Governance Challenges of Regional Innovation:

Building Collective Intelligence and Social Learning through Collaboration

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Introduction

Regional innovation increasingly requires collective intelligence and collaborative governance arrangements underpinned by intellectual, financial and in-kind investments. The co-ordination challenges of distributed governance tax the stakeholders' ability to construct effective systems of social learning. Those systems are built on the social technologies that arise from regional investments from a variety of private, public and civic sources in the region's intellectual and social capital.

Social learning refers to "the process of interaction through which individuals and organizations learn from each other and consequently adapt, innovate, develop new arrangements, conventions and rules" (Paquet & Roy, 1998). 'Collective intelligence' refers to the creative and discriminative capacities of a group, organization or community. It is not merely the agglomeration of individual information but refers to the whole that is more than the sum of individual understandings. Through social learning this collective intelligence can be enhanced over time. Together social learning and collective intelligence represent two important families of mechanisms through which an organization or a community can effectively mobilize its intellectual, physical and human capital. These mechanisms help marshal these assets in innovative ways that continually add to the collective stock of capital assets. This intelligence-*cum*-learning task creates a geo-centric governance challenge: the challenge of optimizing locally based 'communities of practice' so they can ensure effective social learning and make the best use of collective intelligence when resources, power and knowledge are widely distributed.
An innovative region is first and foremost a *community* – i.e., a fuzzy geo-political entity that has a soul, a collective intelligence, a capacity to learn – and since learning implies new perspectives and creative capabilities – a capacity to transform. An innovative region is fundamentally a community that learns fast and well. To do so, it makes the highest and best use of all its collective intelligence and resources (intellectual, social, physical, financial, personal, etc.) through the use of both physical technologies (including communication and information technologies – CIT's) and social technologies (collaborative techniques, culture, and networking and governance styles).

Just as organizational learning is important for firm competitiveness, social learning permits ongoing innovation in regional processes and institutions that contribute to firm adaptation. This paper explains why innovative regions are important; how they work; and how, through a variety of means, some communities are more innovative and more successful than others in a knowledge-based economy. It also presents a framework for regionally based 'civic governance' based on the results of the first year of a three-year comparative study to examine how three different communities – Ottawa, Canada; Glasgow, Scotland; and Silicon Valley, California – have addressed this issue of regional innovation in the new economy through the use of 'civic collaboratives'.

An Analytical Framework

What's new about the new economy is its emphasis on the human dimensions. The emphasis on knowledge workers, knowledge capital and knowledge management puts people in the centre of any discussion of corporate strategy or economic policy. Instead of physical and financial capital being 'top of mind' issues among private and public sector managers, increasingly concerns are turning to developing, attracting and retaining workers. To facilitate the development of knowledge capital, senior managers are increasingly putting attention on non-traditional, external concerns that help build effective "business ecosystems"(Moore, 1996). This shift has resulted in both a range of corporate networks and alliances, and an increased focus on issues of regional attractiveness, community resources and quality of life, to ensure the firm has adequate access to talent resources.

Cayer and Welch (1999) prepared a short list of new economy attributes with which private and public organizations must align in order to be successful in this knowledge-based economy. They include:

- Technology is a given
- Globalism is here to stay
- Knowledge builds wealth
- People are the most important raw material
- Competition is relentless
- There is no such thing as a smooth ride
- Alliances are the way to get things done
- Place still matters – but for different reasons

To these we would add two more attributes that reflect the more distributed reality of the new economy. They are that "sharing knowledge builds wealth faster", as evidenced by the move to open-source software, and that "everybody wins or everybody loses", as evidenced by co-operative industry efforts around competing standards and the growth of broad community collaboration to deal with cross-sector issues (Chrislip & Larson, 1994).

Successful alignment does imply growth, but in a more humanly and contextually balanced manner than the 'winner take all' style typical of industrial era organizations. This is a consequence of the increasing importance of people and partnerships. Further the growth that is experienced is less of a reflection of an organization's agglomeration of assets than its capacity to innovate. In a knowledge-based economy, *extensive growth* (through additional human and physical capital) does not suffice to ensure socio-economic progress. Much depends on the capacity to ensure that the different capital inputs work well together, and therefore on the development of forms of collaborative organization designed to fully tap the collective intelligence and generate effective learning. The lack of *intensive growth* – growth based on a capacity for continuous technical and organizational innovation – is at the source of the productivity slowdown and of the relative decline in our standard of living.

At the core of an effective learning economy, and by extension any significant improvement in our standard of living, are collaborative mechanisms in which partners and sectors may learn to effectively co-operate and co-evolve (Paquet, 1998). For instance, organizational 'turf wars' and other 'silo-like' activities are fundamentally disconcerting, particularly in areas requiring government/business/society co-operation. They reduce an organization's capacity to listen and waste its stock of trust capital. They are in fact vehicles for un-learning. In the case of multi-sector partnerships, where the tendency towards confusion already runs high because of the presence of differing world views, the promotion of narrowly-defined competing interests only exacerbate that confusion. Interestingly, the new mantra of the learning economy, also referred to as the network economy, is "collaborate or die", clearly reflecting the growing market appreciation of cooperation.

The extent of the confusion and dysfunction that may arise in an organization, a community or a socio-economy has much to do with the inadequacy of what Alfred Marshall called "organizational capital". As he put it, "[organizational] capital consists in a great part of (not clear) knowledge and organization; and, of this, some part is private property and other part is not" (Marshall, 1920:138). Organizational capital refers to:

- the internal organization of the units;
- the network of relationships (within the region, district, etc. in which it is embedded);
- the set of capabilities these relationships embody;
- the ways in which they are synchronized; and
- the socio-technical infrastructure required for all this to work (Loasby, 1991).

Collaboration and innovation demand the sort of organizational capital that is capable of generating and supporting an effective co-ordination of economic activity. But caution must be exercised. Too much co-

ordination reduces the degrees of freedom and discretion for discovery and learning among those co-ordinated. A lacklustre organizational performance is therefore *prima facie* evidence that the current organizational capital is not capable of generating either the requisite coherence that ensures collaboration, or the right balance between creative looseness and efficient tension likely to trigger innovation (Granovetter, 1973).

While organizational capital is not the only input necessary for organizational effectiveness, community success and national productivity, it is a key input. It is most certainly one of the key enabling factors. Yet it is also one of the most difficult ingredients to inject into any organization or community. This is because any reorganisation tends to modify an institution's balance of power, often expropriating many power-holders of their leverage. However, to solve the sort of problems faced by many disconcerted communities and socio-economies requires nothing less than a massive investment in new organizational capital. This inevitably entails a transformation of governance and accountability structures to ensure a more decentralized, more participative, less technocratic system – one that draws more on the effective collaboration of private, public and civic actors (Hock, 1995; Paquet and Roy, 1998).

Distributed governance and multiple accountabilities

In times of rapid change, organizations and communities can only govern themselves effectively by developing the capacity to learn both their goals and the means to achieve them *as they proceed*. This learning is accomplished by tapping the knowledge of partners and collaborators within a group and getting them to collectively invent ways out of the predicaments they are in. This leads to a much more distributed governance model that tends to deprive the traditional 'heroic leader' of his or her monopoly on organizational governance. For the organization or community to learn quickly and to avoid the many ways to say 'no', everyone must take part in the *conversation,* bringing forward whatever knowledge they have that has a bearing on the issue. This calls for a dispersion of power and a more negotiated governance process (Paquet, 1999).

Distributed governance does not only mean dispersing decision-making power within sectors. It also entails a dispersion of power across sectors, over a wide variety of actors and groups. Because of the rapid change inherent in the new economy, the best learning experience for these variegated actors and groups is effected through flexible multi-sectoral teams, woven together by moral contracts and reciprocal obligations negotiated in the context of evolving partnerships (Paquet and Roy, 1998).

Under ideal circumstances, a multi-functional *esprit de corps* materializes and provides a most fertile ground for collective learning. It is based on the gradual development of trust, social capital networks, reasonableness, and a mutual understanding, all of which facilitate a *multilogue*, or multi-directional conversations, and generates a pragmatic ethic likely to promote interaction and synergies among the many potential partner organizations (Thuderoz, Mangematin and Harrisson, 1999). Unfortunately, ideal circumstances for creating this multilogue are not always present.

This multilogue entails explicit efforts to mobilize participants through a wide array of mechanisms, co-ordination maps and institutions. In practice, this proves much more difficult to realize than one might presume, for the conditions and constraints imposed by 'collective intelligence' on such efforts do not necessarily represent *feed-forward* social learning (i.e., promoting the advancement of social learning). Consequently, the designed organizational arrangements may not effectively catalyze collective intelligence, or may mark out only a portion of the learning terrain, or may link the different issues too loosely, and therefore may generate slow learning, confusion or even unlearning.

In a distributed governance world, power must be shared even as knowledge is. It must be shared because among the multiple players there are many with pieces of authority or pieces of the solution.

Consequently, each person is an official, and has a burden of office. Each member of the community has ruling work to do: each participant is not simply a consumer of governance, but a producer of governance (Tussman, 1989). Indeed, it is only because citizens *qua* citizens have duties and obligations that they are entitled to civil rights, which ensure that they are fully equipped with the power to meet their obligations.

But there is not much meaningful debate about the nature of this burden of office, because duties and obligations (i.e., the burden of office) are often rather ill defined in our complex world. This vagueness is, unfortunately, unavoidable. Attached to the burden of office is a commensurate accountability obligation. Accountability refers to the requirement to "answer for the discharge of a duty or for conduct". This presupposes an agreement on (i) what constitutes an acceptable performance and (ii) what constitutes an acceptable language of justification for the actors in defending their conduct (Paquet, 1997).

In today's world, leaders generally have a complex burden of office and are confronted with:

- many interfaces with different stakeholders having different claims to authority (hierarchical superiors, professional colleagues, clients, etc.),
- many types of accounts demanded (political, managerial, legal, professional, etc.), and
- much complexity, heterogeneity and uncertainty in the circumstances surrounding the activities for which they are accountable. The very complexity of the burden of office results in much fuzziness in the definition of accountability.

Defining accountability in a single direction, or with reference to only one stakeholder, or with reference to one dimension only of the burden of office, or without taking into account an issue's context, is extremely dangerous. It amounts to assuming that only one dimension is of consequence, and presuming that all other forms of accountabilities can be regarded as irrelevant or secondary in some sense. If, for example, one were to define their burden of office entirely in terms of the dictates of the financial services department in their organization, it could only lead to abusive, dangerous and truncated notions of one's burden of office, accountability and ethics.

In the face of such multiple accountabilities – many of them leading to conflicting or even contradictory demands – there is no easy way out for a community. Once again there is a need for multilogue. Some form of exchange and deliberation is required that leads to an interweaving of the different accountabilities and a fuller use of social learning and collective intelligence — and ultimately to a reconciliation of the different perspectives — even though it be imperfect, incomplete or temporary (Juillet, Paquet & Scala, 2000). Far from a silver bullet approach, this requires an accumulation of trust over time through regular interaction.

As a consequence, social learning will occur if:

- the conversation is conducted within a context that allows a meaningful exchange to be carried out – meaning that participants are willing to listen while putting their own predispositions on hold (Senge, 1990); and
- the conversation, deliberation, and accumulation of judgements are conducted with tact and civility, and with an openness to multiple logics (Paquet, 1999b).

The sort of learning generated by multilogue may not necessarily congeal into formalized decision making or actions. It tends to remain with participants as tacit rather than explicit knowledge or as a capacity to deal effectively with matters in a local and particular context in a timely manner. Often this tacit knowing materializes as a by-product, as a result of subsidiary or peripheral attention being given to some matters while addressing other issues in a more focused way. Indeed, such tacit knowing is at the

very basis of explicit learning, and much of the effectiveness of social learning depends therefore on the accumulation of tacit knowledge in a community (Gill, 2000).

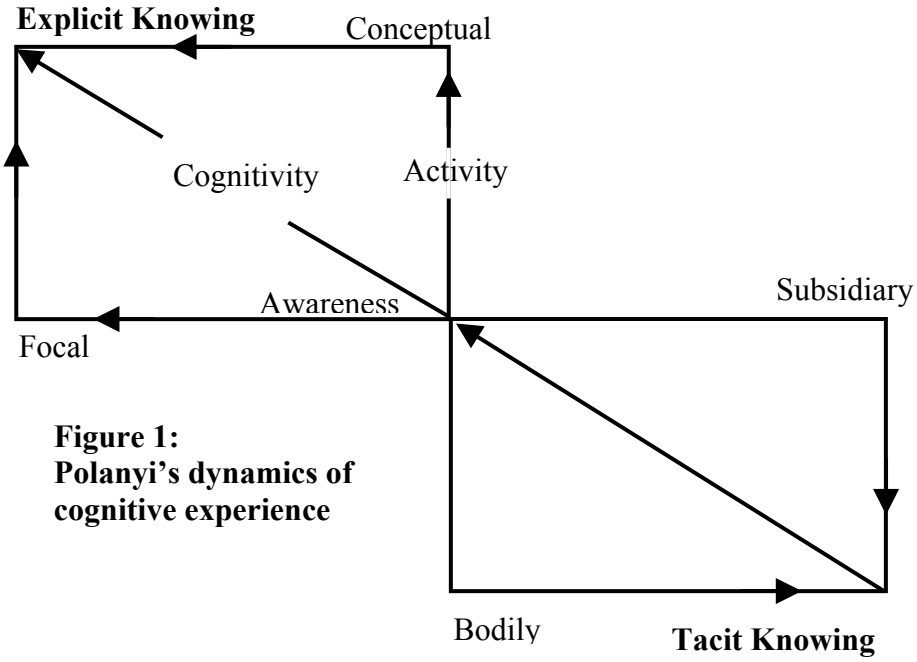


Figure 1: Polanyi's dynamics of cognitive experience

Learning entails "the mutually consistent interpretation of information that is not fully codified, and hence not fully capable of being transmitted, understood, and utilized independently of the actual agents who are developing and using it" (Storper, 1996). A central challenge is the determination of how such knowledge can be made explicit. Michael Polanyi (1964, 1966) creatively explored this and Gill has synthesized his approach in a simple diagram [see Figure 1]. Polanyi's dynamics of knowledge illustrates how cognition proceeds from *tacit knowing*[1] toward an *explicit knowing* through processes that improve the awareness of tacit knowledge by bringing it into focus, and helping to formulate it in a conceptual form that is likely to facilitate its dissemination. Gill's graph maps this process in a simple way.

The effective use of social learning and collective intelligence is predicated on exchanges of accumulated tacit knowledge, which is derived from experience. If for instance, everyone had the same experience there would be no difference in tacit knowledge and no difference in perspective. No learning would take place and you would essentially have a situation of "group think". It is the variations in tacit knowledge that offer the opportunity to examine knowledge in new ways. This is one of the advantages of immigrant societies like Canada and the USA. There are often many different ways of thinking about the same set of facts and as a result these societies tend to be more innovative than more homogeneous ones.

Since not all tacit knowing gets translated into explicit knowing, at any given time a community knows more than it can tell. This is the way knowledge evolves in common law: case by case, and often in a tacit way. But such tacit knowledge and its 'sociality' – the capacity of tacit knowledge to build networks, trust and social capital – cannot easily develop without some sense of proximity.

Discovery and milieu

To cope with a technology-driven and dynamically evolving environment, organizations and communities must use the environment strategically, in much the same way as the surfer uses the wave: to learn faster, to adapt more quickly. This calls for *non-centralization*, for an expropriation of the power to steer away from the top managers in an organization or from any one organization in a network or a community. To be successful 'surfers', decision makers must have the capacity to mobilize the imagination, resources and commitments of all the relevant stakeholders. They must be actively engaged, willing to get their hands

[1] *Tacit knowing* refers to the bodily and subsidiary absorption of knowledge that is drawn upon while the awareness of a person or community is involved in another more focused activities. It is a subsidiary focus of attention.

dirty in dealing with problems. They must become team leaders in task force-type projects, like quasi-entrepreneurs, capable of cautiously performing at less than optimal efficiency and accepting errors in the face of uncertainty, and of engaging others to join voluntarily in such ventures (Wilson, 2000).

This sort of strategy calls for lighter, more horizontal, modular structures, and for the creation of networks. These new modularized private, public and civic organizations cannot impose their views on their clients or citizens. But such horizontal structural features are not sufficient. Mechanisms are required to ensure the requisite degree of consultation, deliberation and negotiation everywhere.

Leaders have to become brokers, negotiators and *animateurs,* developing a consultative and participative mode that assures buy-in among firms, state organizations and community groups. They must find the right balance in this learning process between exploration for new knowledge and exploitation of the newly acquired knowledge (March, 1991). While discovery is clearly important to innovation, it is equally important for innovation to apply new knowledge for the benefit of competitiveness or public legitimacy or civic coherence.

That application takes place by anchoring the discovery in an environmental context which is shaped by market and non-market components, conventions, socio-cultural factors, and by a broader institutional structure. It is this ensemble of components, conventions and structures that constitutes what we can refer to as the relevant *milieu*. Whether the unit of analysis is technology or the firm or the community of practice, these interactive mechanisms are driven by their contextual fitness, and the community selection processes "provide the source of differential fitness – firms whose R&D turn up more profitable processes of production or products will grow relative to their competitors – and also tend to bind them together as a community" (Dosi and Nelson, 1994:162).

One may define the notion of milieu as "un ensemble territorial formé de réseaux intégrés de ressources matérielles et immatérielles, dominé par une culture historiquement constituée, vecteur de savoirs et savoir-faire, et reposant sur un système relationnel de type coopération/concurrence des acteurs localisés" (Lecoq, 1989). The notion of milieu, then, connotes three mutually interactive processes:

1) the contours of a particular spatial set vested with a certain unity and tonus;
2) the organizational logic of a network of interdependent actors engaged in co-operative innovative activity; and
3) organizational learning based on the dialectics between *adapting actors* and the *adopting milieu* (Maillat, 1992).

In these discovery-cum-selection processes, social proximity plays a fundamental role. Both on the organization side and on the forum/environment side, proximity encourages interaction, learning and 'intelligence' (Boswell, 1990). In addition, these interactive mechanisms are fuelled by dynamic increasing returns to agglomeration. The greater the aggregation of firms in a given locale, the greater its interactivity, leading to greater learning and intelligence and hence making the area more attractive to others to locate there. In most cases, these agglomeration economies are bounded, and therefore do not give rise to monopolies in a single region or location, but they do generate increasing returns that tend to snowball (Arthur, 1990).

At its core, the dynamic milieu has a number of intermingled dimensions (economic, historical, cognitive and normative), which all tend to depend on the prevalence of social trust and confidence, and therefore on a host of cultural and sociological factors. These factors may be found in localized networks where backgrounds of shared experiences, regional loyalties and common attitudes are more likely to have an influence.

This is 'social capital' in Coleman's sense, and such social and cultural capital plays a central role in both the dynamics and the capacity to learn and to transform meso-level innovation systems (Coleman, 1988; Saxenian, 1994). Thus, the milieu is likely to have a prominent role in shaping or constraining collective decision making and innovative choices, particularly in collaborative activities where 'shared experiences, regional loyalties and common attitudes' are essential in establishing consensus.

Social learning

Making knowledge explicit does make communication and learning easier, but it does not guarantee that a community of actors will collectively learn faster and become more innovative. While the social learning processes are connected to 'collective intelligence', they can only be usefully examined when done so separately. They are best analyzed as information codification and dissemination problems that complement the Polanyi scheme.

Max Boisot (Boisot, 1995) has suggested that in order to analyze the different types of information transaction structures, one must understand a three-dimensional space – *the information space* – formed from the dimensions of *abstraction*, *codification* and *diffusion* which describe the information flows within it. This space defines three continuums [see Figure 2]:

- the farther away from the origin on the vertical Y axis, the more information is codified (categorized, stylized and simplified);
- the farther away from the origin along the X axis, the more information is diffused and shared; and
- the farther away from the origin along the Z axis, the greater the information's abstractness (i.e., the more general it becomes).

Within the cube, Boisot attempted to stylize the social learning process in two different phases — the processes of production and diffusion of information – each with three different steps. In Phase I, social learning begins with a scanning of the environment for concrete information that is widely diffused in order to detect anomalies and paradoxes. Following this scanning step (**s**), step 2 stylizes the problem (**p**) posed by the anomalies and paradoxes in a language of problem solution. The third step of Phase I generalizes the specific issue solution to a broader family of problems through a process of abstraction (**at**).

In Phase II, step 4, new knowledge is diffused (**d**) into a broader community and then, through a process of absorption (**ar**), new knowledge is assimilated by the population to become part of its stock of tacit knowledge in step 5. In step 6, new knowledge begins to have an impact (**i**) on community practices and artefacts.

From **Figure 2**, one may identify blockages that may inhibit the social learning cycle. In Phase I, cognitive dissonance in (**s**) may prevent anomalies from being noted, and epistemic inhibitions of all sorts in (**p**) may stop the translation process into problem solution. Blockages due to a lack of problem definition being encapsulated within the *hic et nunc* (**at**) may prevent the generalization of innovation. In Phase II, the new knowledge may not receive sufficient diffusion because of property rights or certain values (**d**), or because of the presence of strong conservatism, which may result in a refusal to listen by stakeholders (**ar**), or because of an absence of mechanisms to incorporate the knowledge into existing frameworks and paradigms (**i**). What Boisot's model offers, therefore, is a series of clues on how to repair an impeded flow of knowledge in a community.

However, while the mechanical blockages described in this Boisot model are important, they can not be regarded as the most difficult blockages in the development of social learning and collective intelligence. The central innovation blockages in a region have to do with the need for a reconciliation of "frames of reference". Typically a region may have innovators from any number of the private, public or civic

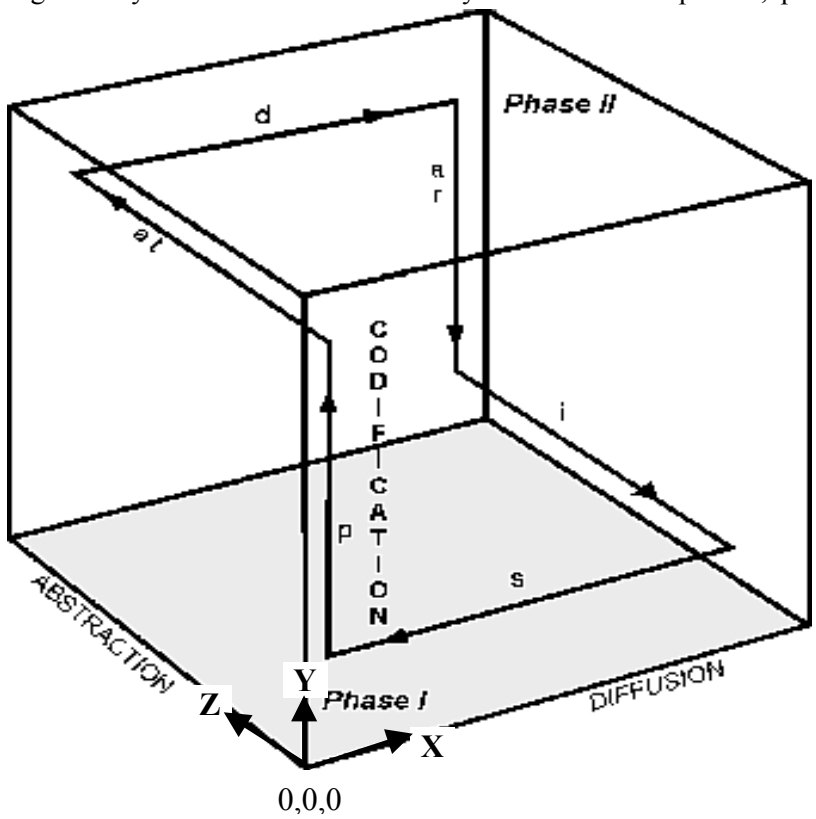


Figure 2: Boisot's Social Learning Process

organizations collaborating with one another. Hence, it is probable that the same data can be interpreted in widely differing ways. What is efficient for businesses may be callous for the community or politically threatening for the government. Therefore, if one wished to expand Boisot's organizational model to a regional level, there would be a requirement to bridge the fundamental worldviews among the various players. This can only be achieved when stakeholders transcend their individual frames of reference and silo-mentality discussed earlier and engage in learning-generating conversations. Importantly, they must avoid the regional equivalent of a turf war or 'advocacy war of solutions' and begin learning about each other.

This 'frame resolution' is the sort of governance challenge that most communities face. The central question in this context becomes how to generate those learning conversations. How can one effectively use neutral instruments, such as the production of a collective report, to trigger the requisite modification of existing frames of reference that leads to a useful elimination of the blockages to social learning?

Generating a common language of problem solution and co-designing solutions presuppose mutual understanding is challenging. "What is essential to value realignment is that a critical mass of appreciation for a new artefact [of knowledge] be built up so that diffusion takes hold within retroactive

realization processes. Of course, grand-scale value realignment...is rare." (Hatch, 1993). Presumably this is because the critical mass for large populations is too large. However, the corollaries to this are that incremental change will tend to easier in large groups and that grand-scale realignment may be possible in smaller populations. Small changes or small groups – these provide the most fertile ground for achieving the critical mass necessary for social learning.

Collective intelligence

It has been established that:

1) distributed governance and multiple accountabilities are the defining characteristics of the new economy organizations and communities;
2) the environment is defined by an ensemble of social mechanisms, network relations, and 'social capital' that provides "causal texture" (Emery and Trist, 1965) for innovation and collective decision making; and
3) the adaptation/adoption dynamics between collective environments play themselves out pragmatically much better *in situ* (Schön and Rein, 1994).

However, these are not sufficient to ensure that effective co-ordination and learning will indeed prevail. In essence, the sum of the parts does not equal the whole. A basic coalescence of all these factors is required to ensure that the community has a capacity to mobilize effectively its competencies, and a capacity to probe and learn, to go beyond its limits (Lévy, 1994).

This process of objectifying knowledge calls for instruments, conventions or relational transactions that will define mutually coherent expectations and common guideposts for partners having quite different paradigms and frames of reference. The challenge of utilizing collective intelligence is to find useful ways to effect agreements in oblique ways that avoid triggering defence mechanisms among different stakeholders and resist efforts to reframe problems in ways that favour individual organizations. This pre-empts the fundamentalist advocacy wars that often accompany collective decision making and make consensus building such a difficult process. Such strategies might include the preparation of a joint report or the hosting of an event for the benefit of a neutral third party, like the community's children. When successful, these strategies requires a great deal of multilogue, which inevitably results in some significant individual reframing about problems and issues and produces effective social learning because of the non-threatening nature of the process (Juillet, Paquet, Scala, 2000).

The instruments and conventions used to establish agreement differ from sector to sector. However, whichever instruments and conventions are used, it is necessary that they provide the requisite coherence for a common context of interpretation and for some "cognitive routinization of relations between firms (and one might add 'communities'), their environments, and employees" (Storper, 1996:259). Indeed, such coherence is a major source of nimbleness in the network economy. Yet, as we mentioned earlier, a good learning network must not be too cohesive: the nodes should not be too similar, nor the ties too strong or too routinized. Heterogeneity and social distance do foster a higher potentiality of innovation because the different parties bring to the 'conversation' a more complementary body of knowledge and experience.

Collaborative Governance

In the context of this discussion of social learning and collective intelligence, it is interesting to note that often within successful learning regions there exist learning networks that can best be described as collaborative hybrids of business, government, education and civic organizations. At first glance, the

activities of these local collaboratives provide a vehicle for ongoing incremental learning but they also seem to provide opportunities for large scale learning through a variety of individual projects. We are led to ask, therefore, is there a connection between the existence of these local collaboratives and successful learning throughout a region overall?

Since April 2000, the authors have begun to explore this question through a comparison of three such organizations – the Ottawa Centre for Research and Innovation (OCRI) in Canada; Joint Venture: Silicon Valley (JVSV) in California; and the Glasgow Education Business Partnership (GEBP) in Scotland. Each of these organizations have members drawn from business, government, education and the community and who work together on initiatives of importance for their respective communities. While the partnership organization may naturally reflect an amalgam of partner interests, it can also be found acting in the spaces that separate them. For instance, a San Jose columnist once described Joint Venture as having, "created a mechanism that prompted people from all three sectors to set aside their differences temporarily, to understand each other's problems and, wherever possible, to develop solutions that help everyone."[2]

What makes these collaboratives interesting is that they seem to encourage a degree of cross-boundary learning capable of instilling effective social learning in their constituent partner environments. Much like the few pacemaker cells that regulate the rhythm of the entire heart, these collaboratives tend to generate an increased capacity for cooperation within their respective communities.

Though civic in form and usually non-profit by charter these new 'civic collaboratives' act as neutral vehicles for facilitating the 'learning conversations' among others. They neither threaten nor challenge any other organization's market or authority and when the collective learning they catalyze is translated into successful projects, these collaboratives earn reputational assets that draw other to the table. Their capacity to generate the type of frame reconciliation and collective coherence discussed earlier has often led to a better coordination of local resources and an improved capacity for local problem solving.

Given their common partnership modality, we were interested to see if these organizations might be a microcosm of the kind of social learning that takes place in a regional context. To proceed further, however, we need to provide some background on each of these civic collaboratives.

Glasgow Education Business Partnership

Glasgow, with a population of over 600,000, is the largest of Scotland's cities and the heart of Scotland's economy. In the 1980's, however, due to the restructuring that occurred in its primary industries -- steel, coal and shipbuilding -- the city experienced great hardship from unemployment rates of up to 50%. Today, Glasgow's new economic vitality is primarily supported by the service sector, namely transaction processing, banking and finance, call centres, software development, biotechnology, multimedia, opto-electronics and tourism. Yet, unemployment remains stubbornly higher than the Scottish national rate of 7.1% with some pockets of the city over 15% (GEBP, 2000b).

The Glasgow Education Business Partnership (http://www.gebp.co.uk) has endeavoured to reduce unemployment, particularly among the city's youth, through a partnership approach involving over 70 projects, 1,000 schools, 3,000 businesses and over 45,000 Glasgow young people. GEBP is an independent not-for-profit organization, partially funded by the local branch of Scottish Enterprise (SEG),

[2] Mitchell, James. Joint Venture must Transform Assent into Action, *San Jose Mercury News*, January 24, 1993, pp 1E

Scotland's economic development agency, and the Glasgow City Council. In fact, GEBP was part of a larger ***public sector strategy*** that linked access to public funds to a requirement for private-public-civic cooperation that addressed the unemployment issue. Though arising from this public mandate, GEBP is not a public sector organization. The majority of its resources, both direct and in-kind, are obtained on a project by project basis from private corporations.

GEBP's work is viewed as a critical element in the improvement of Glasgow's economic performance because the city suffers from the poor educational performance of its youth. Almost one third of its young people leave school at age 16, the end of compulsory education. Of those who finish school, almost 15% leave without any qualifications whatsoever, compared to the Scottish average of 6.6%. Unemployment among school leavers is 22% (GEBP, 2000b).

The main focus of GEBP is linking primary, secondary and post-secondary education with the business community, in order to improve student achievement and curriculum relevancy, to equip its young people with the employability skills for tomorrow's workforce, to encourage a culture of entrepreneurship and to promote lifelong learning. For instance, GEBP helped create a *Guide to the Glasgow Economy* that is used by all S3 level pupils in every school in Glasgow. The guide contains information about the city's youth employment situation, emphasises employers' recruitment needs and illustrates how young people can develop the qualities employers most value while still at school. Through its *Glasgow Partnership Technology Education Network* GEBP brings together a number of individuals and organisations to ensure the coherent delivery of a number of technology projects in support of technology teachers. In 1999, GEBP received the Global Best Award from the International Partnership Network and the Conference Board of Canada in recognition for its work in developing broad-based community partnerships.

While generally recognizing the benefits of corporate social responsibility, increasingly Scotland's businesses have begun to recognize (Dimmock, 1997) that community partnerships spawn internal benefits that include positive PR, easier recruitment, increased organizational learning, increased staff motivation and improved access to resources. An independent survey in 1998 reported that 40% of the organizations involved with GEBP experienced widespread organizational benefits, on average 25% higher than other organizational development approaches used internally (GEBP, 1998).

Joint Venture: Silicon Valley

Silicon Valley is centred around Santa Clara County in California and includes portions of San Mateo, Alameda, and Santa Cruz counties. It is home to more than 2.5 million people and more than 7,000 technology-based companies. Silicon Valley has established itself as the world's leading technology centre and continues to grow aggressively with over $9.7 billion USD in venture capital investment in the first six months of the year 2000 (JVSV, 2000b).

The governance of Silicon Valley's economy has evolved with its economic growth. Henton (2001) has characterized the Valley's evolution through four phases between 1960 and today -- *laissez faire*, market-driven, collaboration and networking. In 1992, business and high-tech leaders concerned about a slowing economy created a cooperative vehicle to deal with regional issues. They called it Joint Venture: Silicon Valley (http://www.jointventure.org) and used it to try and make the Valley more business friendly and to head off a perceived exodus of companies and technology workers. Despite early scepticism, Joint Venture forged a collaborative model that eventually included government, educational and civic leaders and began identifying problems, finding answers and implementing solutions.

According to Henton, "we did not want to create another task force. We wanted to move beyond committees to creating active programs. In essence, Joint Venture was a ***network of leaders***. It was not a

grassroots organization."[3] Those leaders included people like Jim Morgan the CEO of Applied Materials, Ed McCracken the CEO of Silicon Graphics, Dave Packard of Hewlett-Packard, Susan Hammer the Mayor of San Jose and California Senator Rebecca Morgan.

Over the last decade, Joint Venture has pursued an ambitious agenda of regulatory and policy reform through its *Regulatory Streamlining* initiative, has fostered the development of new businesses through business incubation services like *The Enterprise Network* and the *Environmental Partnership*, has created innovative educational models through initiatives like *Challenge 2000*, and has worked to improve the Valley's quality of life through *Smart Valley* and its *Healthy Community - Healthy Economy* initiatives. Its many corporate, government and civic partners have favoured collaboration for three reasons:

1. It yielded creative solutions,
2. It built commitment for implementing those solutions, and
3. It created a decision-making capacity where multiple authorities existed. (JVSV, 1999)

Of late, Joint Venture begun to change its focus to be more in line with the needs of Silicon Valley's growing knowledge economy moving from "developing jobs to developing people". The basis of their new strategy was an extensive public consultation effort conducted by Joint Venture in 1998 involving citizens at all levels from across the region in a visioning process, from corporate CEOs to parents and students. Joint Venture's new focus is three-fold -- *education, workforce development, and technology access* and their activities will be directed at co-ordinating business, government, and civic leaders to obtain maximum leverage with the existing local resources to achieve 'scale' effects across the region.

Ottawa Centre for Research and Innovation

Canada's national capital region has a population of more than 1 million and an economy worth over $US 20 billion, most of which is exported. Ottawa has generally enjoyed economic stability due to the presence of the Canada's federal government but during the 1990's it witnessed a series of setbacks – a major recession, a significant downsizing of the federal government and a major downloading of provincial responsibilities to the local community.

Fortunately, however, Ottawa has been slowly shifting its economic base since the early 1980's from government to advanced technology, which is now the region's leading employer. Ottawa is Canada's R&D capital, responsible for 90% of all Canadian telecommunication's research. It has experienced a five-year growth rate of 90% despite the setbacks of the early 1990's and is poised for a 16%+ growth over the next four years,[4] the highest projected economic growth rate in Canada. Today, Ottawa has a diverse economic base. Its economic clusters include life sciences, photonics, telecommunications, professional services, microelectronics, software and tourism.

The Ottawa Centre for Research and Innovation (http://www.ocri.ca) has positioned itself at the core of region's capacity to generate broad community collaboration. It has evolved from being a collaborative research effort in 1983 to being a key player today in orchestrating the coordination of people, ideas and resources to improve the quality of the region's talent pool, its economic performance, innovativeness and quality of life.

OCRI is unique from both JVSV and GEBP in that it is member-driven. ***Grassroots involvement*** in individual projects tends drives OCRI's direction and success. OCRI projects have tended to involve mid-level managers, small business leaders, teachers, consultants, service providers, researchers, community

[3] In conversation with authors September, 2000
[4] [www.ottawaregion.com]

activists and local government officials. Today, with support from over 600 members including large corporations, school boards, research laboratories colleges and universities, OCRI is aims to enhance the region's talent base, ensure the adequacy of its infrastructure, attract and develop new businesses and ensure that the benefits of technology are bestowed inclusively across the region. For instance OCRI led a broad partnership of industry and educational players to raise $55 million to enhance technology and science education in the area under Ontario's Access to Opportunities (ATOP) program.

OCRI has flourished as a facilitator of cooperation. As a project-based organization, its style and culture do not reflect those of any of its particular partners which has allowed it to become a meeting ground for diverse community stakeholders. The diversity of OCRI stakeholders is unique in the region, allowing it to act as the catalyst of frame reconciliation and ongoing dialogue on issues of regional importance. In OCRI's corporate culture, it does not take ownership of initiatives brought its way by enterprising business people or citizens. Yet it has amply benefited from their work in terms of the reputation that flowed from successful innovations and programs brought forward by people in the community.

Its growing membership base, over 400% growth in five years, evidences the impact of that growing reputation as does the growing national and international interest in the OCRI model, and by the increasing ease by which it can attract resources to its sponsored projects. More organizations are willing to support OCRI's work or directly participate in the initiatives that occur under its umbrella. Over the past decade, OCRI too has been the recipient of a variety of local, national and international awards, including the Year 2000 Global Best Award. More recently OCRI has been tasked by *The Ottawa Partnership*, an informal body that coordinates local development, to create a partnership, *TalentWorks*, to bring together the various workforce programs across the region because of its broad credibility within the community.

Governance as a social technology

Technology generally refers to the practical application of basic principles of knowledge or the capability provided by that application. In other words, technology may be considered as the 'knowledge of techniques'. But technology may also refer to the manner of accomplishing a task using technical processes, methods, or knowledge. In this context, a social technology refers to the mechanisms of accomplishing tasks using social processes, methods, or knowledge.

In each of the aforementioned collaboratives, a variety of social technologies including techniques of cooperation, the establishment of cultural norms, networking styles and governance models have been applied to achieve community goals -- such as reduced youth unemployment, regulatory reform, basic research or other public goods -- that were otherwise unattainable because of the presence of multiple authorities or mutual competition.

In our view, governance is not just about the appointment and behaviour of Boards of Directors. It is about guiding. It is about the processes by which human organizations, whether private, public or civic, steer themselves. Thus the governance regime adopted by a community can, by way of its ability to coordinate physical and knowledge resources, contribute significantly to the community's learning capacity. As such governance can represent an important social technology.

The most commonly observed governance form is hierarchy: the others being market, clan and association (Hollingsworth & Lindberg, 1985:221). Hierarchy requires the members of an organization to align themselves with a single body or individual at the 'top' of the system. Hierarchy is crucially dependent on the leadership quality at the 'top' and on the leader's ability to achieve compliance within his or her organization. Should the leader's legitimacy or coercive power be weakened, a hierarchical

organization will fail to engage the diverse elements of its organization in any useful degree of organizational learning.

The learning capacity of a hierarchically organized society is similarly constrained by the leadership of a few private and public organizations, who typically impose their understanding and worldviews upon the community at large. In this context, traditional 'command and control' governance tends to discourage both individual and collective learning in favour of deferential obedience. In periods of rapid social change, social co-ordination of this type is ill suited for the resolution of complex social problems or for situations of distributed power and authority characteristic of the knowledge economy. Most importantly, there are simply too few learners at the 'top' with significant knowledge and leadership authority to retain public legitimacy by virtue of their being 'ahead of the curve' on a broad range of issues.

For instance, while governments are widely believed to be the upholders of the 'public interest', their hierarchical organizations are widely perceived to be excessively slow learners and overly controlling. Savoie (1999:336) has described the emphasis of current Canadian governance as being "less on policy coherence and more on keeping the lid on." When coupled with universal education and the widespread use of CIT's, such as the Internet, this institutional unresponsiveness and control has led to a continuing erosion of public confidence in the legitimacy of government in all democratic societies (EKOS, 1996).

Given this decline in public confidence in governmental institutions, it has become common currency, especially among neo-conservatives, that markets can provide an alternative mechanism for all forms of social coordination. But while businesses and markets are viewed as being quick learners, resourceful and efficient, they are perceived by the mass public as being too overtly motivated by self-interest. Therefore, when they participate in co-operative compacts involving the public and civic sectors, they are viewed with suspicion. The negative world-wide reaction to the Multilateral Agreement on Investment, the protest reaction to the WTO meeting in Seattle and more recently the FTAA meeting in Quebec City all underscore the public distrust of the private sector to secure anything other than their own self-interest.

In spite of the fact that markets and hierarchies have become the dominant forms of governance, particularly in the Anglo-American world, they have not historically held that position. "In the beginning, economic transactions were governed by social relationships [clans and associations] rather than by markets." (Williamson, 1990). Why? Because " human communities…are discursive achievements, processes of seeking and finding conversational partners and forging with them…institutions that will work" (Kingwell, 2000: 22). Economics was community based, or more correctly relationship based. In today's parlance, the local sets of family or professional ties that once reflected common interests and practices might be better described as networks.

In contrast to both government and business, this network governance that today operates principally from the civic sector, is generally but incorrectly believed to be powerless to effect social coordination. This is because the civic sector's fragmentation tends to preclude the type of control used by hierarchies. In addition, its deficiency in resources tends to reduce its capacity to engage in the kind of contestable power typical of markets. However, as we discovered in our investigation of civic collaboratives, control is not the same as coordination and asset ownership is not the same as access to assets.

The unique hybrid nature of these 'civic collaboratives' allows them to act as private, public <u>or</u> civic organizations. They can seek profit, enhance public interest and further community development all at the same time. One of the key benefits of a partnership is that members do not have to relinquish their characteristic viewpoints. This results in a degree of complementarity that is virtually unattainable in more homogeneous organizations. This seems to be the reason why these collaboratives are often entrusted with the role of fostering social co-ordination in environments with conflicting authorities, sometimes to the extent of assuming traditional public or private sector roles.

We also observed that unlike most civic organizations, 'civic collaboratives' can achieve access to significant resources. While it is true that those resources are not usually generated from within the civic sector, they are commonly funnelled through private and public organizations, they are provide to address civic issues that have been understood to be aligned with public and private interests.

The public legitimacy held by these collaboratives tends to reflect the perception that they are responsive and inclusive – unlike some public organizations, – and, unlike private enterprises, there seems to be no question about their contribution to the public good. Our observations also suggest that these 'civic collaboratives' are perceived as friendly and non-threatening by both governmental and market organizations alike. The inability of civic collaboratives to impose any kind of control while working in the public interest makes them natural partners of government. The coordination role they perform is accomplished through voluntary participation in win-win strategies not through the exercise of control. The inherently bazaar-like nature of these organizations in their inter-partner trade of ideas, services and resources makes them quick social innovators and natural complements to the alliance modalities of business organizations. The trade in ideas, reputation and relationships that occurs in the activities of these collaboratives can provide access to resources on a scale usually unavailable to not-for-profit organizations. The 20 million-dollar community venture capital fund created by *Challenge 2000* is probably the best example of this.

Lastly, these collaboratives frequently find themselves providing facilitation support in areas where direct relations between business and government actors have proved ineffectual or have broken down, as was the case with Joint Venture's *Regulatory Streamlining* initiative or OCRI's *TalentWorks* initiative.

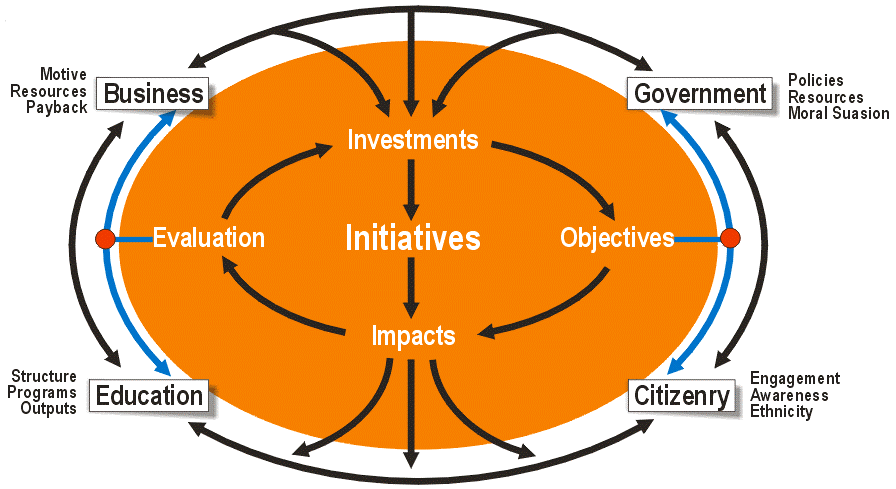
Template for regional learning

From our preliminary research, it is clear that the governance alignment in the three regions has transcended traditional sectoral boundaries and has been guided to a large extent by proximity. The many face-to-face interactions made possible through the activities of the collaboratives have contributed to the willingness of stakeholders to work together. This boundary-spanning governance did not emerge immediately. It took several years in each case to develop the requisite levels of trust among the regions' various stakeholders.

There exists many common themes among the three collaboratives we have studied – educational reform, the development of an entrepreneurial culture, regulatory reform, and so on – yet distinctly different organizational models, values and initiative choices seem to have evolved in each region. These relative differences seemed grounded in a variety of local, economic, social, political and technological realities – in effect the region's milieu. The influence of the milieu seems to have impacted the collective learning within the local partnerships and the nature of the shared local governance system within each region. For example, Ottawa's preoccupation with start-ups and spin-offs has encouraged partnerships in the areas of business networking, professional development and education. This has lent a rather community-oriented flavour to their collaborative governance. The more mature technology economy of Silicon Valley encouraged partnerships that would create a more business-friendly environment. Hence the Valley's closer orientation to the private sector. Glasgow's high unemployment and higher acceptance of government has motivated local partnerships to focus on ensuring basic employability skills and to promoting entrepreneurship, functions that have inevitably had closer ties with the public sector.

In an attempt to better understand how collective intelligence emerges in a region, we put forward the following template as a preliminary mapping of the main actors and flows that shape the learning region:

Figure 3: A Template of Regional Learning



The central component of the organizational apparatus in civic collaboratives is *Initiatives*. By initiatives, we mean the specific set of projects, programs and processes undertaken and managed by the regional entity under study, as well as the scope of their influence. This set of activities determines the organizational apparatus of the regional entity. The initiatives attract investment and provide both explicit and tacit learning. They provide the neutral instrument upon which stakeholders can build learning conversations. In our comparative research, the projects being undertaken by our collaboratives ranged from improving education to creating jobs to basic research to industry advocacy to regional development. Yet from a preliminary survey conducted in each region, initiative participants believed that in addition to any specific results with the initiative, a large part of the value they received was the collaborative process in and of itself.

In the graphic above, the second major factor of regional learning is *Investments*. By investments, we mean the sources and types of inputs that drive the regional entity. Our expectation was that the nature of the investments in collaboration, whether public or private, would shape the type of initiatives undertaken. That is, initiatives would tend to be tailored to meet the interests of the funding organizations in order for the partnership to gain access to those resources. Public money would require the production of public or political goods. Private money would require profit, and so on. While this was observed this in each regional collaborative, we also observed that initiatives could also drive investments. Given an initiative with broad appeal and a solid team and business plan, resources could be attracted without the partnership being overwhelmed by the funding organization. Further, we observed that the project nature of the collaboratives tended to compartmentalize the cultures and values of the contributing partners and allowing a unique co-operative culture to emerge.

Finally, collective learning is also influenced by the outcomes of collaboration, reflected in the *Impacts*. By impacts, we mean the specific and general results of the partnership activities undertaken by a collaborative. These are evidence of the value perceived by the organizations and individuals engaged in them and reflect the organization's ability to promote mutual learning among the partners. Given that in many cases collaboration is an action of last resort (Chrislip and Larson, 1994), frequent, positive and credible evidence of value would seem to be essential for sustaining commitments in order to satisfy participants they are on the right track. A successful initiative in this context is in essence a successful demonstration of social learning. However, in the case of our three regions, this did not seem to imply a

reliance on scientific reporting but rather the use of frequent and positive feedback. Two of the partnerships we observed used little objective evaluation and relied almost entirely on anecdotal evidence. The other used 'rule of thumb' measures, not as substitutes for scientific indicators but as conversational tools that catalyzed dialogue among its stakeholders.

In each of our partnership organizations, a core of similar initiatives evolved that were targeted towards community problems, that attracted investment and that provided cross-sector feedback on the community development to their partners. In the process, they seemed to generate tri-sector learning that synergistically enriched the community's business, governmental and civic organizations. The initiatives did not threaten existing authorities and finally, and most importantly in our opinion, they provided vehicles for the development of broad community leadership.

Like in any good partnership, these collaboratives provided a *quid* for the *quo* for participation. The governmental organizations invested financial resources and gave up some degree of control over the issues of local concern. In return, they found that the risks associated with complex social problems were mitigated by broad community involvement. The government also gained access to private sector resources. Similarly, the private sector invested their time and financial resources and received access to public and civic policy levers, along with additional public resources to leverage those from business. The collaboratives' civic sector partners invested intangible assets – their community-based legitimacy and credibility – in return for access to both private and public resources.

The success of these collaboratives in generating social learning is probably best viewed in terms of their accumulation of intangible assets. The growth of these soft assets increases the collaboratives capacity to act as a credible and neutral intermediary, add to their ability to attract creative ideas from civic entrepreneurs in the community, and to attract both direct and in-kind resources to support the activities of new initiatives. In essence, the growth of a collaborative's intangibles directly enhances both its capacity to effect successful governance in their region.

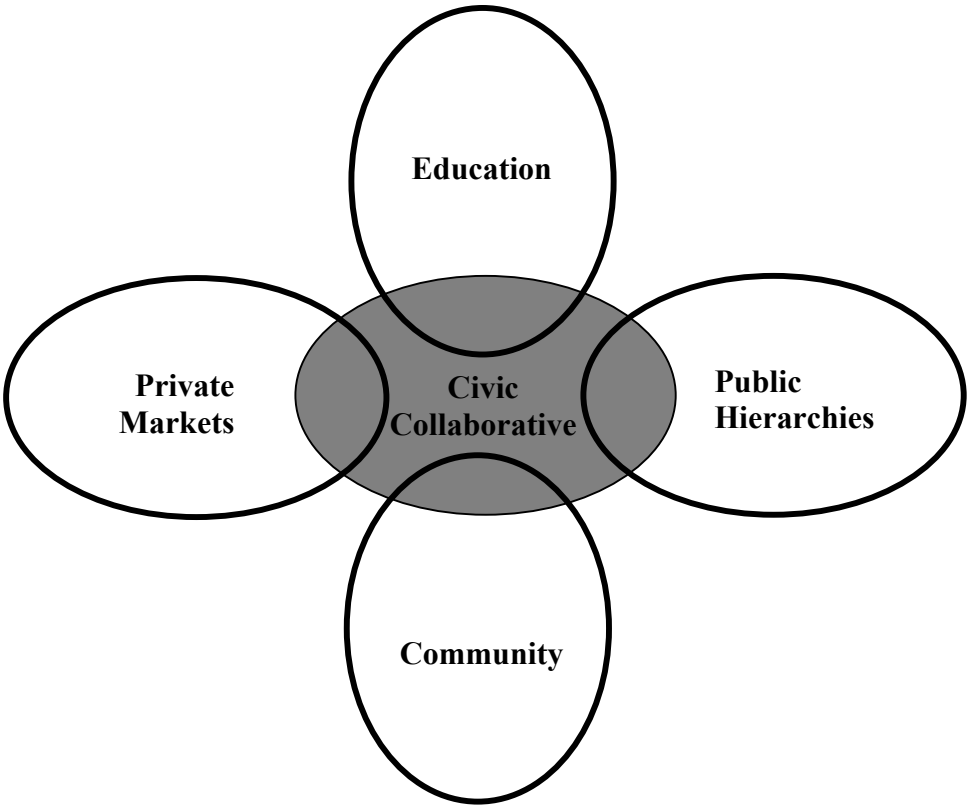
While simultaneously transforming market assets into public goods and public goods into market assets via initiatives, the collaboratives produce a tight social coupling [see Figure 3] because of the more efficient use of community resources and the efficacy of 'win-win' community strategies. These actions are significantly different from either philanthropy, which converts private assets into public goods or privatization, which converts public goods into private goods. The seeming paradox of collaborative initiatives is that they can simultaneously be self-interested AND for the public good. Through these public-private exchanges, the civic collaboratives increase their stock of intangible assets in the community thereby enhancing their future capacity to effect change. What results is a community governance model that puts the 'civic collaborative' at its centre.

This collaborative governance acts neither through coercive nor resource power, but through referent power. Whereas the power of the public sector rests upon what it can be impose and the power of market rests essentially upon what it can take away, the power of civic collaboratives rests on what has been temporarily bestowed upon them by their business, government and community partners. Collaborative governance operates through the use of networks, trust and consensus without relying on either mandated authority or profit.

As Savoie (1999) points out, one of the simple truths about government is that it may not appear to fail . This tends to disqualify them from leadership in partnerships where experimentation, risk-taking and learning are key elements. The suspicion surrounding the motives of businesses mentioned earlier, makes them ill suited to act as community champions – even if they are quick to learn. The fragmentation and paucity of the civic sector implies that community organizations by themselves are unlikely to be accorded leadership status. However, boundary crossing networks and collections of 'civic-minded'

regional players that can generate cross sector dialogue and foster the trust needed to engage the community can assume a 'virtual leadership' role on behalf of their stakeholders.

Figure 4: Community Exchanges with Tight Coupling



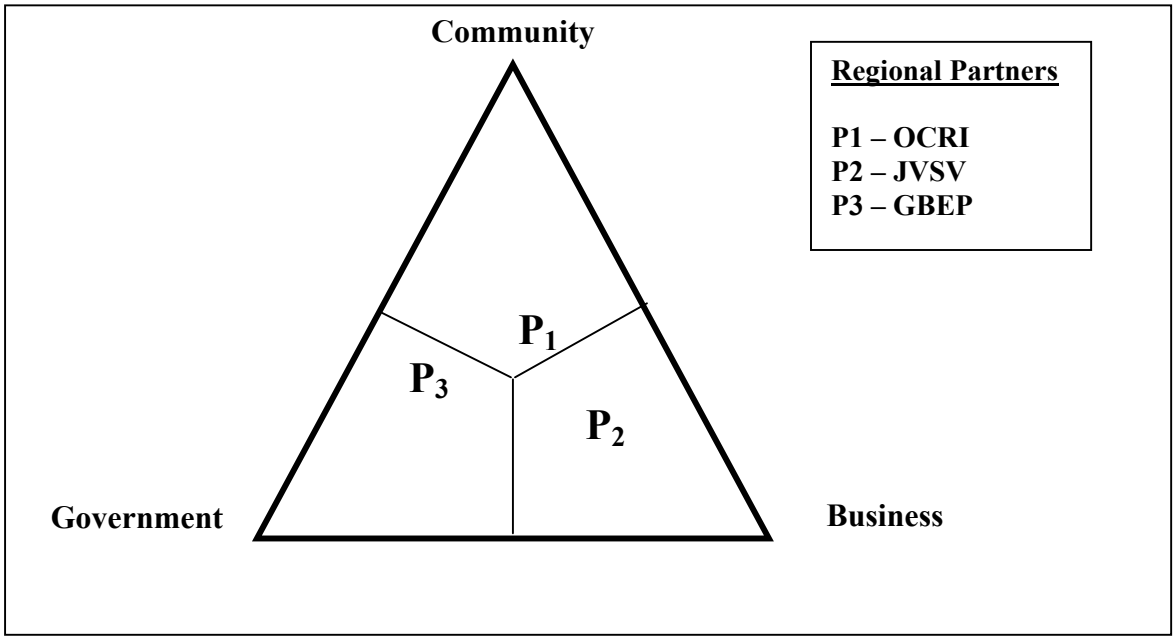
Case applications

Using a modified Boulding triangle (Boulding, 1970), we can attempt to depict the relative governance orientations of our three regions. The typology below is presented as a rough characterization of each regional collaborative. The relative positioning of each partnership helps to provide a sense of the governance patterns that have evolved in each area:

While all three partnership organizations are non-profits and might therefore be located in the Third sector space, their underlying governance tends to vary. Their differences in ability to engage resources from each of the three sectors have suggested to us that one sector or another tends to pre-dominate in each region. Initiative targets for each of these collaboratives are remarkably similar and cover a broad range of concerns. However, there are over-riding concerns. For Glasgow it is unemployment. For Silicon Valley it has been the establishment of an environment friendly and supportive of business (and

more recently of supporting talent issues). For Ottawa it has been the need to foster both business development and the growth of a sustainable talent pool.

Figure 5: Depicting Local Governance Models



In brief, the governance models of our three civic collaboratives can be described as follows. OCRI is a *grassroots network* that does not take ownership of its various projects, preferring the project team to do so. Outside organizations figure prominently in OCRI's public accolades and outsiders not only can be found running projects, but can even be found as OCRI staff. Funding for projects is transient, requiring a recommitment by stakeholders on a frequent basis. Because its membership is drawn from across all three sectors of the community, OCRI maintains a portfolio of intangibles, meaning that it is important that its reputation be built and maintained in all sectors of the community.

JVSV is a *leadership network* that grew quickly to regional prominence on the strength of the reputations of its private and public leaders. For example, Lew Platt of Hewlett-Packard, Jim Morgan of Applied Materials and Ed McCracken of Silicon Graphics, San Jose's Mayor, Susan Hammer, Condoleezza Rice of Stanford University (now the US National Security Advisor) have all been outspoken leaders of the Joint Venture. Joint Venture has tended to own the projects they delivered, preferring professional rather than volunteer staff, and has been more adept than the other two at securing semi-permanent resources to fund their initiatives. Their major source of intangible assets has been the high profile of their corporate leaders and thus Joint Venture tended to value the development of their private sector reputation the most.

GEBP is a *mandated network*. The impetus to collaborate in Glasgow originated in the public sector. While it too has tended to own the projects it delivered, GEBP, like OCRI, has relied more on transient resources that need continual recommitment. Currently, more than half of its direct and in-kind resources comes from private or community sources. The reputation of the public sector has strengthened the acceptance of GEBP and the performance of its initiatives.

Conclusion

Our experience with the regions of Glasgow, Ottawa and Silicon Valley supports the view that in areas of distributed authority and accountability and in dealing with complex problems, governance too must become distributed. It is often messy, vague and hard to define explicitly. The character of the local milieu and the proximate relationships between business, government and civic actors that shape the region's collective intelligence will determine the nature of that governance. That intelligence is not static but is continually being transformed by processes of social learning which engage community actors in learning conversations. Our experience with the civic collaboratives in the three regions suggests that collective intelligence can be enhanced by collaborative activities that contribute to the breaking down sector barriers and to their collective learning.

These civic collaboratives provide forums for non-threatening and productive interactions between diverse community players in pursuit of common interests. A by-product of these interactions is enhanced community governance that facilitates market-to-public and public-to-market exchanges that are mediated by not-for-profit organizations. This arrangement seems to make better use of community resources and develop collective intelligence. The characteristics of these civic collaboratives is derived in part from the initiatives they undertake, the tangible and intangible investments that are made in them, and the impacts that the initiatives have on the community and the players.

While our research in this area has just begun, it seems clear that civic collaboratives need to be encouraged. Where governments may be unable to entertain risk or embrace innovation, civic collaboratives can help them to achieve this, while reaping benefits of increased legitimacy and credibility. Where markets may lack the ability to align community infrastructures to the new economy due to a lack of trust as community agents, civic collaboratives can help them to achieve this, simultaneously enhancing corporate profitability and reputations for corporate social responsibility. For traditional civic organizations, the civic collaboratives help bring together the private and public resources required to fulfill social needs, but also highlight the value of the intangible contributions being made by community actors.

Finally, while the knowledge economy demands an increased community capacity for social learning and collective intelligence, the practical steps of achieving that capacity are not always evident. Our experience with Silicon Valley, Ottawa and Glasgow suggests that institutionalized vehicles of civic collaboration can, through their inter-sector activities in pursuit of solutions to common problems, contribute to social learning and collective intelligence. Enhancing a community's capacity to collaborate is just as important an outcome of co-operation as a successful program or community project. That collaboration may begin with any group of partners as the experience of Ottawa, Glasgow and Silicon Valley suggests. Doing collaboration seems the pivotal point and that once achieved it can become a self-reinforcing element of community life. More research is obviously required but the encouragement of regional learning, like that produced by each of our three case examples, seems a necessary requirement of any community trying to succeed in the knowledge economy. As such, the promotion and support of successful collaboratives may well have positive effects on other investment and policy goals.

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