

Modern Economic Development Planning: Regional Foresight Exercises as Risk Reduction Strategies and Negotiated Co-Investment Processes

abstract: Centralized, government-led economic planning has been discredited and abandoned by policy makers in most advanced countries. However, at the metropolitan region scale, business, civic and academic leadership groups are actively engaged in developing economic strategies to effectively leverage their regional assets. In knowledge-based economies where the decisions of many individual actors and institutions can add to, or subtract from, the good of the region, there remains a need for economic development coordination. In this environment business, civic, and academic leadership groups participating in a process to assess their region's competitive position, determine its priorities, and execute a regional economic strategy, is the best mechanism for coordination. Instead of being antithetical to neo-classical economic models, these kinds of processes, when executed effectively, in fact contribute to regional economic success by managing issues very familiar to economists: developing and transmitting market information and minimizing risks for individual actors. The result can be an economic development process that involves collective learning (intelligence gathering, analysis, diagnostics, decision making and priority setting) leading to a negotiated co-investment process which minimizes risks and maximizes outcomes for individual companies, specialized suppliers, supporting institutions, and the regional economy.

One day, while I was making a presentation to a group of Chinese economic officials visiting us in Toronto it struck me that I was promoting economic planning to officials from a country that was in the process of replacing state economic planning with more market-oriented, decentralized, price-coordinated mechanisms. Market-based and neo-classical economic models had clearly won the ideological (and economic) battle between political-economic systems that had dominated the twentieth century. After all, Chinese officials, working for a nominally communist government, were fanning around the globe to learn about economic policy in western, capitalist, countries. So why was I giving them a primer on economic development planning processes as a way to create regional and firm-level competitive advantage in an advanced, knowledge-based market economy? More to the point, while it might be understandable why a government official like myself would want to indulge in wishful thinking that such planning can work, why were busy CEOs in leading Ontario cities such as Ottawa and Toronto, and in leading regions like Silicon Valley, Austin, Boston, and the capital of capitalism - New York City - using their precious time to engage in such planning processes (1)?

Economic geographers and economic development consultants have developed a wide-ranging set of explanations for the value of regional economic development planning/regional foresight exercises. Various geographers have characterized these exercises as socially organized learning processes which drive institutional reflexivity (2). Others emphasize their value as talking processes which build the conditions essential to achieve mutual understanding between the various actors and thereby to foster trust and social capital (3). And, of course, simply putting some of the right people in the room together will sometimes fortuitously and spontaneously result in business opportunities. While my own experience suggests that all of these are valid

explanations for potentially positive outcomes, I also fear that none of them would be particularly convincing to my former microeconomics professors.

Traditional Marshallian economics theorizes that, in perfectly competitive markets, the optimal social welfare outcome can only be achieved when individual consumers and individual producers act purely in their own self interest, abiding by the rule of law of course. In this model, which has been the foundation for unprecedented gains in prosperity and standard of living in market-oriented western economies, where is there room for economic coordination and planning?

First, we need to remember that the conditions for partial equilibrium in perfectly competitive markets are quite strict. According to my old microeconomics text, these include low barriers to entry and exit, a commodity product that has many substitutes and multiple suppliers and buyers, symmetrical access to information about markets known by all producers and consumers and, perhaps most importantly, declining marginal returns/declining marginal productivity (4). In these kinds of markets, planning activities will be, at best, of no significance and, at worst, opportunities for collusion between producers or interventionist government mismanagement and consequent misallocation of scarce economic resources.

Returning to my personal experience, I have noticed that these exercises are more useful in certain types of regional economies than in others. Some of this difference can be explained by differences in civic culture, something which has quite rightly been getting a lot of attention (1,5). But I believe that some of the differences in effectiveness of these processes are also determined by the nature of competition in different kinds of economic activities, and specifically the degree to which the regional economy in question is dominated by knowledge-intensive businesses and clusters.

Sabel has noted that regional foresight exercises as social learning processes are especially beneficial in situations of rapid economic change and in the emerging knowledge based economy, where the production of complex goods requires the coordination of many specialized firms across diverse branches of the industrial and services sectors (6). I can be convinced that coordination through collective learning is one explanation for why these processes are more effective in knowledge industries and economies, but I would like to suggest another: that knowledge intensive economic activities and markets, and the firms that compete in them, have certain characteristics which make these exercises critical for minimizing and mitigating risk and thereby maximizing regional investment by the firms themselves, by specialized service providers, and by supporting non-profit institutions in the regional cluster.

In knowledge based clusters and knowledge-intensive regional economies we find increasing marginal returns to cluster investments. Increasing returns to scale are evident not just in clusters but in effective urban agglomerations generally. Research by Ontario's Institute for Competitiveness and Prosperity suggests that more urbanized jurisdictions enjoy higher GDP per capita than less urbanized jurisdictions, and that megalopolises such as New York, Chicago, and

Southern California create enormous wealth (7). In a well-planned city with adequate infrastructure investment and capacity, scale efficiencies due to agglomeration effects and opportunities for specialization outweigh declining returns effects related to higher costs (scarcity of factors) and other diseconomies of scale.

But is this unique to knowledge economies, given that in earlier eras there were similar agglomeration effects that clearly outweighed diseconomies - if they did not, how would London and New York have become major cities? The reality is that New York and London have both always been nodes of knowledge transmission and innovation, albeit during an era when their economies were more characterized by manufacturing and goods transportation activities than they are today. One need only read Peter Aycroyd's *Biography of London* to understand that for centuries, London has been a centre of trade and increasingly specialized economic activities (8). One also recognizes from Aycroyd's history that a great deal of economic planning (and perhaps collusion) also took place in London's medieval managed economy - through the guilds, apprenticeship system, and through the evolution and development of highly specialized production districts.

The segregation of districts, within London, is also reflected in the curious fact that 'the London artisan rarely understands more than one department of the trade to which he serves his apprenticeship', while country workmen tend to know all the aspects of the profession. It is another token of the 'specialisation' of London. By the nineteenth century the divisions and distinctions manifested themselves in the smallest place and in the smallest trade. In Hoxton there grew up the industry of fur- and feather-dressing, for example, and in *East London* Walter Besant observed that 'the number of their branches and subdivisions is simply bewildering'; 'a man will go through life in comfort knowing but one infinitesimal piece of work... a man or woman generally knows how to do one thing and one thing only, and if that one piece of work cannot be obtained the man is lost for he can do nothing else'. (8, p126)

But accepting that there are increasing economies of scale in large metropolitan economies does not necessarily make a case for economic planning or collective (ie. governmental, association) intervention as a way to accelerate the growth of those regions. To understand the case for collective planning as a risk minimization strategy, we need to look more closely at the characteristics of knowledge-intensive economic activities.

Characteristics of Knowledge Intensive Economic Activities

First, let's try to be more precise about the term knowledge industries. After all, knowledge is a critical part of any economic activity, and has been since humans learned which berries were good to eat, and which watering holes were safe from predators.

Knowledge industries are therefore not a discreet subset of economic activities, because all economic activities require knowledge. But economic activities do vary in the importance of up-

to-the-minute and highly specialized knowledge. I will define knowledge-intensive economic activities and industries as those in which continuous innovation and adaptation to rapidly evolving technologies and/or production processes, increasing specialization, and/or rapidly evolving consumer tastes and customer requirements are of paramount importance for competitive survival.

To further develop the idea, take as examples a rapidly evolving knowledge-intensive sector such as semiconductor design and a more stable and mature sector such as steel manufacturing as examples. Although a steel plant employs a great deal of technology and capital incorporating accumulated and embedded knowledge, the leading edge in steel production is evolving less rapidly than in semiconductor design, and the end cost of steel has more fixed capital, raw materials, and relatively standardized labour content embedded in it than are found in the final cost of a sophisticated new chip design.

Consequently, the sources of competitive advantage and key success factors for the steel company are quite different than for the semiconductor design firm. The steel company sells a more commoditized product, so product differentiation is difficult, leaving cost minimization as a key driver of profitability. Cost minimization can be achieved through strategies such as minimizing factor input costs (through proximity to raw materials, effective procurement, and skilled industrial relations for example) and/or efficient production (procurement and management of production technologies and processes). Although the steel company requires some highly specialized inputs (production technologies and skilled metallurgists, for example), these inputs represent less of the value of the final product and are less likely to be sourced locally, than specialized inputs in the design of semiconductors.

On the other hand, the chip design firm is in quite a different kind of business. Because knowledge embedded in a chip design is less expensive to transport than steel, the chip design company is much more likely to compete in global markets than the steel maker. And in the rapidly evolving markets the chip design firm competes in, developing the best product and getting to the market quickly is almost always far more important than having the cheapest product. In these businesses then, competitive advantage derives from the product quality and innovation side of the equation, rather than from cost minimization. Product quality, innovation and development time to market are the critical factors and the key inputs are, consequently, access to highly trained specialized labour, access to leading edge research and knowledge in the field, and access to other key supports and specialized business services: venture capital and risk finance, market research, sales, and legal, among others. These factors are more often accessed (or not) externally to the firm, and from within the regional economic platform from which they seek to succeed in global markets.

It follows then that qualities of the regional economy are likely to be more important to the chip design company than to the steel manufacturer. The success of the steel company is more dependent on factors internal to the company and the external factors (such as new production technologies) are often accessed globally, while the success of the chip designer is more dependent on inputs external to that company, but found (or not) within the regional economy. The steel

manufacturing operation is far less dependent on the decisions of others within the regional economy whereas for the chip designer success is highly dependent on the decisions of others. For the chip designer, the regional economic environment represents a bundle of key inputs which create a platform from which to build success in global markets, often in competition with other chip designers likewise relying on their own regional platforms in other parts of the world.

Returning to traditional economic parlance, one might say that these regional assets are a key part of the chip designer's production function, but a part over which the firm has very little direct control, at least individually. This conception would certainly explain why busy business leaders are willing to engage their time and energy in regional economic planning processes.

Some of those regional inputs are general in nature (transportation and communications infrastructure, quality of life, broad legal and regulatory environment). These represent necessary but not sufficient conditions for the success of the chip design firm. In rapidly evolving knowledge-intensive clusters, specialized regional inputs are what create many of the sufficient conditions for success: specialized business services, specialized and highly trained workers, specialized research, specialized technology and market knowledge. And it is these conditions which are subject to increasing returns to scale and agglomeration.

The key insight is that the chip design company is likely to be more successful when there are more chip design companies within their regional economic platform. Each decision by an individual profit maximizing chip design firm to increase investment within that regional platform will, in the long run, increase the likelihood of success for every other chip designer in that region. This reality stands in stark contrast with the steel manufacturing example in which, due to transportation costs, markets are almost always local and therefore the arrival of a competing steel manufacturer in the region is almost certain to depress profits for incumbent companies, at least in the short run.

The arrival of an additional chip design firm in the regional economy then, is likely to benefit every other chip design firm in that region, at least in the longer run. This benefit derives from several sources: the "thickness" of the labour market and the depth of the market for highly specialized labour makes that region more attractive to highly specialized employees who must be drawn to the region and to the industry; the intra-firm rivalry may make each chip firm more competitive (9); the specialized knowledge "in the air" within the region grows; the global locus of the market moves closer to the region; and, very importantly, the demands of the growing industry for specialized labour, knowledgeable financial capital, and focused research and development grows and shapes factor input conditions beneficially for all firms.

The critical insight here is that this beneficial set of developments minimizes risk for each individual firm, and minimizes risk to providers of specialized factor inputs. The first chip design firm to locate in a region is taking a major risk. It is betting either that it does not need a "cluster environment" to succeed, or that it is simply the first mover in creating the cluster environment that it will eventually need to sustain itself. Given the importance of regional factors external to

the firm to the individual firm's success, we can conclude that the rational firm is most likely taking the second bet. In the steel company's investment and location decision, classical plant location factors such as access to materials, distribution networks and low cost production factors are key criteria. The knowledge-intensive chip designer's decision is clearly different. In many ways we can conclude that investment and location decisions in these industries are made on the basis of minimizing the risk that the regional economy in question will never attain cluster status and will thus never provide the deep and rich specialized environment needed to become an effective platform from which to compete in that industry.

The primacy of risk minimization in the investment and location decisions of firms in the most knowledge-intensive industries helps to explain why companies were willing to pay exorbitant costs to locate in Silicon Valley in the late 1990's. What prevented firms from relocating to less expensive locales? One explanation is that they would have viewed such a move as outlandishly risky. The risk would be very high that even a very well managed firm would be unable to succeed in highly specialized markets and economic activities if its regional platform is far from the action.

In the investment and location decisions of knowledge-intensive firms, then, there is a distinct first mover disadvantage. The first firm in a specialized activity to open shop in a region is taking the greatest risk. The second firm incurs less risk than the first, and in fact its decision to invest will likely directly benefit the first firm. Subsequent investments by individual firms reinforce the whole and continue to reduce risk for incumbent and future investor firms.

The need to minimize risk also shapes the investment decisions of key supporting institutions and factor inputs. The specialist venture capital firm deciding whether or not to open an office in a particular regional economy may be moved to do so to minimize the risk that it will be shut out of regional business in its area of interest if that region becomes a global node. However, the specialist venture capital firms is also taking a calculated risk if it is the first in its area of expertise to open up for business in that regional economy: Will the region ever achieve critical mass and consequently profitable volumes of "deal flow"? Once again, there are distinct first mover disadvantages.

The managers of research and training institutions likewise make calculations about risk. With only one chip designer in the region, the Dean of Engineering in a local university would be taking a large risk in creating a special research centre of excellence in chip design, or in doubling the output of specialized chip design engineers. Her decision to do so may be another necessary condition for the eventual success of the region's chip design cluster, but her decision to do so requires her to accept risk. That decision would be less risky if there were ten firms in the region, but there may never be ten chip design firms in the region if she chooses not to make the investment: a classic "chicken and egg" problem.

So we have a situation in which the positive decisions of individual companies and institutions to make specialized investments has a beneficial effect for all other participants in the cluster,

through lessening risk related to their own investments. But each individual actor also faces the reality of first mover disadvantage. Each actor's risk would be reduced if there were greater certainty about the eventual decisions of others. How can we create that greater certainty?

Modern Economic Planning

A collective regional economic development planning process, when well structured and managed, can be effective in creating an environment of greater certainty and in reducing risks inherent in the decisions of individual actors. Although others have provided more complete examinations of regional foresight (12), I will briefly outline what I have seen work.

There are at least two parts to the regional economic planning process. The first is a multi-sectoral regional process that involves civic, academic and business leaders, incorporates the best available information and intelligence, assesses opportunities to leverage the region's key assets, and identifies broad-based actions to improve the region's competitive position as well as identifying existing or promising cluster opportunities. The second phase involves planning at the cluster level, bringing together business leaders, financiers, academic experts, scientists, and other potential providers of specialized expertise and resources for the growth of the cluster. In both cases, government should be a participant in the process but does not drive the process, implying a shift to a new type of associative governance (10, 11). This is the most crucial of several ways in which modern economic planning is quite distinct from the old, discredited form of centralized government economic planning that those Chinese officials are trying to move away from.

An effective regional economic strategic planning process will involve regional leaders who are knowledgeable, visible, and credible in the community. Those leaders assess the region's competitive position - strengths/assets, weaknesses/shortcomings/liabilities, opportunities and threats - based on credible and well-researched information and intelligence. The resulting strategy should define a set of initiatives and investments to improve the region's overall competitive position (relating to quality of life, hard and soft infrastructure, etc.) as well as identifying promising knowledge-intensive clusters which the region has a reasonably strong chance of succeeding in. The leaders involved in this process need to give it credibility, both by bringing information and intelligence to the process, and by signaling to the region that this is a serious exercise. The leaders should be people who bring to the table the resources to fulfill aspects of the strategy and who can commit those resources. And the involved leaders must have sufficient respect and clout in the community that they can enforce the commitments of others to the strategy. Through this kind of process, a region may conclude that it has some of the ingredients required to become a centre for chip design, just to continue with our previous example.

The next step in the process involves planning at the cluster level. The leadership of this process is just as important as for the broader regional planning process, and should ideally include leaders of cluster companies already in the region, specialized supporting businesses such as financiers, the region's economic development agencies, various levels of government, research institutions and

universities. As in the broader regional planning process, the leaders involved in cluster development planning must be positioned to: bring useful information and intelligence to the process; signal the seriousness of the process to the market and the community; commit their organization's resources; and enforce the commitments of other participants in the process. Those commitments might include, for example: the City government committing to provide appropriately zoned lands and buildings suitable for cluster companies; the university committing to increase research and the number of graduates in the specialized field; financiers committing to develop or import competence in the specialized field; the regional investment marketing agency committing to promote the region as a prime location for such activities; and potentially most importantly, the private companies committing to invest in the regional cluster as the other participants' commitments are met. In this formulation, regional and cluster economic development planning is, in effect, a negotiated co-investment process.

Ideally, these commitments reduce the first-mover risk for each of the participants in the process by creating a higher level of certainty that their individual decisions will be matched by mutually supportive decisions from the other participants. Thus we have a situation in which a modern economic development planning process achieves a more optimal outcome than the uncoordinated decisions of individual actors in the regional economy, specifically by making information more transparent, undertaking credible commitments, and enforcing those commitments. A classic game theory economic rationalization for what might seem a distinctly interventionist economic approach.

Throughout this paper I have referred to the region, and this process is especially effective at a regional level/metropolitan scale. A cluster of firms in a city region/metropolitan area shares a set of "real" economic inputs: a regional labour force, local post-secondary institutions, research institutions, hard and soft infrastructure, a set of quality of life amenities, a business services base. At the city region level, leaders are close enough to these factors and institutions to properly assess their effectiveness and have enough community clout to build collaborative initiatives to improve them. At a more local level, the process often becomes focused on increasing a town's or city's share of the region's success, rather than focusing on creating the region's success. And at a larger geographic scale, encompassing several city regions, the shared inputs and the resulting prescriptions are often too abstract (e.g. the university system in general rather than an individual or group of local universities or the overall state of transportation infrastructure rather than the need for direct flights to key destinations at the region's airport) and it is difficult for the group to develop a sense of "ownership" of the process. At the city region scale, top level leaders with credibility will engage in economic planning exercises with a certain civic, even patriotic, zeal. And, as has been argued, it is critical that the process engage leaders who can signal credibility, who are able to commit resources, and who can enforce the commitments of others. This enforcement effort, in particular, is more likely to be effective at a city region scale because the leaders involved often circulate in over-lapping social circles and will not casually risk losing prestige in their home towns.

Of course, what has been described is an ideal situation. And even in this ideal situation, regions

can make the wrong bets, commitments can lapse, and unforeseen shocks can change the entire situation. Nonetheless, this approach to modern economic planning has the potential to make a significant contribution to regional success not only by developing stronger institutions and social capital, but also by tangibly moderating the risks faced by individual decision makers.

So is modern economic development planning simply a confidence game?

If specialized regional assets are in fact critical factors in the production functions of firms in rapidly evolving knowledge-intensive industries, but ones over which others collectively or individually make the key decisions, we can see why firms and institutions may apply a kind of game theory approach to regional economic planning. And, of course, confidence has long been considered an invisible but nonetheless real, mover of economies. Even my former economics professors would admit that.

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