The benefits of local IT procurement

A report prepared for Catalyst IT Ltd by Economics New Zealand Ltd

November 2011

- The local ICT sector, with further support, has good prospects of being a successful 'cluster' (as was identified as far back as 20 years ago)
- If the ICT sector were to grow to the same relative size as Australia's, it would be a $4 billion industry rather than a $3 billion one
- The government, with a $2 billion annual spend, can play a key role in the industry's development
- Local IT companies are cost effective, with a 25-35% cost advantage over Australian companies and larger cost advantages compared to the US or UK
- The multiplier and tax revenue effects of local procurement substantially reduce the net cost to the government of local contracts. As an example, the net cost of a $115K (GST inclusive) contract reduces to around $67K
- Local suppliers have untapped export potential and can also reduce our import bills. We already spend over half a billion dollars a year on imports of computing services, and another $235 million on computing royalties and licence fees

Open procurement the way to go

It is worth saying upfront that the aims of public procurement will be best served by the commissioning public agency seeking the best value for public money, irrespective of the locality of the supplier. It would be inefficient to award contracts to domestic suppliers who cannot deliver the goods and services required to the requisite quality and at the least cost. In addition, New Zealand has international obligations to hold non-discriminatory government procurement policies, and irrespective of any legal obligations New Zealand public sector purchasers benefit from the expanded range of options that an open procurement process provides: there is also a reciprocity issue, as New Zealand would expect to benefit from other countries' similarly open procurement purchases.

All that said, where public sector purchasers are considering otherwise well-matched bids for business, there are a range of benefits from choosing a locally-based supplier that benefit either the national economy as a whole or the government's accounts, and which should be taken into account in assessing the overall outcome of the procurement decision. The main benefits are listed below: they are the efficiency benefits of local suppliers, the value of building a specialist cluster of companies that can be internationally competitive, the fiscal benefits from choosing New Zealand suppliers, the multiplier effect of local suppliers, and the impact on the balance of payments. Comparisons in some instances with an alternative outcome of awarding a contract to an Australian firm are illustrative: the points made are of general application.

Efficiency – more 'bang per buck'

A procurement contract given to a New Zealand IT firm is likely to buy considerably more in way of programming or other resource hours, as industry incomes are substantially lower than overseas whereas industry skills are on a par with those overseas. The skills point is particularly relevant in the open source

software space, as by definition there is 'level playing field' access to it and users anywhere can capitalise on the leading edge innovations of others.

The difference in costs has been quantified below by comparison with Australia: this is likely to be a conservative assessment, as comparison with countries in Europe or North America which have higher incomes than Australia's, would have widened the gap between New Zealand cost levels and those overseas. These comparisons are also necessarily approximate, as different organisations use different definitions of both the ICT sector and of roles and sub-sectors within it, but a consistent picture emerges of significantly lower NZ costs.

According to the latest information from PayScale Inc, a US company that provides global online compensation data[1] and whose coverage includes both Australia and New Zealand, the total pay for IT Consultant jobs in Australia ranges from A$43,747 to A$137,413 (NZ$57,250 to NZ$179,850 at NZ$ = .764A$). In New Zealand the same range is from NZ$47,754 to NZ$146,591. Comparing the means of these ranges, the local NZ total pay is NZ$97,352 whereas the Australian total pay is NZ$118,550 – which means that New Zealand costs are 17.9% lower than in Australia.

The gap is likely larger than this, as while PayScale's Australian sample is of reasonable size (653 positions), its New Zealand coverage is distinctly limited (53 positions), and certainly an average IT sector salary package of over NZ$97,000 looks intuitively to be on the high side. The much more comprehensive AbsoluteIT Salary report[2], which says that it has had 20,500 ICT employees enter their data anonymously since 2008, shows that the median NZ ICT total pay is NZ$77,500. Another source[3] , the Average Salary Survey, reports that the "average income of [a] senior software engineer/developer is around 82,000 NZD", which is in the same region as the AbsoluteIT estimate. Data provided by Catalyst showed that their average annual remuneration was a little over $80,000. A reasonable estimate of the typical IT salary in New Zealand would therefore be (combining the AbsoluteIT, Average Salary Survey and Catalyst data) around NZ$80,000. This means that New Zealand costs are 32.5% below those in Australia when using the PayScale numbers (NZ$118,550) as the basis of comparison.

There is a potential cross-check on this comparison. Hudson, a global recruitment and HR consulting firm with operations in both New Zealand and Australia, produces annual salary guides for the ICT sectors in both countries[4]. The data are not easy to compare, as they are at a very detailed functional level and are not summarised by Hudson as overall industry or sub-sector averages. It is however possible to aggregate the numbers to give some meaningful cross-country comparisons. From the NZ survey, if you take the mid-point of the Auckland salaries for the 18 kinds of jobs listed in the 'Infrastructure' category, and average them, you get an average annual salary of NZ$81,111. From the Australian survey, if you do the same exercise for salaries in Sydney for the 10 jobs listed in the 'Infrastructure/network' category , you get an average annual salary of A$114,250, or NZ$149,500 at the current exchange rate. This suggests that Auckland costs are some 45% lower than Sydney's. If you repeat the exercise with the 32 kinds of 'Systems development' jobs in Auckland compared to the 10 kinds of 'Development' jobs in Sydney, you find the average Auckland salary to be NZ$78,750 and the average Sydney salary to be A$88,000, or NZ$115,200. In this category NZ salaries work out to be 31.6% lower. Incidentally, both of these exercises produce NZ salary levels of around the NZ$80,000 mark, suggesting that the earlier AbsoluteIT/Absolute Salary/Catalyst numbers for New Zealand are roughly right.

---

[1] http://www.payscale.com/research/AU/Job=Information_Technology_(IT)_Consultant/Salary and http://www.payscale.com/research/NZ/Job=Information_Technology_(IT)_Consultant/Salary

[2] http://www.itsalaries.co.nz/content/IT%20Salary%20Report_Aug-2011.pdf

[3] http://www.averagesalarysurvey.com/article/average-salary-in-new-zealand/07163011/income.aspx

[4] http://nz.hudson.com/documents/EmpNZ_SalaryGuide_ICT.pdf for New Zealand and http://jobs.au.hudson.com/documents/EmpAu_SalaryGuide_ICT.pdf for Australia

These comparisons are necessarily a 'broad brush' exercise, but they agree with other, more detailed analysis. In 2007, for example, Investment New Zealand, an arm of New Zealand Trade and Enterprise, published[5] a sophisticated analysis, based on BearingPoint research, of the costs of setting up a 50-person software development centre in New Zealand as opposed to setting it up in Australia, the US, the UK, South Africa, India or Slovakia. A New Zealand operation cost about a quarter less than an Australian one, and about half the cost of an American or British one. Costs in the developing economies were lower than in New Zealand, very substantially so in the case of India in particular, but the developing economy cost benefits would need to be balanced against coordination and logistical costs and potential differences in productivity.

A reasonable and robust overall conclusion is that IT sector labour costs look to be about a quarter to a third lower in New Zealand than in Australia, and the local cost advantage is wider again when compared with other developed economies. This cost gap in New Zealand's favour is wider than any likely difference in productivity levels. For example, recent work from the NZ Institute of Economic Research[6] has shown that there is an overall productivity gap between the New Zealand and Australia: New Zealand's labour productivity in the most recent period studied (2001-06) was 83% of Australia's. Even if the same was true of the ICT sector (and the NZIER's data do not give enough sectoral detail to tell us) it would still pay to employ New Zealand ICT professionals, given that the cost gap is some 25-35% whereas the productivity gap is 17%. But in any event it is unlikely that the productivity gap in the ICT sector is as wide as the national productivity gap, given the highly mobile labour markets between New Zealand and Australia and the global industry standards that prevail in IT, both of which are likely to equalise expertise levels in the two countries. In sum, purchasers of New Zealand IT services are highly likely to be getting very good value for money, in terms of the quantum of hours and skills bought per dollar of spend, compared with what they would get from overseas suppliers.

This efficiency argument is becoming more relevant as fiscal constraints are becoming tighter. The total annual government spend on ICT was officially estimated[7] at $1.94 billion in the year ended June 2008 ($1.36 billion in opex, $578 million in capex), and appears to be running at around the same level currently: the chair of the government's ICT Council, Sam Knowles, referred this month to an annual spend of $2 billion. Efficient stewardship of a $2 billion spend would be important anytime, but is even more so in an environment of fiscal austerity.

Support the opportunities in a strategic and high growth sector

The IT industry is increasingly becoming central to the operation of a high-income economy, which is (for example) one of the main reasons that the Government has initiated the national Ultra Fast Broadband project. Industries as diverse as healthcare, education and the media are increasingly going to be dependent on efficient IT underpinnings, while the IT sector itself will be an increasingly important potential source of employment, value add, and exports.

At first blush, it appears that the New Zealand IT sector is progressing reasonably well. We may have an image of Australia, for example, as being a somewhat more advanced economy, but the reality is that the sizes of the ICT sectors in Australia and New Zealand are broadly similar relative to the size of their economies. Statistics New Zealand's *Information and Communication Technology in New Zealand and Australia* (November 2009) showed that the broadly defined ICT sector amounted to 9.9% of New Zealand's GDP (sales of NZ$17.5 billion) and 9.3% of Australia's (sales of A$96.7 billion).

This overall comparison is somewhat misleading, however. As noted earlier, there is no universally accepted definition of what is counted in ICT, and it can be a mixture of 'old economy' and 'new economy' sectors. In

[5] Investment New Zealand, New Zealand Software Development Industry, June 2007
[6] http://nzier.org.nz/publications/industry-productivity-and-the-australia-new-zealand-income-gap-nzier-working-paper-2011
[7] State Services Commission, *Report: Government Use of ICT 2008*, April 2009

fact, the relatively good showing by New Zealand on this comparison has a distinctly 'old economy' feel. The slightly larger ICT sector in New Zealand in terms of share of GDP is more than fully explained by a relatively large distribution sector involved in the wholesaling of TVs, radios, MP3 players and the like (1.5% of the economy in New Zealand, only 0.6% in Australia), which while formally within the ICT sector is not the sort of leading-edge and IP-rich activity normally associated with the ICT sector. In the more sophisticated 'computer system design and related services'[8] activities, which is what people would tend to have in mind when they are thinking about 'the ICT industry', New Zealand lags behind Australia. In 2008 it was a NZ$3 billion industry, 1.7% of our GDP, compared to A$24.5 billion, 2.3% of theirs. If it had grown to the relative size of Australia's modern IT industry, it would have been a $4 billion industry rather than a $3 billion one. We have made a start, and shown that we can create a viable domestic IT industry, but it is still on a relatively modest scale.

Statistics New Zealand's 2008 results have been updated in their 2011 publication, *Information and Communication Technology Supply Survey: 2009/10*. The data are not fully comparable with the 2008 publication, but as at 2010 the 'new economy' IT sectors (IT technical support services; IT design, consulting, and development services; Hosting and IT infrastructure provisioning services) had total sales of $3.39 billion and export sales of $337 million. These export sales of $337 million, while not insignificant, show that the IT sector is still an embryonic form of what it could become. Its current annual exports are less than our exports of plastics ($493 million) or vegetables ($459 million) and on a par with exports of 'other animal originated products' ($359 million) – a self-evidently small level when you compare the scale and potential of the global IT industry with that of plastics or 'other animal originated products'.

One way of realising the still mostly untapped potential of the domestic IT industry would be to encourage the development of clusters. Domestic procurement could help assist local suppliers to move to greater economies of scale, and to create a pool of local companies with greater depth of experience. There is already quite a large group of companies active in the IT space – Statistics New Zealand counted 1,377 in its 2010 update, the bulk of them (1,152) in the relatively sophisticated 'Computer system design and related services' sector. This is a promising base of existing involvement on which to build a genuine cluster of local competitive advantage. As the Porter project twenty years ago[9], "National advantage resides as much in clusters as in individual industries. Outside of the agricultural sector, New Zealand has not been able to create competitive clusters of industries…Central and local governments should encourage investments that develop, or attract, specialist suppliers and industries related to our current areas of success". And it seems to have been forgotten that the New Zealand software industry was actually one of the industry studies highlighted in the Porter project as being a good base to work from and develop export sales: "The software industry…illustrates that New Zealand firms can compete in rapidly changing technology intensive industries, despite relatively unfavourable conditions"[10].

The Porter research team estimated that New Zealand's software exports in 1990 were some $100 million. On the plus side, the fact that exports have more than tripled in twenty years suggests that the sector does indeed (as the Porter team suspected) have the potential for substantial growth, and banking a compound growth rate of exports of 6-6.5% a year over two decades is a worthwhile achievement. But as the comparison with some of our other traditional export categories suggests, there is still a lot of room to raise our game.

Developing local clusters could be assisted without compromising either proper procurement processes or the vigour of local competition. Procurement, where there are evenly balanced potential suppliers, can however

[8] "Units mainly engaged in providing expertise in the field of information technologies, such as writing, modifying, testing, or supporting software to meet the needs of a particular consumer; or planning and designing computer systems that integrate computer hardware, software, and communication technologies" on Statistics New Zealand's definition.

[9] Graham Crocombe, Michael Enright, Michael Porter, *Upgrading New Zealand's Competitive Advantage*, Oxford University Press, 1991, p176

[10] Crocombe et al, p58

properly recognise the value of helping to grow a more experienced group of local suppliers which can produce the well-known 'virtuous cycle' of increasingly adept companies learning off off each other's success while simultaneously being incentivised to invest and innovate from the presence of strong local competitors.

Balance of payments benefits

Spending on local IT suppliers is beneficial from the point of view of the national balance of payments.

Contracts awarded to overseas suppliers show up in the balance of payments as a debit item, 'imports of services'. This is already a substantial bill to pay: in the year to June 2011, imports of 'computer and information services' cost the country NZ$553 million. Nearly all of this cost ($522 million, according to data supplied by Statistics NZ) relates to computing services: IT technical consulting and support services ($230 million), IT design and development services ($97 million), hosting and IT infrastructure provision ($88 million), IT infrastructure and network management ($68 million), database information services ($20 million), and 'other' data processing ($19 million). It is also a cost which has been rising rapidly in recent years: it has increased by 39.3% in the past five years.

There is a further cost to the balance of payments. Suppliers (either domestic or overseas) using proprietary software developed by overseas companies incur ongoing licencing fees. These too now amount to a substantial cost to the country: in the year to June 2011 royalties and licence fees paid to overseas companies for computer services amounted to $235 million. Again, this is a cost which has been rising sharply, having increased by 38.2% in five years.

In comparison, projects run by domestic companies avoid almost all of these costs. On the basis of analysis of Catalyst's detailed accounts, for example, it is evident that virtually all of its spending occurs within New Zealand: less than 2% of its spending goes on imports of goods and services (1.9%, estimated as 100% of the spending on purchases of hardware and licences, computer consumables, equipment under $500, and licensing fees; and 50% of the spending on subscriptions, training and seminars, and travel expenses). This is likely to be true of many other domestic IT companies as well, though the import component will be especially low for companies operating in the open source software space, as this avoids import costs that would otherwise be spent overseas on royalties and licencing of proprietary software.

Domestic fiscal and multiplier effects

Awarding an IT contract to a domestic supplier sets in train a chain of positive fiscal and multiplier effects which do not occur (or only on a much lower scale) when the contract is awarded to an overseas supplier.

A notional example (again based on the structure of Catalyst's latest accounts, but also likely to be true more generally) illustrates the chain of events, using a contract worth $100,000 pre-GST or $115,000 inclusive of GST.

The first impact is a net payment of GST to the government of $11,700, being the GST due from the domestic supplier ($15,000) less the GST already paid by the domestic supplier ($3,300 assumed in this example).

Of the $100,000 ex-GST cost of the contract, $72,000 will be spent on domestic wages and salaries, $25,500 will be spent on purchase of goods and services (nearly all of it, $21,000, domestically), and $2,500 will be paid in company tax.

Looking first at the impact of domestic wages and salaries, the $72,000 in local wages generates $15,800 in PAYE tax (at an average 22% tax rate[11], reflecting higher than average salary levels in the IT sector), leaving $56,200 in disposable employee income. Not all of this will be spent domestically. It is assumed,

[11] This and the other PAYE calculations are based on the PAYE calculator available on the IRD's website

conservatively, that 5% of this is saved (a conservative estimate as the national household savings rate is arguably negative), that 25% is used for debt-servicing (again, conservatively assuming that everyone has a mortgage, that mortgage payments are substantial but within a bank's normal lending limits, and that mortgage payments have no multiplier effects), and that 28% is spent on imports (the share of imports of goods and services in the overall economy). These channels eat up $32,600 of disposable income. The remainder, $23,600, will be on-spent in the domestic economy, generating further domestic income, employment, and tax revenue. This is the well-known 'multiplier' effect of an increase in government spending.

This domestic spending, plus the GST on the spending on imports, generates further GST revenue of $5,131[12]. As the domestic spending becomes domestic recipients' incomes, it generates further PAYE of $3,284 (at an average tax rate of 16%, the rate applying to an average-level income of $50,000, applied to the ex-GST spending of $20,522). And the chain continues. The $23,600 spent in the domestic economy will create a further round of domestic spending and local income, worth $9,912, with a further round of GST revenue ($1,293) and PAYE (16% of the ex-GST amount of $8,619, which comes to $1,379). There are further, smaller rounds of induced spending and tax that are not pursued further, nor are payments of smaller items of tax (such as ACC and FBT).

Summing up these effects of the local company's wage bill, local incomes rise by $105,512 ($72,000 plus $23,600 plus $9,912), and the associated tax returned to the government is $17,624 by way of GST ($11,200 plus $5,131 plus $1,293) and $20,463 by way of PAYE ($15,800 plus $3,284 plus $1,379), making a total tax inflow of $38,945.

Looking next at local purchases of goods and services by the domestic company awarded the contract, these also generate rounds of local income and tax flows in exactly the same way. The $21,000 spent on local goods and services generates additional GST amounting to $2,739 and PAYE amounting to $2,922 (at 16% of the ex-GST spending of $18,261), while the $4,500 spent on imports generates GST of $587, making a total tax intake of $6,248.

Adding up all these impacts produces a total tax take of $47,693 – $38,945 from following through the impact of the local company's wage bill, $6,248 from following through the impact of the local company's purchases of goods and services, and $2,500 from the local company's payment of corporate income tax.

There are several conclusions which follow from this analysis.

One is that the net cost to the public sector of any project awarded to a domestic supplier, with domestic employees and high levels of domestic purchases of goods and services, is very much reduced by the tax inflows from the domestic income and spending generated. On these estimates, the gross cost of a $115,000 project is reduced to a net cost of some $67,300. The exact size of the net cost will vary from contract to contract, and different assumptions could be made about tax rates or about consumer behaviour, but they would not change the overall thrust of the conclusion, which is that awarding government procurement contracts domestically sets in train further rounds of spending that boost local incomes, generate further tax flows, and return revenues to the government that offset the initial cost.

Another conclusion is that this wider benefit to the fiscal accounts is invisible from the perspective of any single agency awarding a contract. An agency commissioning an individual piece of project work will, naturally and correctly, be concerned about value for money from spending its own budget, but it does not observe, nor directly benefit from, the revenues its domestic procurement is generating for the government as a whole. "Whole of government" ICT purchasing initiatives have the potential, in theory, to look at the bigger picture, though again they tend to be more about the efficiencies to be gained from a single project purchase (on

[12] GST is calculated by dividing GST-inclusive amounts by 7.666

behalf of multiple users) than about the net cost of a domestic procurement once consequent income and tax flows are allowed for.

A final point is that this reduction in costs only applies to the extent that a domestic contractor is expanding the domestic tax base by hiring people locally and by purchasing local goods and services. The tax situation of overseas firms doing business in New Zealand can be complex, but they will almost certainly not generate similar levels of tax to effectively offset the cost of the contract to a public sector buyer. Their workforce will largely be overseas (outside New Zealand's income tax regime), their purchasing will largely be overseas (outside New Zealand GST regime), their corporate profits will not be subject to New Zealand company tax, and the bulk of any 'multiplier' effects on incomes will also take place overseas in their own economies.