rapidly.

IT-enabled Analytics Onshoring, if developed in a focused and committed manner has the potential to provide a significant fillip to the export of value-added analytics services from Australia especially to the US, UK, continental European markets and in a few select domains, even to India and rest of Asia.

- *The highly skilled,experienced and ageing Australian ICT workforce*

  It is a matter of anecdotal evidence as well as academic research that a significant portion of the value created right across the Australian industry over the last decade has been through restructurings and cost-cutting exercises often involving the ICT functions and associated areas such as back-office processing and product-support operations.

  For example,again referring to the banking industry, the table below examples of major bank restructurings in Australia, over the last 8 year period *(source: Credit Suisse First Boston Australia equities research document – "Commercial Bank Restructurings – do they add value?") :*

Month and Year	**Organisation and Restructuring Program**	**Restructuring costs *($ M- proxy for FTE redundancy payments)***
April 1998	NAB – New Business model restructuring	315
July 1998	CBA – Newco organisational restructuring	200
Nov 1998	WBC – Invests in branch network	Not Available
Aug 2000	SGB – Best Bank	193
Oct 2000	ANZ – Specialization restructuring	361
Oct 2001	BOQ – Performance Enhancement	Not Available
April 2002	NAB – Positioning for Growth	370
Aug 2002	CBA – post-Colonial restructuring	120
Sep 2002	SGB – Even Better Bank	90
Sep 2003	CBA - Which New Bank	1,480 (expected)

An inevitable by-product of most of these transformational exercises has been the significant numbers of experienced and highly skilled ICT staff and personnel especially in so-called non-customer facing roles rendered redundant or severely under-employed.

Recent media articles also referring to various "new initiatives" by Australian companies especially in the banking sector, also underscore the fact that the skilled Australian ICT worker is likely to feel the impact of this trend in an even more significant manner over the next few years than in the past.

IT-enabled Analytics Onshoring provides a globally-relevant opportunity to re-focus such relatively demotivated and demoralized but highly skilled and experienced Australian ICT industry staff in order to participate in the creation of a new growth industry, here and now in Australia.

Section 4: IT-enabled Analytics Onshoring – scoping an emerging ICT industry sector

Overview of the major IT-enabled Analytics Onshoring domains

One of the most critical aspects of this report is the identification and dimensioning of the major IT-enalbed analytics onshoring domains amenable to onshoring to Australia.

The terms *"Analytics Offshoring" and "Knowledge-Process Offshoring (KPO)"* are industry-wide terms that refer to the same phenomenon – the outsourcing and offshoring of knowledge-driven and analysis driven functions rather than the historical offshoring of low end "rules based" processing and administrative functions.

For example, the largest BPO organisation in India, Gecis Global (formerly, a GE Capital captive) has nearly 1,500 FTEs performing "Analytics Offshoring" as part of its Analytics division (1,500 out of a total of 16,000 FTEs).

The four major IT-enabled analytics onshoring domains identified as being amenable to onshoring to Australia were:

- *Financial Services analytics*
- *Strategic Business Intelligence and Research analytics*
- *Risk and Quality management analytics*
- *Research and Development ("R&D") analytics*

A specific were then subject to significant research and analysis to determine the short list of specific activities and processes that could be deemed offshoreable over the next 3 year period.

Based on the current state of the global IT-enabled Analytics outsourcing industry, the table below sets out the list of specific activities and processes that would be amenable to being onshored to Australia over the next 3 year period :

Table 2: A strategic detailed view of specific IT-enabled Analytics domains and activities amenable to onshoring to Australia

Domain No.	**IT-enabled Analytics Onshoring domains**	**Sample activities**
1	***Financial Services Analytics***	*Actuarial and insurance analytics services* - compliance based actuarial support – for example, embedded value and appraisal value calculations and reviews, MoS based product profitabilities and Capital adequacy and Solvency calculations *Equity and Credit Research analytics services* - Results database updating & presentation support , credit proposal preparation and presentation support *Retail Banking analytics services* - Data warehousing, mining and CRM support –TERADATA warehouses , SAS database extraction, Informatica and COGNOS report production and preparation Branch location / closure analytics – non-linear programming and transportation models, customer behaviour and queuing analysis
2	***Strategic Business Intelligence and Research analytics***	Creation and manintenance of business intelligence platforms supporting competitor and industry research and analysis SAS and SPSS platforms driven strategic trend analysis reports

		preparation and presentation documents production support
3	***Risk and Quality management analytics***	*Business Continuity Planning analytics* – process mapping, risk incidence analysis and evaluation, disaster recovery plans preparation and scenario analysis and testing *IT governance and compliance methdologies* – risk incidence analysis, risk-based controls and compliance manuals creation and updating and program milestoning and monitoring (eg. traffic light reports for outsourcing contracts) *Quality Management analytics* – Program management of company-wide Six Sigma programs as well as Six Sigma training programs and certification for BPO service providers
4	***Research and Development ("R&D") analytics***	*ICT product design and development analytics* – next generation computer and wireless chip design, nano-materials applications development for optonics and wireless industries…etc *Custom Research Centre analytics* – analytics onshoring for pharma company and academic research labs *Clinical Testing and global Central Reference labs* for pharma company and government agencies

Source: Swamy & Associates proprietary research services

As can be easily seen from the above table, the activities are "high value added" , knowledge driven and ICT based analytics activities which are currently being offshored by global corporations to various offshore

locations such as India and Phillipines.

Indeed, it is these skills and capability driven activities that now need to be onshored to Australia in a competitive manner to create a new pool of challenging employment opportunities for our ICT professionals.

Section 5: Australia as a potential Onshoring hub for the IT-enabled Analytics sector – a strategic review

A. *State of play of the Global IT-enabled Analytics Outsourcing industry*

Historically, IT-enabled Analytics Outsourcing organisations have followed two specific structures, both of which are of significance to Australia's emergence as an Onshoring hub for this new and emerging ICT sector – *the inhouse and captive model as well as the third party outsourced model*.

Review of the in-house and captive analytics offshoring model

Historically, IT-enabled analytics activities at most organisations regardless of their overall nature were performed in-house and not offshored and/or outsourced.

This was because of:

- the perception that these activities were fundamentally "core" to the business of the organisation and that these "core" functions had to performed onshore by highly qualified and trained employees of the institution, under strict supervision by senior executives

- the fact that the outputs of these "core" functions were of critical importance in company and client decision-making and therefore, were deemed mission critical both from a company and client perspective

- the technological and process management challenges of ensuring output of a consistent and reliable quality to support these domains from a remote offshore or outsourced location were deemed too numerous to warrant even pilot attempts

- the perception that regulatory and governmental agencies would intervene very severely if such an outsourcing or offshoring process was attempted by the institutions

Over the last 5 to 7 years, the success of the IT and Business Process offshoring experiences as well as the significant cost and productivity related pressures on these organisations has compelled them to commence the offshoring and outsourcing of these "high value" analytics functions.

We have profiled below two such in-house and captive IT-enabled Analytics facilities to provide an overview of the possibilities under this structure for Onshoring to Australia:

Example 1: Advantage Global Services – a Morgan Stanley subsidiary based in Mumbai and specializing in the financial services area of the IT-enabled Analytics domain . Starting with 20 employees in 2003, it employs close to 200 FTEs as of March 2005.

Typically, research focuses around the applied IT, computer science mathematics and statistics research group. Research activities will focus in developing solutions to the mathematical problem that arises in the development of fixed income plans.

Typical FTE qualifications are Masters in computer science, Applied mathematics, Ph.D in mathematics, perations research or one of the other quantitative sciences.

Work experience in numerical methods, computational mathematics or algorithms as directed towards the development of computational methods for solving PDEs or developing efficient Monte Carlo methods.
Strong programming in C/C++ as evidence by exp. in writing C/C++

Statistics / Econometrics
Database Manager
Mathematical finance / stochastic processes

Example of Potential Research areas

1. Development of fast algorithms for solving direct and inverse problems involving high dimensions PDEs (time + 4 or more dimensions) for the class of PDEs arising in fixed income mathematical finance.

2. Development of analytic or closed from approximations for PDEs and mixed PDE / integral equations problems that arise in fixed income mathematical figure.

3. Investigations and development of suite of industry standard interest rate and credit models.

Example 2: Texas Instruments India Development Centre *– a Texas Instruments R&D centre that specializes in high end chip design and development*

Typically, research focuses on development of next generation high performance audio, video, broadband and wireless “system-on” chips (fundamentally, one complex chip replacing several others performing discrete functions such as voice, picture and video).

Typical FTE qualifications include Phd and Masters in computer science, Masters in various ICT related subjects such as electronics and telecommunicatons engineering, electrical engineering and metallurgical and materials engineering.

Started with 16 FTEs and now employs close to 900 FTEs. Currently, two FTEs were accorded the "TI Fellow" status – a prestigious honour in the global R&D world accorded to only 0.6% of TI researchers globally.

Typical, TI India Development centre customers include Nokia, Ericsson, Kodak and Samsung whose products have significant usage of TI's wireless and broadband chips.

Review of the "third party" IT-enabled Analytics Outsourcing organisations – role models for Australian Onshoring companies

The "third party" IT-enabled analytics service providers represent the most rapidly growing segment of the analytics offshoring activity. They are also the segment with the strongest growth strategies for the future, the highest sophistication and also possess significant diversification ambitions in terms of their analytics delivery locations.

These are the companies that can act as role models for Australian organisations attempting to onshore analytics services to Australia and two of these organisations have been covered in significant detail, in this section.

The 2 third party Global Analytics Offshoring champions featured in detail are :

- Gecis (formerly, a 100% GE Capital subsidiary) – largest Diversified analytics service provicer
- Inductis Inc. – a third party Data Mining analytics offshorer

Gecis (formerly General Electric Capital International Services) – the earliest and the largest diversified Analytics Offshoring service provider

- Gecis is the earliest and the largest of the diversified Analytics Offshoring service providers. It possesses signficant dedicated expertise right across all of the 5 important financial services domains covered in this report.

  Gecis' commitment to process quality through its implementation of Six Sigma driven process quality methodologies is an equally remarkable feature of its service delivery.

  Further, Gecis clearly has the most progressed and sophisticated BCP and Disaster Recovery strategies of all the service providers with

whom interactions were held for this survey.

- Analytics division commenced in 1997

- Analytics Offshoring expertise domains
  - Actuarial services
  - Equity research and M&A / Corporate finance analytics
  - Corporate credit , structured and project finance analytics
  - Retail banking analytics
  - Strategic Financial Management support services

- Revenue breakdown by geography – UK and Europe (14%) , US (85%), ROW (1%)

- The company was originally a wholly owned captive BPO entity of GE Capital (a General Electric group company). In the last six months, it's ownership and operating structure has changed to an extent where a majority stake holding in the company has been sold to two private equity investors – Oak Hill capital and General Atlantic Partners

Stakeholders	Percentage Holding (historic)	Percentage Holding (post-sale)
Oak Hill Capital	0%	30%
General Atlantic Partners	0%	30%
GE	100%	40%

- Current operating structure – Third party Analytics service provider with capability to scale up operations based on client requirements on a wide range of service offerings. It has a flexible delivery model with options of both a dedicated process support as well as one time project supports.
- Company operating locations – headquartered in Gurgaon, India with the Analytics Offshoring division headquartered in Bangalore,India

- Key delivery centre locations

  Gecis has 8 sites in 5 metropolitan cities of India; 2 sites in Mexico; 1 site in Europe (Hungary) and 1 site in China.

  The details are as below :
  India - Gurgaon (New Delhi)– 2 sites, Bangalore – 1 site ; Hyderabad – 2 sites; Jaipur – 1 site ; Kolkata (Calcutta) – 1 site
  Mexico - Juarez (Near El Paso) – 2 sites
  Hungary - Budapest – 1 site
  China - Dalian (China's North Shore) – 1 site

- Gecis Analytics has delivery locations in Gurgaon and Kolkata, India besides Bangalore

- Process quality methodologies, techniques and platforms used and relevant certifications

  Gecis Analytics have evolved robust processes and state-of-the-art expertise in Predictive Modeling, Segmentation, Optimization, Secondary Research, Primary Research, Financial Research and Automation of Management Information Systems over the last seven years. This allows the organization to provide data driven decisioning support to client business across functions like Marketing & Sales, Risk Management, Pricing and Operations. The organization has not only helped businesses take cost out from their operations and increase process efficiency but has helped the client business drive growth and productivity based on the analytics solutions.

  Over the last 7 years, Gecis is a pioneer in the design and implementation of Six Sigma driven process quality control and improvement methodologies in the Offshoring of business processes and services.

  Gecis currently has 300+ Black Belts, Master Black Belts and Quality leaders, who are aligned to processes, and ensure that continuous improvement is sustained for all processes. Combining this with the power of LEAN and Re-engineering, the company has successfully for the last seven years delivered high levels of productivity to the customer

  Some key quality improvement methodologies adopted by GE CIS as part of its Six Sigma roll-outs are :

  DMADV/DFSS - Design for Six Sigma: An intensive framework to redesign existing processes and in the course create a new process focused on driving quantum change

  DMAIC – Design Measure Analyze Improve Control: A twelve-step methodology to undertake continuous process improvement focused on reducing Defects Per Million Opportunities (DPMO)

  BPMS - Business Process Management System: A methodology designed specifically to ensure that improved processes are able to sustain gains and able to consistently perform at desired levels and exceed key metrics

  CAP Toolkit - Change Acceleration Process Toolkit: A support methodology to manage people, set appropriate expectations and deal with the softer issues of managing change

LEAN focuses on the removal of waste, which is defined as anything not necessary to produce the product or service (e.g. additional process step, infrastructure, or handoffs). LEAN focuses on the efficiency & the flow of the process.

- IT infrastructure, Disaster Recovery and Business Continuity Planning strategies

  The company has a robust technology and telecommunication platform and supporting computer infrastructure (about 500 servers and 12,000 desktops). The company also has dedicated fiber lines to the US and UK. Analytics software such as SAS and SPSS are deployed on dedicated servers in respect of Analytics clients.

  The company's information security processes have also been certified as compliant with the BS7799 standard.

  In terms of Disaster Recovery and BCP strategies, Gecis has the policy of having a dedicated BCP team at each of its delivery centres.

Inductis – Data Mining and Data Warehousing Analytics Offshoring specialists

- Inductis is a leading analytics offshoring organization specializing in the data analytics domain. The company's industry focus is Financial Services - both Consumer and Small Business banking - with experience in the areas of credit cards, lending products, insurance and other related products and services.

  Inductis' strong employee skill set and significant consulting experience in the analytics space support the company's growing domination of the analytics domain.

- Company founded in June 2000 by an experienced team of former Mitchell Madison Group consultants (a spin-off of McKinsey's New York-based financial services practice) with strong experience in data mining and analysis.

- Analytics Offshoring expertise domains:

  - Customer and Risk data analytics specialists with area of expertise in building / operating predictive models related to campaign response, risk underwriting, delinquency behaviour, fraud, collections, customer segmentation, retention and attrition for:

    - Credit cards
    - Lending products
    - Insurance

    - Other related products and services

- Revenue breakdown by geography – UK and Europe (5%) , US (95%), ROW (0%)

- Organically funded organization – company ownership rests entirely with employees of the firm. At this stage the company does not have strategic investors or venture capital investment.

- Key delivery locations – Gurgaon (near New Delhi, India), New Providence (New Jersey, US) and New York City (US)

- Quality Management and ICT Infrastructure

  Inductis employs quality methodologies, techniques and platforms throughout its analytics process and maintains the relevant certifications

  The company's process quality methodology revolves around its proprietary project management tool called "DECIDE RIGHT" that ensures consistently high quality deliverables and rigorous analytical approach to all client needs.

  Some of the key aspects of work organization, delivery and documentation standards that are part of this proprietary process management tool are:

    - A project folder structure that follows the standardised format for ensuring all data / information is available in the correct location
    - Proprietary macros for accurate data profiling
    - Adequately documented and correctly executed variable treatment and data transformation
    - Sophisticated modeling tools and methodology
    - Subject matter expertise that reviews the output for accuracy and efficiency of results
    - Adherence to documentation and knowledge management standards

- Disaster Recovery and Business Continuity Planning strategies

  Inductis has a centralized analytics platform that is resident at the AT&T Datacenter facility in Secaucus, NJ. The Platform has 3 dual processor platforms with capacity for 10TB independent Tier I Storage via SAN technology and an additional 6TB in Tier II Storage on NAS devices. Daily disk-to-disk backup processes are executed via two LT02 heads to a tape library with tape cycling each week. Backup tapes are stored in a secure vault at an alternate location over 30 miles from the datacenter.

The company's BCP strategies revolve around data back-ups and the offsite rotation of tapes in addition to a contractual agreement with AT&T's data centres to resume work in 1 of 18 alternate data centers, in the event of a catastrophe.

At present Inductis does have agreements requiring spare warm space capacity at an alternate site; however, the company's Disaster Recovery plans would enable it to resume operations with only 24 hour data loss within 3 - 5 days, depending upon hardware availability and the magnitude of the catastrophe.

B. Critical Role played by NASSCOM (the apex Indian ICT body) in the development of the IT-enabled Analytics Onshoring sector in India

In this context, it is also worthwhile examining the critical role played by the apex Indian ICT body in the development of the IT-enabled Analytics Onshoring sector in India.

NASSCOM stands for the National Association of Software and Services Companies and is the apex organisation for the ICT industry in India. It is a global body with about 900 corporate members, about 150 of them are globally headquartered companies.

NASSCOM's vision is to make India the global hub for software and services related to the ICT industry.

NASSCOM which has for its objective the development and promotion of the IT-enabled services sector in India, achieves its objectives through both strong Indian governmental interaction to drive ICT industry policy formulation as well as working actively with international governments, embassies, global CEO and CIO forums to promote a strong "brand equity" for the Indian ICT sector.

Several key industry research and study documents on Outsourcing and Offshoring to India, several leading White Papers on various aspects of the IT-enabled services industry in India as well as showcasing documents demonstrating the advantage and opportunity offered by the "high end" analytics industry located in India are regularly sponsored and promoted by NASSCOM, globally.

NASSCOM also organises the annual NASSCOM conference featuring leading Indian and global authorities on various outsourcing and offshoring subjects and sectors and provides a platform for projecting India as the ICT desitination of the future.

For example, NASSCOM was the first ICT industry-body globally to promote the Onshoring of Research and Development analytics activities to Indian facilities by creating and managing a specific knowledge-centre focusing on R&D Onshoring to India or;.

for example, NASSCOM was the first ICT industry-body globally to promote the Onshoring of "New Product development" to Indian facilities by developing and managing thematic international conferences on this topic.

The role played by NASSCOM highlights the critical need for an apex body to drive the promotion of ICT onshoring and specifically, IT-enabled Analytics activities to Australia.

C. Compelling factors for Onshoring IT-enabled Analytics to Australia

As of today, the India-based IT-enabled analtyics offshoring industry is experiencing significant impediments to its growth potential, resulting primarily *from four important factors* :

- Shortage of skilled staff and personnel to support the current and newer financial services domains

- Significant infrastructural issues and costs in current delivery locations associated with the current delivery locations in India, Sri Lanka and South Africa

- Regulatory and corporate governance concerns especially those relating to Sarbannes-Oxley legislation as well as data protection and privacy legislations

- Lack of multi-lingual and multi-cultural capabilities for the continental European, East Asian and Japanese financial services markets

Australia can play a significant role in alleviating these three fundamental problems that the analytics offshoring industry faces, given the :

- Size and sophistication of the Australian financial markets and the financial services and IT industries with a strong culture of outsourcing – the two "building block" industries for the IT-enabled Analytics Offshoring industry

- Excellent skillsets, rigorous qualification processes and experience levels required for the performance of the complex analytics activities which are ***readily*** available in the Australian ICT workforce

- Robust process for updating of skillsets and qualifications

- High levels of ICT workforce productivity compared to most other countries in the Western world. This productivity is ***not merely*** labour and factor cost advantages which would vanish over time but a more robust parameter resulting from the strong technology and business infrastructure that obtains in Australia

- Readily available multi-lingual and multi-cultural capabilities in several Asian and European languages and cultures, available in very few delivery

locations anywhere else in the world

A detailed examination of each of these major factors in support of a strong and major role for Australia has been set out below:

Size, sophistication and maturity of the Australian Financial Services and ICT Outsourcing sectors:

The Australian financial markets are the largest and the most advanced in the Asia-Pacific region and amongst the most sophisticated anywhere in the world. The size of the Australian financial markets along with the growth that they have enjoyed in the recent years is evidence of its deep and liquid markets, a strong and robust economy, a highly skilled workforce and a transparent regulatory and governance environment.

For example :

- The Australian stock market has the highest market capitalisation in the entire ASEAN region (larger than HK and Singapore, put together) and the second largest in the Asia Pacific region (after Japan) (source: 2004 Australian Financial Markets Report) and

- The Australian international and domestic debt markets are thrice as large as Singapore and HK put together (source: 2004 Australian Financial Markets Report).

For example, the Australian banking and insurance sectors lead the world in terms of the sophistication of their business and outsourcing strategies. The Commonwealth Bank of Australia's IT outsourcing arrangement with EDS is the largest financial services outsourcing arrangement for EDS in the world and one of the five largest customers of EDS, globally across all industry sectors.

This sophistication and maturity is further evidenced by global ICT giants such as Satyam and Infosys setting up large application development centres to support their global operations. For example, Satyam's largest ICT application development centre outside of India is based out of Melbourne in Australia.

(For example, consider this quote from Satyam in reference to its Australian operations in Melbourne *– "Australia was the natural choice to locate our latest global software development centre – it is one of the most innovative ICT markets among developed countries. We see installations of new software in Australia six months before firms start using them in Europe and America" – Virender Agarwal , Director and SVP, Satyam Computer Services)*

The strong and functional Australian legal system and the inherent transparency of the regulatory and corporate governance regimes in Australia is also another factor that has contributed to the development of such a sophisticated and mature financial services and IT market – yet another

positive for the global analytics offshoring industry having to deal with the impact of newer regulatory regimes such as Sarbannes-Oxley and IFRS.

Ready availability of the requisite skillsets, qualifications and experience levels – current and projected

IT-enabled Analytics Offshoring activities are critically dependent on the supply and ready availability of experienced staff with the right core underlying skills (IT, computer science, finance & accounting, actuarial and statistical, engineering as well as MBA and project management skillsets)

Examining the supply side of the core underlying skillsets, it is noticed that Australia has one of the most rigorous ICT as well as financial services education and training regimes, anywhere in the world.

As a first step, typically, every year Australian universities produce more than 46,000 graduates with financial services industry related skillsets including 200 graduates in actuarial studies (undergraduate and post graduate) and over 10,000 graduates specializing in Information Technology, accounting, banking and finance. The courses are conducted and supervised by these professional associations are amongst the most rigorous anywhere in the world.

For example, let us review the qualification process for the Institute of Actuaries of Australia (IAA) for producing an Australian actuary :

Qualification Process of an Australian actuary over a 5 year period

The roadmap to qualifying as a Fellow has changed and evolved over the last 15 years, to include a greater degree of practical commercial and communication skills. The qualification process is rigorous, and involves 5 steps, as follows:

(a) Part 1 – Foundation Actuarial Studies
(b) Part 2 – Actuarial Control Cycle
(c) Part 3 – Specialised Actuarial Studies
(d) Practical experience
(e) Professionalism course

Part 1 is done at a bachelor's degree level at several participating universities, and broadly covers the following areas:

(a) Financial mathematics
(b) Finance and financial reporting
(c) Probability and mathematical statistics
(d) Models
(e) Contingencies
(f) Statistical methods
(g) Economics

(h) Financial economics

Part 2, the Actuarial Control Cycle, can be done at university or by distance education. Once module 2 is complete, the level of Associate is attained.

Part 3 is administered by the Institute, and students generally complete these studies on a part time basis, while working in the industry. They require a high degree of practical experience and knowledge. Two modules are compulsory, being Investments, and Commercial Actuarial Practice. Two further practice area modules are required, out of the following four:

(a) Life Insurance,
(b) Superannuation and Planned Savings,
(c) General Insurance, and
(d) Investment Management and Finance.

One year practical experience is required before Fellowship can be achieved. During this time, from 2004 onwards, the student must have a mentor actuary, who is a senior actuary or appointed by a senior actuary. The "mentorship" must be registered with the Institute.

Once all the above parts are complete, the student must attend a professionalism course, prior to being admitted as a Fellow.

It is therefore, through such rigorous processes that continuous supply of staff is ensured for the Australian financial services and ICT industry.

Examining the demand side, it is noticed that several of the large Australian organisations have continued to consolidate and pursue significant restructuring and cost cutting programs ("transformation programs") focused on non-customer facing functions such as ICT functions, operations and processing and delivery functions.

This has resulted in signficant under and unemployment of qualified and experienced staff and personnel in various ICT sectors, over the last 5 year period.

Skillset updating and continuous professional development (focus on globally leading MBA and CPA programs

Another major area of advantage that the Australian financial services based professional education system possesses is the regular and periodic updating of skills and qualifications, as they pertain to the ICT and various financial services sectors.

This ensures that the Australian professionals are able to maintain currency and competitiveness of their education and qualifications vis-à-vis other developed jurisdictions.

For example, the table below sets out the review of the movement in the CPA qualification of the Australian Society of Certified Practicing Accountants ("ASCPA") over the last 10 year period :

CPA Professional Program 1995	CPA Professional Program 2005
Compulsory Subjects:	*Compulsory Subjects:*
Core 1 (Financial Accounting)	Reporting and Professional Practice
Core 2 (Financial Accounting)	Corporate Governance and Accountability
	Business Strategy and Leadership
Electives	*Elective Subjects*
Management Accounting	Strategic Management Accounting
Auditing	Assurance Services and Auditing
External Reporting	Financial Accounting
Treasury	Financial Reporting and Disclosure
Insolvency and Reconstruction	Financial Risk Management
Taxation	Insolvency and Reconstruction
Management Information Systems	Taxation
	Knowledge Management (formerly MIS)
	Personal Financial Planning and Superannuation

A further indicator is the quality of Australian post-graduate business administration programs (the "MBA" programs) offered by top Australian universities with specializations in Information systems, strategy, finance and marketing.

It is to be noted that the three-top Australian MBA programs, the Macquarie Graduate School of Management, the Australian Graduate School of Management and the Melbourne Business School are globally ranked higher or at a comparable level to the "famous" Indian Institutes of Management from where most third party and captive analytical offshorers recruit their FTEs *(source: EIU / Economist magazine and Whitehead Mann global MBA rankings, 2004 – MGSM is ranked 50, AGSM at 77 and MBS at 92 compared to Indian Institute of Management at 64)*

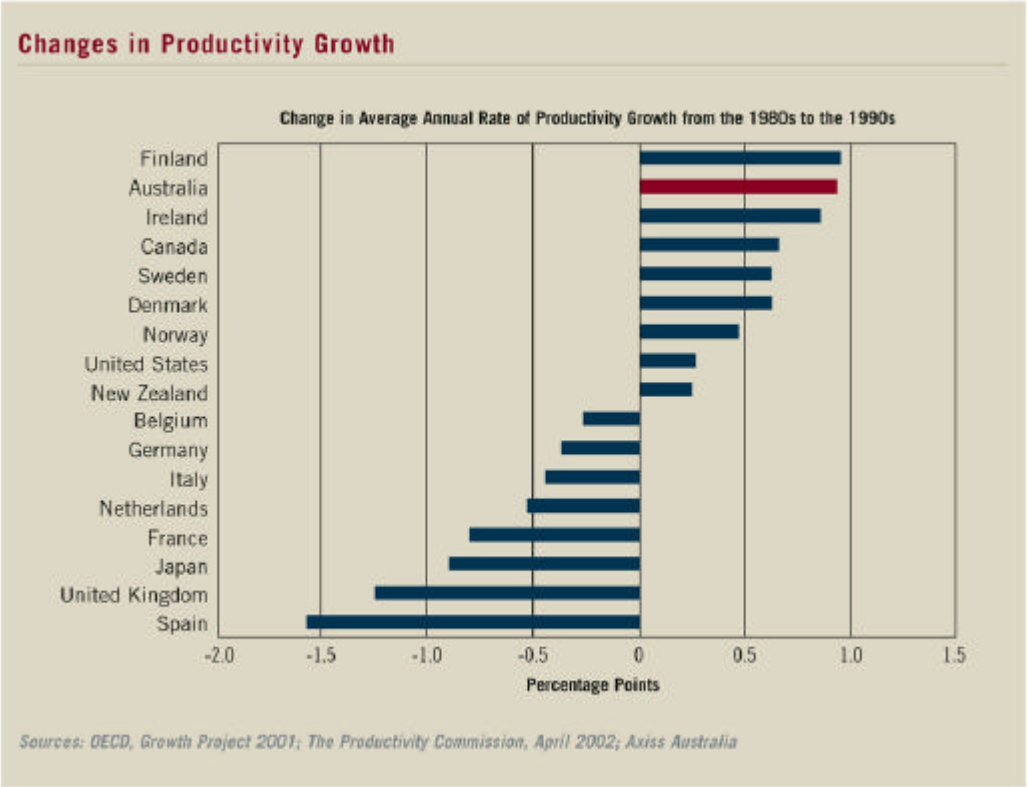
Again with reference to a specific criterion, ***student quality*** – a critical factor to the global IT-enabled analytics offshoring industry, the MGSM was ranked no.1 in the world with the Indian Institute of Management at no.100 (indeed, on this particular parameter, the MGSM is ranked higher than the best MBA progams in the US, UK and Europe) !!

High quality programs such as these three MBA progams ensure that Australian ICT and financial services professionals are not merely skilled

and qualified, they are able to ensure that there is constant updating as well as continuous professional education throughout their careers.

Skillset multi-factor productivity levels in Australia compared to the US, UK and Europe *(labour cost and flexibility as well as robust infrastructure and strong technology uptake)*

The table below sets out the multi-factor productivity data for various countries including Australia, the US and the UK :



As can be seen Australia leads ***the world in multi-factor productivity*** growth over the last few decades. However, this is *not merely* due to simple labour cost and flexibility regimes intrinsic to the Australian economy. Independent reviews of Australia's high productivity levels focus on the combination of a flexible labour system and the excellent quality of technology and infrastructure available relatively cheaply in the country *(source: Australia's productivity surge and its determinants, Productivity Commission studies, 2002-03).*

Even on simple terms such as basic per hourly productivity parameters (GDP output per hour of staff time) Australia figures in amongst the top three countries in the world (barring Ireland and Finland) – again an indicator of the committed and skilled nature of the Australian workforce.

Examining this in the context of a specific IT-enabled Analytics Offshoring

domain – Strategic Business Intelligence and Research analytics services – it is noted again that there is a significant cost differential between Australian consultants and their counterparts in the UK and US, for similar standard of qualifications and quality of output.

	Australia	USA	UK
$ per hour	$400 (large consulting) $250 (small consulting)	$550 - $660	$715 to $880
% difference		+25% to 30%	+40% to 60%

A similar picture emerges in many other major IT-enabled Analytics Onshoring domains where typically Australian skillsets are about 20% to 40% cheaper relative to US and UK skillsets, for the same quality !!

Multi-lingual and multi-cultural capabilities in Australia

One of the key advantages that Australia possesses is the availability of multi-lingual capabilities in Australia as well its multi-cultural receptiveness. Also, multi-lingual capabilities are usually cited as one of the biggest impediments to the growth of analytics outsourcing especially in continental Europe, East-Asia and Japan.

The table below provides a testimony to the multi-cultural and multi-lingual environment that obtains in Australia :

(Updated table on Australian multi-lingual skillsets to be inserted later)

In addition, Australia is one of the top 3 destination countries for overseas students from Asia (including India) for the pursuit of undergraduate and graduate programs at Australian universities.A combination of excellent education systems and good overall levels of social acceptance have made Australia a strong multi-lingual and multi-cultural ICT centre and a possible global hub for Analytics Offshoring.

This is further evidenced by the fact that global ICT majors such as Satyam and Infosys have chosen to establish global development centres out of Australian cities such as Melbourne servicing their global client base.

Disaster Recovery and Business Continuity Planning strategies

The success of the IT-enabled analytics services industry revolves critically around the need for very robust DRP and BCP strategies. Indeed, the process of creating full fledged duplicate delivery centres and sites (not just data back-up facilities) from which they can carry out their operations in the event of geo-political shocks and uncertainties, is one of the significant challenges for the Analytics outsourcing industry, currently.

Indeed, even several of the established Analytics service providers are looking at alternate centres far removed from troubles affecting either America or Asia.

Australia, with its strong history of political and economic stability, democratic system of government and absence of any large scale religious or ethnic violence and tensions, should be an ideal location for several of these alternate Analytics delivery centres catering to global clients.

D. Technology Australia – the critical need for an Australian NASSCOM

As can be seen readily from the previous sections, there is a significant Onshoring opportunity in terms of several IT-enabled Analytics activities being onshored into Australia. Indeed, the building blocks for the creation of a new ICT sector, here and now in Australia, are present in a clear and tangible manner.

Unfortunately, Australia is not seen as a "top-of-the-mind" destination country for any major domain of the IT-enabled Analytics sector by both the end clients (based out America and Europe, usually) as well as the existing IT-enabled Analytics service providers looking to diversify their delivery locations and skill-set offerings. Examples of successful ICT delivery out of Australia such as Satyam are too few to spur the development of a robust Onshoring industry here in Australia.

There is a tangible need, therefore, of an apex Australian ICT body quite similar in objective and functioning manner to the NASSCOM of India. This body would be charged with the task of doing everything that needs to be done towards promoting and developing the Onshoring of suitable ICT processes, specifically in the various key IT-enabled Analtyics domains outlined in this report.

Amidst other things this apex ICT body, Technology Australia (the Australian NASSCOM) would:

- develop globally credible position papers, thematic reports and consultative documents that would promote the onshoring of IT-enabled Analtyics activities into Australia

- work very closely with professional organisations such as the Institute of Actuaries, the ASCPA and the various high calibre MBA programs towards creating and promoting the “Onshoring to Australia” story especially in terms of the IT-enabled Analytics activity domains

- establish formal regular and close working relationships with current IT-enabled Analytics service providers based out of India and elsewhere to promote the complementary role that can be played by Australia in addressing some of the key limitations that they are experiencing in their current delivery locations and models

- conduct annual thematic conferences with a focus on promoting the onshoring of IT-enabled analytics activities to the various Australian ICT locations

- establish formal relationships with major domestic and international venture capital and angel investors to educate them about the size and sophisticated nature of opportunities that are consistent with the *“Australia as an ICT Onshoring destination”* theme. This would spur the creation and sustenance of a strong knowledge-entrepreneurship culture in this brand new, export oriented and leading edge ICT sector here in Australia.

Appendix 1 : Further details and acknowledgements

This project would not have been possible, at all, without the co-operation of numerous senior executives, working within organisations based out of Australia and overseas whose inputs, insights and views formed the core of the substantial research conducted by Swamy & Associtates, on which this particular research is based.

A snapshot of these senior executives who helped us enormously by providing their views, perspectives and comments is set out below :

1. Gecis (formerly GE Capital International Services)

Name	***Designation and operating role***
Pramod Bhasin	President and CEO, Gecis Global
Anju Talwar	Business Leader, Gecis India- Non- GE businesses
VC Gopalrathnam	Business Leader, Gecis Analytics division
Gaurav Sethi	Head –sales and marketing, non-GE businesses

2. Inductis Inc. – Kal Bittianda, Principal and co-founder

3. Axiss Australia and Invest Australia research (Australian workforce and qualifications research data)

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