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Introduction

Australia's experience in the development of the Internet and particularly within the .au domain is similar to that of many other countries in that it was managed on a voluntary basis for a long time. This arrangement served Australia well in the Internet's formative years. However, over time, as the Internet became a more important tool for businesses and others, pressure came to bear for a more robust and scalable management system for the .au domain.

In Australia, this took the form of an industry self-regulatory regime. The original push for a more formal process came about in 1996, and it has taken almost five years to get to where we are today. The reasons for this are many, but the primary reason was that this was a new technology which evolved over time to have significance for many other stakeholders than originally intended. The change from the legacy arrangement to self-regulation has met with many challenges. Australia's first attempt at self-regulation was championed by industry stakeholders, but for many reasons was ultimately unsuccessful. Government assistance was sought to facilitate the transition, and this was ultimately achieved in collaboration with key stakeholders including industry and user groups. It is important to realise that, while the Australian government has played key roles in the creation of auDA and the redelegation, it only took on these roles after this first attempt at industry self-regulation failed.

This paper will provide a historical analysis of the development of the Internet in Australia and highlight the move to a self-regulatory environment and the subsequent redelegation process of the .au ccTLD from the previous delegate, Mr Robert Elz, to auDA. Australia was the first country in the ICANN environment to go through the formal redelegation process and enter into a triangular arrangement between ICANN, auDA and the Australian Government. This achievement has been heralded by some but criticised by others for breaking ranks with the past.

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Administration of the .au domain

The Legacy

From the mid-1970s onwards, networking in Australia was predominantly supplied by the Australian Computer Science network (ACSnet) which was run by Mr Robert Elz at the University of Melbourne, and Professor Bob Kummerfeld and Peirs Lauder at the University Sydney. This relied on an x.25-based network developed by the Commonwealth Scientific & Industry Research Organisation (CSIRO) for interstate connections.

In the early 1980s, these three individuals had established a permanent Australian email connection to ARPANet, the US defence-aligned research network. In the mid-1980s Mr Geoff Huston at the Australian National University contributed an email gateway from the ACSnet mail delivery system into the University's main computer system.

In 1984, Mr Robert Elz of Melbourne University was delegated the authority to administer the .au namespace by the Internet Assigned Numbers Authority (IANA) operating under a hierarchy headed by the United States Department of Commerce. As the .au delegate, Mr Elz's responsibility included control over the delegation of authority for the development of policy, rules and standards for the administration of second level domains (2LDs) within the .au space. The Australian government was not involved in this process as, at the time, the Internet was essentially seen as a non-commercial network operated under the auspices of what became the Australian Academic Research Network (AARNet). This arrangement reflected the historical development of the Internet which was predominantly considered as a tool for use by academics and those with IT expertise.

The delegation of authority of .au to a volunteer based at a University was consistent with the delegation of responsibility to administrators in other national domain spaces, with academic and government institutions in around 240 countries becoming responsible for creating policy and registering domains in their respective country code spaces.

Development of the .au space

Apart from some technical requirements there are no internationally recognised rules on the number of second level domains (2LDs) under a national TLD, the title of those 2LDs or demarcations between those 2LDs. Individual nations are broadly free to manage naming of sites within their national spaces.

Mr Elz developed rules and administrative polices for the .au domain space, and also introduced a number of 2LDs into the .au domain, some of which are identified below. These 2LDs essentially reflected the gTLDs of the time and also included some additions that are unique to Australia. The majority of these still exist, but some have been found to have limited use.

> **.com.au** - commercial entities
>
> **.net.au** - ISPs and other network service providers
>
> **.edu.au** - educational institutions
>
> **.gov.au** - federal and state government bodies
>
> **.asn.au** - incorporated bodies, political parties, trade unions, sporting and special interest clubs
>
> **.org.au** - a catch-all, for registered organisations that do not fit within other 2LDs such as .com.au or .asn.au

.id.au - for individuals use with a set of third level domains named after flora and fauna (e.g. dropbear.id.au, echidna.id.au,emu.id.au)

.info.au - used to identify major Australian information resources.

.telememo.au - a gateway to the X.400 email service .

.csiro.au - for units of the Commonwealth Scientific & Industry Research Organisation (CSIRO), the federal research and development organization

.conf.au - for short duration conference and exhibitions (once the conference or exhibition is finished the domain must be returned).

Over time, as the demand for domain names grew, Mr Elz sub-delegated the administration of a number of 2LDs. With the exception of com.au, these continued to be administered on a voluntary basis. In 1991, Geoff Huston was delegated responsibility for edu.au and gov.au. In 1994, Hugh Irvine, a commercial ISP operation was delegated responsibility for net.au In 1995, Michael Malone, also a commercial ISP operator was delegated responsibility for asn.au In 1996, Melbourne IT signed a 5 year non-exclusive licence with Robert Elz to run com.au—this was perhaps the most controversial of the sub-delegations as it gave Melbourne IT exclusive rights over the .com.au domain which has proved the most lucrative of those operating in the .au space.

The pressures for change

Mr Elz's foresight in developing an allocation policy whereby applicants have to prove they have rights to a commercial name or that the entity is registered with a recognised government or industry authority rather than the 'first come first served' policy adopted in gTLDs, has resulted in comparatively few disputes in the .com.au space. Nevertheless, some problems did arise in the mid-1990s and these lead to growing calls for change.

By late 1995 the administration of com.au domain names was coming under increasing pressure. At this time, the domain name registration backload had increased, resulting in serious delays in domain name registration. In the midst of these pressures, and despite existing, informal registration policies, an administrative mis-communication resulted in the registration of a number of ineligible domain names. The perceived subjectivity in domain name registrations and resultant challenges and disagreements highlighted the importance of consistency in domain name administrative policies.

As noted above, in 1996, as a response to the explosive growth in com.au registrations and subsequently administrative workload, Robert Elz signed a non-exclusive 5 year licence to allow Melbourne Information Technologies Australia Pty Ltd (Melbourne IT), a fully commercial offshoot of Melbourne University, to undertake operational responsibility of com.au. Mr Elz maintained ultimate policy authority of the domain.

In November 1996, Melbourne IT introduced a fee structure for both domain name registration and, contentiously, domain name re-registration. Melbourne IT had initially planned to remove the registration of pre-existing com.au names whose owners had not paid fees by mid-March 1997. Not surprisingly, existing domain name holders resisted this approach. A class action was brought by a Perth-based ISP on behalf of com.au owners to prevent this. A resultant Federal Court injunction prevented Melbourne IT from proceeding with de-registrations. Melbourne IT agreed not to de-register any more domain names until November 1997. This development highlighted the dynamic shift in Internet administration from an academic-based forum to a legal and commercial issue.

In November 1999, Robert Elz delegated responsibility for policy development in relation to the com.au 2LD to auDA, retaining responsibility for org.au, the last of the 2LDs, until January 2002.

Towards self-regulation

ADNA the first attempt

The concept of an industry self-regulatory regime for the .au domain had broad support from industry as it represented a solution to the limitations of the voluntary system of domain name administration. It was also felt that it could provide a mechanism for dispute resolution and could remove the perception of the previous approval process being somewhat arbitrary. While this approach was consistent with government policy at the time, the government did not play a role in the first attempt at self-regulation although it did maintain a watching brief over developments.

In 1996 the Internet Industry Association of Australia (then called INTIAA, now part of IIA) proposed the establishment of a non-profit company to oversee the allocation and management of domain names in Australia in an impartial, consistent and equitable manner. At the time, it was understood that Mr Elz was sympathetic to the creation of such an organisation provided it had majority support in the Internet community.

A public meeting of Internet service providers, Internet industry associations, current and prospective domain name administrators and other interested parties (including government representatives) was held on 16 May 1997. Subsequently, the Australian Domain Name Administration (ADNA) was established and incorporated in May 1997. The primary object of ADNA was to 'ensure the operation of a functional Internet naming system for the .au. domain'.

The six initial Full Members of ADNA were

- The Australian Internet Alliance (AIA);

- The Australian Telecommunications Users Group (ATUG);

- The Internet Industry Association of Australia (INTIAA);

- The South Australian Internet Association (SAIA);

- Tradegate Australia (including the Electronic Commerce Association); and

- The Western Australian Internet Association (WAIA).

While not opposed to the concept behind ADNA, some key organisations such as the Internet Society of Australia (ISOC-AU), the Australian Vice-Chancellors Committee (AVCC) responsible for the Australian Academic and Research Network (AARNet) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) expressed concerns about the new body, namely that:

- the proposed powers of ADNA were very broad, assuming responsibility for the entire .au namespace;

- the consultation period was too short and too narrow; and

- ADNA did not have the active support of a significant proportion of the Australian Internet community.

Key individuals, who had played pivotal roles in the development of the domain name system in Australia were also not involved in ADNA.

There appears to have also been a widespread concern that the controlling body that was being put in place had only vague ideas about how it would actually control the DNS and the policies that would guide that control.

Given a lack of universal support from industry stakeholders, and internal difficulties experienced by the Board of ADNA, by early 1998 ADNA was no closer to gaining the support of the broader

Internet community than when it had begun. The introduction of competition to the com.au domain, which had been confidently expected to happen by November 1997, had still not eventuated by September 1998.

Recognising that the ADNA initiative did not have the necessary authority to operate effectively and be accountable to the local Internet community, the ADNA Board, together with other Internet industry stakeholders, requested government assistance. In particular, it asked the government to:

- facilitate the development of an effective Internet industry self-regulatory regime; and

- oversee the transfer of delegation for the administration of the .au domain space to the new regime.

On behalf of the Australian Government, the National Office for the Information Economy (NOIE) agreed to ADNA's request. The Australian Government agreed to take on this role for a number of reasons:

- it was aware of the Internet's rapidly growing importance;

- it believed that industry self-regulation was a preferred governance model; and

- it could see that catalytic intervention by Government had the clear potential to make a difference.

Significantly, the Australian Government was simultaneously playing a role in helping to establish another industry self-regulatory body known as ICANN.

Self-regulation realised with significant Government guidance

NOIE subsequently sponsored the .au Domain Summit held in Melbourne on Friday 6 November, 1998 which was attended by over 50 representatives of the Internet community in Australia. At the summit, it was agreed that:

- the Australian Internet community should establish a self-regulatory regime to take over delegation for the .au domain space from the current delegate;

- the .au Working Group (auWG) should be established to progress the issue and nominations should be forwarded to NOIE;

- NOIE would prepare two discussion papers; the first outlining the functional responsibilities of the new self-regulatory regime and the second focussing on legal and structural issues.

In December 1998 the auWG, comprising industry and government representatives, was established to develop an outline for an industry body in consultation with key stakeholders. In March 1999, the auWG reported to NOIE on the outcome of their consultations and submitted a Constitution for a company to be known as .au Domain Administration (auDA) for approval.

On 19 April 1999 ADNA convened a special general meeting of its members at which it adopted the auDA Constitution and name and at which time the ADNA directors retired and the new Board of auDA was elected.

The .au Domain Administration (auDA)

auDA was established as a not-for-profit company 'vested with the responsibility of operating the .au domain for the benefit of all stakeholders'. auDA is not a government owned corporation and is not established by specific Commonwealth legislation. The establishment of auDA reflected similar changes to the management of ccTLDs in many countries, such as the establishment of Nominet in the UK and CIRA in Canada.

auDA is based in Melbourne and is managed by a small team. auDA's membership is open to interested parties and comprises three categories of membership, namely: Supply; Demand and Representative Association. The Supply class consists of domain registry administrators and domain registration service providers. The Demand Class consists of any legal person that does not qualify for Supply Class membership. While the Representative Association class covers associations of at least 100 members, such as ISOC-AU.

The auDA Board comprises 13 members, nine of which are elected from the three membership categories, two are elected as general representatives from across the membership, and two independent directors, currently Tony Staley and Greg Crew, have been appointed by the elected Directors. The CEO of auDA also sits on the Board.

A representative from NOIE is also present at Board meetings as an observer. The relationship between NOIE and auDA has been positive and is working well.

Funding

Funding of auDA pre-competition was via a fixed licence fee model with the administrators of the 2LDs. This licence fee was determined by a number of factors, including:

- the number of domains registered

- whether the registrar charges a fee for registration services

- if the domain is 'commercial' or 'community of interest'

- if the domain uses AUNIC; and

- the capacity of the current registrar to pay fees.

In relation to the funding model for auDA post-competition, the Competition Model Advisory Panel made the following recommendations:

- funding for auDA will be secured primarily, but not exclusively, through a levy on domain name registration renewals;

- auDA will charge fees for registry operator and registrar licences to meet the cost of managing compliance with technical requirements and consumer safeguards;

- auDA may also charge fees for accreditation of registrars, complaints-handling, dispute resolution and other services, on a cost-recovery basis; and

- auDA will conduct regular reviews of its budgets and the results shall be published.

These recommendations were adopted by the auDA Board and will be the basis of auDA's funding following the introduction of competition in the .au space.

Policy development

The auDA Board establishes Advisory Panels to develop auDA's policy and procedures, and to provide expert opinion and guidance to the Board. Panels are established to provide expert, practical and considered advice after taking suitable steps to establish policies and procedures by consensus and after public consultation.

The Board establishes the terms of reference of a Panel which is to include:

1. the activity that the Panel is to undertake, including significant milestones and the outcomes the Panel is expected to deliver

2. an expected time line including commencement, reporting, public consultation, and completion dates

3.   the Chair of the Panel (if known)

4.   the individuals and representative organisations that will be initially invited to participate in the Panel

5.   a preliminary budget for the Panel to cover the support necessary to meet the objectives

Broad representation on Advisory Panels is encouraged from all key stakeholders including auDA members from each membership class, as well as representation from non-members. Following establishment of the initial membership of a Panel, the members are free to co-opt other members if they consider this appropriate or seek participation from the general Internet community.

A number of panels have been established since auDA's inception, including:

Name Policy Advisory Panel - which reviews the policies that apply to issuing .au domain names. Competition Model Advisory Panel - which determined how competition in the provision of domain name services will be introduced into the .au namespace.
Dispute Resolution Working Group - which is developing a dispute resolution framework for the .au domain

Towards redelegation

auDA was essentially established with a view to taking over the management of the .au domain administration, and while it was established and acted in good faith in developing policies and procedures related to the management of the .au domain, formal redelegation from the current delegate to auDA was required if auDA was to have legitimacy. Without this redelegation auDA could have been sidelined as it was not recognised by IANA as the delegate to administer the .au domain and as such did not have the appropriate authority to implement a number of policies, particularly those associated with the introduction of competition.

To achieve redelegation, three things needed to occur: the current delegate (Robert Elz) had to agree to the redelegation, the Australian Government had to endorse auDA as the appropriate entity to administer the .au domain, and IANA through ICANN had to be satisfied that auDA could perform the necessary technical functions to ensure the stability of the Internet. The redelegation process was to be consistent with the procedures outlined in the *GAC Principles for administration and delegation of country code top level domains* – essentially this required a triangular arrangement between ICANN, auDA and NOIE.

In practice, the current delegate proved to be very reluctant to agree to the transfer of authority to auDA, and very reluctant to communicate his concerns to the Australian Government.

In October 2000, auDA submitted a comprehensive report to the Government, detailing how it had met, or put in place the necessary mechanisms to meet, the objectives set by Government. These included requirements that the new self-regulatory regime would:

•   operate as a fully self-funding and not-for-profit organisation;

•   be inclusive of, and accountable to, members of the Internet community including both the supply and demand sides;

•   adopt open, transparent and consultative processes;

•   aim to enhance benefits to Internet users through the promotion of competition, fair trading and provisions for consumer protection and support;

•   establish appropriate dispute resolution mechanisms; and

- represent Australian Internet industry interests in the Internet domain name system at national and international fora.

Satisfied that auDA had met the necessary requirements, in December 2000, the Minister for Communications, Information Technology and the Arts, Senator the Hon Richard Alston, formally endorsed auDA as the appropriate entity to manage the .au domain space.

In June 2001, auDA wrote to IANA formally requesting the redelegation of the .au domain from the current delegate, Robert Elz to auDA. It was to be another four months before an Agreement with ICANN was signed on 25 October 2001. There were a number of reasons for the delay, among them was the reluctance of the current delegate to agree to the redelegation. ICANN was keen to afford Mr Elz the opportunity to outline his concerns. He was primarily concerned that auDA was not sufficiently representative of the Internet community and was of the opinion that if anyone was to take over the administration of .au in the immediate future it should be the Australian government. During this time, Melbourne IT wrote to IANA along similar lines, suggesting that the appropriate entity to hold the delegation was the Australian Communications Authority, the body responsible for the management of Australia's communications industry regulatory framework.

ICANN's CEO, Stuart Lynn, subsequently sought reassurances from the Australian Government on the ability of auDA to administer the .au domain space in the interests of the Internet community. The Minister for Communications, Information Technology and the Arts wrote to Mr Lynn reiterating the Government's support for auDA.

On 31 August 2001, IANA issued a report on a Request of the .au Domain Administration (auDA) for the Redelegation of .au Top -Level Domain. Under the proposal, auDA would undertake management of the .au ccTLD under appropriate oversight of the Australian Government (concerning national public-policy interests) and ICANN (concerning global technical-coordination interests).

On 4 September 2001, ICANN posted the proposed Sponsorship Agreement with auDA for public comment. On 10 September, following its public forum, the ICANN Board authorised the ICANN President to enter on behalf of ICANN the ccTLD Sponsorship Agreement for .au with auDA.

On 25 October 2001, auDA signed an Agreement with ICANN to formalise the transfer of delegation for the .au country code Top Level Domain (ccTLD). The Agreement set out the triangular relationship between auDA as the .au delegate, the Australian Government, and ICANN as the international domain name governing body. This agreement was the first such formal document establishing a relationship between a national Government, ccTLD administration and ICANN. This was based on the GAC Principles for the delegation and administration of Country Code Top Level Domains.

Self-regulation—is it working?

The move to an industry based self-regulatory regime seems to be working well at this time, and auDA has certainly made significant progress since its inception. However, it may be too soon to make a definitive statement about its success, unfortunately only time will tell.

The introduction of competition into the .au domain space is currently taking place, and auDA's success will be largely measured upon whether this transition is indeed workable and delivers the anticipated benefits of cheaper prices, more choice and better quality of service.

While the Government is confident in auDA's ability, it does have a fall back position. On 7 December 2000, the Parliament passed amendments to the *Telecommunications Act 1997* and the *Australian Communications Authority Act 1997*. The amendments clarify the powers of the Government in relation to "electronic addressing" services such as Internet domain names.

Specifically, the amendments clarify existing provisions in the *Telecommunications Act 1997* for the Australian Communications Authority (the ACA) and the Australian Competition and Consumer Commission (the ACCC) to "declare" and "direct" a manager of electronic addressing.

It also introduces a new provision into the *Australian Communications Authority Act 1997* that would allow the Minister to instruct the ACA to assume direct responsibility for an electronic addressing service, should self-regulation prove inappropriate at any time in the future.

The powers embodied in this legislation are only likely to be invoked if industry self-regulation was a failure in Australia. In this context, the Australian Government remains committed to the principle of self-regulation.

Conclusion

The work of Mr Elz and the other early contributors to Australia's domain name policies cannot be underestimated, and the stability of the .au domain space as we know it today is a legacy of the work which they undertook in the early years. However, the evolution to a self-regulatory regime, given the exponential explosion in the use of the Internet as a valuable tool for businesses, regions and general communication and research, was the logical way forward.

While the road toward self-regulation has been a long and sometimes tortuous path, it has resulted in a self-regulatory regime that is responsive, accountable and well resourced to administer the .au ccTLD in the best interests of the Internet community.

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