

## **State Policies to Enhance the New Economy: A Comparative Analysis**

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### **Introduction:**

While the collapse of technology stocks in recent years has taken some of the bloom off the new economy, many jurisdictions continue to orient their economic policy towards the development of new economy initiatives. This trend is underpinned by two interrelated assumptions about the nature of the new economy.<sup>1</sup> First, the new economy is linked to globalization. As such, the development and growth of the new economy is seen as the key to global competitiveness. The new economy, like globalization itself, is also seen as both inevitable and irreversible. Many commentators have suggested that globalization has decreased the capacity of states to actively intervene and regulate the economy. In the context of the new economy this has meant that the state is not viewed as a regulator of markets, but rather as a facilitator of market decisions made by private corporations.

The second assumption that underpins many discussions of the new economy is that the growth of information technology will bring benefits to those who were excluded from the operation of the old economy, or at the very least will replace the jobs lost through deindustrialization and the decline of manufacturing. These benefits will be achieved either directly through jobs in new economy industries or through a variety of peripheral aspects of the new economy. In particular, the digital revolution promises better educational opportunities, better capacity to access government, better and more responsive state services, and a host of other facilities that promise to integrate individuals into the broader society through information technology. For individuals living in disadvantaged communities – inner cities, deindustrialized regions, remote rural communities – these benefits could prove to be extremely important.

Our objective is to critically examine both these assumptions. Through a comparative analysis of state policies oriented towards the promotion of the new economy, we attempt to assess the degree to which state's actually have engaged in a laissez-faire approach to economic development in this area. At the same time, we also examine the degree to which state policy in this area targets those communities that have been traditionally excluded from mainstream economic development.

An examination of state policies aimed at promoting the new economy brings into question both these assumptions. The state plays an extremely active role in fostering and developing new economy initiatives. While it is true much of that activity is geared towards encouraging new economy industries to locate in particular jurisdictions, there is a significant investment of state resources in fostering and developing the capacities necessary for new economy industries to flourish. While this state activity is definitely aimed at facilitating, rather than challenging, the market, nevertheless it goes well beyond the image of the new economy as having developed without state assistance and state investment.

It is also evident that there has been very little by way of state policy designed to direct new economy jobs into disadvantaged communities. Consequently these communities continue to see very little benefit from the new economy. Disadvantaged communities lack many of the characteristics that would lead new economy industries to locate in them. Inner cities, for example, are frequently characterized by skills shortages, lack of education, low literacy levels, high rates of drug and alcohol dependence, lack of infrastructure, and a highly transient workforce. Given the way the state relates to the New Economy, facilitating rather than challenging market decisions, it is difficult to imagine that many people in the inner city will be able to work in new economy industries or take advantage of so-called “virtual citizenship”. There is little likelihood of these promises becoming a reality without a different kind of state state intervention and state direction.

This paper is divided into three parts. The first part provides an overview of the theoretical literature around the new economy, with a particular focus on National Innovation Systems (NIS) theory and cluster theory. These theories appear to describe what states have done in the past two decades as regards the New Economy, and they are used to justify on-going forms of state behaviour. We find also that the state only infrequently intervenes in such a way as to consciously and directly spread the benefits of the New Economy to disadvantaged communities. This too is consistent with NIS and cluster theory. The second part provides a comparative overview of state policies related to the new economy and develops a categorization scheme for such policies. Finally, the paper considers a developmental alternative to current state approaches to the new economy.

## **Part I: Conceptualizing the New Economy**

### **National Systems of Innovation:**

National Systems of Innovation (NSI) theory posits an interlinking system, or network, of institutions that contribute to technological innovation and promote the new economy. This approach was developed by Freeman (1987) and Lundvall (1992), and has been placed in a Canadian context by Niosi, Manseau and Godin (2000), and by Holbrook and Wolfe (2000 and 2002).

According to NSI theory, a nation's performance in the knowledge-based economy is conditioned by the relationships between research intensive, knowledge-based, public and private institutions and the ability of the population to absorb and make use of innovation (Niosi et al, 2000: 3). Three types of institutions are of primary importance: private and public research intensive firms; research universities; and government labs. The technical, legal, financial, commercial and social linkages and the informal interactions between these institutions make up a nation's system of innovation. Significant transfers of intellectual resources occur between institutions (Holbrook and Wolfe 2000: 3). Innovative institutions and firms collaborate to adapt to rapidly changing economic conditions and to excel in a continuous process of learning. The many facets of an innovation system condition the complex relationship between early stage R&D and economic growth in the New Economy.

According to the OECD (1997) a national systems approach offers new criteria for evaluating government policy. NSI theory directs government policy toward the prevention and correction of both market and systemic failures. As Holbrook and Wolfe (2000: 4) point out, the results of a NSI analysis may "proscribe a broader range of policy solutions, with greater emphasis on the role of social factors and institution-building than traditional policy approaches."

Recent research on innovation systems has moved from the national to the regional level. Regional Innovation Systems (RIS) theory places special emphasis on location. "Regions which possess the full panoply of innovation organizations set in an institutional milieu, where systemic linkage and interactive communication among the innovation actors is normal, approach the designation of regional innovation systems" (Cooke and Morgan 1998: 71). Tradable goods such as codified knowledge, financial assets and material inputs can be sourced on the global market. Important non-market transactions cannot be. Institutional capital, social capital and tacit knowledge are "untraded inter dependencies." Factors of space and proximity contribute to the creation of these interdependencies and this makes a regional perspective on innovation systems essential (Holbrook and Wolfe, 2000: 4).

### **Clusters:**

Research on clusters of innovation stresses the importance of proximity in the process of innovation. Since the publication of Porter's *The Competitive Advantage of Nations* (1990) clusters have emerged as a widely influential policy idea, and many governments have adopted formal cluster initiatives. Clusters can be defined as "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate"(Porter: 2000: 15).

Porter's (1990, 1998, 2000) argument is that clustering development enhances competition, productivity and innovation. Firms and supporting institutions in clusters are linked formally and informally. Members of a cluster benefit from the complementary products and services. Firms are privy to new technological developments and information about changing market demands. Successful clusters provide firms with specialized suppliers and a technologically skilled workforce. Innovation is partly driven by the competitive pressures within clusters but firms and institutions also often mitigate risk and lower the costs of innovation through the development of joint R&D projects. Collaboration between members increases over time as clusters mature and as levels of trust are increased.

This is not a new phenomenon. Clusters exist in traditional resource sectors such as agriculture and in industrial sectors such as automotive manufacturing. The theory has, however, become most closely associated with the knowledge-based economy. Two of the most famous, the Silicon Valley in California and Route 128 in Massachusetts, are clusters of high-tech innovative firms and institutions. There is, it seems, a logical tendency for firms and industries in knowledge-based economies to cluster. Audretsch and Feldman (1996: 639) found that even "after controlling for the concentration of production" there is evidence to suggest that those "industries in which knowledge spillovers are more prevalent—that is where industry R&D,

university research and skilled labour are the most important—have a greater propensity for innovative activity to cluster than industries where knowledge externalities are less important." Certainly, Canada's knowledge-based economy is concentrated in four regions of the country. Montreal (biotechnology, computer telecommunications and aerospace), Ottawa (telecommunications), Toronto (software, computer hardware, biotechnology and internet applications) and Vancouver (computer software, biotechnology and wireless communications) represent 80 percent of Canada's innovation capacity (Niosi 2002: 42).

### **The Role of the State in Innovations Systems Theory and Clusters**

Innovation systems theory is focused on the fulfilment of economic goals. The theory spends little time examining the process by which innovation might enhance social well-being. There is no discussion of potential social benefits beyond the creation of a society that promotes a continuous process of learning. Innovation systems theory does not, for example, examine how social and economic benefits derived from the process of innovation are likely to be distributed. Yet the rewards and opportunities that the new economy offers have not been shared equally among countries, regions and socio-economic classes (Yalnizian 2000; MacLeod, McFarlane and Davis 1996). Will the poorest populations and regions benefit from economic growth spurred on by innovations in knowledge-based industries and sectors? Innovation systems theory say little on this matter. Most theorists appear content to let the economic benefits of innovation enhanced growth "trickle down" to the most marginalized populations.

Cluster theory calls upon government to identify and upgrade existing clusters. This means: the providing public and quasi-public goods that strengthen links between firms within clusters; constructing specialized transportation and communications infrastructure; creating specialized education and training programs; and, if appropriate, establishing cluster-related university research facilities.

Cluster theory proscribes *against* government efforts aimed at the creation of new clusters in communities most in need of development. The development of new clusters should be left to the market. Governments should identify, support and upgrade existing clusters, not attempt to create new ones. The "seeds" of a successful cluster are firms that have already passed "the market test." Government action is not justified unless the market has already established a cluster in a particular area (Porter 2000: 26).

Economically depressed communities, by definition, lack many of the elements that make clusters successful. Joint Venture: Silicon Valley has identified six elements that characterize successful high-tech clusters: a technologically skilled labour force; "anchor" firms that support and encourage entrepreneurial activity; sources of funding and venture capital; universities or other educational institutions that help train the workforce, transfer knowledge and provide technological advice and support to area firms; public services such as specialized human resource, legal and financial services; and government initiatives and programs to address social and economic issues (Joint Venture: Silicon Valley 1999: 5). Many of these factors are likely to be absent in economically depressed communities. Governments might provide public institutions and social services but cluster theory, according to Porter, advises against this if anchor firms and venture capitalists are not already present. But most struggling communities do

not have high-tech firms that have "passed the market test"—if they did they would not be economically depressed.

It is, consequently, not at all surprising that there is little theoretical work linking clusters and community level development. The theory offers nothing to communities that the market does not already favour. Governments are not normally willing to admit nothing can be done for depressed or failing communities. Nonetheless, in so far as government policy in the New Economy is influenced by the theory of clusters, policymakers will be unlikely to support initiatives aimed at creating clusters in communities where social and economic development is needed most.

## **Part II: New Economy Policies in Comparative Perspective**

### **Method:**

What follows is a four-part framework, developed inductively through an examination of policies and initiatives adopted by governments to promote the New Economy in nineteen jurisdictions. These include: Canada; all ten Canadian provinces; four American states—California, Georgia, Minnesota and Massachusetts; two European jurisdictions—the UK and Ireland; and two newly industrialized or developing nations—Singapore and India.

Most jurisdictions have established government ministries or offices dedicated to the promotion and advancement of knowledge, science, technology and innovation. All governments have a presence on the World Wide Web. Ministry web sites provide up-to-date policy profiles. The appropriate web sites for each of the nineteen jurisdictions were systemically examined and analyzed. When necessary, the web sites of related ministries, such as those of economic development, education and human resources, were included in the analysis. In each case, this web-based analysis was followed by an examination of relevant ministerial policy publications and budget papers. Additional information was obtained through phone and e-mail correspondence with government officials.

There are some difficulties associated with this method. Policies and initiatives related to the New Economy are numerous and scattered across ministerial boundaries. Web sites are never condensed for want of space. It is consequently often difficult to determine which policies are considered to be a priority and which are merely secondary initiatives. Governments tend to promote every initiative as the most important initiative. As a medium, web sites uniquely allow this to occur. In addition, government web sites and policy framework publications are characteristically vague and somewhat glib. They are invariably positive but equally incomplete. Funding reductions and program cuts are absent; tax cuts and new initiatives are highlighted. Skillful rhetoric is used to evoke a sense of completeness around issues that are often not explicitly addressed. For example, the concept of an "innovation ecosystem" implicitly suggests that environmental concerns have been incorporated into innovation policy frameworks. In some cases this will be true; in most it will not. It is necessary to read between the lines. E-mails and phone calls to government officials help mitigate these various difficulties but do not solve them.

Despite these difficulties, however, web sites and policy papers are reasonable descriptions of what governments are doing. Web sites, in particular, provide easy access to up-to-date information that is in many ways more extensive than the sort of information that might be obtained through traditional interviews. It is easy, in an interview setting, for specific but important objectives, policies and goals to be overlooked. By contrast, all relevant initiatives appear on government web sites and in policy papers. An exhaustive analysis of web sites and policy papers will, therefore, provide an accurate account of what is being done. But what governments are 'doing' also includes what they are not doing. Initiatives no longer thought to be of value are abandoned and many potentially important concerns are not considered. Web sites and policy papers are, therefore, even useful in their incompleteness. If what is thought to be important is included, what is not included is clearly thought to be unimportant or at least difficult to deal with. As we will see, New Economy policies in advanced industrial nations rarely explicitly integrate both social and economic objectives. In particular, there are remarkably few New Economy initiatives that incorporate any of the principles of Community Economic Development, or in any other way address the needs of disadvantaged communities.

### **A Four-Part Framework**

New Economy policies and initiatives can be divided into four categories.

**1) The Innovation and Investment Environment.** This includes the general environment created by government tax policies, trade agreements, and the system of regulatory policies to protect private and public interests. It also includes policies that are specifically aimed at innovation and investment in knowledge-based sectors. These include narrowly focused tax incentives such as Research & Development tax credits. Intellectual Property Rights and copyright policy frameworks are also intended to directly encourage technological innovation and growth in the knowledge-based economy. Lastly, this category includes any miscellaneous regulations that might affect technological development and innovation. Category I policies are broad-based and market-driven. They condition the general investment and business environment.

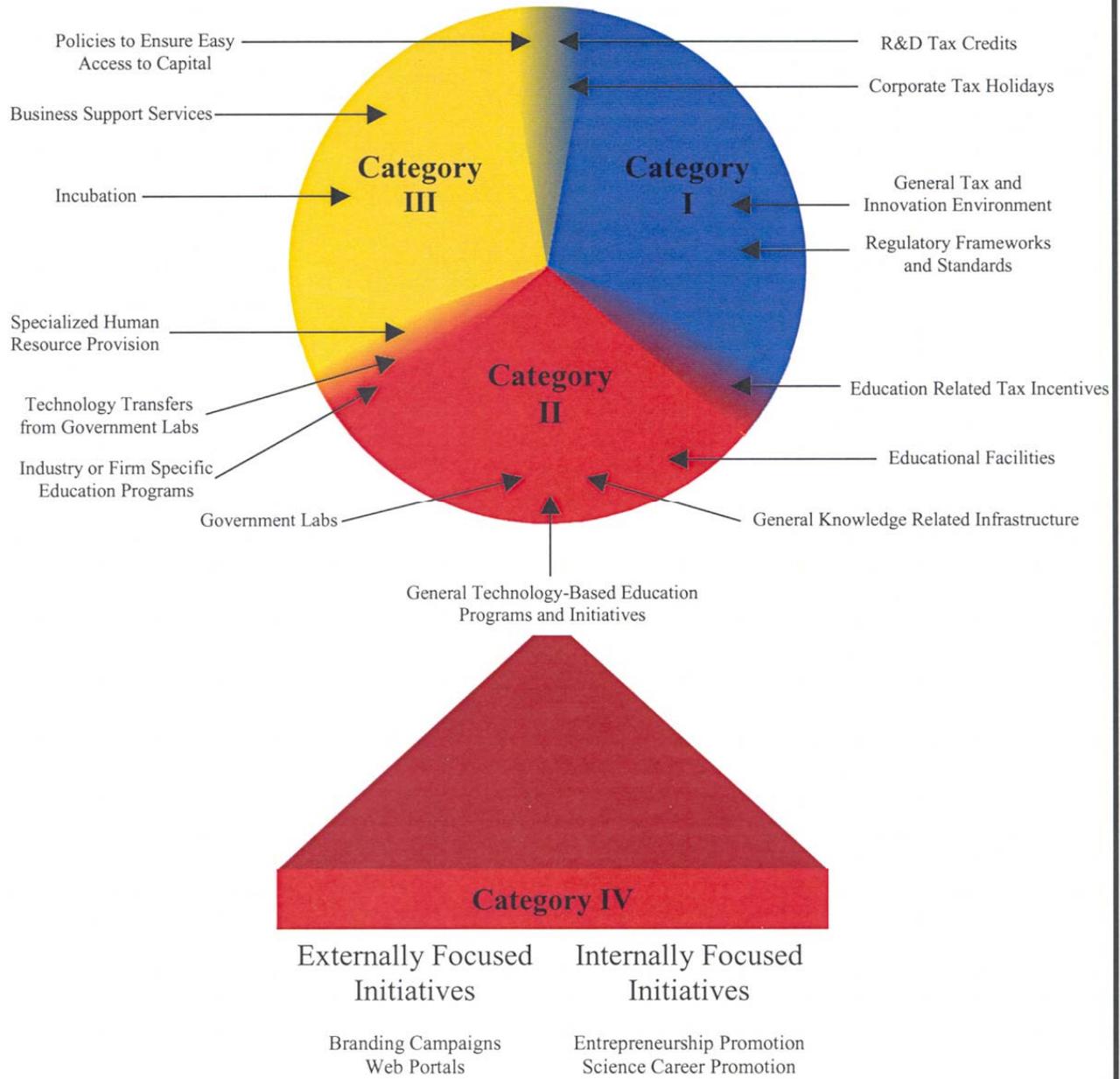
**2) Direct Investment in Public Infrastructure and Expertise.** This category includes all policies aimed at supporting and creating research facilities, research parks, higher education facilities, telecommunications infrastructure and public networks of expertise and knowledge sharing. These policies are broadly aimed at the creation of a highly skilled and educated workforce and the development of new public knowledge. Category II policies are public or quasi-public, and are designed to ensure the provision of necessary high-tech infrastructure and knowledge-intensive expertise.

**3) Public Support for Private Firms.** As a consequence of the neo-liberal revolution most industry support programs in most of the developed nations have been re-configured over the past two decades to be more broadly available and to contain a smaller element of explicit subsidy. There are, however, many ways in which governments provide direct support to New Economy firms. These include but are not limited to: repayable loans; grants; programs to ensure easy access to venture capital; incubation facilities to assist the development of new firms; information networks that provide public knowledge and technology transfers to private firms; training support or the provision of an already skilled workforce; government procurement contracts; and the fostering of partnerships between the public and private sector to commercialize new technology products. Category III policies provide extensive services, expertise and capital to private firms and entrepreneurs, and are intended to help mitigate the uncertainties of high-risk knowledge-based ventures and investments.

**4) Marketing or Branding.** This category includes those initiatives aimed at attracting new investment or expertise to a national or regional knowledge-based economy. These initiatives are not material in nature. Initiatives in this category include advertising campaigns or web-based portals that provide information about demographics, workforce quality, tax policies, expertise availability, infrastructure availability, the state of the existing knowledge-based economy and the general quality of life in the jurisdiction. Initiatives in this category are either externally or internally focused. Those that are externally focused attempt to attract foreign firms or investors. Those that are internally focused promote local entrepreneurship and attempt to encourage young people to enter high-tech or knowledge-based careers.

All four categories are interrelated, each overlapping with the next. Their edges are blurred and ill defined. Many policies fit into two categories at one time. The above diagram presents a graphic representation of the four categories and their relation to one another. Categories I through III are represented as a circle. Category I blends into Category II, which blends into Category III, which in turn merges with Category I to complete the circle. Category IV is an effort to promote what is being done in the other three categories. What follows is a closer examination of each category, together with select examples of policies and programs adopted in the nineteen government jurisdictions.

## A Four-Part Framework



## Category I

Governments in the last 20 years have reduced taxes in order to attract and retain investment and expertise. This is of particular concern in a knowledge-based economy characterized by mobile firms with few material assets. To attract and retain knowledge-based firms, governments also offer tax incentives specifically directed toward innovation, science, technology and research. The most common is the Research & Development (R&D) tax credit. Canada has one of the most favourable R&D credit programs in the OECD<sup>ii</sup>. The general rate of Canada's Scientific Research and Experimental Development (SR&ED) tax credit is 20%; there is a 35% rate available to Canadian-controlled private corporations with a prior-year taxable income under \$400 000 and prior-year taxable capital in Canada under \$15 million.<sup>iii</sup> All provinces except for Alberta and PEI offer additional R&D tax incentives. With some variation, most provinces provide a flat rate of either 10% or 15% to all companies conducting eligible R&D in the province. The federal R&D tax credit program in the USA is calculated using a complex formula but the average credit works out to about 10% of eligible R&D expenses.<sup>iv</sup> The government of Singapore offers a double deduction on all eligible R&D expenses carried out in that country.<sup>v</sup>

R&D tax credit programs are crossover programs associated with both Categories I and III. They are Category I policies because they condition the general innovation and investment environment but they are Category III policies insofar as they provide targeted support to private research intensive firms.

Similar science and research oriented tax incentives are less common. The Government of Ontario, for instance, offers a 10% Innovation Tax Credit to small and medium sized companies performing R&D in the province, and a New Technology Tax Incentive, an Interactive Digital Media Tax Credit, a Research Employee Stock Option Credit, and among others, a retail sales tax exemption on R&D equipment purchased by manufacturers.<sup>vi</sup>

There are other important tax-based policies that both condition the general investment environment and provide targeted support for specific firms or types of firms. The Government of Newfoundland and Labrador, in partnership with the Government of Canada, has established a lucrative tax holiday scheme. The Economic Diversification and Growth Enterprises Program (EDGE) is an attempt to encourage new private sector investment in Newfoundland and Labrador, particularly in rural areas of the province. Qualifying businesses are given a 10 year tax holiday on payroll taxes and on provincial corporate income taxes. If the business is established in the Northeast Avalon area of the province the tax holiday period is increased to 15 years. But that is not all. During the provincial tax holiday period businesses are also given a 5

0% rebate on federal corporate income taxes, and a 100% rebate on municipal property and/or business taxes. The Department of Industry, Trade and Rural Development calls the EDGE program "the most competitive corporate income tax incentive program in all of Canada."<sup>vii</sup>

Other Category I and Category II crossover incentives are aimed at providing easy access to specific resources businesses need. Quebec, for example, offers a five-year provincial income tax holiday to foreign experts who come to the province to work.<sup>viii</sup> The PEI Nomination Program is part of a federal/provincial accord that allows the province to select or nominate specific foreign nationals for permanent resident status, and specifically targets skilled and educated workers or entrepreneurs.<sup>ix</sup> To address shortages of skilled workers in Ireland, the Department of Enterprise, Trade and Employment has developed a working visa and work authorization scheme that enables foreign workers with job offers to gain advanced immigration and employment clearance.<sup>x</sup>

More general regulatory frameworks and standards also condition the investment and innovation environment. These include patents, copyrights and other forms of intellectual property protection. All government jurisdictions have extensive intellectual property regulations and policy frameworks. Firms will not do research and innovative work in jurisdictions where intellectual property is not protected. There is therefore pressure on every government to legally protect intellectual property. But governments also try to encourage innovation by offering financial incentives related to IPRs. The Economic Development Board of Singapore, for example, manages a program called the Patent Application Fund Plus, which helps small and medium sized businesses defray the cost of patenting intellectual property. Individual businesses receive up to S\$30,000 for this purpose.<sup>xi</sup> Ireland provides tax exemptions on royalty income from patented intellectual property as an incentive to encourage innovation.<sup>xii</sup>

The innovation environment is also conditioned by tax-based or financial incentives, frequently aimed at educational programs. These incentives generally underscore efforts to create skilled and knowledgeable workforces, and therefore fall somewhere between Categories I and II. Ontario, for example, offers an Educational Technology Tax Incentive designed to increase private sector support for technology-based education in the province. The incentive is available to businesses that donate or give price discounts on new technological equipment to eligible educational institutions. Incorporated businesses receive a 15% tax deduction and unincorporated businesses receive a 5% refundable tax credit.<sup>xiii</sup>

Category I policies are the most visible of the four types. Governments are not shy to advertise and promote what is being done to create a business-friendly innovation and investment environment, in part because Category I type policies are largely consistent with the

tenets of neo-liberalism. In Category I governments support individual businesses not through direct subsidies and grants but indirectly by creating an innovation environment that protects intellectual property, reduces regulation, provides incentives to innovation and keeps taxes down.

## Category II

Category II investments are primarily directed toward education and the building of public or quasi-public infrastructure. These expenditures can be broken down into four types: general knowledge related infrastructure such as broadband networks; research councils and government research labs; the development of advanced educational institutions and facilities; and educational programs and initiatives that are unrelated or only partly related to any specific educational institution.

As regards the first of these types, all urban areas in advanced industrial nations, and most areas near urban centers, have access to modern knowledge-based infrastructures. This is not the case in many remote or rural areas. Efforts are being made to address this 'digital divide'. The Government of Canada has developed an extensive multifaceted initiative called "Connecting Canadians", the purpose of which is to ensure all Canadian communities have access to broadband services by 2005. A centerpiece in this initiative is Industry Canada's Community Access Program (CAP), which seeks to provide affordable public internet access at libraries, educational facilities and community centers. The project targets those who would otherwise have limited internet access. Provincial and territorial governments are working with the federal government to establish CAP sites in every part of the country.<sup>xiv</sup>

There are provincial initiatives aimed at the development of broadband infrastructures. Alberta SuperNet, for example, is a broadband infrastructure project linking government offices, educational institutions, health care facilities, libraries and smaller communities. Connect Ontario and SmartLabrador are similar infrastructure development programs.

In 2001 the UK's *Opportunity for All* White Paper announced a 30 million pound fund to support broadband infrastructure and public access site development at the local level. In the USA, the MassBroadband initiative supports the development of broadband infrastructure in all areas of Massachusetts that do not already have access.<sup>xv</sup> The Department of Education in Georgia works in association with the private sector to provide high-speed access to rural residents and public schools, and to close the 'digital divide' in urban areas.

Access to broadband infrastructure is quickly becoming as important as access to roads, rail and air transportation facilities. Governments recognize this. Broadband development

projects and community access initiatives are an important component of public investment in the New Economy.

Publicly-funded government research labs are a primary component of national systems of innovation. They complement the innovative potential of universities and private research-intensive firms. Government labs conduct research that is pre-competitive, labour intensive, preliminary and often expensive. Efforts are made to transfer knowledge with commercial potential to private sector interests. Knowledge and technology transfers from government labs to the private sector are a primary means by which early stage public investment in R&D is transformed into economic growth. So while government research labs clearly represent direct public investment in knowledge creation, they are often also explicitly established as supports for the private sector. Government labs might therefore be placed in both Categories II and III. Labs and facilities dedicated to the advancement of research that is of specific concern to the public must be included in Category II. Research facilities that advance and transfer potentially marketable knowledge or innovative processes fit more properly in Category III. Often the line between the two types of research labs cannot clearly be drawn.

All nineteen government jurisdictions examined support advanced networks of research labs. The Government of Canada has 111 labs and facilities dedicated to areas of research of particular interest to both public and commercial concerns.<sup>xvi</sup> A similarly extensive set of public institutions, labs and research facilities exists in the USA and the UK. India's system of government labs is not as extensive but India has for example established a Centre for Advanced Technology, a Central Electronics Engineering Research Institute and a network of Software Development Parks dedicated to the development of export services making use of information and telecommunications technology.<sup>xvii</sup> Singapore has established a network of public research labs that is out of proportion to the country's small population. The Agency for Science, Technology and Research (A\*STAR), for example, has established major research facilities in science and technology, biomedical research and industrial processes.<sup>xviii</sup>

Labs and research facilities are often dedicated to the creation of new knowledge that directly benefits knowledge-intensive industries, and represent a significant public investment in the knowledge-based economy/society.

Education is a central component of public investment in the New Economy. Governments are building a remarkable number of new educational institutions dedicated to science, technology, engineering and innovation. The University of Ontario Institute of Technology was announced in 2001 and opened in September 2003. It is Canada's newest university.<sup>xix</sup> Manitoba committed \$24 million to the Red River College's Princess Street Campus. Completed in 2004, its focus "will be on information, communication and technology

programs in response to the needs of the new economy."<sup>xx</sup> Simon Fraser University opened a new Surrey Campus in 2002 offering degrees in Interactive Arts and Technology.<sup>xxi</sup> There are similar colleges and universities dedicated to the creation of a technologically skilled workforce in every other jurisdiction examined.

Perhaps as important as the building of education infrastructure and institutions are educational programs, many of which are unrelated or only partially related to specific education institutions, and some of which are designed to encourage those in 'at risk' or disenfranchised demographic groups to advance their education and employment opportunities.

The Canadian Government's Office of Learning Technologies, for example, manages a Learning Technologies for the Workplace initiative which funds projects that help workers take advantage of new technologies so that they can adapt to changing job demands.<sup>xxii</sup> Canada's Community Access Program Youth Initiative offers short employment to young people, ages 15-30, in CAP sites around the country, providing youth with work experience and the opportunity to develop information and telecommunications skills.<sup>xxiii</sup>

An increasing number of government education programs focus on job specific skills. Those designed around the specific needs of industry should be placed in the crossover region between Categories II and III. They represent a direct public investment but they also directly benefit private companies by providing, in some cases very specific training that would otherwise have to be conducted on the job. Hundreds of education programs fit this description. Ontario's Strategic Skills initiative, for example, is a \$130 million program supporting projects that establish ties between businesses in select sectors, and training providers and education institutions. The initiative aims to create "strategic skills necessary for building business competitiveness", and to "increase the responsiveness of Ontario's training institutions to business needs."<sup>xxiv</sup>

Georgia has a remarkable number of industry or business specific education programs. The Quick Start program, for example, provides customized training services to new or expanding businesses at no cost. The Intellectual Capital Partnership Program enables an employer to form a partnership with a university or college and design a program of study that prepares students for specific jobs in that company. The company must hire the students from the program upon graduation, and must create 10 "knowledge-jobs" that are deemed strategically important to Georgia's economy.<sup>xxv</sup>

Ireland's Department of Enterprise Trade and Employment supports a unique industry specific education program aimed at providing jobs for the long-termed unemployed. FIT or "Fastrack to IT" is an industry-sponsored education program, designed around the job training

needs of participating employers. Started in 1998 it has, to all appearances, been successful in providing education, training and job opportunities to over 2000 previously unemployed residents of the Dublin area.<sup>xxvi</sup>

Of the four categories of government policy in the New Economy, Category II is most likely to contain programs, such as this one, dedicated to social and community level development. If there are programs that integrate social and economic objectives they will be found here. Some governments are working to better educate not only those who already have formal training, but also those who have historically been disenfranchised both economically and educationally. But the efforts have not been worked into a conscious effort to integrate the needs of disadvantaged communities and people into the overall efforts to encourage growth in the New Economy.

### **Category III**

Category III policies are those that directly support knowledge-based businesses. While governments have generally adopted a market-driven approach to development in the New Economy, the extensive list of category III policies is a powerful reminder that the perceived importance of the knowledge-based economy to the economic well-being of a jurisdiction encourages governments to play an active role in deciding the fortunes of clusters of firms and individual knowledge-based businesses.

Gaining easy access to venture capital, for example, is a concern for new, high-risk, knowledge-based enterprises. Governments have various means by which to ensure venture capital is available. Increasing the supply of venture capital is a priority of Canada's Innovation Strategy. As part of this strategy the Business Development Bank of Canada will increase access to venture capital by pooling its expertise and the assets of various partners, pension funds in particular. The bank invests these funds in specialized venture capital firms.<sup>xxvii</sup>

Governments also ensure easier access to capital by reducing the risk to lenders. Singapore's new Standards, Productivity and Innovation Board (SPRING), for instance, runs a Micro Loan Program. This is a fixed interest rate financing program designed to encourage financial institutions to lend money to very small start-up enterprises, particularly knowledge-intensive ventures with relatively few tangible assets. Similarly, many financial institutions will not lend to small start-up, high-risk enterprises that do not have a good credit rating. Through the Loan Insurance Scheme the Government of Singapore shares the cost of loan insurance premiums with new enterprises making it easier for these ventures to obtain funding from traditional financial institutions.<sup>xxviii</sup> California runs a Small Business Loan Guarantee Program

that guarantees up to 90% of a loan to a limit of \$350, 000.<sup>xxix</sup> Such programs allow those who demonstrate a reasonable capacity to repay, but do not have a sufficient credit rating, access to seed capital.

Governments also provide direct financing to knowledge-intensive firms. The California Technology Investment Partnership Program, for example, offers grants and technical assistance to California-based business in an effort to accelerate the development of new technology-based commercial products or services. The grants, also available to non-profit organizations and other consortia, match money coming from the federal government in similar cost sharing programs.<sup>xxx</sup>

Category III is dominated by programs and initiatives designed to provide services, knowledge and expertise to businesses. The global economy is complicated, complex and often difficult to assess, especially since market conditions change rapidly with technological advances. Smaller companies often lack the resources to assess market opportunities in the New Economy. Governments offer help. PEI, for instance, offers several such programs. Technology PEI, a provincial crown corporation charged with supporting the technology sector, established the Information Technology Ideas Assessment Program, through which the Government shares the cost of having potentially marketable ideas assessed by the Canadian Innovation Centre. The business or entrepreneur pays the deposit fee; Technology PEI pays the remainder. The Canadian Innovation Centre provides a critical factor assessment, a software assessment, a technology assessment and a market preview of the ideas of those participating in the program.<sup>xxxi</sup> In Quebec, the Ministère de la Recherche, de la Science et de la Technologie (MRST) created a science and innovation monitoring network or Observatoire réseau en science et en innovation (ORSIQ). The MRST has set up three pilot 'observatories' to monitor the regional innovation systems in the Bas- Saint-Laurent, Mauricie and Estrie areas. These observatories will be used to better "understand interactions among local stakeholders affected by innovations, and to inform regional and national decision makers about the market niches and strategic development prospects in each region."<sup>xxxii</sup> Singapore's Economic Development Board has set up a web-based portal to provide advice to knowledge entrepreneurs. Technopreneurship Singapore provides information on recent technological developments, a seven step guide for start-up enterprises and a "business partner matching feature" that matches "technology start-ups and enterprises looking to market or test-bed their products, services & innovations with Singapore-based companies."<sup>xxxiii</sup>

Governments also provide specialized management services and technological advice to startup firms in knowledge-intensive sectors. Enterprise Ireland, for example, has an Innovative Management initiative. Its purpose is to enhance the management skills of R & D enterprises in

Ireland. The agency pays 50% of the cost of courses in R&D, innovation and technology management. Enterprise Ireland also manages the Mentor Network, which matches retired or semi-retired managers with start-up enterprises, to provide management guidance on a voluntary basis.<sup>xxxiv</sup> India's Utilization of the Scientific Expertise of Retired Scientists (USERS) program helps businesses, as well as public research intensive entities, access scientific expertise that might otherwise be unavailable. Singapore offers a more direct program that provides specialized expertise to firms. Technology for Enterprise Capability Upgrading (T-UP) is a multi-agency government initiative that enables private businesses to employ experts from various research institutes. Under T-Up the Government co-shares up to 70% of the researchers' salaries for a maximum period of two years, making specialists available to knowledge-intensive firms at a fraction of their full cost.<sup>xxxv</sup>

Governments also provide direct support to private knowledge-intensive firms through technology transfers. This is an important component of all national innovation systems. In supporting research, governments are primarily focused on what new knowledge might do to enhance economic growth. Money and human resources directed toward R&D will not enhance economic growth unless innovation products and services are transferred to those willing and able to market new ideas. Government labs and universities are increasingly playing this entrepreneurial role. In some cases the commercialization of public research provides a new and important source of revenue to government labs and research universities. More commonly, public research is transferred to private knowledge-based firms for commercialization. Governments facilitate these transfers. The Federal Partners in Technology Transfer is, for example, a key consortium of public servants from Canada's federal science-based departments and agencies. One of this organization's chief objectives is to assist in the development of policies and programs that facilitate knowledge and technology transfers from government labs to knowledge-based firms.<sup>xxxvi</sup>

Many government programs designed to fulfill ambitious commercialization goals are integrated into complete business support centres or publicly-funded business service corporations. These are of particular importance in Category III because they normally provide not only commercialization services, but many of the other above mentioned services—advice regarding possible market opportunities, specialized management services, technological expertise and the provision of specialized human resources—under one roof. The Networks of Centres of Excellence program is a major initiative of the Canadian Government designed to develop partnerships between universities, government research institutes and industry. There are Centres of Excellence across the country doing research in areas ranging from language and literacy to engineering to sustainable energy to information and telecommunications technology to health sciences and biotechnology. One of the primary functions of these centres is to facilitate

the commercialization of new ideas by bringing technological expertise, entrepreneurial skill and new sources of capital together. In an average year the Network files 80 patents, obtains 100 licenses and creates 7 spin-off companies. These spin-offs are costly. The program's annual budget from 1999-2000 to 2002-2003 was \$90 million.<sup>xxxvii</sup>

At the provincial level there are many smaller-scale centres dedicated to supporting research, start-up companies and commercialization. Ontario has, for example, an equivalent of the federal Networks of Centres of Excellence program. The Ontario Centres of Excellence network comprising four centres promoting economic growth through the commercialization of research in information and telecommunications technology, photonics, advance materials manufacturing and space technology. The Ontario Ministry of Enterprise, Opportunity and Innovation also supports 48 Small Business Enterprise Centres, which provide start-up businesses with managing and marketing advice, business consulting services and access to technology and financing options.<sup>xxxviii</sup> There are similar business support centres in most other jurisdictions—though few have such an extensive network.

There are also business incubators, designed to nurture enterprises during the earliest and most vulnerable stage of development. Incubators provide all the services available through government programs and business service centres, but most also provide subsidized office space and access to specialized facilities, such as research labs, that might otherwise be unavailable to new enterprises. Incubation has become a pervasive phenomenon. The rapid pace of technological development makes incubators a particularly useful device for knowledge-intensive firms. Survival and success rates for incubated companies are much higher than for non-incubated start-ups. The average success rate after five years for incubated businesses ranges between 70% and 80%, compared to 15% for non-incubated start-ups.<sup>xxxix</sup>

All nineteen government jurisdictions have devoted significant resources to the creation of incubation facilities. The Communications Research Centre, for example, an agency of Industry Canada, runs the Innovation Centre incubator in Ottawa. The Centre offers companies furnished offices, office equipment and laboratory space at subsidized rates. Technical support services, a library, conference rooms and auditoriums are also available. There are business development assistance services and formalized networking channels. New technologies are made available for commercialization and more than 150 engineers, scientists and technologists work closely with entrepreneurs.<sup>xl</sup>

Provincial and state governments also support extensive technology incubation facilities. InNOVAcorp is a Nova Scotia crown corporation dedicated to commercialization of innovative products and services. InNOVAcorp supports two incubators—the Technology Innovation

Centre and the BioScience Enterprise Centre. The former provides 'flexible' office and industrial space leases to client firms, a shared administrative support staff and office equipment, professional development workshops and seminars, conference spaces, promotional initiatives to help businesses market their ideas, formalized networking channels, technological expertise and other services.<sup>xli</sup> The BioScience Enterprise Centre offers a similar list of services including many specialized scientific resources.<sup>xlii</sup> The Georgia Institute of Technology's Advanced Technology Development Centre (ATDC) is a focal point incubator for start-up knowledge-based firms in that state. ADTC supports young companies in biomedical technology, computers & electronics, engineering & technology services, environmental technology, internet applications, manufacturing, new media, optical technology, software and telecommunications.

Each incubator offers specialized services but the primary purpose and method is generally the same—incubators provide extensive services and expertise to emerging and vulnerable enterprises. They 'incubate' or protect young companies from the market until they are mature and stable enough to go out on their own.

The extensive list of policies, programs and initiatives included in Category III make it clear that governments, even those ostensibly dedicated to a free market approach, are unwilling to let the market alone decide the fortunes of the knowledge-based firms that operate within their jurisdiction. Government policy in the New Economy has found new and 'innovative' ways to support private businesses with public funds.

#### **Category IV**

Category IV consists of initiatives largely promotional in nature, and is divided into two main parts: policies that are externally focused, and policies that are internally focused. Externally-focused policies are designed to promote what is being done, or offered, in the other three categories, and normally include advertising campaigns or web-based portals that provide information about tax policies and credits, expertise and infrastructure availability, the quality and general skill level of the workforce and the various support programs, services and financial options offered to businesses. Promotional initiatives also focus on the state of the existing knowledge-based economy and the general quality of life. Governments, like businesses, brand and advertise what they offer.

There are two types of internally focused Category IV programs or initiatives. First, there are programs to promote local entrepreneurship in knowledge-related sectors. Second, governments promote Science & Technology generally and research or knowledge related careers specifically. These promotional campaigns are most often directed at young people, but

groups historically disengaged from science-related careers, such as women, are also sometimes targeted.

"Branding" is the most general type of promotional effort. It is the promotion of a jurisdiction as if it were a product for sale. Unless investors and highly skilled people from outside a jurisdiction are made aware of what is being done to promote the New Economy, little foreign investment or expertise will be forthcoming. Branding is integrated into Canada's Innovation strategy. "Branding can improve Canada's image among investors and highly qualified people by demonstrating our advantages. Raising Canada's profile would help secure the international recognition we need to be seen as one of the most innovative countries in the world."<sup>xliii</sup>

Branding campaigns are also conducted at the provincial level. New Brunswick promotes itself as a 'gateway' to the North American market. The NB Identity campaign promotes the province's geographic location, strategic infrastructure, bilingual workforce, and an investment environment characterized by increasingly declining taxes. Market Ontario is that province's "investment attraction program." Managed by the Ministry of Enterprise, Opportunity and Innovation, it targets five key markets: France, the United States, Germany, Japan and the UK. The marketing campaign involves making "corporate calls" to foreign corporations in order to promote Ontario. Interested investors are then given "familiarization tours" and "site selection tours" in select regions of the province. The Ministry credits Market Ontario with initiating \$143 million in investment and the creation of 7000 jobs.<sup>xliv</sup>

Branding and general promotional campaigns are often web-based. Access Manitoba, for example, is a web site that provides information about all of the initiatives and programs offered in the other three categories: tax policies, educational facilities, education levels, telecommunications infrastructure, industry support service agencies and financial assistance programs.<sup>xlv</sup> There are similar promotional schemes in many other jurisdictions including the "Alberta Advantage" campaign and Saskatchewan's "Our Future is Wide Open" initiative.

Governments also form structured alliances with the private sector to promote business development. The Georgia Department of Industry, Trade and Tourism, for example, developed Georgia Allies in 1997. It is a private/public marketing group that includes leading information and telecommunications firms such as ALLTEL Communications and AT&T. The purpose is to identify and attract new investment in 'strategic industry sectors.' "Our principal goal is to create the most successful economic development marketing initiative in the world."<sup>xlvi</sup>

In a global economy the bulk of what governments do to promote growth and investment is directed outward. Each jurisdiction encourages new investment and development from elsewhere.

But it is possible to identify separate schemes designed to promote entrepreneurial activities in knowledge-based sectors and industries. The Ontario Ministry of Enterprise, Opportunity and Innovation, for example, runs several programs designed to promote and foster the "spirit of innovation" among young people. This effort includes a Summer Company program that provides business training and mentoring, as well as financial support, to young people who want to start summer businesses. The My Company program provides business mentoring and easy access to small initial loans. The Future Entrepreneurs initiative is a voluntary program to help middle-school teachers develop lesson plans designed to 'introduce' an entrepreneurial mindset to students. These programs are all part of Ontario's Young Entrepreneurs Strategy. "Ontario's economic growth and job creation is driven by our entrepreneurs, which is why a key priority of the government is to foster an entrepreneurial spirit and skills in our young people. They will be responsible for our continued economic prosperity in the rapidly-changing world of the 21<sup>st</sup> century."<sup>xlvi</sup>

India has an extensive list of programs to promote local entrepreneurship in the New Economy. The Department of Science and Technology includes a National Science & Technology Entrepreneurship Development Board. The NSTED runs an Entrepreneurship Awareness Camp targeting recent Science & Technology graduates. The purpose is to promote entrepreneurship as an alternative career option to scientific work in universities or government labs. The Entrepreneurship Development Program trains Science & Technology graduates in the basics of early stage business development. The Faculty Development Program is designed to equip Science & Technology teachers with the tools to inculcate "entrepreneurial values in students" by "guiding and monitoring their progress towards entrepreneurial careers." The NSTED also provides an Open Learning Program in Entrepreneurship and a Technology Based Entrepreneurship Development Program.<sup>xlvi</sup>

A remarkable number of Category IV initiatives specifically target young people. These programs have a two-fold purpose: they promote a science oriented culture, and they promote career options related to research, development and innovation. The Economic Innovation and Technology Council of Manitoba (EITC) has, for example, developed MindSet: The Manitoba Network for Science and Technology. MindSet is an effort to unify all EITC's youth-oriented S&T awareness programs. Many of these programs are career-oriented. The "EITC recognizes the importance of attracting the best and brightest young people to S&T-related careers in Manitoba."<sup>xli</sup> There are similar youth-oriented promotional initiatives in every jurisdiction.

The Georgia Technology Authority offers a science-oriented career promotional program that targets young women. CyberSisters is a summer program that provides an opportunity for middle-school aged girls to spend four weeks with women mentors successful in the field of technology.<sup>1</sup> India's Ministry of Science & Technology has also developed a Science & Technology for Women initiative. It is designed to improve the opportunities and working conditions of Indian women, especially women in rural areas, through the promotion of R&D and the adaptation of technology. Ultimately the scheme aims to increase the number of women in science, technology and research development fields.<sup>li</sup>

There are other similar efforts to promote the participation rates of groups who have been historically underrepresented in knowledge-based careers. These efforts have, however, been limited. In addition to the above programs to promote the participation of women in S&T related careers, India has adopted a unique program called S&T Application for Weaker Sections (STAWS). "This scheme is aimed at the development of economically weaker sections of the society in rural and urban areas." It is one of the only government programs designed to address the 'digital divide' that exists between the urban middle classes and poor urban dwellers. The program is designed to promote R&D and technological adaptation in an effort to improve the quality of life in the 'weaker sections' of society. It is also an attempt to motivate scientists to direct their knowledge and expertise toward solving the problems 'weaker' communities face.<sup>lii</sup> It is not possible to determine from the information that the Government of India provides how effective this program has been—or to what extent the Indian S&T community has taken up this challenge. Nonetheless, the program is in place. Issues related to addressing the needs of groups that are under-represented in knowledge-based careers have at least been articulated and formalized in India.

This is not the case elsewhere. Canada's Innovation Strategy, for example, makes mention of the obstacles First Nations communities face. Aboriginal people live in some of the least well-connected rural and urban communities. The high barriers facing Aboriginal people in Canada must be addressed before they can fully participate in the knowledge-based economy/society. This issue is not being completely ignored. One of the 12 demonstration 'Smart Communities' in Canada has been developed in a rural Aboriginal community. In general, however, there is no comprehensive effort, at either the provincial or national level, to increase the participation rates of those segments of the population who are disenfranchised from, and under-represented in, the New Economy. Category IV efforts, as we have seen, are instead primarily geared toward external and internal "branding" or promotional campaigns.

### **Conclusion: A Developmental Alternative**

The above review of state policy geared towards the promotion of the new economy reveals several aspects of these initiatives. First, it is clear that the state is heavily involved in the promotion of the new economy. Despite its rhetorical basis in the logic of neo-liberalism and the assertion of many new economy proponents that it transcends the need for state intervention, the state is actively involved in the promotion and development of the new economy. While states might not be acting in a traditional dirigiste fashion, they are actively involved in identifying new economy sectors that might be suitable for particular jurisdictions and then trying to develop those industries through a mixture of policy instruments. Furthermore, a relatively limited and consistent set of policy initiatives are being pursued across jurisdictions..

It is equally clear that state policy in this area is designed to operate within the logic of the market. Consequently, there is very little state policy in this area attempting to direct the benefits of the new economy – either in terms of new economy jobs or the social capital benefits of on-line technology – into historically disadvantaged communities. Inner cities, remote and rural communities, while they may be the subject of the occasional new economy-related project, are not the focus or target of state policy in this regard.

This is not to say that all scholars working in this field have ignored disadvantaged communities. Even Michael Porter, the guru of cluster theory, has argued that inner cities may have capacities and characteristics that would make them attractive/suitable for new economy initiatives.(Porter 1995, 1995-1996) Michael Gurstein has attempted to apply innovation system theory to the community level and developed the concept of a Community Innovation System (CIS).<sup>liii</sup> For Gurstein, a CIS is a community based network of public or private enterprises and political, educational, financial and social institutions that provide the ingredients needed for local innovation to take place. Although bringing the level of analysis down to the community level is important, in the final analysis Gurstein’s work offers little new or additional to mainstream approaches to the new economy.

James Johnson has also attempted to identify the needs and requirements for community level development in the new economy. (Johnson 2002) Johnson sets out six “community capital” assets – policy, physical, financial, human, cultural and social – that communities must possess to prosper in the new economy. While Johnson’s model does include both social and economic concerns it is ultimately an approach that is market-driven and focused on competition. Communities must have sufficient financial capital assets, combined with an appropriate entrepreneurial “can-do” attitude towards the future, if they are to succeed. While Johnson does argue that promoting local cultural characteristics is important and can create a climate in which people are better able to maximize their participation in the new economy, it is not clear how this

sort of “community capital” relates to financial capital and entrepreneurialism. Without a different kind of state direction, questions of financial viability of investment decisions will usually push investment away from the inner city and disadvantaged communities.

One difficulty of any argument focused on the market capabilities of communities is how the notion of community is defined. Johnson’s work, for example, focuses on the urban community, which is different and likely significantly larger than the “inner city”. As the degree of scale increases, specific questions of educational levels, transience and mobility out of neighbourhoods, crime and violence become less of an issue. In effect, these problems get aggregated out of the equation. As scale is decreased, however, these become critical issues of labour market stability and capacity that likely preclude any industry – new or old economy – from locating in the inner city.<sup>liv</sup> There is also the need to distinguish between place and people. It may very well be that various competitive advantages of the inner city might lead certain industries or businesses to geographically locate there. It is another thing to ensure that local individuals are employed by those firms and that the economic benefits produced by that business remain within the community.(Sawciki and Moody, 1995-1996)

It would seem clear, therefore, that a market-oriented approach, even if it acknowledges the importance of social and cultural factors, will be insufficient to overcome the serious obstacles facing most disadvantaged communities. What is needed is an approach that relies far less on trying to influence the market decisions of corporations, and which focuses more on developing the capacities of disadvantaged communities. We argue that states have the opportunity to go beyond the narrow policy instruments discussed above to develop new economy strategies that could be directed towards enhancing the capacities of disadvantaged communities so they might participate in the new economy. To do this, however, it is necessary not just to make the inner city the focus of new economy policy, but rather to develop a new approach to the development of economic policy.

Maureen MacIntosh has attempted to outline what a developmental state would look like at the local level. At national levels, the concept of a developmental state is now well understood to include one that intervenes to promote the economic development of its region, town or country. (MacIntosh 1993, 37) This can involve a range of policy instruments, some of which may be extremely interventionist while others may be less so. However, at local levels such efforts are frequently characterized by intense conflict as efforts to promote developmentalism have frequently occurred in cities and regions facing economic crisis and decline.

Building on the British experience, MacIntosh argues that the state must be developmental in two senses. First, it must be developmental in the *policy* sense. The state must

play an active role in economic reconstruction and the distributional issues of who benefits from reconstruction. Secondly, the state must also be developmental in a *process* sense. The state must operate in a different fashion, and the relationships between state actors and citizens of disadvantaged communities need to be restructured. In order to counter the dominance of the economic development paradigms examined in this paper, it is necessary to enact changes in the structure of the state and its internal processes that “shift the location of power, change the access to information of different social groups, and develop the capacities of the previously less powerful.” (MacIntosh 1993, 37) It is important to enhance and develop the capacities of disadvantaged communities. In part this can be done by opening up the policy process and providing genuine opportunities for these communities to plan their own economies and make determinations about their own needs. This requires states to engage with these communities, rather than simply treating them as the objects of economic development projects.

This approach to developmentalism is critical if the state is to escape from the straight-jacket that seems to characterize economic development in the context of the new economy. States currently follow one another’s lead in a competitive cycle of attempting to meet the needs and expectations of capital. Opening up policy processes and introducing a developmental component provides an opportunity -- and constitutes the challenge -- to break free from this cycle. As MacIntosh states:

If developmentalism is about process, then the first requirement of a developmental state is that it cease to be a prisoner of the old order. Developmentalism of the ‘process’ kind opens the state to new pressures that distance it from old certainties, provide new ideas and offer support to more radical measures. Without the openness and conflict generated by new constituencies, proposals for economic regeneration will be captive to old assumptions, and any sharp break with the past will rapidly come to seem impossible (MacIntosh 1993, 17)

Restructuring the way economic development policy is formulated, therefore, is as critical as rethinking economic development itself. In particular, a more democratic and locally driven approach to policy development is critical in order to break the cycle of conformity that characterizes economic development thinking regarding the new economy. Our research clearly indicates how across a wide number of jurisdictions a relatively narrow range of policy instruments have been adopted. Simply taking these instruments, which are largely market and private sector oriented, and applying them to disadvantaged inner city communities, will not address the needs of those communities. Both the internal dynamics of state economic development agencies, and the external pressures brought to bear on those agencies by private

sector businesses, militate against developments that would benefit communities characterized by high levels of unemployment, poverty, and low literacy levels.

In many respects, MacIntosh's notion of the developmental state corresponds nicely with principles of community economic development. CED is understood as a community-driven process that combines social, economic and environmental goals to build healthy and economically viable communities. CED aims to revitalize and renew community economies by developing community resources. Local control and ownership of those resources is considered vital to enhance the self-reliance of local communities. Local control also ensures that economic development will be responsive to locally defined priorities.

CED emerged as a strategic response to depressed socio-economic conditions in local communities. It is based on the premise that traditional models of economic development do not meet the needs of large numbers of communities and local residents. Our analysis confirms that this is the case as regards the new economy. CED practitioners and activists have sought to develop an alternative vision of economic development. In this vision the goals of social welfare, equity, economic development and sustainability are not left to chance (i.e. the market), but rather are facilitated by a flexible process and guided by a strategic vision that is defined by the needs and priorities of the community itself. While many different models of CED have emerged, they all tend to offer strategies for revitalizing and renewing community economies that focus on responding to locally defined priorities.<sup>lv</sup>

In order to pursue CED as an economic development strategy the state needs to radically redirect its understanding of economic development. In particular, it needs to play a more active role, in consultation and partnership with disadvantaged communities, in planning and directing economic development. This may require investing resources in both social and economic capital. Education, housing, basic infrastructure, may require considerable increases in the level of state expenditure. At the same time, this investment cannot simply be mandated by bureaucrats in a centrally-directed process. Prior efforts in social planning and social engineering have demonstrated that such an approach is fraught with difficulty. This is where CED's emphasis on local participation and local self-governance is important. The state needs to involve these communities in planning and developing both the economic priorities of the area and the mechanisms by which those priorities can be realized.

The new economy opens up tremendous possibilities in this regard. There is nothing about the new economy that precludes the application of CED principles. Indeed, given the tremendous potential of information technology to reorganize and restructure labour processes, CED and the new economy could potentially be integrated in creative and innovative ways.

However, currently, there is little effort to do this. State policy around the new economy has become so influenced by the logic of globalization and the view that the state is unable to effectively structure economic development other than in a fashion consistent with the imperatives of the market. Consequently, there is little attempt to harness the potential of the new economy and make it work for disadvantaged communities. As the degree of urbanization and the degree of poverty and despair associated with urbanization increases (Davis 2004), the need for a more developmental approach to economic development issues is something that advanced industrial countries can no longer afford to ignore.

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## NOTES

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- i We define the 'New Economy' as being underpinned by three major structural changes: a rise in general education levels; the development and availability of new information technology (IT); and an increase in "invisible" trade in services, mergers and acquisitions, and the flow of information (Petit 2002; Bosworth and Triplett 2001).
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- xxx<sup>viii</sup> Ontario, Ministry of Enterprise, Opportunity and Innovation, [http://www.ontario-canada.com/ontcan/en/expanding/ex\\_sm-bus-ent-ctrs.jsp](http://www.ontario-canada.com/ontcan/en/expanding/ex_sm-bus-ent-ctrs.jsp)
- xxx<sup>ix</sup> Government of Manitoba, *Manitoba at the Forefront of Innovation*, 2003: 35.
- x<sup>l</sup> Government of Canada, Communications Research Centre, <http://www.crc.ca>
- x<sup>li</sup> Government of Nova Scotia, Technology Innovation Centre, <http://innovacorp.ns.ca>
- x<sup>lii</sup> BioScience Enterprise Centre, <http://bioscience.com>
- x<sup>liii</sup> Industry Canada, *Achieving Excellence: Investing in People, Knowledge and Opportunity*, 2001: 69.
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- x<sup>lv</sup> Government of Manitoba, Access Manitoba, <http://www.gov.mb.ca/est/cc>
- x<sup>lvi</sup> Georgia Department of Industry, Trade and Tourism, <http://www.georgia.org/economic/index.asp?qui=4&qual=0>
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- x<sup>lviii</sup> India Department of Science and Technology, National Science and Technology Entrepreneurship Development Board, <http://www.nstedb.com>
- x<sup>lix</sup> MindSet, <http://www.mindset.mb.ca>
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- li India Department of Science and Technology, <http://dst.gov.in>
- lii Ibid.
- liii Michael Gurstein, "Community Innovation Systems and the Management of Technological Change: A Solution for a Community being Left Behind" in J. Adam Holbrook and David Wolfe (eds) *Knowledge, Clusters and Learning Regions: Economic Development in Canada* (Kingston: School of Policy Studies, Queen's University) 259-279.
- liv In the Centennial neighbourhood of Winnipeg, for example, 30% of families have an educational attainment level of less than grade 9 while 37% have a family educational attainment level between grade 9 - 12. For Winnipeg as a whole, however, the comparable percentages are 9% and 26%. The Winnipeg Foundation, Centennial Neighbourhood: 'A Snapshot in Time' (Jan. 2004) available at <http://www.wpgfdn.org>. By increasing the scale under consideration, low education achievement would not seem to be a factor preventing Winnipeg from attracting new economy industries to its "community", but it certainly would prevent such industries from locating in the Centennial Neighbourhood.
- lv Neechi foods, an aboriginal food coop in Winnipeg developed the following set of 11 CED principles:
1. Use of locally produced goods and services;
  2. production of goods and services for local use
  3. local re-investment of profits;

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4. local skill development;
  5. long term employment of local residents;
  6. local decision making;
  7. promotion of public health
  8. Improvement of the physical environment;
  9. promotion of neighborhood stability;
  10. promotion of human dignity;
  11. mutual aid support among organizations adhering to these principles

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<http://www.manitobaresearchalliancecd.ca>