Culture Unbound
Journal of Current Cultural Research

Super Network on the Prairie: The Discursive Framing of Broadband Connectivity by Policy Planners and Rural Residents in Alberta, Canada

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Abstract

This paper focuses on the case of the SuperNet, an infrastructure project designed and sponsored by the provincial government of Alberta, Canada with the objective of providing broadband connectivity to public facilities, businesses and residences in rural communities. The data were collected through individual interviews, focus groups, and town hall meetings in the course of a collaborative research initiative (The SuperNet Research Alliance) that investigated the social construction of the broadband network from multiple perspectives. The objective of the paper is to examine in parallel the discourses in which the concept of broadband connectivity acquired meaning and substance at the levels of 1) provincial government and industry policy planners and 2) the residents of the rural communities who were the intended beneficiaries of the SuperNet. Using actor-network theory as a departure point, this analysis takes stock of the framing devices employed in the two sets of discourses and of the distinctive worldviews that generated them. It looks for the meeting points and the disjunctions between the grand visions and the grounded projections underlying the positions taken by the two respective categories of actors. Differences in the interpretation and appropriation of broadband among rural Albertans themselves are discerned and related to social factors characterizing different situations within rural areas. Rural broadband connectivity thus emerges not so much as a one-dimensional access equalizer for rural people, but as a complex mediator of opportunity, participation and identity.

Keywords: Alberta SuperNet, broadband connectivity, actor-network theory, media space, policy planner discourse, users, sense-making, rural residents.

Bakardjieva, Maria & Amanda Williams: ”Super Network on the Prairie”, *Culture Unbound*, Volume 2, 2010: 153–175. Hosted by Linköping University Electronic Press: http://www.cultureunbound.ep.liu.se

Introduction: A Rural Media Space in the Making

As the opening comments to this special issue suggest the question of how best to imagine rural media spaces in an increasingly global and technologically driven world has been largely overlooked (Andersson & Jansson 2010). This paper begins to address this absence by offering an empirically situated investigation of how two distinct "discursive communities",[1] policy planners [2] and citizens, struggled in the early phases of a broadband policy initiative to assess the challenges and opportunities of an emerging rural media space.The term "media space" is employed in the sense proposed by Couldry and McCarthy (2004:2), as a term that:

> …at once defines the artefactual existence of media forms within social space, the links that media objects forge *between* spaces, and the (no less real) cultural visions of a physical space transcended by technology and emergent virtual pathways of communication.

This concept is useful because it allows us to envision a complex and multilayered object of study that encompasses at the same time media technology and the practices of its construction and use along with the concrete physical and social environments that these artefacts and processes originate from and produce. All elements of this definition of media space are present in the case study that we consider in this paper. This discussion closely examines the construction of a broadband communication infrastructure driven by the explicit goal of transforming the political and economic landscape of rural Alberta by forging links with distant places and how that project struggled to fit into the existing physical and cultural spaces of the people it was supposed to serve. With these intertwined dynamics unfolding over a relatively short period of time, some clear observations of a media space in the making emerged, one that to this day is still solidifying.

This contribution begins with a brief discussion of the case in question: the Alberta SuperNet. The theoretical and methodological dimensions of this particular examination are then supplied. In this instance, it is argued that a useful way to begin thinking about rural media spaces is via the theoretical lens of actor-network theory. Following that, in the findings and analysis section, the understandings of the two specific discursive communities we studied are presented and then juxtaposed against each other. This permits not only a greater appreciation of the complexity associated with this case, but also allows us to formulate several general conclusions of practical and theoretical significance which are reflected upon in the final section of this paper.

Some Background on the Alberta SuperNet Case Study

The Alberta SuperNet is an over half-billion dollar publicly and privately funded initiative approved by the Government of Alberta in 2001. The goal of this project was to connect 429 communities (urban and rural) through 13,000 km of fibre optic and wireless infrastructure. Primary partners in the initiative included: the Government of Alberta who funded the construction of an "extended network" linking government facilities in over 400 of the smaller rural communities province-wide; the Bell Consortium that financed and built the privately owned "base network" linking 27 of Alberta's larger urban communities; and Axia Net Media Limited, a company that took on the responsibility for managing and operating the extended portion of the network on the province's behalf. Many have positioned the SuperNet as a "precedent setting" case in efforts to promote rural broadband connectivity (Axia Net Media Corporation 2007; Cherry 2004; Dutton et al. 2004; Mitchell 2007). According to its proponents, four contextual factors make the technical dimensions of this initiative particularly noteworthy.

First, the technical infrastructure of the SuperNet itself is an impressive achievement. It has been praised for both the sheer scale and scope of its overall geographical coverage and for the rapid time frame in which it was built (Cherry 2004; Mitchell 2007). The Canadian province of Alberta stretches over 661,848 square kilometres. Its relatively small population (approximately 3.4 million) is concentrated in six metropolitan centres. At the time of the SuperNet's inception (2001), 80 percent of Albertans lived in urban centres, yet the government acknowledged that a great deal of the province's economic success was generated by industries such as oil and gas, agriculture and forestry located in rural areas. The vast majority of these areas were still reliant on dial-up Internet services. Consequently, the government believed that rural jurisdictions might benefit from increased access to broadband and in the process help facilitate the province's overall economic growth (Axia Net Media Corporation 2007: 1-2).[3]

A second notable feature of the SuperNet is its unique business model (Mitchell 2007). As a hybrid enterprise, the SuperNet demonstrates both a "supply side" dynamic associated with the construction of large scale technical infrastructure and a "demand side" component in which specific groups are expected to dictate the scope of development and use (Anderson & Christiansen 2007). The supply side dimension of this project emerged because the province and Bell took on the financial responsibility for building a technical network that links over 4,200 locations across the province including all provincial government offices, libraries, schools, and hospitals. The demand side dimension of the SuperNet project is twofold. First, in order for business and residential users to connect to the SuperNet, an ISP must be present in a specific community. The role of that ISP is to buy bandwidth on the SuperNet and distribute it further to private customers. Once an ISP decides to provide service using the SuperNet, they still require a "last mile" solution (be it wireless, cable, ADSL or fibre) to connect their user

base. In this way, it is the ISP that secures business and residential connectivity in rural communities and ultimately decides the end price for the customer and the speed of the services they will supply. The second, demand side dynamic, emerges because despite an initial capitalization by government to be linked to the SuperNet, public facilities (such as hospitals, health centres, government offices, libraries and schools) must still pay for their monthly Internet service. In sum, while the SuperNet's business model ensured the presence of a main connectivity "trunk" across the province, it also anticipated that ISPs would step in to provide last-mile connections and that social services would be willing to pay the required fees to utilize the SuperNet.

A third point of significance is that the SuperNet represented a somewhat unexpected public investment (Williams 2010). During the 1990s, building an information highway became a major priority for Canada, as it did for many nations around the globe. In 1994, the Government of Canada formed the Information Highway Advisory Council (IHAC) to provide direction about how best to proceed. As a response, IHAC produced two major reports, both of which urged the government to invest in constructing a national information infrastructure. Additionally in 2001, a newly appointed federal committee, the National Broadband Task Force, again reiterated the need for ubiquitous connectivity across the country. Despite these high level policy recommendations, very little federal support was ear-marked for making universal broadband access a reality (Matear 2002). While federal involvement in promoting broadband connectivity was underwhelming, several provinces consciously chose to expand and upgrade the telecommunications infrastructure within their jurisdictions. In this regard Alberta was the clear leader; its $193 million investment in the SuperNet, represents almost half of the $545.9 million overall provincial broadband investment from 2002-2006 across Canada (Canadian Radio-Television and Telecommunications Commission 2007: 129). The interview data with policy planners, discussed in greater detail in the findings section below provide some insight into the factors that motivated this provincial decision. According to respondents, the central reasons why Alberta emerged as a leader in terms of broadband provision included: the presence of a politically savvy minister in a newly formed department (Innovation and Science) who represented a rural constituency (Interview 7); a strong internal bureaucratic team dedicated to making the Minister's ideas a reality (Interview 5, Interview 7); the existence of surplus budgetary funds, which permitted the initiation of new projects (Interview 4); an articulated need to diversify the Alberta economy and make it less dependant on oil and gas revenues (Interview 1); a desire to introduce some new players such as ISPs as additional telecommunication providers (over the incumbent Telus) into the market (Interview 3); and the presence of general information technology enthusiasm, or "bubble," that had yet to "pop" (Interview 1, Interview 5).

A final factor that makes the Alberta SuperNet an interesting case study is that it became the focus of a large collaborative academic researcher project: the Alberta SuperNet Research Alliance. In 2003, this multi-disciplinary, multi-institutional team set out to investigate the social, economic, and cultural impacts of the SuperNet on Albertan communities. At this time, members of the research team began to explore user relations through public consultations and survey work, and conducted specific studies of tele-heath, distance education, emergency preparedness, libraries, business, and community sense-making practices (Mitchell 2003, 2007). The authors of this article were involved as researchers in this network, and thus had the opportunity to observe first hand through individual data collection projects, and two public symposia, some of the dynamics emerging across the province of Alberta as various actors tried to make sense of this specific policy initiative. While the findings of our individual projects have been published elsewhere (Bakardjieva 2008; Mitchell et al. 2006; Williams 2010; Williams & Langford 2007; Williams et al. 2007) we felt that an important contribution could be made to the existing knowledge base by exploring our data collectively in a holistic manner.

Conceptualizing the Rural Media Space

In deciding how to frame conceptually our understanding of the SuperNet as an emerging rural media space, actor-network theory (ANT) was an obvious choice for several reasons. ANT has been proposed by its key founders (Latour 2005; Law 1999) and those working within geography (Hitchins 2003; Murdoch 1997, 1998) as a theory-method uniquely suited for tracing the emergence of socio-technical ensembles that also holds the potential to radically transform conventional understandings of spatial analysis (Murdoch 1998). In addition, it has been argued that ANT promises new insight into the dynamics of political/policy spaces (Woolgar 2004). Finally, given its roots in both ethnomethodology (Latour 1999) and semiotics (Law 1999), ANT supplies a unique set of concepts that encourages a localized and relational look at the competing sense-making practices of various discursive communities.

One of the most compelling ideas offered by ANT which can be productively applied to the analysis of an emerging rural media space is found in Callon's (1986) notion of translation. This heuristic provides a way to look at how a specific initiative begins and what sorts of processes might be required in order for it to become a stable network of human and non-human actors (people, technology, ideas, etc.). According to Callon, translation can be understood using four key dimensions: (1) problematization, (2) interessement, (3) enrolment, and (4) the mobilization of allies. During problematization, an actor initiates a network formation by defining a problem and recommending solutions. In this early phase, the initiating actor will strive to position themselves, or another actor, as an indis-

pensable resource for solving whatever problem exists, or in Callon's words as an "obligatory point of passage" (Callon 1986). Interessement is the stage in which the initiator tries to convince others of the validity of their claims. This is accomplished by making the identities and interests of the other actors seem entirely consistent with the initiating actor's leading interests, as a form of goal alignment. The anticipated outcome of interessement is to lock potential allies in place, and co-opt those not yet convinced, which might require providing certain incentives. If interessement succeeds, enrolment is possible. Callon suggests that enrolment involves a definition of the roles of the various actors within a specific space. It is a strategic process which entails "multilateral negotiations, trials of strength and tricks" to achieve success (Callon 1986: 211). The final dimension of translation, mobilization, requires the enlistment of a dedicated group of spokespersons who speak on behalf of the many and behave according to the roles that were circumscribed for them, thus supporting the initiator's interests. Once such allies are mobilized, the socio-technical network begins to achieve stability. This is because its underlying logic (including the problem set, the assigned solution, and the circumscribed roles) are all taken as fact and consistently supported by the spokespersons. A successful, or complete, translation is believed to generate a shared space, equivalence, commensurability and alignment. Moreover, "irreversibility" occurs at the moment when a social investment reaches a point where withdrawal would be unlikely (Callon 1991). In contrast, an unsuccessful translation is one in which actors no longer communicate, they reconfigure themselves in separate places with no common measures or linkages (Callon 1991: 145). However, as Murdoch (1998) has aptly noted, networks can be comprised of multiple overlapping sectors such as "spaces of prescription" that are "heavy with norms", "predictable", and "taken to be a fact" and "spaces of negotiation" that remain "fluid" and "provisional" because the links between the actors are "divergent" (362). Murdoch's qualification is useful because it offers the possibility for socio-technical networks to be imagined simultaneously as sites of coherence and difference.[4]

Callon's notion of translation and Murdoch's application of actor-network theory to the understanding of space informed our data analysis in this particular instance. Using previously collected material from 10 focus groups in rural communities, 8 town hall meetings in rural jurisdictions, and 10 interviews with policy planners intimately involved in the conception and execution of the SuperNet initiative, this study was interested in describing the nature of the SuperNet as a newly emerging media space made up of technologies, social arrangements and practices, jointly constructed by a diverse cast of actors. Our central goal was to determine whether this media space was a shared space of equivalence, commensurability and alignment? Or was it rather something more fragile? If so, where did the fragility come from and what were the fractures preventing the harmonious alignment of the different actors' interests and meanings? Our answers to

these questions were gleaned by examining the qualitative data we had at our disposal with a view to discerning the specific points of potential instability in the accounts produced by the two types of actors. We were concerned with delineating the spaces of prescription (where policy planners and rural communities seemed to agree on their view of this particular initiative) as well as the unsettled spaces of negotiation. Finally, we were interested in elaborating the practical and theoretical insights that could be generated from this sort of exploration.

Findings and Analysis

What follows is a brief analysis of the key themes that emerged in the policy planners' and citizens' responses to what the SuperNet ought to accomplish, or of how the two discursive communities problematized the technical infrastructure. Each is presented separately first, after which an effort is made to evaluate what these various themes tell us about the overall nature of the SuperNet network as a constitutive element of a rural media space.

The Birth of a Super Actor: The Policy Planner Discourse

The ten semi-structured interviews reviewed for this portion of the analysis were collected with industry and government representatives from April 2007-September 2007. The sampling strategies for this data set was purposive and snowball in that several key actors were initially identified and after each subsequent interview respondents were asked to recommend other study participants. The people that agreed to be interviewed included the following: a member of the committee that first looked at requests for proposals (RFPs) to build and implement the SuperNet (Interview 2); two deputy ministers whose department sought approval and monitored the build (Interview 1 & 4); the Minister of Innovation and Science of the time who served as a public face for the initiative when it was first announced and presented to the public (Interview 3); the head of the communication team responsible for branding the SuperNet (Interview 5); the Chairman and Chief Executive Officer of Axia, who bid on the government RFP and won, and now manages the SuperNet on the government's behalf (Interview 6); the Executive Assistant to the Minister of Innovation & Science, who was instrumental in helping ensure that the SuperNet initiative passed through Cabinet relatively smoothly (Interview 7); two senior civil servants responsible for managing the SuperNet on the provincial government's behalf as it became operational (Interview 8 & 9); an Internet Service Provider (ISP) whose company was responsible for quality control and assurance during the building of the network (Interview 10).

In examining the interview transcripts several key themes were apparent which can be used to map out the policy planners' conceptualization of this emergent media space as well as to delineate the sources of both its stabilization and fragil-

ity. Each of these themes is identified, bolded, and discussed below in the context of the SuperNet as a translation attempt by the Alberta government.

First, at the level of problematization (the definition of the problem and the recommendation of solutions) the policy planners struggled with a key dilemma: *determining the role of government versus that of the local/global marketplace*. On the one hand policy planners presented the SuperNet as a way to promote a more equitable form of access across the province so that urban and rural jurisdictions had equal opportunities, or as a bridge over the "digital divide" (Interview 1, Interview 6). As one participant claimed the SuperNet was best imagined as "a made in Alberta solution for getting ubiquitous service in virtually every community" (Interview 1). Another asserted:

> If I can be so bold as to sum it up in one statement, there is absolutely no reason why people in the rural parts of the province should not receive the same government services, access to the same business opportunities in the province… where you live should not matter… you can continue to enjoy your quality of life without moving into the big city. (Interview 7)

On the other hand, the SuperNet was also positioned as a way to promote innovation and growth in the telecommunications industry as articulated in the following claim: "we need[ed] to come up with a model that does not take anything away from existing ISPs… we did not want a monopoly but we also did not want the innovators… in small communities to suffer… we are not in the business of being in business, we are in the business of creating an environment where business thrives" (Interview 5). Or in the words of another respondent there was a hope that the government could create a "marketplace" where "businesses would lead" (Interview 6). In this sense, two somewhat incompatible goals were key to the problematization of the SuperNet: a desire to provide universal access as social welfare (where the free market had failed to do so) and a hope to foster the role of the market through new opportunities for growth. The crux of the dilemma was nicely captured in a comment made by one of the civil servants interviewed: "How do we enable and not compete? How do we ensure that Albertans have access to services while we don't take business out of the game" (Interview 8)?

The desire to promote both these objectives simultaneously explains why the SuperNet's business model was structured the way it was and also why right from its inception this network was fated to remain a precarious achievement. In hindsight, policy planners recognized the challenges in balancing these competing pressures and critiqued the assumptions of the business model intended to meet the two goals that proved to be rather contradictory. Several respondents argued that the government should have in fact "done more" in terms of *satisfying first and last mile concerns* (Interview 1, Interview 4, Interview 9, Interview 10) as ISPs are motivated to make money and thus in very small communities they might not see it as economically feasible to provide connections to business and residential users. As one respondent noted, "there is no money in it. You have to have a lot of customers to make it work. It is a tough business model for ISPs" (Interview

10). Ironically, the SuperNet managed to leave those potential users whom the market had not served in the first place at the mercy of problematic market forces once again.

Strongly linked to the policy planners' perception of the SuperNet itself as a solution to the rural and urban connectivity gap was the idea of bringing a *global economic dynamic* into rural Alberta. Policy planners spoke of the SuperNet as a catalyst of economic growth and as a driving force in making Alberta a "player on the world stage" (Interview 1) and "nudg[ing] the province forward" (Interview 4). This initiative was also connected by some participants (Interview 1, Interview 5) to the "Alberta Advantage" a provincial branding campaign designed to showcase why Alberta is a desirable environment in which to invest.[5] These aspirations were unsurprising given the wider socio-historic context in which they were formed: amidst the excited rhetoric of the information highway (Interview 4) and in the presence of a still very much intact "e-bubble" (Interview 1, Interview 5). An explicit technological determinism underpinned these expectations of global economic grandeur. The technical network was construed as a powerful "superactor" (Williams & Langford 2007; Williams 2010) that would engender automatic loyalty and alignment among the other parties involved. It was expected to draw isolated Alberta rural areas into global information flows thereby transforming rural businesses, governmental and educational bodies into active players on the international stage**.** The characterizations of the technical network contained multiple images of the SuperNet's extraordinary powers and abilities. Among the things the SuperNet was professed to accomplish were: "elimina[ting] geography" and "mak[ing] everybody connected" (Interview 1); "bring[ing] immediate benefits to Albertans… to build business opportunities" (Interview 4); "help[ing] rural development as it evolves" (Interview 8). It appears that, possibly led by their mandate to convince other actors this was indeed an "obligatory point of passage", policy planners had managed to convince themselves that the technology was going to produce transformative effects by virtue of its mere presence. Their comments suggested that this radical transformation could happen in a relatively short time span if rural communities were sufficiently receptive to such possibilities. Community residents and businesses were prescribed an enviable role in these stories as recipients and beneficiaries of the gifts brought about by the infrastructure. However, little attention was given to the demands and the challenges of their role as key inhabitants of the nascent media space and major players in whose hands it would be to determine the success or failure of the initiative. In other words the strategy of interessement employed by the government actors was to promise the advantages of an information economy and a new rural media space as something that could transpire unproblematically for citizens. While this strategy likely reverberated with numerous aspirations and perceived interests already present in rural communities, it fell severely short of envisioning and de-

scribing the concrete steps that community members would need to take for these promises to materialize.

Interviewed two years after the network had been "lit up", policy planners displayed a *shared disappointment with the project's outcomes*, and particularly with the fact that rural residents had not yet decisively embraced the SuperNet as the saviour it was intended to be. Their comments betrayed the regret they felt due to the lack of uptake by specific user groups and the rural population at large:

> The original promise of SuperNet, part of the promise, was that it would also be a great help to research …The SuperNet has been of very little value so far to Alberta's researchers private and public… There are research projects out into rural Alberta, carbon sensors in various locations, biodiversity carbon monitors in several places, highway sensors, sensors Crowsnest Pass and… to my knowledge not one of them is using SuperNet. (Interview 2)

> But it is now just a matter of you have this interesting tool, how do you use it to take advantage of it? At the business level I am really disappointed that apart from an increased use of the agricultural community for watching commodity prices and hedging, and issues like that, there is still relatively little use in terms of building business opportunities in rural Alberta and things like that…to take advantage of the system. (Interview 4)

> If you ask me, 'did SuperNet live up to its promise'? I would say probably not yet. I think it is still simply a possibility. (Interview 7)

This shift from bright-eyed techno-optimism to disenchantment occurred within the span of about two years and helped reveal the temporal assumptions that policy planners had tacitly made. These actors, it seems, had taken it for granted that the transformation of rural Alberta into a vibrant site of the global information economy could occur within a relatively short timeframe. Consequently, they were disappointed by a presumed lack of interest by citizens and the absence of any visible signs of economic growth or qualitative change in the ways rural Alberta did business and positioned itself in the global marketplace. The "nudge," they believed, had been given, however the province had failed to jump forward. This realization led some interviewees (even the former Minister and chief champion himself) to express measured regret about the millions of taxpayer dollars that had "gone to die" (Interview 3) in the initiative because the opportunities it offered had yet to be realized.

In retrospect, the impatience and disillusionment of the policy planners seems somewhat paradoxical given the fact that they themselves had chosen a business model that depended on the market to take care of the final and decisive step of bringing broadband into the actual living spaces of rural Albertans. As will be demonstrated in the next section, this oversight was the source of frustration for many in the SuperNet's anticipated user base. On the policy side, however, this specific choice was based on confidence in the automatic and instant capacity of market forces to recognize and grab opportunities when such are offered to them. In a large way, this unsubstantiated faith made rural citizens captives of the ability and willingness of local service providers to live up to the role set for them and

bring connectivity to isolated homes and businesses. A temporal and conceptual fracture in the stabilization of the network appeared when ISPs failed to jump to the task. Along with the overly ambitions definition of the local commercial providers' role, another reason for their disinterest was the lack of substantive financial incentives compelling their involvement.

To be fair, the policy planners who were interviewed were not oblivious to the problems associated with their enrolment efforts. For example, several respondents revealed that the government *did not do enough to reach out to rural citizens regarding the SuperNet's potential*: "there was a community engagement group but I think it got disbanded…. I think it should have been the next level of provincial investment" (Interview 1); "to realize those economic opportunities, the province has not done enough to date to promote that culture… we have the infrastructure, we just have to know how to utilize it" (Interview 5); and "the government has to put money into education….they have not done this" (Interview 3). The Minister argued that much of this outreach oversight was because the government became so caught up in building the infrastructure that they failed to develop a long-term vision for the project that might have increased user engagement. He claimed: "…our energy was taken up on the implementation of the project. That was probably my fault. While I did understand the technology I did not conceptualize what we would go through in four years…. and what this is going to look like in four years" (Interview 3). Several other respondents drew attention to the fact that the government remained highly pre-occupied with managing the internal tensions with the immediate actors in the network such as the telcos, the ISPs and other government departments (Interview 1, Interview 4, Interview 6, Interview 7).

Finally, some of the policy planners also felt that this initiative struggled in the last phase of translation (mobilization) because it *lacked a compelling champion within government committed to success* (Interview 1, Interview 5, Interview 7). A leadership issue emerged because there was a Cabinet shuffle and the Minister who conceptualized the SuperNet moved portfolios quite soon after the build began. According to one interviewee, "the new Minister did not have the understanding of what this meant for Alberta and for rural communities… he looked at this as a government infrastructure project… it never really regained momentum after that" (Interview 5).

In sum, the SuperNet struggled to solidify as a predictable network. The project was problematized using two incompatible goals, which resulted in a business model that depended primarily on market forces (the ISP community) and a powerful technological presence (a super actor). This was considered sufficient to entice the rural population to embrace the project without delay. The specific interessement and enrolment efforts needed to engage the rural communities fell to the wayside as the government became exclusively preoccupied with ensuring the construction of the technical infrastructure and with accommodating the interests

of the immediate project actors. This oversight was further exacerbated when a shift in leadership pushed the initiative outside of the government's immediate priorities.

Little Voices on the Prairie: The Discourses of Rural Citizens

We now turn our ear to the discourses of ordinary rural Albertans that our project elicited and collected over a period spanning three years. The material analyzed in this section comes from a variety of sources. It includes eight town hall meeting transcripts from 2003 that our research team conducted in rural jurisdictions just after the SuperNet was announced and the build began. The goal of these town halls was to engage potential users in a conversation about what the technology might do, and how communities might "define [their] distinctive needs and aspirations" in relation to it (Mitchell 2007: 10). An effort was made in selecting locales for these particular town halls to represent the diverse types of rural communities in Alberta (such as bedroom communities, truly remote locales, and those jurisdictions located on and off major transportation routes). The locations chosen (and codes deployed for the purpose of this discussion) were: Athabasca (ATH), Canmore (CTH), Drumheller (DTH), Grand Cache (GTH), Morinville (MTH), Pincher Creek (PTH), Rocky Mountain House (RTH), and Vulcan (VTH). The next set of data comes from a series of focus groups, which took place in 2004-2005, and involved discussions with rural business community members regarding the feasibility of a set of specific scenarios. The communities visited for this investigation included: Canmore (FG1), Drumheller (FG2), Grand Cache (FG3), Morinville (FG4), Rocky Mountain House (FG5) and Vulcan (FG6). The final set includes four focus groups conducted in 2004-2006, in which the central aim was to explore how rural citizens made sense of Internet technology, and how these existing notions and experiences prepared the ground for the conceptualization of the SuperNet. The communities selected in this round of data-collection were: Drumheller (FG7), Pincher Creek (FG8), Rocky Mountain House (FG9), and Thorsby (FG10).

This large body of discursive material allowed us to chart a wide spectrum of meanings through which rural citizens related to the *super actor* constructed by policy planners. Importantly, rural Alberta presented us with a complex canvas of differently situated and differently informed human actors who made sense of the SuperNet project in very distinct ways. Age, economic status, occupation and education were predictably among the central factors suggesting different positions in the debate, but the vicissitudes of geography including landscape, distance from central points, population density and even forestation emerged as situational features with high significance to residents. Residents' experiences of Internet connectivity were shaped by these factors and so were their projections and expectations with regard to what the SuperNet might bring about. Rural Albertans living in small towns already had some type of more or less affordable Internet

provision. Standard broadband in the form of ADSL or cable had become available to these communities in recent years. The farther one lived from such a hub of relative population density, however, the harder, more expensive and problematic it was to obtain quality service. Spread-out farms and residences had signed up for wireless provision where possible, but in some cases a hill, or even a bunch of big trees, could erect an insurmountable barrier for the signal. Depending on how badly the rural resident's livelihood depended on being connected, some farmers and entrepreneurs had invested in their own wireless towers or had subscribed for a satellite connection. Added to the Internet service subscription, the cost of the tower, and the satellite link, made these solutions unaffordable to many. The left-out people had to rely on their dial-up connections for whatever use of the Internet they had. From these diverse situated experiences and pragmatic interests came different questions and concerns regarding both the SuperNet and the Internet.

In terms of the problematization of the government initiative itself, many respondents *rejected the SuperNet brand while still recognizing the value of high speed Internet versus dial up*. Early on in both the town hall meetings and the focus groups, the utility of asking questions about the SuperNet and the Internet separately became apparent. There were significant differences in how these two notions were construed. The set of questions concerning the SuperNet itself typically elicited images of a nebulous entity with no clear features, purpose or application: a set of puzzling construction activities observed by the roadside on the way home; a spout of confusing tech-talk; a pompous rhetoric stemming from government press releases:

> It seems the more I hear, the more confused I am getting… we were discussing between us what we thought the SuperNet was, I had at least three different versions in my mind and now I have four or five. It seems to me the marketing of it, the "be all and end all" of it… it's coming to your doorstep…it's like the new coming. (ATH)

> I don't see an awful lot of demand for the speeds that the SuperNet claims to deliver for what they do… it is basically a government service, a service for the government not for communities. (FG1)

The invocation of "high-speed Internet", on the other hand, was often greeted with excitement and impatience, with accounts of little victories and substantive gains in one's capacity and action scope, and with hopeful projections as to what these minute gains could spell for the future of rural Alberta as they accumulate and proliferate. There were several distinct areas in which the benefits of high-speed Internet were clearly recognized and the need for it, where it remained inaccessible, was pressing.

First, those on the "more professional end of agriculture", as one participant put it, had discovered the possibilities of advertising their cattle online:

> Those people have been able to promote their breeding through the Internet. You want people to buy the semen from your bulls. You can buy semen from bull right from Alberta. You can buy them from France, or you can buy them from England or whatever. And that is definitely very big time. The things with purebred horses, the

> quarter horses, all that agricultural end, right down from getting a German Shepard to guard your farm. You can get those kinds of things off the Internet. (FG9)

This approach was bringing direct economic returns as recounted by one of the participating ranchers:

> … So now about two years ago we had a sale and two days before the sale people were telephoning: "Could you send us a digital picture on the Internet from front to front, back to side…" And [I] went outside and took the pictures and ran them on the Internet and people ended up driving up for our sale and there were figures up to about $10, 000… That was the highest selling that we had ever had in our sales. (FG8)

But it felt very stressful to do this kind of trade over dial-up. A rural web-site designer explained:

> All of my sites involve lots of pictures of cattle and horses mostly cattle pictures. On a regular 56K dial up modem they will not download right away and that's a big problem when people go to your site and want to see a picture and they have to sit and wait, wait, wait, wait… But in order for them to make it a useful tool it needs to be faster, it needs to be more information, it needs to be more accessible to people. (FG8)

In a second important area of economic activity, rural entrepreneurs who were trying to run a business over dial-up felt the stranglehold of low speed and constantly busy phone lines. Many of the home-business operators we spoke to were in that position:

> Um, I'm on dial-up so it is quite painful and especially when you're talking to someone from Calgary, they don't understand why, "Oh did you get that email?" … They don't understand that you're still on dial-up and there's, you know, we don't have the same opportunities as them. … I don't know, but everybody just can't understand why I can't, I don't want files that take forty-five minutes to download; why you can't do that two minutes before deadline… (FG10)

Another focus group participant needed high-speed in order to more effectively develop and use her business website to sell the parrot toys that she herself designed and made. Interestingly, this retired farm lady had learned the skills and created that website herself. A small business owner offering accounting services out of her farm summed up this need for speed thus: "Like, the dial-up has to go, or else I'm going to have an ulcer 'cause now my business is depending upon the Internet."(FG 10)

Bigger business had gone their own way of ensuring adequate connectivity such as wireless towers and satellite connections, but many of their professional employees did not have the luxury of high-speed when they went back home at the end of the working day. There, they had to put up with the "kerchunck, kerchunck" of low speed as one outspoken farm woman described the experience (FG 9).

In a third and broader-stroke conceptual move, rural people envisioned high-speed connectivity as a condition that would help expand their personal and professional horizons and lifestyle choices as well as change the makeup of their

communities. One vocal participant and community champion shared his vision of a new set of possibilities opening up to rural areas:

> … I can relate back to my experience of being in the city when I was still working there and a lot of people who I was interacting with at that time came from rural communities; that tended to be the peer group that I was associated with. And they all wanted to come back to rural communities because that is where they grew up and that's where they felt most at home, but they were making a living through the knowledge economy somehow, the digital economy, and therefore unable to come back home because it would limit their opportunities to such an extent. … It used to be just the major urban centers and now with high speed Internet through DSL and cable into those small towns you get some opportunity there and that allows you to participate to certain extent in the digital economy. (FG8)

This reverse migration to the rural area had already happened in the case of a highly trained computer programmer, currently website developer. She shared that finally, with the availability of high-speed, she had been offered a ticket out of the city and back to "small town rural life," that "place of sanity", as she saw it: "I live in Rocky not because I chose to do business here, but because I chose to live here. And finally I do business" (FG9). Importantly, for this woman and other professionals in our groups, high-speed connectivity allowed them to stay in touch with their professional peers and helped them be actively involved in their area of knowledge, mostly through participation in virtual communities and discussion forums. More powerful broadband could add voice- and video-conferencing opportunities to facilitate real-time meeting attendance, one business manager suggested (FG9). Thus pursuing professional careers and maintaining professional identities out of the rural heartland was becoming practically feasible.

Finally, if cases like these proliferated, rural residents surmised, "quality people" would be attracted to rural areas, which will transform into "exurbs." That would diversify rural communities' economy and brighten up their social and cultural life. Not the least, better integration and mutual understanding between rural and urban populations may take place. Not only new-comers or returning sons and daughters, but also the current dwellers of rural areas would have the chance to contribute to this positive change by starting new businesses (FG10) and telecommuting (MTH). Families would not need to leave for the sake of the education of their children, if a variety of online courses and other educational opportunities were offered to rural young people to help equalize their chances with those of urban kids (CTH, FG7, FG10, see also Bakardjieva 2008)

Given these numerous applications that some rural people had found for high-speed Internet in their thoughts, and in their daily lives, they could not wait to see broadband connectivity extended to all corners of the province, including the far-out farms and residences, at affordable prices. How did, then, the government-sponsored and promoted SuperNet infrastructure figure into these grounded needs and aspirations? Not well enough at the time we conducted our research. *The business model selected for the SuperNet caused frustration*. The crucial "last mile" connection, being left to theoretical free market players as discussed in the

previous section, was missing. This threatened to make the whole SuperNet enterprise irrelevant to many ordinary people. Needless to say, this absence stirred an outcry among those left out:

> When they say last mile they mean last 300 miles…Where did the $400 million go? If anything, a lot of it should have been subsidizing the end. Not just saying "here is a line, deal with it". (FG1)

> Okay but so why isn't the government helping, like instead of sending [another] local company in the patchwork of who knows who, you know what I mean, why aren't they working our provincial phone company to bring it to the masses? (FG10)

> All it is a wire in the ground that you might have seen this summer…. It gets to your door, but it is like when you are standing in the car dealership and they say "want that car over there? Well you can have it but the keys are over here and you can't have the keys". (PTH)

> Well, if everybody else decides that okay I'm going to go with satellite or go with a service provider who [does not use the] SuperNet, it was kind of a waste to put SuperNet in, if nobody's going to use it or it takes so long to get to us that we spend the money, or the satellite technology comes down and then you've got all this optic, fiber in the ground that we've spent I don't even know how many millions or billions on was a waste because people will find other ways around it. (FG10)

In some instances, citizens were not satisfied with simply criticizing the government's choices, but offered alternative models they felt the government could have considered such as making broadband services analogous to a public utility and building upon the existing co-operative structures which offer natural gas and electricity to Alberta's rural communities (FG2); or endorsing a demand side model that began in the rural communities and connected only those with an expressed need and desire for this sort of connectivity (FG1). A strikingly astute comment from one of our focus group spelled out an approach fundamentally different from that taken by the government:

> They should have taken the whole budget and started the other way. Not try and build this network because the network is already there. If anything, [the government] should go to the small communities that don't have anything and ask them what they want and connect them to the major centres. Not go the other way. By leaving the *last mile* they still have not solved anything. (FG1)

Considered as a process of translation (as per ANT), this discrepancy between the visions of policy planners and rural residents demonstrates the difficulty SuperNet builders had tuning their message to the perceived interests and aspirations of Alberta citizens; or put differently they could not convince rural communities that the SuperNet was truly an obligatory point of passage. Although technically the SuperNet could be deployed to meet the pressing needs of rural people, because of its specific commercial model and hyped image, it missed the target both in terms of problematization and timing. Thus it alienated instead of winning over these very important actors.

As documented in the previous section, policy planners were quick to view the SuperNet singularly as a *super actor*, as a powerful presence with the potential to

improve Alberta's economic and cultural environment on its own. Rural citizens were not quite so ready to make that leap of faith. Our town hall and focus group discussions were interspersed with expressions of *measured skepticism about the SuperNet as a transformative force*. As one respondent noted the SuperNet was best imagined by community members as a "double-edged sword" (PTH) with the potential to enhance their daily lives while also possibly compromising many of the things they held dear. Rural community members were not prepared to ignore what they perceived to be the damaging edge of the SuperNet sword. A fear that the initiative aroused was the possibility of creating new inequalities of access and opportunity within the rural areas themselves. One respondent noted: "If the SuperNet is only developed as far as the terminal nodes in rural towns, it may accelerate the present exodus from the land to the cities" (PTH). Others worried that rural spaces as we know them could be undermined and lose their unique features when they get engulfed in information, activities and cultures originating elsewhere. This is well articulated in the following comments: "Rural people by definition are isolated and I'm wondering…whether or not this broadband experience is actually isolating people even more as their need for using the computer suddenly increases" (ATH); and "In small communities, we're losing the population, and I still think, in the end, we're still going to need that one-on-one contact" (VTH). Additionally, the idea that the SuperNet might create less connected and "less resilient communities" (FG7) was raised. Urban people assume a certain fabric of social connections and services that they can rely on in crisis situations. This was not the case with farmers scattered across the prairie. For them a migration to the virtual world did not feel too safe. As one participant stressed:

> In case of a disaster, what happens if you do not know your neighbour? As neat as it may be to be able to e-mail people across the world instead of writing them letters, what do you do if your house is on fire? …E-mail your friend in New York? I am sure that is not going to help. (FG7)

Finally, it was suggested the SuperNet itself could be used to harm communities by encouraging technical solutions as opposed to promoting human involvement in the workforce:

> There are very, very few professional level jobs in a town of this size, and if we start eliminating potential teaching jobs [with technology], they are going to be cutting the throats of people who do want to live here and love this community. (PTH)

Unlike the policy planners, these participants were not easily swayed by the allure of a technical super actor. There were aspects in their pre-technology life that they cherished and wanted to preserve. They knew that some of the impending changes could be undesirable or destructive. The one-dimensional discourse in which policy planners couched the SuperNet project did not help address or assuage residents' very real and often concrete concerns. This suggests that facing and diffusing actors' anxieties around a technical innovation represents another critical moment in the translation process.

In summary, the citizens we spoke to were thoughtful, articulate and reflective actors who highlighted additional sources of fragility in the formation of this new rural media space. Citizens though not spokespersons for the SuperNet brand itself, were vocal proponents of the need for high-speed Internet connectivity over dial-up (not necessarily broadband). They were also acutely aware of both the benefits new technical capacities could introduce into their daily practices and the dangers that such developments potentially posed to their rural lifestyle choices. Like the policy planners, they were disappointed with the project's outcomes in its early phase. Paradoxically, their discontent stemmed not from lack of interest in what the SuperNet could potentially offer them, but from dissatisfaction with the timing and form in which that potential was being rolled out. Note, however, that the hopes they held out for the SuperNet were firmly embedded in the ongoing lives and situated projects of their families, their business and communities. It thus seems fair to claim that at the time our data were collected, in actor-network terms, citizens were still actively questioning the problematization of the SuperNet since it did not speak to their pressing issues in an adequate way. Moreover, they resisted accepting the SuperNet as an obligatory point of passage (a necessary step, if interessement is to be a success). They remained unimpressed with the government's existing enrolment strategy as it had very little real meaning to them. That is not to say they believed such enrolment attempts could not be improved. In fact, in some cases rural respondents urged the provincial government to become a model user in order to demonstrate exactly how the initiative could or should have meaning to them. In other words, they demanded from the planner to create a liveable media space rather than to simply construct an infrastructure, no matter how advanced and powerful it appeared to be.

Conclusion: A Tale of Two Discourses

As much as rural folks had to say to the "high uppers," their voices trailed away in the vastness of the prairie. But even if they were heard, from the elevated standpoint of policy planners, the expectations of ordinary residents may have looked too modest and unimaginative. Yes, residents did not care so much about the super qualities of the SuperNet. Their virtual undertakings were tightly intertwined with the actual spaces of their family life and work. Their journey into the media space of the Internet had certainly began, but with small and very practical steps. No big leaps of ambition, faith, or investment were registered in our focus group records. However, exactly by being small, practical and meaningful, the initiatives undertaken by rural citizens built a steady momentum for change.

This was obviously not the momentous change that policy planners had hoped for. One of them described the situation thus:

> I use the analogy of you take somebody out of a fairly comfortable sedan and you give them a jet fighter and then you say "go fly," it shouldn't really be surprising

> that people don't understand it and [don't] know what it can do for them, and there is an educational component that needs to be there. (Interview 1)

In other words, instead of initiating or luring in high-tech ventures to take advantage of the "real broadband," residents were doing things such as building websites and virtual stores, showcasing their local character, starting parrot-toy businesses, and trading bull semen online. But those parrot toys and bulls represented the grounded reality of rural Alberta. They were the practical projects that constituted the everyday lifeworlds of rural residents. The fact that these projects were finding their way into the media space of the Internet had high significance that politicians failed to recognize to their own detriment. Following a political logic marked by technological and market determinism, policy planners had anticipated that the very arrival of the optical trunk into the frozen soil of the prairie would rapidly transform the horizons of rural people's lifeworlds. It might have been much wiser, we suggest, to start the project by taking stock of the content and dimensions of these ultimate actors' lifeworlds and the material situations that generated them, an approach recommended by those that endorse constructive technology assessment (CTA) as the best way to make policy (see Genus 2006; Schot & Rip 1996)

Furthermore, we discovered that relevant actors reside in different strata of the social world and making translation work across these strata often requires a quantum leap and poses a major challenge. In the case of the SuperNet, the network builders, in their professional roles and perceived mandates, operated on the basis of instrumental rationality that, according to Habermas, is characteristic of the systemic relations underlying markets and bureaucracies (Habermas 1984).[6] Accordingly, these actors were preoccupied with the mobilization of other actors functioning by the logic of market and bureaucratic systems: government offices and figures, legislative bodies, companies, industries, and markets, and employed their main "steering media," power and money. They underestimated, if not completely ignored, the need for taking their enterprise into the realm of the lifeworld of potential users and enrolling them by means of communicative understanding. In the best case, network builders thought of their possible outreach to rural Albertans as education, or informational campaigns, which would flow from the top down and would eventually help bind rural residents' activities into a set of systemic relations. Little consideration was given to the possibility of engaging rural citizens in communicative interaction, of tapping into their situated knowledges and hearing their messages, of which there were many as the quotes from our focus groups demonstrate. Interestingly, and perhaps somewhat comfortingly, the holdup of SuperNet adoption proved system rationality powerless to remodel the lifeworld at will to its own specifications.

Whatever future the SuperNet and the media space of rural Alberta might have, it will most likely be decided in the interplay between the systems of market and government on the one hand, and the lifeworld of users, on the other. From a theo-

retical perspective, then, we believe that highlighting the distinction between these two types of rationality and their pertaining strategies using a Habermasian view offers an important refinement to actor-network theory. The work of translation proves to be particularly challenging and uncertain across the rift separating these spheres of action. Thus specific strategies designed for closing that rift may be a critical area for actor-network scholars to focus on.

Finally, a parallel analysis of the two discourses reveals two distinct programs with regard to this emergent media space. The media site that policy planners had envisioned and worked to create was akin to what Lefebvre (1991) calls "abstract space" (50), an instrumental territory open for *colonization*, a space welcoming the formative flows of money in the form of investment, commodity and labour exchange, and power exemplified by efficient communication between the government and local administrations. This colonization prospect did not remain unnoticed by rural residents who spoke of the SuperNet as a "double-edged sword." For their part, residents envisaged a media space conducive to *cultivation* through meaningful action. They imagined an environment that was tightly intertwined with their lived material spaces, yet also widened their horizons by enabling practices that would transcend the entrenched rural and urban identities. In short, they construed the media space as one of action, a space that would allow them to establish new connections with the wider world on their own terms.

Thus, in contrast to the preoccupation with "abstract space" characteristic of policy planners, rural residents conceived of the nascent media space as *texture*, which Jansson defines as the "dominant paths and patterns that are (re)produced through the repetition of practices within a more durable spatial structure" (Jansson 2007: 197). This texture of recursive practices is what the cultivation process evoked in citizens' discourse would eventually produce, but it could not materialize overnight. Especially given that the infrastructure builders had devoted scarce thought to its creation. At the same time, the development of a media space with a dense and lively texture can be seen as the best way to stabilize the infrastructure's otherwise precarious actor-network.

Unfortunately, due to resource and time limitations our research did not follow the developments surrounding the SuperNet in these rural communities past the end of the SuperNet Alliance project.[7] Thus, we are not in position to provide a happy ending with a definitive moral. Our account thus remains, as the section title above indicates, a cautionary tale of two discourses that have, each in its own way, shaped the cultural and media landscape of rural Alberta.

To conclude, in this discussion we have used the case of the Alberta SuperNet project to demonstrate how the close examination of the diversity and complexity associated with emerging rural media spaces offers insights with potentially broad practical and theoretical significance. We intend our work to encourage scholars to pay attention to the dynamics of the policy environments in which such spaces are conceptualized, designed and implemented. The allure of new technologies

seems to be something that policy planners have trouble resisting, yet technology-centred projects are costly and sometimes yield disappointing results. As we have shown, it should not be forgotten that the enrolment of various actors in socio-technical networks is hard work. Consequently, a larger and more inclusive blueprint of media spaces, as well as communicative involvement with the diverse actors expected to populate them, should be considered before substantial investments in technical infrastructure are made.

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Notes

1 The term "discursive community" is used within this context to suggest that knowledge is often produced, shared and appropriated locally within a specific group; it also implies that an exploration of communication practices within such a group may yield some fruitful research findings (Gberardi, 2000). It is however acknowledged that people may be a member of many sorts of different "discursive communities"; thus confining them to simply one for analytic simplicity has some limitations.

2 The term policy planner is used to refer to all those involved in the formulation and implementation of a policy idea, it thus includes industry representatives and other actors along with the traditionally expected policymakers.

3 Modern dial-up modems generally have a maximum theoretical speed of 56 Kb/s, the latency period of connectivity makes certain applications, such as videoconferencing, nearly impossible at slower speeds thus making broadband a more attractive option.

4 The performativity aspects associated with coherence and difference as concurrent spaces is explored by both Mol (2002) and Law (2003) in their discussions of "multiplicity".

5 For more details on the Alberta Advantage one can consult the Government of Alberta's website on this topic: http://alberta.ca/home/43.cfm.

6 We realize that Habermas' concepts are based on a social ontology very different from the one informing actor-network theory. We do not fully embrace the theoretical premises of either of these schools of thought. We are therefore treating them as useful heuristics and sources of conceptual tools for systematic analysis of social phenomena. Seen from this perspective, the two distinct registers can complement and inform each other.

7 Though SuperNet project has been operational for almost five years, a review of the Axia website in late 2009 indicated that over 185 communities of the 422 in Alberta still do not have an ISP offering service in their community (Axia Net Media Corporation 2009). Put another way many communities have yet to really see if the SuperNet will make a real difference in their lives.

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