New Zealand
ICT
Tertiary Education & Job Series
November 2012

garry.roberton@wintec.ac.nz

Note: Penultimate edition
Insights for November 2012

- **Enrolments:**
  - Between 2007 and 2010:
    - ICT diploma *EFT* student enrolments increased by 36 per cent
    - ICT degree EFT student enrolments increased by 14 per cent
  - Between 2009 and 2010:
    - ICT diploma EFT student enrolments declined by 2.4 per cent, while the completion rate fell by 10 per cent (refer slide 6)
    - ICT degree EFT student enrolments increased by 8 per cent, while the completion rate fell by 2 per cent (refer slide 10) (The completion rate fell by 6% between 2007 & 2010)

- **Trademe IT Job Adverts:**
  - Down 5 per cent for the month (-4 per cent last month & -11 per cent for September)

- **Seek ICT NZ Job Adverts:**
  - Total job adverts:
    - Down 5.4 per cent for the month following a 1 per cent increase last month
    - Down 9.0 per cent on November 2011 (Down 8 per cent last month)
    - Just 4 per cent up on November 2010

*EFT Equivalent Full Time (includes part-time enrolments)

Note: Data analysis performed on Friday 9th November 2012
NZ CS/IS/IT Diploma Completions
Domestic & International
2005 to 2010

Note: PTE completions at 1680 (refer next slide) represent two thirds of the 2480 total completions with ITPs providing the remaining third (800)

Source: Educationcounts (Accessed November 2012)
NZ CS/IS/IT Diploma Completions by Tertiary Institute (Domestic + International) 2010

Note: Tertiary education institutions (TEIs), NZ’s public providers, operating under one national system, comprise:

- Eight universities with emphasis on academic education
- Twenty state owned ITPs with emphasis on vocational education
- Three wänanga (education delivered within a Mäori context). Zero completions means less than 5 were recorded
- Forty Industry Training Organisations (ITOs)

PTEs:
- At any one time there are between 700 and 800 registered Private Training Establishments.

Source: Ministry of Education (Accessed November 2012)

Source: Educationcounts (Accessed November 2012)
### Number of CS/IS/IT diploma completions recorded in 2010 (refer bar chart in slide 3)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic students</td>
<td>1660</td>
</tr>
<tr>
<td>International students</td>
<td>820</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2480</strong></td>
</tr>
</tbody>
</table>

The discrepancy between this total (2480) and the total numbers in the previous pie chart (slide 4) is due to the ITP completion numbers appearing twice; i.e. once under the ITP category and once under the TEI category. All other TEI completions were (relatively) insignificant (approx. 20).
NZ CS/IS/IT Diploma Completions as a Percentage of EFT* Students Enrolled 2005 to 2010

Source: Educationcounts (Accessed November 2012)
NZ CS/IS/IT Degree Completions
Domestic & International
2005 to 2010

Number of students completing qualification

Source: Educationcounts (Accessed November 2012)
NZ CS/IS/IT Degree Completions by Tertiary Institute (Domestic + International) 2010

Note:
- The 910 completions (refer slide 6) for TEIs represents the combined University and ITP completions, plus an additional 10 completions from other public providers; i.e. ITOs and Wānanga
- Zero completions means less than 5 were recorded

Source: Educationcounts (Accessed November 2012)
NZ CS/IS/IT Degree Completions as a Percentage of EFT* Students Enrolled 2005 to 2010

*EFT Equivalent Full Time Students

Note:
Further analysis of the enrolment figures needs to be conducted before any sensible conclusion can be drawn from the decline in degree completion percentages; i.e. 12% between 2006 and 2010. During this period enrolments increased by 2.7%.

Source: Educationcounts (Accessed November 2012)
2007 Peak before recession

Seek & Trademe ICT Job Advert Trends
All NZ

Source: Seek ICT (Accessed November 2012)
Seek ICT Job Advert
Monthly Trends
2010 - 2012

Source: Seek ICT (Accessed November 2012)
Seek ICT Job Advert Trends
Change for the Month of November 2012

Source: Seek ICT (Accessed November 2012)
Seek ICT Job Advert Trends
Year to November 2012

<table>
<thead>
<tr>
<th>Month</th>
<th>Auckland</th>
<th>Waikato</th>
<th>Wellington</th>
<th>Canterbury</th>
<th>Total NZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov-12</td>
<td>1283</td>
<td>35</td>
<td>717</td>
<td>219</td>
<td>2332</td>
</tr>
<tr>
<td>Oct-12</td>
<td>1347</td>
<td>41</td>
<td>720</td>
<td>267</td>
<td>2466</td>
</tr>
<tr>
<td>Sep-12</td>
<td>1315</td>
<td>72</td>
<td>679</td>
<td>286</td>
<td>2445</td>
</tr>
<tr>
<td>Aug-12</td>
<td>1523</td>
<td>55</td>
<td>787</td>
<td>272</td>
<td>2725</td>
</tr>
<tr>
<td>Jul-12</td>
<td>1608</td>
<td>65</td>
<td>752</td>
<td>230</td>
<td>2742</td>
</tr>
<tr>
<td>Jun-12</td>
<td>1644</td>
<td>50</td>
<td>793</td>
<td>220</td>
<td>2786</td>
</tr>
<tr>
<td>May-12</td>
<td>1520</td>
<td>40</td>
<td>878</td>
<td>243</td>
<td>2784</td>
</tr>
<tr>
<td>Apr-12</td>
<td>1407</td>
<td>45</td>
<td>689</td>
<td>221</td>
<td>2438</td>
</tr>
<tr>
<td>Mar-12</td>
<td>1577</td>
<td>48</td>
<td>853</td>
<td>218</td>
<td>2768</td>
</tr>
<tr>
<td>Feb-12</td>
<td>1539</td>
<td>61</td>
<td>805</td>
<td>266</td>
<td>2753</td>
</tr>
<tr>
<td>Jan-12</td>
<td>1087</td>
<td>32</td>
<td>543</td>
<td>185</td>
<td>1904</td>
</tr>
</tbody>
</table>

Source: Seek ICT (Accessed November 2012)
Seek ICT Job Adverts  
by Industry Certification  
November 2012

*Monthly change for;  
❖ Microsoft:  
❖ Auckland decreased........9.7%  
❖ Canterbury decreased.....23%  
❖ All NZ decreased.................9.7%  
❖ Linux:  
❖ All NZ decreased.................12%  
❖ Canterbury decreased......24%  
❖ Cisco:  
❖ All NZ decreased.................10%  
❖ Auckland decreased........12.6%

*Note: all categories recorded increases last month

Source: Seek ICT (Accessed November 2012)
Seek ICT Job Adverts Filtered by Management Certifications
November 2012

Significant monthly changes:
- **ITIL**:
  - All NZ down 6% (down 7% last month)
  - Auckland down 17%
  - Wellington up 17.6%

Source: Seek ICT (Accessed November 2012)
Seek ICT Job Adverts by Programming Language
November 2012

- Java decreased .......... 11%
  (Auckland down 14.5%)
- .NET decreased .......... 12%
- Other changes for .NET;
  - Auckland down 22%
  - Wellington up 11%
  - Canterbury down 21%
- PHP decreased for;
  - Auckland ................. 14%
  - Wellington ............... 17%

Source: Seek ICT (Accessed November 2012)
Notes: Decreased demand this month for:
- Prog/Dev down 10 per cent (Up 7% last month)
- Mobile apps down 15.5 per cent

Wellington increased its percentage this month - at the expense of Auckland? 😊
Following several monthly increases for job ads in the cloud category, a decrease of 16.5 per cent occurred for this month.

Source: Seek ICT (Accessed November 2012)
Increases occurred this month for the following roles:

- Developer up 6 per cent
- Sales up 30 per cent
- Specialist up 8 per cent

Source: Seek ICT (Accessed November 2012)
Seek ICT Cloud Job Adverts
Sales category examples

13 Information & Communication Technology jobs containing cloud sales in New Zealand

[Job Advert Details]

Source: Seek ICT (Accessed November 2012)
Changes for the month:

- **SQL Server (all NZ)** up 1.5% (Wellington up 8%)
- **SAP (all NZ)** down by 3% (Wellington up 2%)
- **Oracle (all NZ)** down by 8.5% (Waikato up 33%)

Local Scene

- **New Zealand ICT Research Project Announced**
  - The Institute of IT Professionals New Zealand (IITP) and AUT University’s Centre for Research on Information Systems Management (CRISM) have launched a major research project;
  - The joint initiative will investigate the critical factors that drive IT professionals today and led them to take up a career in the field and
  - will allow a direct comparison with similar research in other countries such as Australia and Singapore

- **DoL Jobs Online monthly report for September 2012** – published October 2012
  - In seasonally adjusted terms, skilled job vacancies fell by 5.4%

### Table: Monthly and Annual Change in Job Vacancies

<table>
<thead>
<tr>
<th>Industry</th>
<th>Monthly change (Aug 12-Sep 12)</th>
<th>Annual change (Sep 11-Sep 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitality and tourism</td>
<td>1.9%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Healthcare and medical</td>
<td>-1.2%</td>
<td>16.9%</td>
</tr>
<tr>
<td>Construction and engineering</td>
<td>-3.8%</td>
<td>20.5%</td>
</tr>
<tr>
<td>Sales, retail, marketing and advertising</td>
<td>-6.6%</td>
<td>-4.7%</td>
</tr>
<tr>
<td>Information technology</td>
<td>-6.9%</td>
<td>-8.4%</td>
</tr>
<tr>
<td>Education and training</td>
<td>-7.6%</td>
<td>-13.0%</td>
</tr>
<tr>
<td>Accounting, HR, legal and administration</td>
<td>-8.2%</td>
<td>-4.9%</td>
</tr>
<tr>
<td>Other</td>
<td>-1.8%</td>
<td>16.1%</td>
</tr>
</tbody>
</table>
Global Scene

- **Australia – [TechRepublic](#):** Plumbing the depths of Australia’s online job market
  - Online jobs advertisements fell again to a new record low this past month, and IT is leading the drop:
    - IT salaries have grown by 4 per cent (ACS) over the period that vacancies have been dropping and there is discussion about a skills shortage (click on the TechRepublic link to access the full article)
News Bytes

Global Scene

➢ Ireland – The Epoch Times (English Addition) IT Skills Shortage Hemming Irish Recovery:
   ➢ Over 97,000 people directly employed in the digital technology sector
   ➢ Significant shortage of design engineers needs addressing;
     ➢ Technology Visa required in order to fast track the provision of work permits to individuals with the requisite ICT skills and qualifications

➢ South Africa: Mind the ICT skills gap
   ➢ ICT industry will face a serious skills crunch in the future unless it focuses on developing its young professionals:
     ➢ Software developers, high-end integrators and other ICT service providers complain that their growth is constrained by a shortage of relevant skills
     ➢ A 2011 ITWeb-JCSE Skills Survey suggests that current demand amounts to 20,000 to 30,000 job opportunities, or 10% to 15% of the total ICT workforce

➢ UK - IT industry news: More programming skills required, according to an IT security firm
   ➢ Many students lack the programming expertise required to find IT jobs in areas such as web security
Global Scene

Gartner’s top predictions for IT firms:

➢ Through 2015, 90% of enterprises will bypass broad-scale deployment of Windows 8
➢ By Year-End 2014, three of the top five mobile handset vendors will be Chinese
➢ By 2015, big data demand will reach 4.4 million jobs globally, but only one-third of those jobs will be filled
➢ By 2014, European Union directives will drive legislation to protect jobs, reducing offshoring by 20% through 2016
➢ By 2014, IT hiring in major Western markets will come predominantly from Asian-headquartered companies enjoying double-digit growth
➢ By 2017, 40% of enterprise contact information will have leaked into Facebook via employees’ increased use of mobile device collaboration applications
➢ Through 2014, employee-owned devices will be compromised by malware at more than double the rate of corporate-owned devices
➢ Through 2014, software spending resulting from the proliferation of smart operational technology will increase by 25%
➢ By 2015, 40% of Global 1000 organizations will use gamification as the primary mechanism to transform business operations
➢ By 2016, wearable smart electronics in shoes, tattoos and accessories will emerge as a $10 billion industry
➢ By 2014, market consolidation will displace up to 20% of the top 100 IT services providers
As the author of this series I’m taking this opportunity to let readers know that I have recently resigned from the Waikato Institute of Technology. Consequently, this is the penultimate ICT trends report.

Producing this ICT trend series, one of my ‘official’ research outputs, has given me an immense amount of satisfaction, due in no small part, to the feedback and helpful/positive comments from a wide spectrum of ICT organisations, both here in NZ and overseas.

In analysing the ICT statistics from 2000 onwards it became apparent that the industry was heading towards a skill shortage abyss. Between 2000 and 2007 enrolments in CS/IS/IT courses dropped 50% across all tertiary institutions in NZ, while the job adverts, reported by the Dept. of Labour, rose by a similar figure. This trend was worldwide.

Enrolments in ICT diploma and degree courses have now risen from the low levels reached in 2007, but are still well short of those needed to bridge the skills gap. The medium to long term predictions by a number of well respected commentators, in articles published by Gartner and TechRepublic, for example, are for a growing and largely unsatisfied demand for ICT skills and experience. The gap between the supply of graduates and the growth in ICT jobs will be further exacerbated by the demographics of a tsunami of baby boomers moving into retirement. Governments, businesses and professional organisations will have to continue to develop strategies to counter this increasing demand. The recent initiatives by IITPNZ, such as ICT-Connect and the survey project partnership with AUT provide exemplars to build on.

It’s my intention to continue to take a strong interest in the ICT industry and tertiary education. I would like to continue my work with the trends report and to take up other opportunities as they arise. Examples include producing reports for Tertiary Education Institutions (TEIs); e.g. independent subject expert reports for NZQA course approval and accreditation, as well as curriculum development and national moderation.

Contact details:
Mobile: +64 27 404 9581

G-and-g@clear.net.nz
Garry.roberton@gmail.com
Twitter: @Gazza_R
Conclusion

Demand for Skills

- Globally, the shortage of ICT workers with the necessary skills continues to be discussed, at the same time as many countries, including NZ and Australia, are experiencing a downturn in online ICT job advertisements.
- Governments, ICT industry and professional organisations should continue to focus on the medium to long term demands for skilled ICT workers/professionals.
- Strategies need to be developed in order to get young people enrolling in ICT qualifications in sufficient numbers to meet this growing demand and to counter the rapidly increasing number of baby boomers moving into retirement.

IITP – AUT New Zealand ICT Research Project

- Your active participation and responses will help ensure the success of this project; i.e. in tracking long-term trends and gauging whether various initiatives and projects aimed at attracting smart people into ICT are working.

Garry.roberton@gmail.com
Twitter: @Gazza_R
What Is the Future of Computers?

Peter J Denning - Communications of the ACM journal -
"Don't feel bad if you can't predict the future."
(About all the people who have tried to do so in the past, and failed)