

OPPORTUNITIES AND CHALLENGES

What Does the New Economy Have To Offer Aboriginal Economic Development?

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Economic Progress translates into social progress; a society where all citizens benefit and no one is left behind

INTRODUCTION

The New Economy, also known as the information economy or knowledge-based economy, took hold in North America in the mid 1990s. Some believe that the combination of the prominent information and communication technologies (ICT) sector and the Internet hold great promise for the economic development of Aboriginal communities. Online access can provide education and training opportunities as well as a wealth of information whether it be about public sector services available to Aboriginals or on-line banking. For instance, the New Economy can provide education and training opportunities for rural and remote communities as the Internet makes on-line electronic learning feasible for those in remote communities as in the case of Campus Manitoba, a division within the Faculty of Extended Learning at the University of Mani-

toba, that offers post-secondary level courses to remote areas including White Bear First Nations in Saskatchewan with the use of communication technology to deliver lectures and tutorials.

Another example is the Connecting Aboriginal Economic Developers (CAED) project, sponsored by Western Economic Diversification Canada, to develop an Extranet that will help over 400 Aboriginal economic development officers to collaborate and access information for learning, mentorship and for their jobs (Western Economic Diversification Canada). The Internet offers lines of communication and access to information and knowledge for isolated firms as knowledge spillovers¹ have become less dependent on spatial proximity (Kolko, 2001). For instance, embroidery goods can be produced with digitalized sewing machines and patterns accessed through the Internet, and couriered to customers at a distance (Duboff, 2004).

A second view contends that the increasing skill level requirements of the New Economy sectors pose greater employment challenges to already employment challenged Aboriginal com-

Deputy Minister Al Hinton, Saskatchewan Northern Affairs "Sharing Canada's Prosperity — A Hand Up, Not A Handout", Standing Senate Committee on Aboriginal Peoples, Government of Canada, March 2007.

¹ A knowledge spillover is a type of positive externality whereby a third party to a transaction receives learning and knowledge benefits.

munities. The pivotal role of knowledge and ideas in the New Economy further emphasizes the need for higher education and skill development for economic development. The recent Senate report, "Sharing Canada's Prosperity — A Hand Up, Not A Hand Out" (Standing Senate Committee on Aboriginal Peoples, 2007) states that Aboriginal people often lack the basic skills and expertise to gain employment in the traditional economy, such as the natural resources sectors (oil and gas, mining), let alone the New Economy sectors which typically require higher skill sets. The Senate report also notes the substantially lower education attainment levels of Aboriginal Canadians compared with non-Aboriginal Canadians. It has been estimated that it will take about 28 years to close the education gap. Consequently, the disparities in education and training may lead to additional challenges for Aboriginal economic development in the New Economy.

The overall effect of the New Economy on Aboriginal economic development is not clear as it broadens economic and social development possibilities through ICT and the Internet and at the same time it creates greater challenges with greater human capital requirements for participation in the New Economy sectors. This article is an attempt to address the question posed in the title, what does the New Economy have to offer Aboriginal development? The question is addressed in two ways, first, by considering the appropriateness of Aboriginal communities as locations for firms in the New Economy and second, by assessing the compatibility of New Economy businesses with the objectives of Aboriginal economic development.

This article is composed of six sections. Section one briefly outlines the main characteristics of the New Economy and section two explains the location decisions of firms in the New Economy. Section three describes the back-office services industry and its suitability for Aboriginal economic development. In section four an economic model of firm location in the New Economy is illustrated. Section five is an assessment of the compatibility of the back-office services and like industries with Aboriginal economic

development objectives. Section six is a discussion and conclusion.

1. THE NEW ECONOMY

While there is no standardized definition of the New Economy, a review of New Economy literature uncovers a few common themes among the range of definitions. The New Economy is characterized by an increasingly dominant information and communication technologies (ICT) sector; the development of the Internet and its contribution to the economy; increasing globalization; a more highly skilled labour market; and an increasingly important role for knowledge and ideas. At the firm level, more easily accessible information and knowledge leads to broadening the strategic capacities (Petit, 2002) and altering the decision making processes in firms. In addition, there is a great deal of literature devoted to the location decisions of firms in the New Economy, as it is widely believed that the determinants of industrial agglomeration, or clustering, are different in the New Economy which is the topic discussed in section 2.

2. LOCATION DECISIONS IN THE NEW ECONOMY

There is a great deal of literature devoted to the location decision of firms in the New Economy, as it is widely believed that the decision of whether or not to cluster has evolved. One stream of literature suggests that firms are more likely to locate in a cluster in the New Economy largely because the creation and transfer of knowledge is more conducive to firms in clusters (Globerman, 2002; Bekar and Lipsey, 2000), while another stream argues that firms are more likely to locate away from metropolitan hubs and clusters as ICT has made it possible for firms to effectively communicate, conduct economic activity, and thus create and pass on knowledge over distances (Kolko, 2002). In other words, a firm with a modem in a geographically remote area can be competitive. This second view has been called the forty acres and a modem concept² and

² The term is coined by Kotlin, 1998.

is considered to be applicable to specific economic activities, such as back-office services.

The way in which knowledge is created and learning occurs in firms in the New Economy may provide insight into the location decision of firms. New economy literature suggests that firms access knowledge either through global pipelines, local atmosphere, or a combination of both. Global pipeline refers to the channel in distance interactions of firms which reaches over short distances to other regions and over long distances internationally (Bathelt, Malmberg, and Maskell, 2002). For instance, the New Brunswick ICT sector became competitive with world-leading ICT clusters by developing long distance networking and business development activities to create extra-local linkages (Davis and Schaefer, 2003). Local atmosphere is a concept used to describe the creation and transfer of knowledge within a cluster. It refers to unintended and intended learning processes which occur as an outcome of frequent face-to-face interactions, movement of employees among firms and between education and research institutions and firms, new firm start-ups and the like (Wolfe and Gertler, 2004; Bathelt et al., 2002; Maskell, 2001). Firm location does not directly affect the knowledge created and transferred through global pipelines while it does directly affect knowledge created and transferred through local atmosphere.

Being that many First Nation communities are located away from metropolitan hubs and tend not to be part of industrial clusters, the forty acre and a modem concept may provide economic development opportunities for Aboriginal economic development. The forty acre and a modem concept is applicable to specific economic activities particularly back-office services, the topic covered in the following section.

3. BACK-OFFICE SERVICES INDUSTRY

Back-office services, describes the off-side delivery of a range of non-core service functions, including administrative tasks, customer service and technical support (Conrad, 2000). Information and communications technology has made it possible for many back-office services to be provided in locations far from home offices. With

appropriate information technology (IT), any non-face-to-face service can be provided back-office. Outsourcing is the term used to describe the contracting of business functions outside the firm. Outsourcing occurs inside and outside national borders.

There is nothing new about outsourcing as manufacturers have outsourced parts manufacturing to smaller firms for decades. In the New Economy, the demand for outsourcing has increased as information and communications technology (ICT) has made it possible for many more aspects of production to be outsourced, namely services. The ability to outsource services is specifically what the New Economy brings to the concept of outsourcing, often to low cost countries with lower labour standards such as China and India. In essence, services can be provided from anywhere on the globe if the telecommunications infrastructure is available. Firms outsource to reduce costs, improve employee productivity and to focus on core business functions (Canadian Chamber of Commerce, 2005). The back-office services industry has become a significant component of the global economy evidenced by the close to US\$3 trillion or nearly 10% of global GDP it comprises (International Trade Centre, 2000).

While offshore back-office services is growing at a rate of 15% to 20% (Conrad, 2000) annually, some types of back-office services such as customer relationship management (call centres, technical support, etc.) are more suitable for nearshore rather than offshore outsourcing (Bowen, 2005). Nearshoring refers to contracting out to geographically close countries, such as is the case where U.S. firms outsource to Canadian firms.

Back-office operations are increasingly viewed as a source of economic development for communities and regions. The International Trade Centre (2000) has identified back-office services as a high growth market opportunity. Numerous American communities have been actively soliciting back-office business to create jobs. For instance, Rural Outsourcing, an IT company that outsources to rural communities in the U.S. claims that they can provide information technology services at 30% to 50% below most urban based consulting firms due to lower overhead and wages in rural regions (Johnson, 2005).

Some Aboriginal communities in the United States are benefiting from nearshoring. For instance, Lakota Express, a Native American woman owned marketing and web-design firm, established in 1996, is based on a South Dakota Indian reservation and provides services for clients including Daimler Chrysler, the federal, state and tribal government. Lakota Express has a state of the art call centre that provides inbound and outbound telemarketing. They also provide other services such as data entry, order processing, and surveys. (Lakota Express, Inc, 2006)

In addition, tribally owned companies have been set up on Northern Ute reservations in Utah. On four Utah reservations, 150 to 180 full time jobs have been created through outsourcing of government and commercial contracts. "One venture, owned by members of the Cedar Bank of Paiutes, did \$14 million in business last year" (Walker, 2005). Jobs include data entry, call centre, helpdesk and info-tech work.

Notwithstanding labour costs in Canada being higher than in Mexico and India, the two favoured outsourcing destinations of the United States, there are several factors which make Canada a very desirable place to outsource. Canada has a competitive advantage in attracting U.S. outsourcing business due to its educated population, high employee retention rates, cultural and linguistic similarities, stable political environment, business-friendly climate, shared business culture, and close proximity to the United States (Bowen, 2005; Canadian Chamber of Commerce, 2005). As well, outsourcing to Canada is a less sensitive topic among U.S. firms and their clients and has attracted less political and media attention in the United States than outsourcing to off-shore locations (Bowen, 2005).

In 2006, the Canadian business support services industry reported over \$5.7 billion in revenues with over 48% of that being generated by telephone call centres (Vincent and McKeown, 2008). While Canadian growth in back-office operations is not expected to reach near the levels of India and other Asian countries, it is expected to maintain a secure position for U.S. firms that rely on others to look after their busi-

ness analytics, corporate reporting, and data warehousing operations and want those functions performed geographically closer to the head office (Bowen, 2005).

Contact centre business is the largest type of offshore activity performed in Canada. "Call centre strategies are in place in nearly all Canadian provinces, and constitute a continued area of focus for economic development activities for the provinces. Contact centres have played an important role in bringing high value, white-collar services-based employment to communities across Canada, especially to rural and remote communities" (Canadian Chamber of Commerce, 2005: 5). For instance, in Sault Ste. Marie, 2500 jobs, mainly in customer service and technical support, were created by U.S. outsourcing during the period 2002–2005.

A few of Canada's Aboriginal communities have become involved in the contact centre industry. The Aboriginal community of Bella Bella, with a population of about 1500, on Campbell Island in British Columbia has successfully operated a call centre from 2000 to 2008 providing jobs for eight full-time and several part-time employees (Gauthier, 2001). The Saskatchewan Indian Institute of Technologies (SIIT) has operated a call centre since 1996. They started with 8 employees and currently employ about 35 permanent part-time Aboriginal employees, many of whom are post-secondary students. The SIIT call centre is based on the Asimakaniseekan Askiy reserve in Saskatoon and offers its services on a national level, but primarily in Saskatchewan, in the First Nation languages of Cree, Dene, and Saulteaux, and English. Convergys, an Ohio-based call centre giant, opened a call centre at the Power Centre in Truro, Nova Scotia, run by the Millbrook First Nation in 2004. The call centre currently employs about 600 full-time employees, a small proportion are Aboriginal.³ These jobs pay above minimum wage, starting in the range of \$9.75–\$11.35 per hour. The larger companies such as Convergys offer comprehensive benefit packages which include health, dental, pension, stock options and tuition reimbursement benefits. Note that the call centre operations in Saskatoon and

³ Jill Richard, Convergys Recruiting Manager at the Truro call centre does not know how many of the 600 employees are Aboriginal but states that it is a small proportion. Employees cannot be asked to self-identify as Aboriginal.

Truro are located in cities and not in rural and remote areas, thus making these two examples less applicable to the forty acre and a modem concept. At the same time neither of the urban located call centres is located in a cluster thereby justifying their inclusion and relevance to this discussion. Given the viability of back-office services firms in rural and Aboriginal communities in the United States and Canada, the back-office services industry may hold promise as an economic opportunity for other Aboriginal communities in Canada.

New economy literature suggests that the creation and transfer of knowledge in back-office services industries is more reliant on global pipelines than local atmosphere thereby lending support to the forty acres and a modem view of firm location in the New Economy. Section 4, the section to which we now turn, assesses the applicability of the forty acre and a modem concept to back-office services firms located in rural and remote areas using microeconomic theory and modeling.

4. THE NEW ECONOMY MODEL OF FIRM LOCATION

While economic literature has largely ignored questions about firms' location decisions, Paul Krugman's (1991) work in the area of industrial geographic concentration has played a prominent role in filling the void. Krugman's (1991) core periphery model is used to analyze the forces of economic clustering and spreading by allowing mobile workers to migrate between regions. Numerous extensions of the model have been developed to analyze economic topics in the areas of international trade, economic growth, business cycle theory and regional economics, the latter being most relevant to the topic of this article.

In this article, Krugman's core periphery model is modified to analyze the location decisions of firms in the back-office services industry. The core model is modified to reflect two relevant determinants, the first is congestion costs and the second is the creation and transfer of knowledge, both of which are more fully explained below.

It has been argued that some firms find it more profitable to locate away from industrial

clusters and large cities in order to minimize congestion costs, specifically the additional costs of doing business and living in large urban centres (Brakman et al, 1996). For instance, Silicon Valley has incurred large increases in the cost of living and traffic congestion which has in turn ignited growth in less congested surrounding areas (Broersma, 1998). In addition, a Transport Canada (2007) study estimates urban congestion costs in Canada's nine largest urban areas to be in the range of \$2.3 to \$3.7 billion dollars in 2003, mostly due to time lost in traffic, increased fuel consumption and increased greenhouse gas emissions.

The literature suggests that as congestion costs increase, firms are more likely to relocate to away from large metropolitan hubs to reduce production costs, as well as the costs of living for their employees. The congestion effect is relatively strong for back-office services firms since cost savings is one of the main motivations for outsourcing back-office services. Back-office services firms are believed to have a competitive advantage when located in less congested and rural regions characterized by relatively low wages and low rent. Accordingly, a congestion effect is incorporated into the core periphery model, as was first done by Brakman, Garretsen, Gigengack, van Marrewijk, and Wagenvoort (1996).

A second modification to the model addresses the importance of knowledge creation and transfer in the New Economy. Here we make reference to the concepts of local atmosphere and global pipelines as previously discussed in section 2. Firms in the back-office services industry rely on gaining information and knowledge over distances via global pipelines to a larger extent than through local atmosphere. Back-office services firms in small communities or rural regions create extra-local linkages through global pipelines whereby information and knowledge is exchanged. In the model, the benefit of knowledge creation and transfer through global pipelines is available to all regions, both urban and rural.

Although local atmosphere is expected to play a much smaller role for firms in the back-office services industry, it does exist and is advantageous to co-located firms. For instance, in Winnipeg, experienced call centre workers often move from Convergys to MTS Allstream

Inc. or EDS where their experience earns them higher wage rates. MTS Allstream Inc. and EDS both benefit from local atmosphere, through cost savings, by hiring already trained and experienced call centre workers.

The modified model considers the following five clustering forces:

1. Economies of scale, which is the cost savings associated with larger scale production (a positive clustering force);
2. The share of household expenditures allocated to New Economy goods and services (a positive clustering force);
3. Transport costs (a negative clustering force);
4. Congestion costs (a negative clustering force); and
5. Local atmosphere (a positive clustering force).

To clarify, a firm to which economies of scale is very important is more likely to locate in a cluster, a firm producing a product which comprises a large share of household expenditure is more likely to locate in a cluster, a firm with high transport costs is more likely to locate away from a cluster, a firm to which congestion costs are high is more likely to locate away from a cluster, and a firm to which local atmosphere is important is more likely to locate in a cluster.

The Model

The model describes two regions that each produces two types of goods, back-office services and agricultural goods. Both regions have two types of workers, agricultural workers and back-office services workers. Agricultural workers cannot become back-office services workers, and vice versa. For simplicity, it is assumed that the agricultural workers are immobile and unable to move between the two regions while the back-office services workers are mobile and migrate to the region offering to highest real wage.⁴

The two regions are identical except that region 1 is a cluster characterized by co-located back-office services firms in close proximity to learning institutions specializing in the back-office services industry leading to the creation of

local atmosphere and thus providing firms with a competitive advantage, denoted by lower production costs. The lower production costs result from the knowledge and information benefits associated with clustering. In region 2, many back-office services firms may exist without being co-located due to the large geographic size of the region. In sum, the regions are identical in all attributes except for the number of back-office services firms and the competitive advantage due to clustering of back-office services firms in region 1.

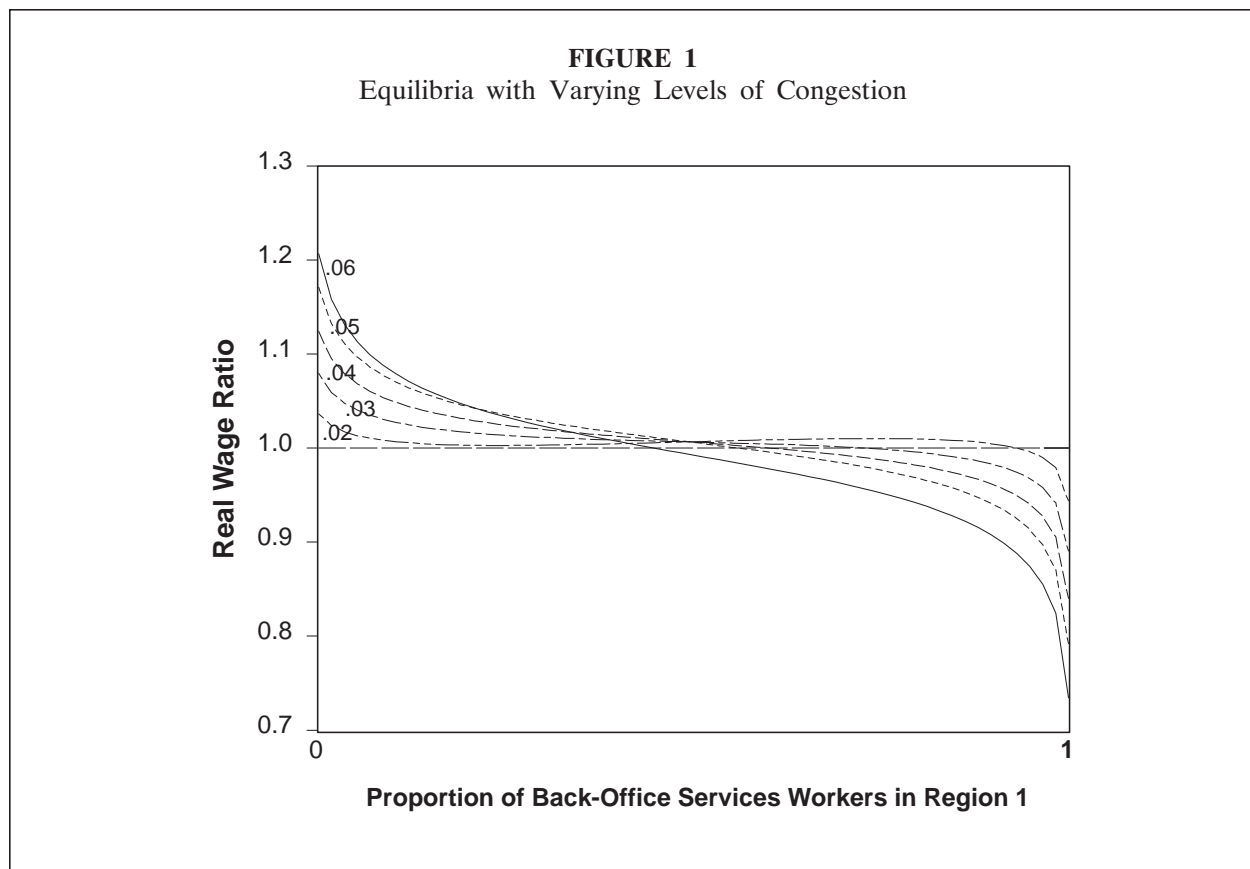
The agricultural goods are standardized which means that all farm products are identical. In other words, a farm in region 1 produces identical corn to all other farms in region 1 and all farms in region 2. The back-office services firms produce differentiated services which mean that each firm provides a different service. For instance, one firm may provide customer support for a telephone company and another firm may provide customer support for a government child care service program.

All workers live in households which purchase both agricultural goods and back-office services. Households like variety and thus purchase back-office services from both regions regardless of the region in which they reside. In other words, there is trade among the two regions.

As back-office services workers move between the two regions chasing a higher real wage, the region with the larger number of firms and workers experiences congestion and thus higher production costs. The analysis investigates the change in real wages as congestion costs are varied.

The model deals with two time periods, the short run and the long run. Back-office services workers are not mobile in the short run but are mobile in the long run. When real wages are not the same in both regions in the short run, the back-office services workers migrate from the region with low real wages to the region with the high real wages in the long run. A long run equilibrium is reached when real wages are equal across both regions at which point there is no tendency for workers to further migrate. The equations of the model are strongly non-linear

⁴ Real wage is nominal wage adjusted for inflation.



and require the performance of numerical simulations for solutions. Refer to the appendix for more technical details of the model.

Simulation results

The numerical simulations illustrate that back-office services workers, and thus firms are more likely to locate away from the cluster in region 1 as congestion costs rise, as is thought to be the case for many firms in the back-office services industry. The results imply that firms in industries which incur relatively high congestion costs have a tendency to locate away from congested urban clusters.

The main simulation results are summarized in Figure 1 above. The graph in Figure 1 illustrates the short run and long run equilibria as the congestion variable is varied. Note that the vertical axis represents the ratio of the real wage in region 1 to the real wage in region 2 with a horizontal reference line at 1.0 denoting the long

run equilibrium condition where the real wage is identical in both regions. The horizontal axis represents the initial distribution of back-office services workers between the two regions. Specifically, it shows the proportion of back-office services workers in region 1. For instance, if the proportion of back-office services workers in region 1 is .30, then 30% are located in region 1 and 70% are located in region 2. Each of the six curves on the graph is the line joining all the short run equilibrium wage ratios as the proportion of back-office services workers in region 1 increases from 0 to 1. The point at which each curve intersects the horizontal reference line (Real Wage Ratio = 1) represents the long run equilibrium, the point at which the real wages are the same in both regions and workers no longer move between the two regions. Each curve, identified by a number, represents a different level of congestion costs. Congestion costs range from .02 to .06, where .02 represents the case where congestion costs are relatively low

and .06 represents the case where congestion costs are relatively high. For instance, the curve labeled .02 is in long run equilibrium when 95% of workers are located in region 1. In this case, the competitive advantage and associated clustering benefits of locating in region 1 outweigh the congestion costs as the majority of firms choose to locate in region 1. When congestion costs are relatively high as in the case of the curve labeled .06, the long run equilibrium occurs when 58% workers are located in region 1, illustrating little to no clustering as firms spread out to minimize congestion costs.

The simulation results lend support to the premise that the benefits of knowledge creation via global pipelines (over distances) and reduced congestion costs is greater than the benefits from knowledge creation via local atmosphere (by means of clustering) for many firms providing back-office services.

5. THE COMPATIBILITY OF THE BACK-OFFICE SERVICES INDUSTRY WITH ABORIGINAL ECONOMIC DEVELOPMENT OBJECTIVES

While the simulation results in section 4 provide support for the development of the back-office services industry as a viable approach to Aboriginal economic development, a discussion of the compatibility of the approach with Aboriginal economic development objectives is needed to assess the appropriateness of the approach. There is no generally agreed upon set of Aboriginal economic development objectives as they vary widely across the country. Development objectives as set out in the Neechi model have been selected for assessment in this article. The principles of the Neechi model, founded by an Aboriginal worker-owned cooperative in Winnipeg, have come to be considered a comprehensive set of community economic development principles by many advocates of community-based approaches to development and are increasingly

adopted by community-based organizations such as SEED⁵ Winnipeg (Loxley and Lamb, 2006). More relevantly, the community-based approach to development has been adopted by many Aboriginal communities with a focus on “a more community-oriented, less individualistic, culture, which leads to a decidedly refreshing approach toward economic development” (Standing Senate Committee on Aboriginal Peoples, 2007:4). While debate about the goals, objectives, and priorities for Aboriginal economic development continues to evolve as experiences grow, the Neechi principles provide a relatively effective benchmark and for that reason have been chosen for the present analysis.

The Neechi principles are summarized as follows: production of goods and services for local use; local reinvestment of locally generated profits; long-term employment of local residents; local skill development; local decision-making; improved public health; improved physical environment; neighbourhood stability; and human dignity. In this section, the goals will be discussed as they relate to the back-office services industry in Aboriginal communities. The three examples of participation in the back-office services industry in Canadian Aboriginal communities, as discussed in section 3, cover two approaches to involving Aboriginal communities in the New Economy. First, Aboriginal communities can develop their own back-office services firms as in the cases of Bella Bella and SIIT. Second, Aboriginal communities can attract existing back-office services firms to locate on First Nations reserves. The latter is most suitable to First Nations located close to urban centres who want to expand commercial activity on reserve by attracting outside investment.

Table 1 provides a summary of the assessment of compatibility of back-office services for Aboriginal economic development with the Neechi principles. On the first Neechi principle, back-office services firms provide services for export, not for local use, although their existence and success may provide the opportunity for new firm start-ups which may produce a good or ser-

⁵ SEED Winnipeg is a non-profit community economic development organization with a mission to deliver programs and services that help low income individuals, groups, and organizations start businesses. Aboriginal Community Collaborations (ACC) is one of SEED's six program areas, whereby it connects with Aboriginal organizations to collaborate on creating community economic development initiatives designed for the Aboriginal community, one of which is the Aboriginal Build A Business Program.

TABLE 1
Compatibility of Back-Office Services for Aboriginal Economic Development
with Neechi Principles

<i>Neechi Principle</i>	<i>Compatible</i>	<i>Somewhat Compatible</i>	<i>Incompatible</i>	<i>Explanation</i>
1. Production of goods and services for local use			X	Services produced for export
2. Local reinvestment of locally generated profits		X		The opportunity is provided as long as the firm is locally owned.
3. Long-Term employment of local residents		X		Depends on market conditions for the back-market services industry
4. Local skill development	X			The strongest benefit
5. Local decision-making		X		Exogenous factors strongly influence local decision-making
6. Improved public health	X			Greater employment and income are correlated with improved public health.
7. Improved physical environment	X			Greater employment and income are correlated with an improved physical environment.
8. Neighbourhood stability	X			Greater employment and income are correlated with more neighbourhood stability.
9. Human dignity	X			Employment is associated with greater human dignity.

vice for local consumption. For instance, the additional income and profits brought into the community from the back-office services firms will provide community residents with greater purchasing power strengthening demand for goods and services from local businesses. Backward linkages⁶ may be created as back-office services firms are likely to call for other business initiatives to provide skills development and training programs to potential workers who will

require some basic training in computer literacy and customer relations among other skills. Forward linkages⁷ may be created as back-office services workers gain skills and move onto other employment initiatives.

On the second Neechi principle, back-office services firms provide the opportunity for local reinvestment of profits provided that the firm is locally owned. In the back-office services industry either the firm is locally owned and contracts out

⁶ A backward linkage is a measure of the extent to which the output of a sector depends on inputs purchased from other sectors in the community.

⁷ A forward linkage is a measure of the extent to which the output of a sector is sold as an input to other sectors in the community.

to non-locally owned firms, as in the case of the Bella Bella Call Centre on Campbell Island and the SIIT Call Centre in Saskatoon or the firm itself is non-locally owned, as in the case of Convergys, a multinational corporation, in Truro. The Millbrook First Nation owns the Power Centre in Truro where Convergys is a tenant. In the case of the SIIT Call Centre, the generated revenue is reinvested in SIIT educational services (Burke, 1999).

Long-term employment for local residents, the third Neechi principle, is somewhat compatible in that back-office services employment may either be long term or it may provide skills, training, and experience necessary to be able to secure other long term employment opportunities. The back-office services industry has often successfully played the role of providing starter jobs for low skilled local residents whom in the process build on their human capital. For instance, the Bella Bella Call Centre developed with the objective of providing job experience and skills training to Heiltsuk band members who would go onto other jobs or attend school for higher education (Stockford, 2006). At the SIIT Call Centre, many of the part-time jobs are occupied by Aboriginal post-secondary students providing them with work experience, advantageous in securing long term employment after graduation, and an income to assist in financing their education. The back-office services industry is characterized as one with a high degree of competitiveness and sometimes short lived contracts, thus making it more suitable for the short-term goals of providing training and job experience. For instance, the Bella Bella Call Centre closed in early 2008 as their last contract expired.

In close connection, the fourth Neechi principle, local skill development, is strongly compatible with back-office services firms in rural and remote communities. Both Aboriginal owned call centres, Bella Bella and SIIT, in Canada provide on the job training. The Convergys call centre on Millbrook First Nation provides job training and offers specific computer training courses to those without prior computer experience, though the number of Aboriginal employees has been small. Local skill development leads to knowledge spillovers whereby workers move among back-office operations firms or other local business initiatives. Although, opportunities for knowledge

spillovers may not be commonplace in remote Aboriginal communities.

On the fifth principle, an Aboriginal firm providing back-office services is likely to be locally owned, as in the cases of the Bella Bella and SIIT Call Centres, yet their existence and the way it operates is determined by exogenous factors, namely decisions by outside agents (clients such as private firms or government). Locally owned back-office services firms in Aboriginal communities are likely to be small scale operations unless the community is in close proximity to an urban centre. The non-Aboriginal owned call centre in Truro is large scale employing close to 600 workers, most of whom are not Aboriginal.

Neechi principles six through nine, improved public health, improved physical environment, neighbourhood stability and human dignity are all compatible with the operation of back-office services firms in an indirect manner. A community with greater levels of employment, greater wage income, and more locally earned profit is likely to provide better public health, an improved physical environment, greater neighbourhood stability and a higher degree of human dignity. Income and profits lead to a larger tax base whereby the public sector has more resources for allocation towards public health spending and physical infrastructure. A higher level of employment and income enables households to improve their personal physical environments, whether it is their homes, yards, or rental properties. The employment of previously unemployed individuals is associated with greater human dignity and self esteem which may lead to neighbourhood stability. To clarify, employed individuals are less likely to be transient, thereby improving neighbourhood stability. Chief Wilfred Humchitt, of the Heiltsuk band in Bella Bella, stated, "It has been uplifting to see members of our community get off social assistance, take advantage of their training and secure employment that ensures lifelong career opportunities. I have seen individuals leave the call centre with greater esteem and a positive outlook for the future." (Stockford, 2006).

The greatest strength of back-office operations for Aboriginal economic development is in its ability to provide jobs and skills to Aboriginal people, thus addressing one of the most critical concerns in Aboriginal communities. Experience

in the back-office services industry helps a workforce to develop computer and customer service skills which are in demand and are portable to other work environments (International Trade Centre, 2000). The skill level requirements are relatively low. The costs of providing back-office operations are expected to be comparatively low due to the lack of congestion costs such as high rents and high wages associated with larger centres. Back-office services clients look to save at least 30 to 40% of the costs of providing the service in-house. Labour costs are typically 60% of any back-office services while other major cost items which need to be competitive include telecommunications and rent (International Trade Centre, 2000).

Although back-office operations do not comply with many of the Neechi principles, they may be viewed as a means to an end if appropriately planned to cross-subsidize other development initiatives towards community development, such as further training programs and housing projects. As well, it may offer the opportunity to keep rural communities intact provided telecommunications infrastructure is available to support the delivery of back-office services.

6. DISCUSSION AND CONCLUSION

At least three Aboriginal communities have participated in the back-office services industry in Canada. Of the three communities described in section 3, one was in business for close to eight years, another is in their twelfth year of business, and the third signed a six year deal in 2003. Are the Aboriginal communities' involvement in the call centre industry a result of chance or are they supported by economic fundamentals? If the latter is true then call centres and other back-office services type operations may be suitable for economic development in other Aboriginal communities. The analyses in this article suggest that the success of back-office services firms in Aboriginal communities is supported by economic fundamentals.

The NE firm location model supports the forty acre and a modem concept that firms in certain industries will benefit from locating away from a cluster as the costs of clustering (congestion costs) outweigh the benefits (local atmosphere). The Bella Bella Call Centre is a prime example of a forty acre and modem type firm as

it operated in a small and relatively remote community and relied on information and knowledge transferred over distances (global pipelines). As previously discussed the existence of the SIIT Call Centre on reserve in Saskatoon, a city of 200,000, is also supported by the simulation results since it is not part of a call centre cluster and operates with relatively low overhead costs. The Convergys call centre located in the Millbrook First Nation run business centre, is different from the other two businesses because it is not Aboriginal-owned and it operates at a larger scale. It is a unique case in regard to the New Economy clustering model as well. It fits the forty acre and a modem model in that it operates in a small city of about 23,000 and a census agglomeration population of about 45,000 where congestion costs are expected to be low. It also fits the clustering model in that the location decision was largely based on successful operations in other parts of the province. The province of Nova Scotia is geographically small and has a well developed call centre industry, enabling local atmosphere to benefit the newest Truro call centre. Information and knowledge are created and transferred as employees move among firms and firms can benefit from economies of scale in employee training programs and other support services.

In regard to the compatibility analysis of back-office services with Aboriginal economic development objectives it is difficult to reach a definite conclusion since objectives vary widely among First Nations in Canada. As stated in section 5, back-office operations do not comply with many of the Neechi principles but may still be considered to be worthwhile if they can provide skill development and jobs. Nonetheless, some Aboriginal communities will not be interested in developing back-office operations for economic development in their communities.

Based on the discussion and economic analyses in this article, it can be stated that the back-office services industry has been particularly successful in the New Economy and may be appropriate for Aboriginal economic development in some Aboriginal communities provided certain challenges are overcome.

One challenge to using back-office services as an economic development strategy is that many First Nation communities lack the characteristics that would attract New Economy indus-

tries. These communities typically have low education levels, tend to lack workers trained in the use of technologies, and have limited access to broadband and IT equipment. Although the situation is changing rapidly as many isolated communities, such as Bella Bella and others in the north, are increasingly becoming connected to broadband.

A second challenge is dealing with the ongoing competitive threats in the back-office services industry. The International Trade Centre (2000) reports that the international environment is very competitive and seemingly long-term contracts can disappear suddenly in the back-office services industry. The Bella Bella call centre deals with this risk by taking on several contracts for service, and in fact had 24 contracts within its first eight weeks of operation (Stockford, 2006). In addition, rapidly changing support technology requires providers of back-office services to keep current with continuous upgrading which can be costly. As well, economy wide factors such as the recent dramatic rise of the Canadian dollar has eroded some of the comparative advantage of back office operations in Canada (Vincent and McKeown, 2008).

A third challenge is the need for public sector support, especially for the provision of training programs and infrastructure which are essential for the success of any New Economy initiative in a disadvantaged community, First Nations or otherwise. Some of this support is being provided. The Province of Nova Scotia has partnered with Congergys to provide computer readiness training to prospective call centre employees without computer skills (Richard, 2008). The Manitoba government has implemented training initiatives aimed at creating labour opportunities for the disadvantaged Aboriginal population in the call centre industry in Winnipeg (Guard, 2006). In 2003, the B.C. Institute of Technology (BCIT) implemented an Aboriginal call centre training program in conjunction with the Aboriginal Community Career Employment Services Society (ACCESS) who developed an Aboriginal employment readiness program. By the fall of 2003, more than 100 people had completed the two programs and close to 70% had found employment (BCIT, 2004). In regard to the provision of infrastructure, Duboff (2004) identifies the lack of Broadband Internet access as the greatest barrier for

rural Aboriginal development organizations to participate in the NE, although the situation is improving. In addition, public sector support in the form of tax incentives can be extremely advantageous in attracting call centres to Aboriginal communities. The success of the Millbrook First Nation in attracting Convergys to their development was largely due to the province of Nova Scotia's offer to rebate a portion of payroll tax on condition of specific job creation numbers and income tax is paid by the employees. Additional rebates are available to Convergys as they continue to expand.

Fortuitously, a combination of a predicted labour shortage and a concern for chronic unemployment in disadvantaged communities has inspired some innovative proposals for labour force training programs. Loewen, Silver, August, Bruning, MacKenzie and Meyerson (2006) propose the development of a labour market intermediary focused on a specific industry such as IT. The intermediary is to be comprised of employers, unions, governments and community-based organizations and educational institutions that are committed to developing an improved employment development system that will ultimately move large numbers of low income members of disadvantaged communities into good jobs.

While this article has focused on the back-office services industry, other industries are compatible with the forty acres and a modem concept and may be just as applicable to Aboriginal economic development. Other suitable industries may include natural resource management, Internet-banking, and E-learning, to name a few (Duboff, 2004).

This article contributes to the existing body of academic and non-academic literature in three ways. First, it contributes to the literature on Aboriginal economic development in that it suggests that trade offs are sometimes necessary in order to realize the most crucial goals. For instance, chronic unemployment is perhaps the largest challenge for First Nation communities and it may be necessary for a community to compromise other development objectives, namely self-sufficiency, in order to provide employment opportunities for its residents.

Second, this paper contributes to public policy literature directed at economic development. Since public sector support is required for most

BOX 1
EDO Ideas

Two models for back-office services initiatives in Aboriginal communities:

<i>Model</i>	<i>Location of Aboriginal Community</i>	<i>Ownership</i>	<i>Size of Business</i>
1	Rural or urban (non-cluster)	Aboriginal owned firm (Bella Bella Call Centre and SIIT Call Centre)	Small scale (up to 50 employees)
2	Urban (non-cluster) or close proximity to urban centre	Non-Aboriginal owned firm (Convergys on Millbrook First Nation)	Medium to large scale (more than 50 employees)

Points for consideration

Model 1

1. Entrepreneurship, management, and marketing skills are required to get the business up and running.
2. Appropriate information technology (IT) infrastructure is required, i.e., broadband, computer hardware, etc.
3. Training is needed. Possibly training may be provided in partnership with government, as in the cases previously discussed.
4. Clients for a small scale back-offices service firm may include local and provincial governments, local utilities to provide services such as billing, customer support, data entry, etc.

Model 2

1. The Aboriginal community must have the prerequisites to attract a back-office services firm such as Convergys, which may include the following:
 - (a) Physical infrastructure, i.e., roads, sewer, water, utilities, business park, etc.
 - (b) Provision of office space as in the case where Millbrook First Nation provided a new \$2 million building for Convergys.
 - (c) May require a land leasing system if the outside firm wants to build its own building on reserve land.
 - (d) A streamlined business regulatory system, i.e., transparency, efficiency, access to information, etc.
 - (e) Development of investment promotional materials.
 - (f) Willingness to partner with governments and financial institutions to negotiate a deal, i.e., Millbrook First Nation worked with the Province of Nova Scotia to provide incentives for Convergys.
2. The community must be located close to an urban centre with a labour force large enough to staff a large scale back-office services firm.

economic development, it is beneficial to consider public investment in New Economy forty acre and a modem type initiatives since they are likely to have higher success rates given their current and forecasted growth rates. For the back-office services industry, public policy needs to be directed towards providing universal access

to broadband service and associated telecommunications equipment for specific initiatives. As well, publicly funded labour training programs, such as the ones discussed above, are needed to train the chronically unemployed and are vitally important for successful economic development.

Third, the results of the analyses in this paper broaden the scope of Aboriginal economic development strategies providing useful information for academics and practitioners of economic development. Strategies involving the creation of New Economy initiatives broaden the possibilities for Aboriginal economic development initiatives. A number of ideas for economic development in Aboriginal communities have been discussed in this paper and may prove useful for economic development officers (EDO). The main points are listed in Box 1 below. The information in Box 1 is intended to provide some preliminary information for an EDO interested in learning how to get started with a back-office services initiative in an Aboriginal community and is not intended to be fully comprehensive. The EDO should also keep in mind that the strategies suggested in this paper are most appropriate for achieving the short to medium term goals of providing local skill development and work experience. As previously discussed, long term employment is not very secure in this industry due to the extreme competitiveness and foot-loose nature of the industry. However, there may be good potential for niche markets in the back-office services industry where Aboriginal communities have a unique competitive advantage, namely the ability to reach other Aboriginal communities through common language. As Aboriginal communities reach higher levels of economic development and become wealthier, private firms will want to find ways to reach Aboriginal consumers. SIIT started out providing Aboriginal communities with product information for SaskTel because of their ability to provide services in three Aboriginal languages. The demand for these types of services is likely to increase in the future.

his paper concludes by addressing the question posed in the introduction: What does the New Economy offer Aboriginal economic development? It offers new opportunities for Aboriginal economic development strategies based on the forty acre and a modem concept. These strategies are by no means a solution in themselves, they merely add to the Aboriginal economic development tool box. The analysis in this paper has shown that Aboriginal economic development initiatives in certain New Economy activities are both advantageous and feasible. At the same time, it creates challenges for Aboriginal

economic development as development objectives of self-sufficiency, local ownership and local decision-making are becoming increasingly challenged by increasing globalization in the NE.

APPENDIX

Krugman's (1991) core periphery model is a fully specified, general equilibrium model where the interaction of demand, increasing returns, and transportation costs drive a cumulative process of regional concentration.

Consider 2 regions ($r = 1, 2$) both producing sector *A* back-office services, consisting of numerous varieties, and a sector *B*, standardized agricultural good, which serves as numéraire. The production of NE back-office services is characterized by increasing returns to scale, foot-loose production, and imperfect competition.

The model assumes two factors of production sector *A* workers and sector *B* workers. Sector *B* workers only produce sector *B* agricultural goods and sector *A* workers only produce sector *A* back-office services. Sector *A* workers are mobile and locate in the region offering the highest real wage while Sector *B* workers are immobile and the sector *B* agricultural industry is perfectly competitive with constant returns to scale and standardized goods. It is assumed that the labour market always clears so that there is no unemployment.

The demand side of the economy is modeled with a Cobb-Douglas utility function with constant elasticity of substitution (CES) where the consumption of all varieties of sector *A* goods is symmetrical.

In the short run, the sector *A* labour force is not mobile and short run labour markets clear. The transition from the short run to the long run involves the migration of sector *A* workers to the region with the highest real wage. In long run equilibrium, the real wages are equal in both regions.

Congestion results in negative location specific external economies of scale, which directly associates increasing production costs with the number of firms in the region. The local atmosphere concept is modeled in lower marginal costs for region 1; the region characterized by co-located sector *A* firms in close proximity to learning institutions specializing in areas pertinent to sector *A* firms. The lower costs ensue

from the knowledge and information benefits associated with of co-location. Sector A firms in region 2 are not co-located and are not in close proximity to learning institutions. To clarify, region 2 is geographically large enough so that many firms may exist in a region without being considered co-located.

Numerical simulations are performed to investigate the change in real wages as key variables, described above, are varied. The simulations are performed by observing how short run equilibrium values for income, price index, and nominal wage are observed for a range of exogenously set values of initial distributions of the sector A labour force. Initial distribution of the sector A labour force between the two regions is varied between 0 and 1, to perform 59 separate simulations in which the initial distribution of sector A workers in region 1 rises incrementally from 0.0169 to 0.9971. The short-run equilibrium is summarized by the following three equations representing income, price index, and nominal wage in each region:

$$Y_r = \phi_r(1-\gamma)L + \lambda_r\gamma L w_r$$

$$I_r = (B_r) \left(\frac{\sigma}{\sigma-1} \right) \left(\frac{\gamma L}{\alpha \sigma} \right)^{\frac{1-\sigma\tau}{1-\sigma}} \left[\sum_{r=1}^2 \lambda_r^{1-\sigma\tau} w_r^{1-\sigma} T_{rs}^{1-\sigma} \right]^{\frac{1}{1-\sigma}}$$

$$w_r = \rho \beta_r^{-\rho} \left(\frac{\delta}{(\sigma-1)\alpha} \right)^{1/\sigma} \left(\frac{\gamma L}{\alpha \sigma} \right)^{-r} \lambda_r^{-\tau} \left[\sum_{r=1}^2 Y_s I_s^{\sigma-1} T_{sr}^{1-\sigma} \right]^{1/\sigma}$$

When real wages are not the same in both regions sector A workers move from the region with low real wages to the region with high real wages. A long run equilibrium is reached when real wages are equal in both regions. The real wage ratio (real wage in region 1 over real wage in region 2) varies as the initial share of the sector A labour force in region 1 varies.

Default Simulation Values

Unless otherwise specified the parameters for the simulations are as follows:

$$\begin{array}{lll} \delta = 0.4 & \alpha = 0.08 & \phi_1 = \phi_2 = 0.5 \\ T = 1.7 & \beta_1 = 0.78 & L = 1 \\ \sigma = 5 & \beta_2 = 0.80 & \\ \tau = 0.01 & \gamma = 0.4 & \end{array}$$

List of Variables

L	= total labour force
σ	= elasticity of substitution between sector A goods
δ	= share of income spent of sector A goods
γ	= share of labour force working in sector A
λ_r	= share of sector A labour force working in region r
α_r	= fixed labour cost in region r
β_r	= marginal labour cost in region r
w_r	= nominal wage in region r
Y_r	= income in region r
τ	= congestion parameter
ϕ_r	= fraction of agricultural labour in region r
T_{rs}	= transport cost of a shipment from region r to region s
I_r	= price index of sector A goods in region r

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