# 10. Broadbanding the nation: lessons from Canada or shortcomings in Australian federalism?

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## Abstract

At federation, the former Australian colonies readily agreed to the Commonwealth's ownership and control of the national telecommunications network, enshrined principally in section 51 of the Australian Constitution. Conversely, Canada's telecommunications industry developed in diverse, regionally based markets consisting of a variety of private sector businesses and provincial and municipal government-owned enterprises. As telecommunications technologies converged with media and Internet-based technologies, the changing industry structures in both countries have led to quite different outcomes in high-speed broadband. Canada embraced the plurality of its industry structure with federal policy focused on educating the diverse policy communities, aggregating demand in local and regional markets, and 'forbearance' from regulatory interference in an effort to promote cross-platform competition. Canada's policy choices resulted in Canada ranking fourth in the Organisation for Economic Cooperation and Development (OECD) in 2007 in terms of broadband infrastructure access and speed of the services. On the other hand, Australia's device-based industry structure, combined with its centrally-controlled communications policies, struggled to keep pace with the converging technologies and effectively prevented local and regional interests from being heard in a debate dominated by the federal government, the Australian Competition and Consumer Commission (ACCC), Telstra, and professional lobbyists. Local and regional interests were effectively ignored while Telstra blamed the federal government and ACCC for the state of Australia's broadband infrastructure and speeds which rank well below the OECD average. During the 2008 federal election, Kevin Rudd announced the Labor Party's intention — if elected — to massively extend the reach of broadband technology as an essential element in nation-building. This chapter reflects on the implications for nation-building of Australia's centrally-controlled federal communications policy, and its long history of government-controlled, one-size-fits-all infrastructure solutions.

## Introduction

This chapter reflects on the implications for nation-building of Australia's centrally-controlled federal broadband policy, and its long history of government-controlled, one-size-fits-all infrastructure solutions. Drawing on early qualitative findings from a series of interviews with telecommunications industry elites conducted in Canada and Australia during 2006 and 2007, this chapter posits that Australia's nation-building future rests on a reinvigoration of federalism to enable local and regional communications solutions to address local and regional communications problems. The reasons for this are twofold. First, research on the social uses of broadband technologies indicates that improving the infrastructure is not, as some would believe, about providing entertainment or solving a digital divide issue which may not justify significant public expenditure — it is 'a social network and productivity issue … [and] an investment in social capital' (CEDA 2006: 22) which is necessary if Australia is to maintain its current standard of living. Traditional social networks exist physically at the local and regional levels, while broadband technologies enable digital social networks which extend beyond geographical bounds, providing numerous social and economic benefits. In this social environment, broadband technologies require physical infrastructure which is necessarily situated amidst the local as established by geography and the needs of the citizen. Thus local issues are important if the broader 'digital' needs of citizens are to be met. After all, it will be difficult for governments to justify public expenditure on a broadband network which does not meet the needs of its citizens as users (this concept is explored by Coleman & Skogstad 1990; Coleman 2007).

Second, where social capital is defined as the 'social norms, networks and trust that facilitate cooperation within or between groups… [which] can generate benefits to society by reducing transaction costs, promoting cooperative behaviour, diffusing knowledge and innovations, and through enhancements to personal well-being and associated spill-overs' (Productivity Commission 2003: viii), a single national solution may be regarded as paternalistic in circumstances where citizens as users are not involved in the decision-making process.[1] Given the specific knowledge requirements for citizens as users to be gainfully involved in communications policy processes, paternalistic solutions tend to detract from social capital rather than create it. Where the citizen as user is excluded from decision-making processes due to a lack of policy experience, they are subsequently excluded from gaining skills to participate effectively in future policy processes. The nation-building project may be largely finished in terms of large-scale infrastructure projects (Butcher 2007), but the future of nation-building in the global information economy is one of increasing social capital by establishing communications networks which are accessible and deliver the services which citizens as users need and can afford. Increasing social capital in this environment requires citizen engagement — a requirement that

is likely to become more important as technology provides citizens with greater access to information and interactive media.

The key argument developed in this paper is that contemporary nation-building requires citizen participation and strategically-focused policies which facilitate citizen engagement and federal systems are well-placed to enable such approaches. Various commentators have indicated that if Australia is to maintain its current standard of living, high speed broadband is a necessity (Smarr cited in Hartcher 2007). However, evidence of the advantages of public investment in broadband infrastructure remains incomplete (Crowe 2007a) or lacks empirical rigour (see for example Bell Canada Enterprises 2006; Business Council of Australia (BCA) 2008a; Crandall et al. 2007; Douglas 2007; Foreshaw 2006). Moreover, academic challenges to the status quo (the single national solution) in Australia continue to be regarded as 'left-field' (Sainsbury 2006). To shine some light on the 'left-field' debate, two approaches to broadband infrastructure deployment in two most-similar federal jurisdictions are compared from a nation-building perspective in Canada and Australia. The following sections focus on the Australian way of 'doing' communications policy, the influence of history on nation-building, and the persistence of the single national policy solution in the broadband era.

## The Australian way of 'doing' communications policy

Historically, telegraphy was a major component of the nation-building projects in both Canada and Australia. The technology is significant today in that it ushered in the information age (Copp & Zanella 1993: 14; Livingston 1996: 6-7; Williams 2001: 15) and established a conceptual framework for policy-makers responding to modern communication challenges. While broadband technologies have surpassed the capabilities of the broadcasting and telecommunications technologies of the twentieth century, conceptual remnants from the initial stages of the information age tend to circumscribe policy choices for deploying contemporary broadband infrastructure in Australia (Gans 2006). At federation, the former Australian colonies readily agreed to the Commonwealth's ownership and control of the national telecommunications network, enshrined principally in section 51 of the Australian Constitution. Conversely, Canada's telecommunications industry developed in diverse, regionally-based markets consisting of a variety of private sector businesses and provincial and municipal government-owned enterprises. As telecommunications technologies converged with media and Internet-based technologies, the changing industry structures in both countries have led to quite different outcomes in high-speed broadband.

Canada embraced the plurality of its industry structure with federal policy focused on educating the diverse policy communities, aggregating demand in local and regional markets, and 'forbearing'[2] from regulatory interference in an effort to promote competition. Such policy choices resulted in Canada ranking

fourth in the Organisation for Economic Cooperation and Development (OECD) in 2007 in terms of broadband infrastructure access and speed of the services. On the other hand, Australia's device-based industry structure,[3] combined with its centrally-controlled communications policies, struggled to keep pace with converging technologies and effectively prevented local and regional interests from being heard in a debate dominated by the federal government, the Australian Competition and Consumer Commission (ACCC), Telstra, and professional lobbyists (Crowe 2007c; Lee 2007; Warne-Smith 2007). Local and regional interests were sidelined (Marris 2007; Sainsbury 2005) while a passionate debate over responsibility for the state of Australia's broadband infrastructure and speeds, which rank well below the OECD average, raged publicly between Telstra, the Howard government and the ACCC (Crowe & Boyd 2005; Lee & Bajkowski 2007; The Australian 2007). During the 2008 federal election, Kevin Rudd announced the Labor Party's intention — if elected — to massively extend the reach of broadband technology as an essential element in nation-building. Following Rudd's election victory, 'broadband' has been elevated in status to a ministry[4] however a single national solution continues to dominate the broadband policy discourse in Australia.

Research suggests that single, national broadband solutions do not 'create a program delivery system that is cost-effective, easy to use and highly responsive to the needs of citizens' (Information Technology Office 2005: 14). The increasing trend toward centralisation appears to be reinforcing 'state paternalism' which is at odds with the need to create 'social capital'. To Kelly (Kelly 1992: 98), 'state paternalism' was an historical approach to policy-making in Australia which was 'familiar and comfortable' to organised interests. While many have critiqued Kelly's concept of the Australian Settlement (see for example DeAngelis 2004; Smyth 2004; Stokes 2004), 'state-paternalism' provides a useful conceptual framework for understanding the Australian way of 'doing' communications policy (see Castles cited in DeAngelis 2004; also Stokes 2004). However, the paternalistic approach appears to have had its day. As Rhodes (Rhodes 1996) suggests, active policy communities operating independently of centralised systems of control tend to be 'a challenge to governability because they become autonomous and resist central guidance'.

A new way of 'doing' communications policy in Australia is likely to improve access and equity in relation to policy programs which to date have been unsatisfactory. For example, in its performance audit of the federal government's program 'Networking the Nation —The Regional Telecommunications Infrastructure Fund', the Australian National Audit Office (Australian National Audit Office 1999: 13) found that significantly more funding through the program went to Coalition-held electorates. Although the audit report found that 'decision-making was equitable, with no obvious weighting in the allocation of funds to particular political parties', 72% of the funds allocated went to Coalition

seats with only 23% of the funding allocated to Labor seats. Centralised power in this regard clearly benefited the Coalition for electoral purposes. Further, the allocation of funds to the states was based on proportion of population with 'no other needs assessment undertaken to implement the Government's decision on the allocation of funds' (Australian National Audit Office 1999: 15). It is not unreasonable to assume that local needs in electorates held by other parties received fewer benefits from the program. Moreover, the central administration's ability to deliver program funding to citizens has also been called into question, especially in administrative efficiency and effectiveness in terms of actually delivering programs. The 1999 audit report suggested that 'given the Department now has some experience in administering the program', administrative costs could be reduced. Yet seven years later, the Metropolitan Broadband Connect program announced in March 2006 to provide $50 million to improve suburban broadband services indicated that the central administration was still struggling to deliver broadband programs (Crowe 2007b). Indeed, by February 2007 most of the funding remained unspent except for $1.3 million in 'administrative costs' and Australia was still well behind Canada in the OECD broadband rankings.

Canada's results in deploying broadband infrastructure and the key themes emerging from interviews with industry elites suggest that sound policy outcomes result from: encouraging bottom-up engagement with diverse policy communities through provision of municipal (local), provincial (state), and federal representation of local and regional interests; educating policy actors through formal involvement in policy processes; enabling local and regional solutions to broadband infrastructure through partnerships between various combinations of public, private and third sector organisations; reorganising the formal boundaries of the converging communications industries; and 'forbearing' from competition where different service providers are competing for customers who require similar services which can be provided by a variety of different media. The latter concept is referred to here as 'technological neutrality' where functionality, rather than a particular technology, is regulated (Computer Laboratory 1997). Most of these approaches are absent in Australian broadband policy programs, suggesting that an old way of 'doing' communications policy persists. To this end, attention is now focused on early approaches to nation-building in an effort to determine history's influence on the 'Australian way'.

## The influence of history on nation-building concepts

Historically, the term 'nation-building' in Australia and Canada meant 'building infrastructure' (see Vance cited in Infrastructure Canada 2006; Putnis 2002).[5] However, these two countries adopted very different approaches to the nation-building project — differences reflected in their distinct approaches to the practice of federalism today. Watts (cited in Mathews 1982: 13; see also

Brown & Bellamy 2006: 12) states that Australia began as a decentralised federation which has since moved toward a 'centralised coordinative federalism'; in effect a unitary system of government in-waiting. Canada, on the other hand, began highly centralised but has since become 'largely coordinate and even conflictual in character'. More to the point, Watts (cited in Mathews 1982: 14) suggests that Canada has both strong national communities *and* provincial communities as a result of competing 'nation-building' and 'province-building' processes which have occurred concurrently since Confederation in 1867.

The existence of a 'vibrant French-Canadian component' in Canada helped establish a 'heterogeneous federal society' and competition between national and provincial institutions resulted in political legitimacy 'oscillating between periods of centralisation and decentralisation' over time (Watts cited in Mathews 1982: 17). This is in stark contrast to Australia's trend toward centralisation which has gathered momentum in recent times. The extent of the federal government's attempts to take control of traditionally state-run policy areas include, for example, public housing (ABC News 2007b), hospitals (ABC News 2007a), industrial relations (Shaw 2006), courts (Attorney-General of Victoria 2007), education (Ferrari 2006), and social policy (AAP Australian Associated Press (AAP) 2007), indicating that Watts' (cited in Mathews 1982) observations some three decades ago remain extant.

Geography also played a part in the different practices of federalism in Australia and Canada. Australia's remoteness required a greater focus on communications technologies to overcome the tyranny of distance and cooperation between the dispersed colonies (settled mostly in coastal regions) commenced well before[6] the Overland Telegraph Line was connected with the submarine cable from Java in 1872. At federation, section 51 (v.) of the Australian Constitution gave the federal government legislative responsibility for 'telegraphic, telephonic, and other like services'. This level of cooperation was peculiar to communications. For example, while the states retained responsibility for railways at federation, the communications network was considered 'properly a national enterprise' by all jurisdictions (Putnis 2002: 2). Australia had a national telegraph network connecting it to the rest of the world but it did not have a national, uniform-gauge rail network as a result of railways being deployed independently by colonial governments (Department of Infrastructure 2008). Conversely, Canadian federalism was concerned with connecting communities which formed predominantly along the overland northern border of the United States and focused on 'railway-building and the expansion of Canadian territory' (Burgess 1990: 43). Telegraphy, although preceding the construction of the Canadian Pacific Railway, did not acquire the same level of importance as the railway (Boyce 2000). Indeed, the impetus for confederation was the condition that 'the Dominion government build a railroad' to connect the provinces (Velaz 1997: 54). Consequently, Canada's rail network was transcontinental while provincial

governments tended to facilitate local telegraph infrastructure to the north of the transcontinental railway line through local combinations of public, private and community ventures.

The Australian and Canadian experiences of deploying railways and telegraph technologies suggest there are advantages in single solutions for building 'national' infrastructure where none exists. Indeed, railways and communications networks were often regarded as conceptually similar because of their concurrent historical deployment. Yet the institutions responsible for communications policy are still grounded in the principles of their early federal predecessors in that Canada's communications network tends to be developed at the local and regional level while Australia persists with a single national solution.[7] As the convergence of communications technologies is making the railway/telegraph concept less relevant — one might think of modern communications technologies such as broadband as more of an entire transport system rather than simply one element of the system — it is timely that Australia's nation-building model is reconsidered.

The conceptual separation of transport and communications is a recent phenomenon. The telegraph was largely responsible for the information age and Livingston (Livingston 1996: 6) suggests that telegraphy enabled the separation of transport and communication in a practical sense. Nevertheless, 'distinguishing communication from transportation' conceptually in scholarly works mostly occurred in the late 1980s. Indeed, some industry elites still adopt the 'railway' concept in discussing broadband deployment, but this concept relates to the 'carriage' of data via a 'line' rather than the approach to deploying the infrastructure. However, single national solutions were only referred to by Canadian industry elites in their historical context. Diverse policy actors and market players tended to focus on how they serve citizens or customers respectively rather than debating the merits of federal communications policy. Most industry elites spoke of communications policy in terms of simply 'forbearance' and it was apparent that greater cooperation exists among policy actors in Canada. In sharp relief to Australian industry elites, most Canadian policy actors were focused on providing solutions to local problems while business people generally discussed market competition issues rather than focusing on problems with the regulatory system.

Australia's nation-building approach to deploying communications infrastructure was enabled by a collaborative culture resulting from some 50 years of cooperation between the various colonial governments before federation (Putnis 2002). During that time, government distaste for privately owned networks was obvious. For instance, the first privately-owned telegraph network was established in South Australia by James McGeorge, a business owner who ignored the Colonial government's opposition to privately owned infrastructure (Moyal

1984: 20). Once his network was established, the Colonial government promptly purchased the competing network and simply dismantled it. Government control of telegraphic infrastructure also thwarted Samuel McGowan's[8] desire to create a business out of the new technology and despite some success as a telegraph construction contractor, he was eventually coerced into becoming 'general-superintendent of the new electric telegraph in Victoria' (Moyal 1984: 18). Following federation, the Australian government retained responsibility for the communications network and invariably controlled the broadcasting and telecommunications industries (see Australian Heritage Commission 2003 for details). Seven decades later, deregulation of the telecommunications industry commenced with the corporatisation of Telecom Australia in 1975 and market-based solutions have proven popular for many years since. However, federal intervention in media and communications remains a popular policy tool for Australian governments, despite the private nature of most communications providers.

Australian industry elites focused on very different themes to their Canadian counterparts. Government intervention, various obstacles to infrastructure deployment, *ex-ante* regulation[9] (ITU International Telecommunications Union (ITU) 2008) and an unpredictable industry environment coupled with suspicion of other policy actors were recurring themes. These themes suggest that contemporary market-based approaches to communications services provision in Australia are yet to achieve the level of acceptance which has accompanied the relative 'market maturity' experienced in Canada (Spool 1997; Total Telecom Magazine 2007).[10] The overview of Australian communications history above provides some insight into these phenomena. Nonetheless, a single national solution designed by the federal government persists as the dominant paradigm for fixing Australia's broadband problems. Much like the telegraph solution, the focus on a single part of the communications infrastructure suggests that the out-dated transportation concept of communications deployment continues to inform Australian policy choices. Regrettably, the 'Australian way' is of little value in appropriately connecting citizens as users in a time of rapid technological change.

## The persistence of the single national solution in the broadband era

Nation-building in Australia has generally been neglected since major government-led infrastructure projects such as the Sydney Harbour Bridge and the Snowy Hydro Scheme were completed. The rise of 'economic rationalism' in Australian policy (see Pusey 1991), which has seen a shift from government-led to business-led infrastructure development, is often blamed for contemporary infrastructure problems. Aside from government neglect of infrastructure, the shift from public to private funding has created its own problems, particularly

in the way that governments have attempted to keep the details of public-private partnerships shrouded in secrecy (see for example Scott & Allen 2005). Consequently, the public's support for major, government-led engineering feats has not been forthcoming for private sector infrastructure projects, despite the obvious engineering significance of major private-sector projects (Shepherd 1999). In some instances, businesses have agreed to commercial documents being released for public scrutiny but it has been governments who have resisted. For example, public-private partnership projects such as Sydney's Cross City Tunnel have been the subject of significant public opposition (Smith 2005)[11] toward both the public and private proponents of the project with many citizens regarding themselves as 'collateral damage' in the negotiation process (Fullerton 2006). Changing the provider of funding for infrastructure projects has not changed the single policy solution. In the foreseeable future, it is unlikely that Australia will reduce the use of public-private partnerships to fund large infrastructure projects. Nevertheless, consumer groups are concerned that governments will 'sell out consumers' long term interests by caving into industry pressure' in their 'haste to appear to have the instant answer on broadband' (Choice 2007).

The major differences between Australia and Canada are reflected in the two approaches to deploying broadband networks. Lehr et al (2005: 3) provide a simplified explanation of these two approaches, in that the differences 'may be caricaturised as a battle between the traditional service provider business model for providing network services versus one based on end-user equipment', with Australia adopting the former, and Canada more closely resembling the latter. History has influenced the current structure of Australia's telecommunications industry and the impact of technological convergence on policy-making has been neglected for many years. This has led to false industry boundaries between the telecommunications and various media industries in Australia, where regulation is designed predominantly for communications industries which remain traditionally structured on devices rather than functionality.

The phenomenon where industry changes remain elusive is often referred to as 'excess inertia' in game theory where 'no one benefits from the new [way of doing things] alone, [so] each participant may rationally stick to the old, inefficient [way of doing things]' (Boyer et al. 2001: 406). For example, competitors in the Australian telecommunications industry are often restricted to second-mover strategies (for an overview of the concept, see Hanson et al. 2002: 168-9) because of Telstra's market dominance. This forces competitors to 'imitate' the market leader rather than venture new approaches (Boyer et al. 2001: 406-7; see also Dosi cited in Carter 1981: 182-202). Moreover, successive federal governments have encouraged Telstra's competitors to imitate the market leader by persisting with outdated industry structures. Telstra Chief Executive Officer Solomon Trujillo (Trujillo 2006) refers to these converging sectors as the

'media communications' industry and the term is adopted here to differentiate the new industry from the traditional telecommunications and media broadcasting industries.

Local interests persist despite the Australian preference for national communications solutions and federalism is an important element in addressing these competing local and national interests. Indeed, federal systems have traditionally provided political solutions to overcome political issues associated with uniting regional jurisdictions and interests into a single nation-state. However, the secrecy and push to further centralise power under the Howard regime impacted upon communications policy and has effectively limited the involvement of local and regional interests in the policy process (Sainsbury 2006). Centralisation of power is important from a social capital perspective, in that the institutions of government 'set the rules: 'routines, procedures, conventions, roles, strategies, organisational forms and technologies around which political activity is constructed' (March & Olsen 1989: 22). The centralisation of power can, over time, become the 'new way of doing things' which decreases opportunities for local and regional institution-building. Crick (Crick 2006) suggests that social capital is reduced where political activity is restricted to certain 'non-revolving' elites by providing little opportunity for others to add to the debate. In Australia, this occurs at two levels which are absent in Canada. First, the centralisation of power in the federal government reduces the ability of sub-national governments to deal with regional and local issues. Second, traditional industry boundaries mean that businesses compete in the market on functionality, but are regulated by the devices used to provide the function. Each level of restriction contributes to the latent protection of entrenched interests, thus reducing access to citizens both as policy participants and users of technology.

Canada's 'oscillating legitimacy' between federal and provincial custodianship is noticeable in the media communications industry and improves citizen and user access to policy debates through greater policy transparency. For example: 'It is decidedly wrong to say that only the appropriate provincial legislature can regulate what its provincially incorporated companies do in any respect. It is likewise wrong to say that only the federal parliament can regulate what federally incorporated companies can do in any respect' (English 1973: 344). This institutional arrangement is largely responsible for Canada being a world leader in broadband infrastructure and services. According to the OECD (Organisation for Economic Cooperation and Development (OECD) 2002: 6):

> Low prices, good quality service and relatively rapid diffusion of new technologies characterise the Canadian telecommunication landscape. The regulatory framework is transparent and allows for full participation

of all interested parties. Consensus building has been a key factor in the development and implementation of regulations.

Canada has focused on 'technological neutrality'[12] in determining the structure of the industry for cross-platform competition purposes. The integrated regulatory system supports competitive practices through the CRTC's 'mandate of making the telecom market as competitive as possible' (Surtees cited in Martin 2003). This approach does not only focus on large competitors such as Bell Canada, Telus and Rogers Communications. Indeed, decisions by the CRTC demonstrate that federal policy can be actualised for smaller entrepreneurial firms. For example, Xit Telecom, a Quebec-based private fibre network developer, tested the policy by complaining to the CRTC that the large providers were selling dark fibre[13] to 'end customers at rates less than the cost of new construction, while charging more to potential competitors' (see Martin 2003). The CRTC ruled that Bell Canada and Telus Communications (Quebec) were to 'file proposed tariffs for inter-exchange dark fibre access' to promote competition in the private network market to lower costs to potential customers. The complaint was lodged in April 2003 and the CRTC's *Telecom Decision CRTC 2003-59* was issued on 22 August 2003. The CRTC often resorts to its 'expedited procedure for resolving competitive issues', enabling rulings on competitive issues to be delivered relatively swiftly. Obviously similar examples of competition regulation exist in Australia, but this case relates directly to competition policy enabling private networks to be built on a competitive basis, not simply the wholesale pricing issues often associated with the battles between Telstra and the ACCC.

In Australia, the Business Council of Australia (BCA) (see Maiden 2007) has recently called for 'greater investment on the 'supply side' of the economy', particularly in the areas of infrastructure, skills and workforce participation. In its report entitled *Infrastructure: Roadmap for Reform*, the BCA (Business Council of Australia (BCA) 2008b: ii) suggests that insufficient infrastructure development in ports, roads, rail, power, and water require a 'cross-jurisdictional framework for appropriate, timely, and coordinated investment in infrastructure to meet future growth needs' along with the 'development of fully operational national markets' as essential reforms (see also Williams 2008). The report also states that broadband services are problematic in terms of low penetration and speed of broadband services. However, while broadband networks are regarded as important, and it is recognised that Australia's broadband services are falling behind the rest of the developed world, very little attention is given to the details. For instance, the BCA's focus on the 'development of a quality broadband system with comprehensive access for businesses and households' (Business Council of Australia (BCA) 2008b: 8) is, unlike all the other types of infrastructure mentioned in the report, given no indication of the anticipated improvement to

Gross Domestic Product (GDP) (Business Council of Australia (BCA) 2008b: 6). Further, communications infrastructure occupies just a few lines of the report, leaving government to provide a 'policy framework that can stimulate the investment required to match a clear view of the productivity and innovation advantages available from higher broadband speeds, a view of the competitive framework for access, and a statement on implementation timing' (Business Council of Australia (BCA) 2008b: 14).

There are two reasons for the BCA to expect the government to provide direction on the communications network. First, the federal government has constitutional responsibility. Second, and more importantly, the federal government has always dealt with communications policy.

## Lessons from Canada

As early as 1994, Canada not only had a clear federal policy advocating community involvement in establishing communications networks, but the federal government's leadership, particularly from the Communications Minister, had encouraged the diverse policy communities to 'buy-in to the Minister's vision'.[14] The federal government's leadership in communications policy encouraged the involvement and subsequent education of a diverse group of policy actors, representing a plurality of interests, who helped to shape communications policy at various levels of government and civil society. This particular group of policy actors remains influential today, with many of the community leaders involved in Canada's Information Superhighway conferences of the early 1990s occupying leadership roles including First Nation communications network developers, industry and public advocates, communications infrastructure entrepreneurs, and academics. Indeed, many of the original conference attendees were active participants in the recent Canadian Radio-television and Telecommunications Commission (CRTC) review of telecommunications regulation. Others conducted an alternative telecommunications review panel to enable citizen voices to be heard through media coverage. This alternative review panel was particularly important, ensuring community issues were included alongside the lengthy and expensive submissions put forward by the large telecommunications carriers, particularly Bell Canada.

Particularly in areas of market failure, Canadian communities have been able to work with businesses and governments at various levels to facilitate broadband infrastructure deployment. The extraordinary extent of government cooperation, at federal, provincial and municipal levels, and civil society and business involvement in the deployment of broadband infrastructure, facilitates accessibility and take-up of broadband services. For example, governments, businesses and civil society groups in Laurentian Hills, Renfrew County, Ontario, were engaged by Xit Telecom in an innovative approach to bring high-speed

broadband services to communities where most other providers are unable to make a profit. Xit Telecom uses a combination of dark fibre and microwave infrastructure and requires (generally) 30 customers in a given area to justify their infrastructure deployment. The technology is cheaper than that provided by the larger telecommunications carriers because the intelligence is in the applications (the boxes at each end), not the network itself.

Xit Telecom claims that consumers will pay CAD$39.95 per month for their broadband connection, a price which is comparable to many Australian broadband plans. Yet the firm's innovative approach to network deployment was not a result of any particular technological development, but more a case of establishing strong working relationships with governments and communities. In Laurentian Hills, community frustration at the lack of broadband services prompted federal Member of Parliament Cheryl Gallant to initiate the Broadband Renfrew Access Valley Ontario (BRAVO) project (Walker 2007a). Robert Proulx, owner of Xit Telecom, addressed a community meeting, sponsored by the BRAVO project, to put forward his proposal to establish a private network for the community, using Xit Telecom's business model. The community agreed to a small test to trial the technology's capabilities. While tests are still in progress at the time of writing, with topographical problems interfering with the line-of-sight microwave infrastructure, it appears that some more investment in infrastructure may be required to bring broadband to the community.

Despite some problems with the early trials, the integrated nature of Canadian broadband policy is likely to enable Xit Telecom to bring broadband services to the Laurentian Hills community as the approach enables local problems to be dealt with by the policy and deployment process. For instance, the local Member of Parliament has negotiated some CAD$30 million funding from the federal, provincial and municipal governments which is available for community infrastructure projects in partnership with private sector investors and infrastructure providers. Further, issues of access to property for locating microwave, satellite and wireless infrastructure and providing access to cable ducts is coordinated by the project leaders; often volunteers from the BRAVO project. Such small scale operations occur throughout Canada regularly, enabling the deployment of private networks using various business models.

An earlier federal policy initiative, run by the Internet Highway Applications Branch (IHAB) at Industry Canada, used market aggregation to improve broadband penetration in communities. Communities were encouraged to submit a Request for Proposal (RFP) for broadband infrastructure deployment. This involved various partnerships between governments, businesses and community groups in the policy process and has helped citizens as users to receive the type of infrastructure they need. For instance, Kuhkenah Network (K-Net) is a community group which has established a private network to service indigenous

communities in the remote northern regions. The fibre network enables the provision of e-health services (called tele-health in Canada) to these communities. Medical and education services can be provided remotely via an advanced video conferencing system. The growth of some of the remote northern communities may well be due to the advanced connectivity provided by K-Net.

In comparison to Gungahlin in Canberra, a relatively new suburb to the north of the national capital, Canadian communities do not face the same barriers brought about by the federal system. Telstra is the major provider in Gungahlin, although there are other providers using Telstra's network or their own wireless networks to service the area. Telstra denies there are problems with broadband in the area but residents have experienced unsatisfactory broadband services which some believe to be a result of insufficient infrastructure development (Frost 2007). Further, alternative providers available elsewhere in the Australian Capital Territory (ACT), such as the ACT government-sponsored TransACT fibre network provider, are not available in the Gungahlin area. TransACT has been able to lay fibre cable throughout the ACT on the infrastructure owned by ACTEW, the ACT's major electricity provider. Gungahlin, however, was built by developers and government joint-ventures which meant that access to the underground conduits for the electricity network did not facilitate access for TransACT's network. Here local problems favoured Telstra and, in effect, hindered local competition. In the meantime, the Gungahlin Community Council, a community group designed to represent the interests of community members, is limited to media coverage as its major influence on the policy process and the deployment of local infrastructure.

## Reinvigorating federalism

Attempts to reinvigorate federalism in Australia are not new (Brown & Bellamy 2006). Indeed, the Rudd Labor government is currently in the process of delivering 'new federalism' (Franklin 2008) through harnessing 'the goodwill of wall-to-wall State and Territory Labor governments'. In effect, the Coalition of Australian Governments (COAG) is more cooperative under Labor than it was under the previous Howard government. Nevertheless, COAG is still a centralised institution and while it does take into account state and territory issues, it is still focused on the single national policy solution. Canada's broadband outcomes from a nation-building perspective have enabled nation-building to commence from within the citizenry, rather than from an externally imposed central body. Canada's approach provides the social capital that enables communications networks to function beyond the technical capabilities and into the realm of the tacit where most social benefits can be derived.

Reinvigorating federalism in an Australian context is unlikely to move beyond the 'Australian way' if recent infrastructure initiatives offer any insight to the future. The old way of thinking about communications policy is unlikely to

develop the human element of the national network where 'the edge-nodes are both end-users and relay points that may be interconnected into a mesh to provide wide-area connectivity … [where] there is no centralized network coordination … [and] the 'network' grows 'virally' as end-users add equipment to the network' (Lehr et al 2005: 3). The establishment of Infrastructure Australia (see Walker 2007) will no doubt improve some aspects of Australia's infrastructure crisis, but treating broadband infrastructure in the same way policy–makers treat other types of infrastructure is conceptually narrow and unlikely to meet the needs of citizens as users. Canada provides a number of lessons for Australia in reinvigorating federalism — considered here an enabling quality of modern nation-building. Regrettably, the 'Australian way' persists and is likely to do so into the foreseeable future unless 'left-field' ideas which challenge the status quo are considered seriously in policy debates.

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## ENDNOTES

[1] Coleman (2007) also suggest that while the 'public, whose power as consumers has been enhanced by opportunities to talk back to companies and form networks around common interests, is still largely locked out of the political system'.

[2] In accordance with Canada's *Telecommunications Act 1993*, the Canadian Radio-television and Telecommunications Commission (CRTC) may refrain (that is, 'forbear') 'in whole or in part and conditionally or unconditionally, from the exercise of any power … in relation to a telecommunications service or class of services provided by a Canadian carrier, where the Commission finds as a question of fact that to refrain would be consistent with the Canadian telecommunications policy objectives'.

[3] Canada's CRTC is a specialist regulator and is responsible for regulatory functions regarding technical, content and competition issues of both broadcasting and telecommunications services as a result of the *Canadian Radio-television and Telecommunications Commission Act 1976*. Australia, on the other hand, did not merge its broadcasting and communications authorities until 1 July 2005 when the Australian Communications Authority (ACA) and Australian Broadcasting Authority (ABA) merged to form the Australian Communications and Media Authority (ACMA). Nevertheless, the Australian Competition and Consumer Commission remains the main regulator of competition issues under its telecommunications

authority outlined in Part XIB of the *Trade Practices Act 1974*. The industries, however, remain for the most part separated on the basis of 'device' — that is, radio, television, computer, telephone, mobile telephone — rather than by function (that is, communication).

[4] Stephen Conroy is the Minister for Broadband, Communications and the Digital Economy.

[5] Note that while Putnis (2002) claims that the news media was responsible for 'creating' the nation, he acknowledges that telegraph infrastructure enabled the news media to do so.

[6] The first inter-colonial telegraph line connected Melbourne and Mt Gambier in 1858, and soon after Sydney and Albury (Department for Environment and Heritage 2007: 4). Various inter-colonial conferences were held in the 50 years preceding federation.

[7] During the 2007 election campaign, broadband became a major issue. However, Australian voters were effectively given a choice between a national solution with mostly private sector solutions by the Coalition, or a national solution focusing on public-private partnerships by Labor.

[8] McGowan was a young Canadian entrepreneur responsible for the 'first transfer of modern telecommunications technology to Australia' (Moyal 1984: 16).

[9] Interviewees were familiar with the two approaches to regulation know as *ex ante* and *ex post*. According to the ITU (2008), '*Ex ante* regulation is mainly concerned with market structure, that is the number of firms and level of market concentration, entry conditions, and the degree of product differentiation, [whereas *e]x post* regulation is mainly concerned with market conduct — the behaviour of a firm with respect to both its competitors and its customers'. *Ex ante* regulation was commonly deemed 'undesirable' by industry elites in both Canada and Australia.

[10] 'Market maturity' usually refers to the various stages of 'product life'. However, in the telecommunications industry, it also suggests the state of play between market competitors. Given that Canadians tend to focus on competing in the market, whereas Australians tend to focus on the regulatory system, Canada's industry appears to be at a greater level of 'maturity'.

[11] A traffic count conducted by the *Sydney Morning Herald* (see Smith 2005a) demonstrated that motorists were not using the Cross City Tunnel. The NRMA had also published a 'rat run' map to show motorists how to avoid using the tunnel (and paying the toll fee).

[12] For example, Canadian telecommunications companies compete on an equal footing with cable television companies on the basis of the type of service provided, not the infrastructure 'platform' the service is delivered on. Technological neutrality is an essentially contested concept but in principle, various CRTC and International Telecommunications Union papers refer to the concept as 'natural selection' of particular technologies to perform particular functions, that is, the function and not the technology is regulated. Nevertheless, voice-over-Internet-Protocol (VoIP) services have challenged these principles in both Canada and Australia and the issues of 'neutrality' remain largely unresolved.

[13] Dark fibre refers to cable which has been deployed but is not in use. The cable does not have any electronic signalling equipment which enables businesses to 'light up' the cable using various technologies. Dark fibre is often used to build private networks for customers such as municipalities, school boards and large enterprises (see Martin 2003).

[14] Numerous industry elites from various policy actor groups acknowledge the Minister's leadership and sponsorship in the deployment of communications infrastructure.