The Australian Open Source Industry & Community Report 2008

Methodology.

The **Australian Open Source Industry & Community Report** was commissioned and executed by Waugh Partners, with the financial support of sponsors, NICTA, IBM and Fujitsu.

We worked closely with psychometricians and statisticians provided by NICTA, our primary research partner, to ensure the end-to-end quality of the research. While our sponsors and supporters provided feedback at numerous points throughout the project lifecycle, this report is the result of independent analysis by Waugh Partners. It is based on data collected through a pair of online surveys held between October and December 2007.

Community

The community survey was aimed at "individuals who contribute to Open Source projects and communities in any capacity, not just software development", and received 315 complete and legitimate responses, with 66 incomplete. Twelve of those incomplete responses were deemed legitimate and complete enough to include in the final results.

We conservatively estimate that our sample of 327 respondents represents roughly 10% of the total Australian Open Source community, which is well above the 5% required for statistical significance. This understanding of the size of the community is based on membership of community organisations, mailing list subscriptions around the country, user group attendance figures and other information about the community.

Industry

The industry survey was aimed at "companies that sell, support or service Open Source related technologies in the Australian market", and received 129 complete and legitimate responses, with 69 incomplete or duplicated.

We conservatively estimate that our sample of 129 respondents represents roughly 25% of a particular segment of the Australian Open Source industry. This segment is well-connected within the industry, tightly-knit with the community, and leans towards some of the core platform technologies in the Open Source world – Linux and LAMP in particular. We are comfortable with this leaning, as our results show that respondents represent a dedicated core of the industry (over 50% earn greater than 70% of their revenue from Open Source activities), our projections take this leaning into account, and that we have not attempted to make estimates about those in the industry who do not self-identify as Open Source service and solutions providers.

Our estimate of the size of the industry is based upon Open Source Industry Australia membership, additional lists of companies maintained by other Open Source organisations, and companies that Waugh Partners are aware of through our substantial work in the industry. It is worth pointing out that around half of the respondents to the Census were not previously known to us, but were verified as active players in the industry.

Promotion

The Census was directly promoted through a national roadshow which traveled to every capital city, on several mailing lists including Linux Australia, Open Source Industry Australia and user groups around the country, and through direct contact with Open Source community members and companies. Indirect promotion included blogging, media coverage, and notification to members of the Australia Computer Society, AIIA, OzZope and numerous other organisations.

Projections

We have been very careful to make conservative projections, particularly related to industry revenue.

Our projected industry and export revenue figures are based upon the projected industry size and spread of companies compared to the broader ICT industry, using the combined mid-point of each revenue bracket, and an upper limit of $5M (as defined in the survey itself). We wanted to ensure our figures were broadly applicable, not swamped by 4 or 5 large companies. The projected Open Source related revenue was found by combining each company's revenue and their percentage revenue related to Open Source, and then extrapolating as per our industry projections.

References

The survey results were designed to be comparable to existing data sets in order to assess the state of the Open Source industry and community against the broader ICT industry, workforce and Australian population. A few key comparisons and references throughout the report include:

- DCITA Overview of Australian ICT Industry 2006 (DCITA 2006)
- ACS Industry Report 2008 (ACS 2008)
- Australian ICT Trade Update 2007 (Houghton 2007)
- AGIMO Open Source Overview 2007 (AGIMO 2007)
- Open Source Industry Australia 2005 Survey (OSIA 2005)
- South Australian Open Source Business Survey 2007 (SA 2007)
- Free/Libre Open Source Software: Policy Support, Gender: Integrated Report of Findings (FLOSSPOLS 2006)
- Open Source Software in Canada (CanFLOSS 2003)

Definitions

Where possible, we have used Australian Bureau of Statistics definitions, such as industry sectors, ICT job descriptions and company sizes: Micro (1-4), Small (5-20), Medium (21-200), Large (over 200).

FLOSS: Free, Libre and Open Source Software. Though we have referred to the businesss and methodology of "Open Source" throughout this report, we believe that the philosophy of "Software Freedom" is of equal importance.

Introduction.

In our interaction with business, government, education and the Open Source industry, we have found a sharp disconnect between the perceptions held by the market, and the reality of Open Source in Australia.

We knew that our country has produced some of the world's most influential Open Source innovators and projects. We knew that clever, home-grown Open Source companies were succeeding in local and export markets.

But we didn't have the numbers. Until now.

The **Australian Open Source Industry & Community Report** delivers those numbers, to encourage an informed conversation about the potential for Open Source in Australia.

You see, we have a problem. The Australian ICT trade deficit stands at a discombobulating $21 billion... 80% of our total trade deficit (Houghton 2007).

Most of that is equipment, necessary to the productive use of ICT in this country. In broad terms, there are few opportunities for savings among our ICT imports, which means we have to make it up in exports.

In good times and in bad. With or without a resources boom.

In fact, we believe that the ICT industry has a responsibility to help equalise this immense ICT trade deficit – through improved export revenue and real productivity gains for other Australian industries.

Open Source is a key platform for Australian innovation and productivity. The shared Open Source development model allows us to solve common problems in collaboration with the global community, and create new value built on these common foundations.

We are already good at this.

Our industry and community are strong and well-connected in ways that few other countries have achieved. Australian contributors are recognised as leaders in the global Open Source community.

Our industry is investing in Open Source research and development, while finding success in export markets. International companies are hiring Australian Open Source experts, here and abroad.

We host one of the world's best technical Open Source conferences, linux.conf.au, which attracts many of the best and brightest developers from around the world, each and every year.

Now it's time for some local attention.

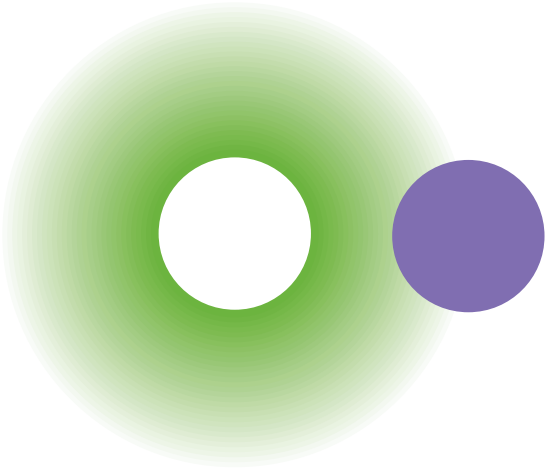
In this report, we have highlighted our findings from the **Australian Open Source Industry & Community Census** surveys, and included experiences from some of the companies and people who influence the Open Source industry and community in Australia.

We hope that it leads you to a better understanding of the our industry and community, and the immense potential for Open Source in Australian business, government and education.

Waugh Partners

Jeff and Pia Waugh
waughpartners.com.au

Primary Sponsor.



Open Source is arguably the most significant movement in the software world of the past decade. Its impact is both pervasive and disruptive, and the importance of Open Source solutions to government and business organisations of all sizes continues to grow.

As Australia's national ICT research centre of excellence, **NICTA** is committed to the ongoing support of Open Source software, both as a business enabler and as a foundation for research and innovation – the genesis of new tools, platforms, companies, and even whole industry sectors.

While NICTA's intellectual property protection spans the whole spectrum from open to closed source, there is no question that Open Source is now a part of NICTA's DNA. It is in the tools we use to conduct original use-inspired ICT research, it is in many of technologies we develop and release to the world at large, and it is used within our internal business systems.

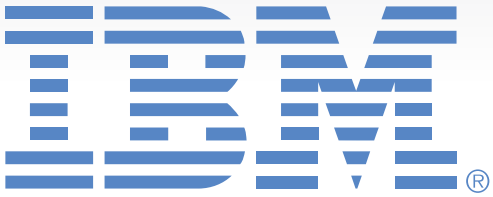
In August 2006, NICTA announced the creation of Open Kernel Labs, a new spin-out company to take NICTA R&D expertise in Open Source platforms to the global embedded systems market. In this case, Open Source has enabled an effective business model for a new software company to compete globally, without the sales and marketing budget of a cash-rich multinational.

More recently, NICTA researchers have been behind a major initiative to rationalise international research outputs in the field of machine learning on an Open Source platform.

NICTA is excited to be a part of the Australian Open Source Industry & Community Report project to understand more about this industry and community, and the opportunities that Open Source will continue to provide for Australian innovation.

Prof. Bob Williamson, Scientific Director
www.nicta.com.au

Sponsors.



IBM Australia Ltd is proud to be a financial sponsor of the 2008 Australian Open Source Community & Industry Census conducted by Waugh Partners.

The results of the Census allow our clients and other businesses to obtain factual information with regard to Open Source adoption in Australia, and allow our clients to move forward positively in deploying Open Source software (OSS). There are many instances where OSS does not yet compete with commercial software and hence IBM recommends businesses choose OSS which will integrate with commercial software as required to best meet the needs of their business.

The census results are important to IBM and Australian businesses as they prove that the OSS industry in Australia has matured. Simple facts such as 46% of respondents gained 70% or more of their revenue from Open Source activities suggest that Australian businesses are already taking advantage of what OSS has to offer.

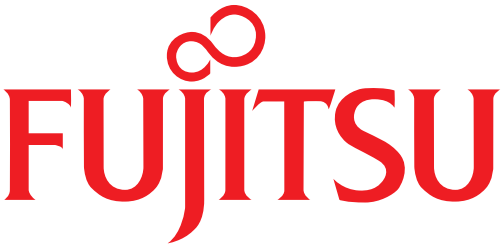
IBM has been a long term supporter of Open Source software since it first donated $40 million worth of tools to the Eclipse project in November 2001. IBM continues to donate code and resources (over $1 billion since 2001) with recent donations to OpenOffice.org in November 2007.

IBM has built a substantial environment around Open Source software that includes ensuring most of IBM's key Software Products operate on Linux, running OSS labs (of which one is located in Canberra, Australia) leading and participating in Open Source projects, being members of many OSS industry groups (eg, OSDL, ODF Alliance) introducing partnerships with Red Hat and Novell (elevating them to IBM's Strategic Alliance program) and other activities around Open Source software.

IBM's philosophy on "Freedom of choice" for software, hardware and services and leadership in industry standards provides customers with security, flexibility and control of their IT infrastructure and applications. This in turn, supports their need for dynamic, flexible, interchangeable business processes. IBM uses Linux, Open Source and industry standard architectures to extend the value of our software, hardware and services to provide customers choice in becoming an on demand business.

If you would like further information on how IBM can help enable your company with Open Source software, please contact your local IBM representative or visit www.ibm.com/linux.

Kevin Wilson, Lotus Competitive Solutions Executive
IBM Software Group (A/NZ)



At **Fujitsu Australia Software Technology** (FAST) we enthusiastically support the launch of the first Australian Open Source Industry & Community Report.

This initiative aligns closely with one of our key objectives of promoting the business relevance of Open Source. Impressing the business usefulness of Open Source is increasingly important now that the technical excellence of many of these products is so firmly established.

In many respects, FAST's involvement and promotion of Open Source is no different from its involvement and promotion of proprietary software – we are motivated to deliver the best value and the best return on investment to our customers. The challenge for us, and every Open Source vendor, is to properly communicate that message.

The growth in business adoption of Open Source software continues to gain significant momentum. This adoption is further accelerating with the recent trend towards Open Sourced business applications, most notably in sectors such as CRM and ERP. This is a strong indicator that the business relevance of Open Source is gathering pace in a way that many may not have foreseen.

The great story that is emerging nowadays is that it's possible to have an entire end-to-end Open Source stack from operating system and database, through to middleware and application software. For many businesses, this type of configuration can realise substantial cost advantages, and better strategic positioning.

At FAST, we will continue to promote Open Source solutions to customers for whom this represents the best option. As the range of Open Source software available continues to grow and further evolve, it is expected that adoption of such solutions by our customers will increase steadily in coming years. In our view, the future of Open Source is bright for both vendors and customers.

Liam O'Dubhir, Product Manager, Open Source Software
www.fastware.com.au

Supporters.

Open Source Industry Australia is the industry association for Australian organisations developing, selling and supporting Open Source Software solutions to all sectors of our economy, and indeed in the global marketplace. OSIA takes a proactive role in promoting the interests of the industry to business and government within Australia.

A robust local industry has emerged to support Australian businesses deploying Open Source based technology. There is a high demand for Open Source skills, with wages competitive within the ICT industry. Within this thriving environment, OSIA facilitates and supports access to skills and certifications for its members and the community to meet the increasing demand for Open Source solutions.

Open Source software is here to stay. Smart companies have found that turning to Open Source delivers real competitive advantages. Organisations adopting Open Source are also finding benefits in contributing back to the community. The resulting collaboration between community and industry creates a co-operative ecosystem where users become contributors and improvements are shared.

39% of Census industry respondents reported already being a member of OSIA. We welcome others to join as we work together to promote the benefits of adopting Open Source solutions and engaging with the community.

Donna Benjamin, Director
www.osia.net.au

Linux Australia is the peak body for Linux User Groups and the broader Free and Open Source Software community around the country.

Every year it facilitates linux.conf.au, an international conference for the Free and Open Source Software Community, in a different Australasian city. This conference is a focal point for the Australian Open Source community. Linux Australia supports a number of other community activities throughout the year such as Software Freedom Day and provides representation at industry events and engagement with government.

Linux Australia welcomes the publication of the Australian Open Source Community & Industry Report and thanks Waugh Partners for their efforts in conducting the Census.

We are pleased to see that the information gathered confirms our perception of the strength and diversity of the Open Source community. Linux Australia feels this strength and diversity is indicative of how successful we and the many Linux User Groups nationally have been in supporting, extending and evangelising Linux and Free and Open Source Software (FOSS).

Further information about Linux Australia and the community can be found at our website.

Stewart Smith, President
www.linux.org.au

Department of State and Regional Development

The NSW Government through the **Department of State and Regional Development** is proud to support the Open Source Industry & Community Report, the first national effort to quantify the demographics of the industry in Australia.

The Department of State and Regional Development is the NSW Government's business development agency and works with business to strengthen the State's global competitiveness, promote investment, job creation and build business capability.

Information and communications technology (ICT) is an important industry sector for NSW. It is a major element of the NSW services sector in terms of employment, value of production and exports. It is equally important in supporting high growth industries in all areas of the economy, by virtue of the lower costs and improved productivity that ICT-driven businesses can deliver.

The Open Source technologies sector will contribute to the competitive position of NSW into the future. Its dynamic nature and the extent of innovation, collaboration and entrepreneurship in the sector can provide the basis for economic growth in modern and sophisticated economies like NSW.

Sumeet Kumar, Department of State and Regional Development
www.business.nsw.gov.au

Bob Waldie, Chairman and CEO of Opengear, is a serial entrepreneur who has spent over 20 years building Open Source technology companies. He served as CEO and then Chairman of Linux-based security applicance vendor SnapGear which was acquired by CyberGuard in 2003. He then co-founded his current venture, Opengear in 2004.

Opengear makes products which enable secure remote access and control of computers and communications devices in distributed networks. The company's research and development is based in Brisbane, but it is focused on supplying the export market. 50% of its sales are to the US and the company has distribution partners in 17 other countries including China, Japan, Germany and the UK. Bob says the focus on overseas markets was a deliberate strategy.

"It is easier to sell next generation solutions into more advanced export markets."

"The reality is it easier to sell next generation solutions – and commercial Open Source solutions are very much in that category – into more advanced export markets. The fact is that Australia has many pockets at the forefront of technology development, particularly in the open source space, but with few exceptions we are laggards in commercial adoption of new ICT solutions."

Bob believes that Open Source technology will be increasingly competitive in an overseas market which is demanding more cost effective solutions, and robust security and and compliance – all things which Open Source technology is uniquely positioned to satisfy.

Industry.

Our conservative projection of earnings suggests that the Open Source industry generates $500 million in revenue each year, with over 50% of that being directly related to Open Source.

Size & Strength

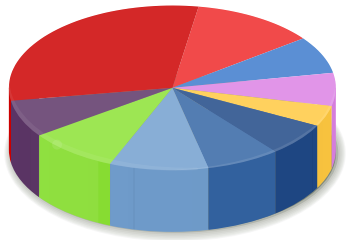
Despite a common mental picture of Open Source companies as "one-man band" contractors, the industry is in fact extremely diverse. Ranging from sole traders to large multinationals, only 50% of respondents have fewer than 5 employees, compared to 78% of the broader ICT industry (ACS 2008).

It's clear that the companies surveyed represent a focused and well-defined industry sector, with almost half of the respondents (46%) making 70% or more of their revenue from Open Source related activities. Our conservative projection of earnings suggests that the industry generates $500 million in revenue each year, with 50% of that being directly related to Open Source.

This apparent disconnect between the Open Source related portion of individual company revenue and that of the industry is due to the broad range of company sizes and different Open Source business models in play.

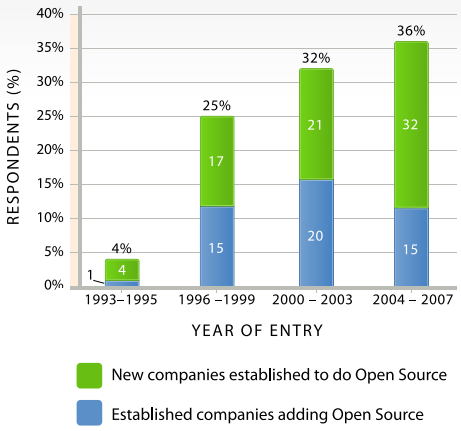
The promise of commercial success with Open Source beckons. The dot-com bust period appears to have encouraged existing companies to add Open Source to their roster of services, and now a growing number of new companies are joining the Open Source industry every year.

Percentage Open Source related revenue



12%	Less than 10%	7%	51% - 60%
7%	11% - 20%	10%	61% - 70%
7%	21% - 30%	9%	71% - 80%
4%	31% - 40%	7%	81% - 90%
7%	41% - 50%	30%	91% - 100%

Open Source industry growth rate

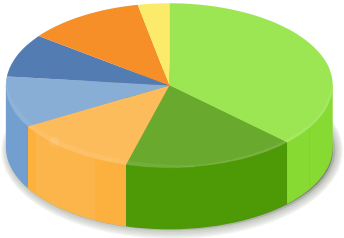


Services & Support

Most of the industry (70-80%) provides the classic mainstays of Open Source services – software development and customisation, implementation and migration, and support and maintenance. Not only do these represent the most common commercial services, but also the top three most lucrative, from which 75% of respondents made the majority of their income.

Significantly, 43% claimed that software development was their most lucrative service, while only 4% made the majority of their income from the sale or resale of software licenses – "will code for food" could not be further from the truth! This practical, commercial software development capacity, built on robust and inexpensive Open Source platforms, represents a huge opportunity for Australian business and Government.

Gross revenue in Australian market



37%	Less than $200K
17%	$201K – $500K
12%	$501 – $1M
10%	$1M – $5M
9%	More than $5M
12%	Prefer not to answer
3%	Don't know

All states and territories are well supported, with nation-wide coverage of company headquarters and support capacity. South Australia appears to be particularly strong, seeing an over-represention of companies to the general population, when compared with other states (see Community).

Concerns

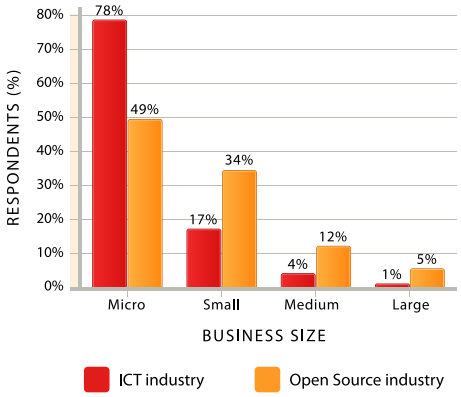
The availability of Open Source vendor support was the chief concern expressed by Australian Government agencies in the 2007 AGIMO Open Source Survey, and this perception is regularly mirrored in the local business community.

Understandably, this has had a negative impact on the commercial uptake of Open Source solutions in Australia.

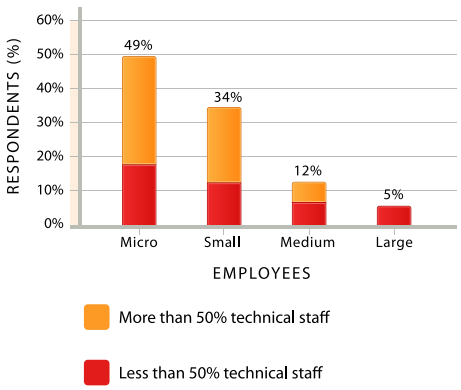
It is unsurprising that these misconceptions remain a problem, given that two thirds of the industry employ over 50% technical staff, and are more likely to be focused on getting the job done than self-promotion.

The results in this report suggest that while capability and local support options for Open Source solutions are in fact quite strong, the industry must work to quash lingering misconceptions.

Open Source vs. ICT business size



Technical focus of Open Source industry



Andrew Tridgell has spent nearly two decades as a leader, active developer and community builder for Free and Open Source software. He was the instigator of the SAMBA project, arguably one of the world's most important Open Source projects, and says he's proud to be part of the Australian Open Source community.

"The enthusiasm, open spirit and technical depth of this community shines through year after year, producing world-leading work in a huge variety of projects."

Tridge says the Antipodean spirit shines through in the casual yet deeply technical nature of linux.conf.au, our leading FOSS conference. "LCA is the highlight of the year for me, and it's become a much admired icon in the huge range of Free Software conferences held around the world each year."

Always looking for a new hacking adventure, Tridge now works as part of IBM OzLabs, which he describes as a fantastic group of free software developers who manage to produce a prodigious amount of good code "despite the appearances of never being away from the pool table for long".

"The Australian Free Software community knows that it is playing a leading role in a world IT revolution, but we approach it in a relaxed manner, happy in the knowledge that we're making the world a slightly better place, and having a heap of fun in the process. It's world domination, Australian style."

Kimberlee Weatherall is an intellectual property lawyer and academic who says her involvement with Open Source came about almost by accident. A senior lecturer in the TC Beirne School of Law at the University of Queensland, Kimberlee says she became aware of the Open Source community and its legal issues and concerns about developments in IP through her work in academia.

"Over time I found myself working on Open Source issues more. I couldn't write code then, and still can't, but that hasn't stopped me being involved, and feeling welcome at some very techie conferences and events."

Kimberlee presented papers at linux.conf.au in 2007 and 2008 on the state of IP globally and its impact in Australia. From 2002 to 2007 she contributed to public understanding of IP issues in Australia by publishing Weatherall's Law, a blog which discussed the impact of laws such as the Digital Millenium Copyright Act and the Free Trade Agreement with the USA.

"It's a smart, exciting, interesting, and friendly community - slightly addictive even."

Kimberlee was awarded the annual Rusty Wrench award for service to the free software community at linux.conf.au in 2007.

Community.

The Australian Open Source community is more diverse than the stereotypical young, single, student programmer.

Interstate & International

State representation of the community is similar to the general population, with notable over-representation in the ACT and South Australia. This strength may be due to the large amount of Open Source related research and defense work in SA, and the presence of inspiring developers such as Dr Andrew Tridgell at the IBM OzLabs Linux Technology Centre in the ACT.

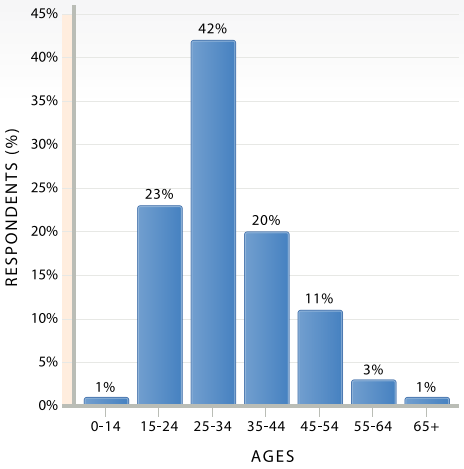
The community represents 28 countries of origin, including Australia (80%), the UK (4%), New Zealand (3%), China (2%) and Germany (2%), while 7% are Australians living overseas (see Business Development).

Generations

While the median age of the community (30) is lower than the median age of the Australian population (36.9), a broad range of ages are represented – the youngest respondent was 11 years old, and the oldest was 67. Over half of the community are in a relationship, while almost a third have children. The "children of Linux" are growing up – and raising the next generation of the Open Source community!

We found three clear 'generations' of Open Source contributors. The first coincided with early Unix and code sharing long before it became known as "Open Source". Now between 45 and 55, we endearingly refer to them as our "greybeards" (hirstute or not).

Ages of community respondents

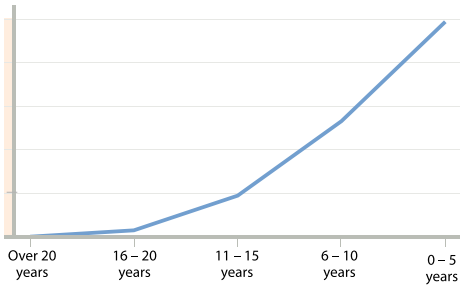


A surge of contributors born in the late 60s and early 70s are likely to have encountered early Free Software such as GCC – and the eventual arrival of the Linux operating system in 1991 – during university.

Many of the 42% of respondents aged 25-34 would have found Open Source through university or other educational venues during its popular development and industry boom in the late 90s and early 00s. There were more 25 year old respondents than any other age.

The 1999 debut of linux.conf.au (as CALU) is partially responsible for the large upswing of community participants in Australia over the last eight years. Overall, the community is enjoying solid growth, with an increasing number of fresh faces, of diverse ages and backgrounds, getting involved every year.

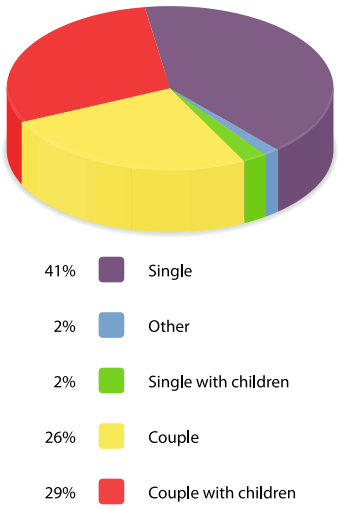
Generations of community growth



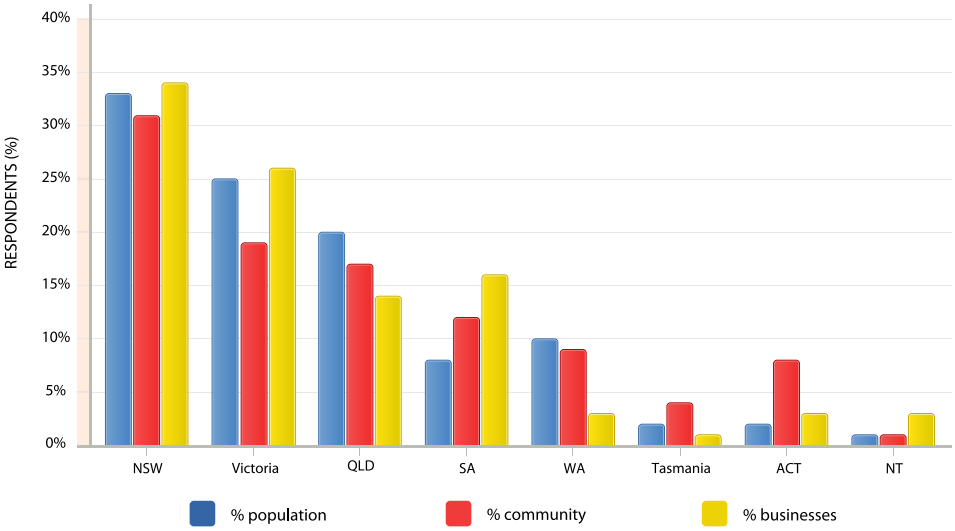
Community Engagement

The community is active, engaged and well connected, with 65% of respondents holding membership of a community organisation such as Linux Australia or a local user group, and 61% attending Open Source conferences.

Family status



Open Source companies, individuals and general population by state



7.3% women

Women represent just 15% of workers in the ICT industry (ACS 2008). So, while the representation of women in the Australian Open Source community is indeed low, 7.3% is comfortably higher than the 1.5% suggested by FLOSSPOLS (2006).

Women tend to join the community later than men, albeit with a slower growth rate overall. Events such as linux.conf.au have seen a huge growth in the numbers of female attendees (15% in 2008 up from 4% in 2003), largely as a result of the popular Linuxchix mini-conference, which began in 2007.

While fewer women are unemployed, they received lower salaries than men – even for equivalent jobs. More women were employed as web developers, and more worked in casual, part-time and contracting roles than their male colleagues.

Open Source software is used extensively at the **Queensland University of Technology** by the Faculty of IT. Some of the key advantages of Open Source as a teaching platform are added flexibility, lower costs, and transparency.

Undergraduate students are exposed to Open Source right from their first semester of study, through to study at advanced postgraduate levels, alongside with proprietary software, thus enabling them to make well-informed choices as to the merits of both.

Professor Mark Looi, Deputy Dean of the Faculty says that "Open Source has contributed significantly towards the success of the teaching, particularly in the networking and software engineering areas, where the inherent flexibility of Open Source enables students to experiment more creatively and gain more in-depth, hands on skills."

Associate Professor Jim Hogan says, "At QUT we have long tried to expose our students to both proprietary and Open Source technology stacks in the software engineering courses, something we've tried to reinforce in capstone projects by allowing many students to make their own technology decisions. Happily, we've received very good support from both sides of the open-proprietary divide."

The Faculty of IT uses Open Source within the teaching program, and also has many staff members who actively contribute to both the development of Open Source projects and the use of Open Source to share the results of active research projects.

Education & Skills.

The most valuable Open Source skills are forged outside the classroom, in the hands-on lessons of open, collaborative development and practical, commercial experience. The industry and community are very much aware of this, but most of our formal educational institutions have some homework to do.

Community

While the "student coding in his bedroom late at night" stereotype is now widely understood to be a flawed picture of the Open Source community, it is difficult to discount the significant contribution of student procrastination to the public good.

Indeed, 54% of respondents hold a university degree, 16% are currently studying full time, with an additional 7% studying part time. On the whole, members of the community are more likely to be well-paid professionals than students eating pizza and living at home.

Most respondents (67%) believed that their Open Source skills were learned outside formal education – instead they were self-taught, or learned in practical and social settings such as Open Source projects and mailing lists.

All is not lost for universities, however: Time spent at university correlates closely with the period in which respondents began participating in the Open Source community, particularly among the younger age groups. Exposure to Open Source platforms and communities during university years appears to be habit-forming.

QUT was the most popular university among respondents, while the University of NSW produced the highest earners.

Further qualtitative investigation into the state of Open Source education among our primary institutions will be the focus of an upcoming research project.

Industry

The Open Source industry is hungry for skilled workers (see Careers & Employment), but tends to view the influence of formal education similarly to the community.

Industry participants clearly ranked experience in Open Source projects, followed closely by experience in an Open Source company, as the most valuable experience for new employees.

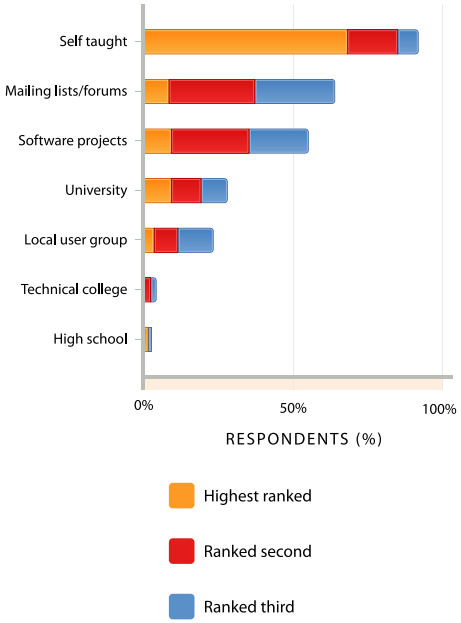
Respondents were less convinced about the value of formal education, and did not believe that institutions such as universities, technical colleges or high schools could deliver the skills and competencies they required.

The technical and development skills most desired by the industry include general programming skills, Linux, web technologies and PHP in particular. The experience of community respondents correlates well with the skills required by the industry – particularly in the area of general programming, which is the hardest to recruit of all the skills.

The most desired personal attributes were motivation, reliability, ability to learn, and attention to detail. The cultivation of these skills and attributes should be considered by ICT education institutions and schools as the bare minimum to prepare students for the rapidly growing Open Source workforce.

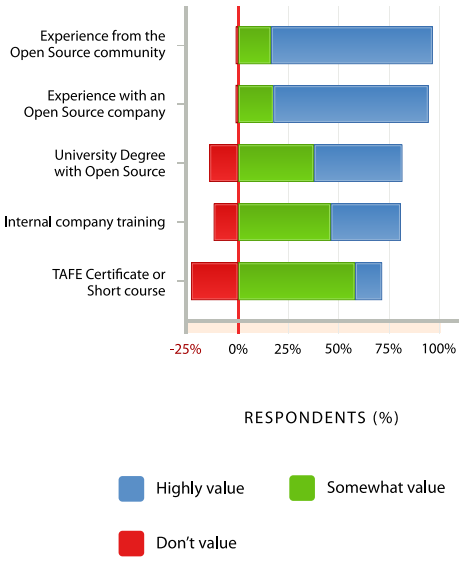
The industry's awareness of the value of community participation suggests a strong case for education institutions to better engage with the community as a mechanism for learning and job opportunities – and the industry needs to support such efforts.

Where we learn Open Source skills



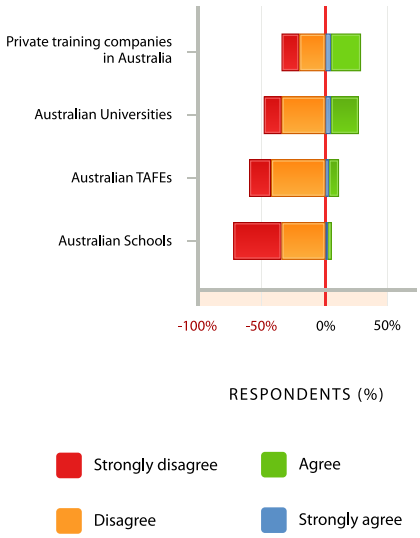
Industry value of training & experience

How much do you value the following Open Source certifications and training in new employees?



Industry perception of education venues

Do you think the current level and depth of Open Source education in the following categories deliver the skills and competencies you require?



Most popular Australian universities

Percentage of university attendees indicated below.

Queensland Uni. of Technology	7.3%
University of Sydney	6.8%
Australian National University	6.3%
University of Queensland	6.3%
University of Melbourne	6.3%
Monash University	5.9%
University of New South Wales	5.9%
University of Adelaide	5.9%
University of Western Australia	4.9%
University of Tasmania	3.9%

Like many software developers, **Rusty Russell** began exploring programming and open source technology while he was still at school. Ten years after his involvement in Open Source helped him land his first job, Rusty's contribution to the community has included the founding of Australia's annual Free & Open Source Software conference, linux.conf.au, now in its 8th year.

Rusty says his involvement with Open Source has been integral to his technical and career development. His exposure to Open Source in the workforce started in his very first job working in a small company which turned to Open Source technology to give the IT team access to new technology resources and options without stretching the budget. Experience taught him how easy it is to participate in Open Source development through online collaboration. This participation plugged him into a global network of Open Source developers which helped hone his technical skills and gave him access to a global job market.

"The first indicator of passion and talent is the Open Source projects to which someone has contributed or founded."

Experience with open source technology can help developers by giving them more options in how they overcome technical challenges, says Rusty.

"Even when I was a contractor for a much larger organisation, my knowledge of Open Source enhanced my performance. I knew that we could modify Linux to meet our unique requirements which no off-the-shelf offering could fulfill."

Now a senior software developer with IBM Australia, Rusty says programmers with Open Source experience are in high demand. In fact, demonstrated activity in Open Source development puts people at the top of his hire list.

Careers & Employment.

Community respondents are mostly full-time employed ICT professionals, many of whom found Open Source work and skills through their participation in the community… However, some are not involved in ICT at all.

Employment

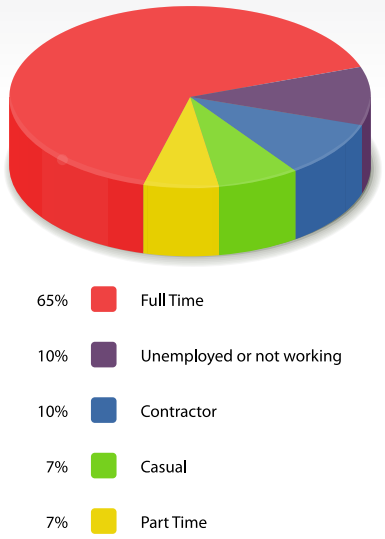
The community represents a diverse range of skilled participants, from ICT professionals to journalists, lawyers, teachers and artists.

Although software engineering was the most common role among community respondents, there were only 23% in total.

While the majority of the community are employed in ICT related roles (86%), only 29% work in the ICT industry itself. Those not working in ICT roles at all (14%) bring new perspectives, priorities, and skills that strengthen the community and make Open Source increasingly relevant and useful to the broader population.

Most of the community are employed full-time, with only 24% employed part-time, casual or as a contractor. Of the 10% not working, 6.1% are engaged in full time study. Only 3.9% are neither studying or working.

Employment status



It is encouraging to note that 43% of the community are paid to work on Open Source in some capacity.

Salaries

While the median salary for full time ICT professionals in the community isn't particularly high ($68k with a $83k average) compared to the broader industry, those working full time with Open Source (10%) do earn substantially more ($88k median with a $100k average).

Software developer salaries are on par with the rest of the industry, however the computer support staff respondents earn a pay bracket higher ($88k compared to around $63k).

We will be doing an updated comparison with the broader industry figures once the ABS statistics for 2007 are available in late 2008.

From Community to Industry

The growing number of new participants in the community loosely corresponds with the number of new people entering the Open Source workforce over the following five years. Considering the high value employers place on experience in the Open Source community, it is clear that this participation can lead to a lucrative career path.

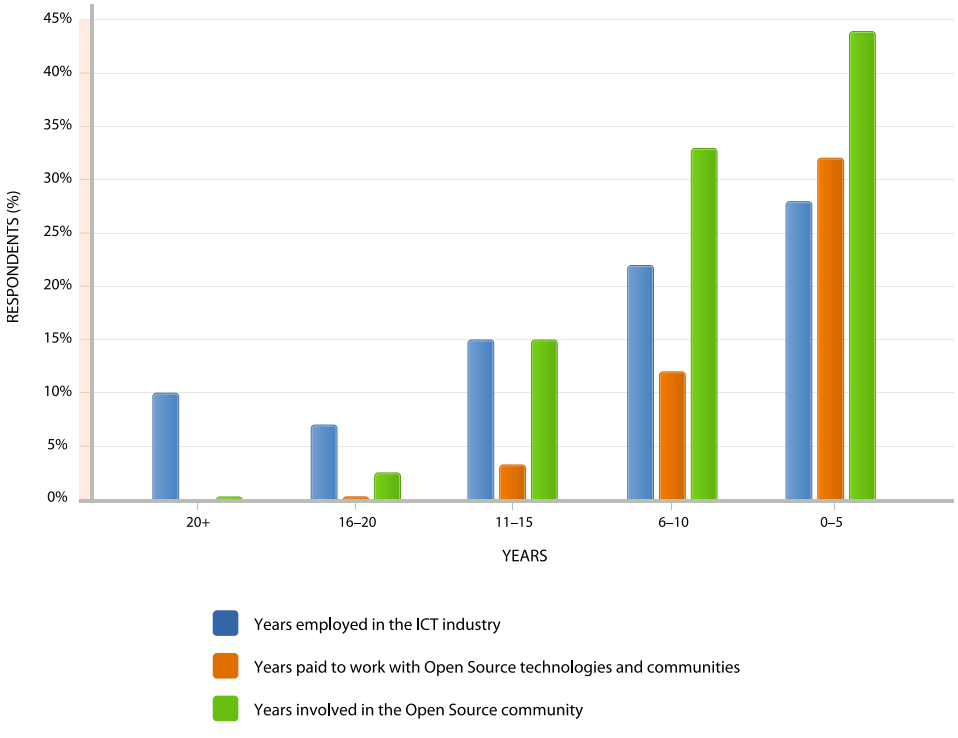
Industry Employment Requirements

We project that over 10,000 people are employed by the Open Source industry in Australia, of which around 4000 are technical staff. The Open Source industry will need to employ over 3,400 workers in the next 1-2 years, of which 65% are technical roles.

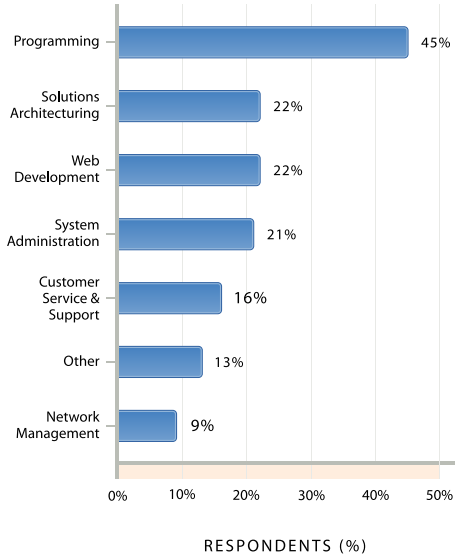
The industry is facing many recruitment challenges with 58% of companies saying skilled Open Source workers are either difficult, or extremely difficult to find.

The most difficult skills to recruit include programming (45%), web development (22%) and solutions architecture (22%). However, these skills correlate well with the capability and learning capacity of the broader Open Source community. Most companies (56%) expect to acquire their new skills through recruitment, and 44% of companies expect to train existing staff.

Years involved in community, industry, and ICT in general



Toughest Open Source skills to recruit



Gernot Heiser and **Ben Leslie** are the software developers behind **Open Kernel Labs**, a company which started life as a research project at the University of NSW. It evolved into a commercial venture which spun off from leading ICT research organisation NICTA in 2006. They have used the advantages of Open Source to be globally competitive even against larger and better resourced multinationals.

The OKL4 operating system, developed by Open Kernel Labs, is on millions of mobile phone handsets and will be on millions of set-top boxes in the near future.

"Using an Open Source model is one of the best ways to achieve significant uptake of a technology, and large numbers of potential customers can be reached at little cost," says Ben.

Open Source provided a cost effective way to develop the technology – which was of critical importance in a university research where budgets were tight. But it provided technological advantages as well.

"Using an Open Source model is one of the best ways to achieve significant uptake of a technology."

"In an R&D context, you're frequently pushing the limits of the systems you're working with. Open Source allows you to fix those limitations rather than being at the mercy of a supplier," says Ben.

Ben says open sourcing its system has been the key to Open Kernel Lab's success. "Better than any slick demo this showed that it was real, it let interested parties evaluate it without even talking to us, and gave them a degree of certainty about the cost they would be facing. "

"Open Source is not the right model for everything, but where it is applicable it is an immensely powerful means for breaking into a market."

Innovation.

The Australian industry and community constitutes a powerhouse of innovation and Open Source world leadership.

Capacity for Innovation

Almost 60% of our community contribute to over 316 unique Open Source projects, with most participating in multiple communities.

Nearly a third of our contributors hold leadership roles in their software projects, which demonstrates that we are very strong participants and leaders in Open Source, especially for such a small population.

During a visit to Australia in 2005, Mark Shuttleworth, founder of Ubuntu said, "I've found that there is a really strong talent pool here in Australia around Open Source, so that's been very encouraging."

While Australia has been one of the highest contributors per capita to Open Source around the world (Boston Consulting Group 2002), in recent years our leadership has been eclipsed by Europe as a result of significant investment in Open Source by governments and the EU.

A research project into the economic impact and opportunity of Open Source in Europe showed "increasing the [Open Source] share of software investment from 20% to 40% would lead to a 0.1% increase in annual EU GDP growth excluding benefits within the ICT industry itself – i.e. over Euro 10 billion annually".

Contributing to Innovation

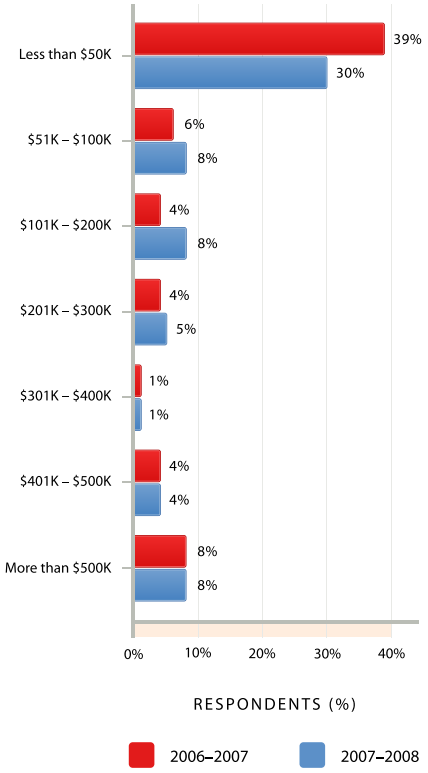
The Australian Open Source industry tends toward innovative behaviour, committing significant resources to R&D ($50 million total), which appears to be a natural function of their participation in the Open Source community.

50% of respondents claim that over 90% of their R&D spending is related to Open Source, and spending is expected to rise 7% over the coming financial year, against the declining trend of the broader ICT industry (ACS, 2008).

The industry strongly encourages staff participation in Open Source development, with 62% of respondents allowing staff to work on Open Source in work time.

This can be compared with almost half of the community paid in some capacity to work on Open Source, and demonstrates that there are more people in the community with the right skills available to fulfill industry needs.

R&D spending and outlook

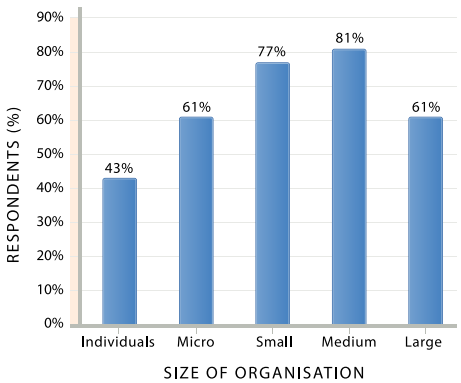


The Market.

The Australian market for Open Source is very strong in both the private and public sectors, and rapidly growing.

Industry responses have provided a prism through which we can better understand the market of commercial Open Source users.

Size of Open Source industry clients

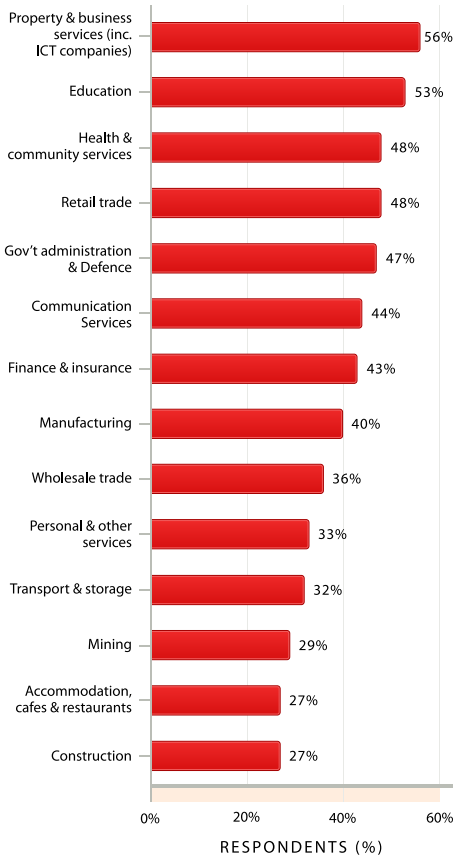


The top industries serviced by the industry are currently property & business (an ABS category that includes ICT companies), education, health, retail and government. Additionally, respondents are experiencing the strongest growth for Open Source services and solutions in property & business (ICT), education and government.

While some users and industry figures have adopted a "doom and gloom" attitude to Open Source in Australian business and government, it seems that many successful players – and their users – are seeing a very different picture.

With 61% of respondents servicing large organisations (200+ employees), it is clear that SMEs are not the sole domain of Open Source services and solutions. These figures demonstrate that the industry must work harder to make its success stories known through case studies and focused messaging.

Client market sectors serviced



Vquence CEO **Silvia Pfeiffer** came to Australia as a skilled migrant and has capitalised on our active ICT and Open Source development community to develop a successful startup business.

Silvia arrived in Australia from Germany in 1999 as PhD graduate in digital media. She joined the CSIRO to work on automated audio-visual content analysis algorithms for video, and through this work became involved in several Open Source projects including the development of Annodex, a project centred around the creation of interlinked video and audio content webs.

"For such a project to succeed, it was absolutely necessary to have it as open standards and invaluable to provide reference implementation as Open Source software," she says. The W3C is now evaluating the technology as part of its activities to standardise new video web technologies.

Silvia's career path in digital media also opened up business opportunities for her – she is now CEO of Australian start-up Vquence, a company which provides services in social video metrics.But she is one of many ICT professionals who realise the benefits of fostering the 'virtuous circle' of technology development and community around Open Source technology, through events like FOMS, an annual open media software workshop which attracts developers from around the globe.

Silvia is the key organiser of the Foundations of Open Media Summit (FOMS), former vice president of the Sydney Linux User Group (SLUG) and president of the Annodex Association.

"The quality and calibre of the Australian Open Source community is an asset that we should make the most of."

Business Development.

Open Source solutions and innovation provide numerous business development and export opportunities for Australia and our ICT sector, but more must be done to harness our existing skills base and potential.

Exports

Around half of the Open Source industry respondents service export markets (45%), generally providing computer and information services. Export revenue is estimated at over $60M, with a majority of exporters projecting growth in web and embedded development.

Australia already has a knack for similar forms of export business: "Computer and information services are the fastest and largest category of ICT services exports... accounting for almost 50% of all ICT services exports" (Houghton 2007).

As the Open Source industry is largely focused on service revenue, we see a great opportunity to grow ICT exports for Australia. The open development model and collaborative nature of Open Source gives Australian companies a standing start, and plethora of software to expand upon and integrate in new and specialised ways.

Additionally, export services based on Open Source generally contribute to export revenue without raising software royalty imports, which amount to more than 40% of the ICT trade balance deficit (Houghton 2007).

Immigration & Emigration

Open Source contributors are choosing to live and work in Australia. Around 20% of respondents have migrated here from 28 countries, and most (87%) have become Citizens or Permanent Residents. Even without a strategy in place to attract skilled Open Source contributors to our shores, Australia stands to benefit from their participation and skills in the long term.

Of the 7% of respondents living overseas, most (76%) believe that better Open Source employment opportunities exist outside Australia. The core reasons for moving to the US or UK are better career opportunities and increased remuneration, while those living in countries such as China, New Zealand and Thailand chose to do so for lifestyle and culture reasons.

Only half of the respondents living overseas have plans to return to Australia, primarily for family and lifestyle reasons. The top reason for not returning to Australia is the perception of inferior work opportunities, which is a significant problem considering the recruitment needs of the local Open Source industry.

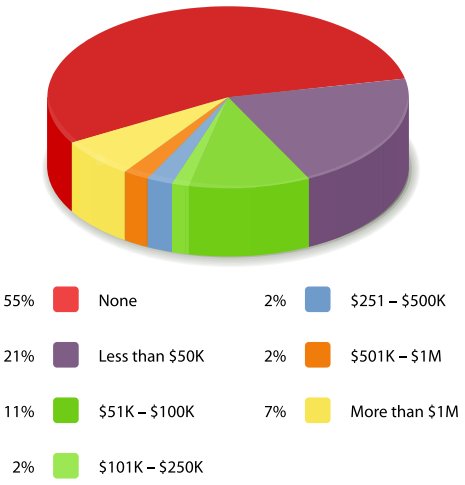
Business development

The emerging trends predicted by the industry provide further opportunities for business development and exports. The fastest growth area of services is web technologies followed by infrastructure & communications. The fastest market growth sectors are property & business (including ICT companies), education and government & defence.

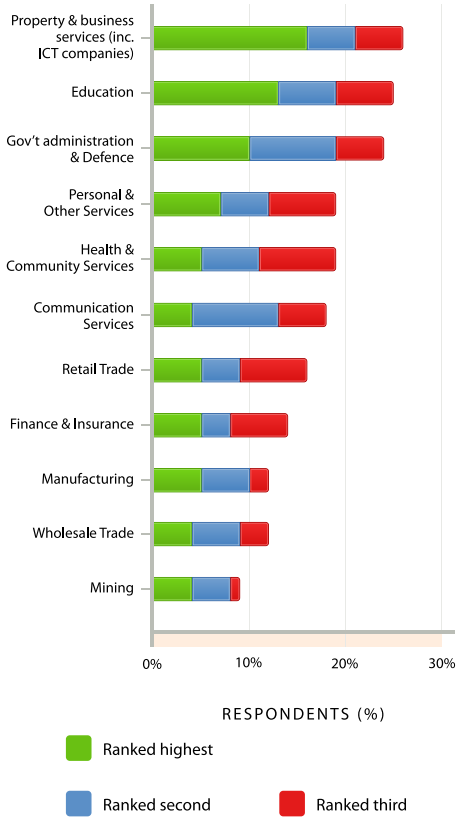
Only 16% of the Open Source industry have received external funding, of which 62% enjoy Federal or State Government support. There are significant opportunities for business development in partnership with government that the vast majority of the industry is not exploring.

State and Federal Governments are aware of the need for a strong local ICT industry, and have made numerous grant and business development schemes available. The Open Source industry should explore and pursue these opportunities in partnership with State and Federal Governments.

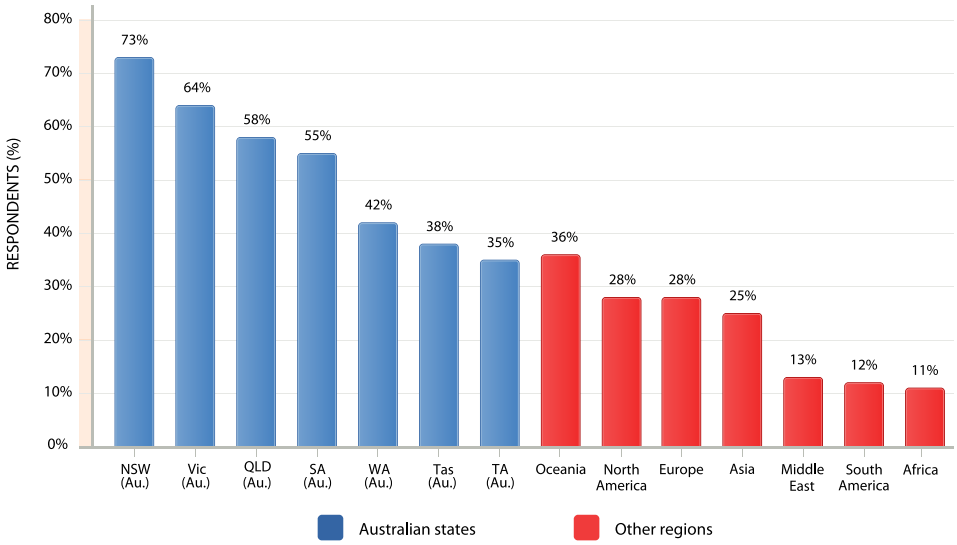
Open Source industry export revenue



Projected Open Source growth sectors



Regions serviced by the Open Source industry



Opinion.

Industry and community respondents were asked, “What do you feel are the major impediments facing increased adoption of Open Source in Australia?” Their answers focused on market knowledge and perception, leadership of industry and government, and Australia’s relatively slow adoption of new ICT solutions.

Industry

The industry opinions reflect that most of the concerns are around market fear, incorrect perceptions and vendor lock-in. Beyond these perception issues, the industry is highly concerned about a lack of skills.

The industry has broadly recognised the need for better marketing. Several companies even suggested that there are no issues for Open Source adoption in Australia, and that they are in the process of furthering this adoption quite successfully.

1. Lack of education in the market
2. Managerial fear of change
3. Perceived lack of commercial support for Open Source in Australia
4. Government/customers prefer to deal with large proprietary multi-nationals, leading to disadvantageous procurement processes such as mandating of a specific product
5. Lack of marketing and marketing budget
6. Vendor lock-in, such as proprietary systems or formats, proprietary drivers, and mandatory pre-installed software on computers
7. Incorrect perception of Open Source being low quality, difficult to configure, immature, not interoperable
8. Fear, Uncertainty and Doubt (FUD)
9. Lack of skilled workers and Open Source in education
10. Lack of suitable Open Source products in specific crucial areas for adoption, such as business and personal accounting software

“I believe that encouraging educational institutions to use Open Source software in the classroom, particularly when such software has parity with proprietary applications, would have a positive flow-on effect.”

“I believe that perception is probably the largest hurdle. Individuals perceive a higher learning curve, businesses perceive higher TCO and lower support, and government perceives open source and open standards as being far less widely used than they actually are.”

Community

The community opinions are well considered and somewhat consistent with the industry perspectives. The top issue identified is the lack of education about Open Source in the market, and this is consistent with the number 3 issue, that of misconceptions.

Vendor lock-in was raised as a significant issue by both the industry and community, while noting that the open market created by Open Source and open standards reduces the risk of lock-in.

1. Lack of education in the market
2. Vendor lock-in (answers included references to proprietary systems, contracts, tender requirements, protocols and formats, proprietary drivers, mandatory pre-installed software on computers, media formats and ATO software)
3. Perceptions of Open Source being low quality, difficult to configure, immature, not interoperable, unsupported, low industry professionalism, only for geeks
4. Apathy and fear of changing incumbent solution, Windows is a familiar habit, software freedom isn’t understood or valued
5. Fear, Uncertainty and Doubt (FUD)
6. Lack of Open Source in education, students taught a monoculture
7. Lack of marketing or community ability to effectively promote itself and Open Source (answers raised the lack of case studies or positive info about FOSS, overzealousness in the community, not enough balanced views)
8. Lack of Government leadership, investment and understanding of Open Source
9. Lack of commercial support, user training, documentation and third party applications
10. Challenges (or perceived challenges) for migration, such as cost of migration and training of staff, macros, proprietary add-ons, integation with proprietary solutions, difficulty in using Open Source, lack of suitable Open Source products for personal accounting and tax

Last Word.

Acknowledgements

Many thanks to Pascal Klein for creating our beautiful Tango-style charts and Sarah Stokely for excellent copy editing assistance.

Many thanks to the people and organisations featured throughout the report: Bob Waldie, Andrew Tridgell, Kimberlee Weatherall, Queensland University of Technology, Rusty Russell, Gernot Heiser and Ben Leslie of Open Kernel Labs and Silvia Pfeiffer.

Finally, many thanks to our sponsors, and all of the individuals and companies who completed the surveys that informed this report!

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Rusty Russell by Daniel Smith
Give me some sunshine by aussiegall

Colophon

This report was produced in Adobe InDesign, Inkscape and the GIMP, set in Linotype Frutiger Next and Helvetica Neue. Colours inspired by the tango! project.

A printed edition of the report, pictured left, is also available for purchase individually or in special bulk orders. It includes a number of features not included in the PDF version, such as this beautiful, unmissable cover and a centrefold map of Australia's Open Source industry and community. Please check the Waugh Partners website for ordering information.

Waugh Partners will publish ongoing analysis and reports from the census data, and further qualitiative research inspired by it. Please contact us if you have comments or suggestions.