

Sustaining Geographical Cluster Effects

(A review and reformulation of Porter's Diamond Perspective)

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Introduction

During the recent years, the liberalization of world trade, the innovations in information and communication technologies, and the development of international value chains have fundamentally transformed the ways in which firms create, capture and sustain value. In this article, we investigate the impact of these forces on the geographical clusters, defined by Porter (1998a: 78) as "geographical concentrations of inter-connected companies and institutions" and "critical masses in one place of unusual competitive success" in particular fields.

Many studies suggest that in response to the ongoing globalization and technology shifts, firms are becoming less integrated into their local clusters, and are re-locating and out-sourcing big chunks or modules of their value chains to one or more other nations (Dicken, 1992; Audretsch & Feldman, 1996; McKendrick, Doner & Haggard, 2000).

The spreading of the value chain is driven by the prospects of leveraging differences in the factor cost and skill advantages of different nations, as well as by the related and supporting sectors, demand conditions, and the tactics and strategies of the local and global rivals. Not only in the new age industries such as electronics, but also in the traditional industries such as textiles

and furniture, there now exist both low-wage, low-skill value stages, as well as high-wage, high-skill activities; enabling a greater geographical differentiation and value chain specialization under globalization (Ernst, Ganiatsos & Mytelka, 1998).

The global spreading of the value chain is challenging the sustainability of the value generated within traditional geographical clusters, where value chains in several inter-connected sectors were historically located and nurtured (Gupta, 1998). As a result of the globalization, many of the traditional clusters are facing the phenomenon of "de-clustering" (Porter, 1990) where their dominant players outsource large modules of the value chain, particularly in manufacturing but increasingly also in services, to other nations. Most at risk are highly automated or highly routine operations, which are run by relatively easy to train workforce, but encompass high paying wage jobs because of the high productivity and criticality of the automated or routine operations. As these operations are outsourced, a significant hole is left within the local regional cluster, threatening its scale and scope, and thus its capability to generate cost savings from the economies of scale and to generate innovation through the geographical proximity of various functional activities.

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To date, the dynamics of how the existing geographical clusters, with traditionally vertical value chains across multiple sectors, cope with the trend towards internationalization of the value chain has not been adequately investigated. The article is a step towards filling this gap.

Towards this end, we review the relevant literature on geographical cluster-effects. We then offer a reformulation to sustain the geographical cluster-effects using an empirical study of the furniture cluster in Grand Rapids, Michigan, USA. Finally, we discuss the implications of the reformulated model for the managers in the emerging markets.

Literature Review

There is a growing literature on regional clustering and competitive advantage outlining different approaches and propositions (see, for instance, Porter, 1998b, Ernst, 2002). Here we are interested in Porter's diamond perspective, which emphasizes the gains from mutually reinforcing cluster of linkages.

Porter (1990, 1998a, 1998b) proposes that a long-term successful industrial performance requires the development of competitive advantage in clusters of interlinked sectors. Each industry should be linked together with a cluster of other related successful industries through a range of common, supporting home-base conditions. The home-base conditions are summed up as the national 'diamond', i.e. four different forces in competitive advantage: factor conditions, demand conditions, related and supporting industries, and firm strategy, structure and rivalry. Government and chance events are identified as two residual influences.

Porter further proposes that the above forces play a limited role by themselves. Factor endowments, such as labor, raw materials, capital and infrastructure; influence the cost of inputs and resources; while large home market and large rival firms potentially contribute to economies of scale. However, globalization and technology limit the gains of competing on input costs or on scale economies. What is more critical is how each of the forces operates in a mutually reinforcing way.

In addition, Porter proposes that competitive advantage results from the capability to improve and innovate, not static advantages. He emphasizes the role of spatial proximity, directly as well as through the effect on cultural and social proximity, in the flow and exchange of information about needs, techniques, technologies and strategies. A local context should be forged that encourages upgrading and sustained investment and enables vigorous competition among a group of local rivals. A core group of demanding local customers should be nurtured in specialized segments, whose needs anticipate those in the region and elsewhere. A critical mass of capable local suppliers should be developed in a range of connected-instead of isolated-industries. Specialized, efficient and quality factor inputs should be ensured and upgraded through training.

Finally, Porter emphasizes the relevance of a global orientation. Companies must address and anticipate regional, national, and international needs, not just local needs. Further, the home-base region must be viewed as a platform for a global strategy, not the place where all of a firm's activities take place.

Recent research suggests a more central and pervasive role of the globalization factor in the development and success of regional clusters, than that envisaged by Porter (1990: 1998a: 1998b). This neo-diamond perspective holds that a cross-border development of the diamond is an essential element of the upgrading process, enabling sustained competitive advantage in the age of globalization (Clancy, O'Malley, O'Connell, & Van Egeraat, 2001). For the industries that evolve within a home base, sustained development is contingent on extending the geographical scale of production system cross-regionally (Van Grunsven & Van Egeraat, 1999). In many industries, it may not be feasible or even critical to develop broad and deep, vertically complete, clusters within a local region (Clancy et al, 2001).

Moreover, the neo-diamond perspective recognizes the capacity of the smaller regions and nations to develop competitive clusters through linkages extending beyond the home base. The local firms need not be "constrained by the paucity of local innovation processes" (O'Donnell, 1998: 53), and may leverage external innovation economies. The externally leveraged economies, though, need to be embedded within the local cluster, through assimilation, adaptation, improvement, and application, to attain competitive advantage. Similarly, the local firms need not be constrained by the paucity of local demand or by the limited number of local rivals (Clancy et al, 2001). The external demand, external related and supporting industries, and external rivals could be brought to influence the local cluster, so that the local firms will benefit from the

rivalry among firms in other nations, from the collaborations with international channel partners, and from the demanding customers and large demand scale overseas.

Finally, the neo-diamond perspective underlines the significance of the growing role of external investors, such as multinational enterprises, as drivers of clusters in several regions of the world. Porter's diamond perspective held that the external enterprises can at best occasionally "seed" a cluster, but the indigenous players are critical for upgrading and sustaining the competitive advantage (Porter 1990: 679). In contrast, the neo-diamond perspective notes that while a home base is critical to the development of a cluster, the home base activities need not substitute the activities of the external enterprises, but could be linked to them in ways that strengthen the overall diamond. Further, the external direct investment often catalyzes the local businesses to adopt new technologies, methods, skills and strategies, and has a fundamental transformative impact on the local organizational capability (O'Donnell, 1998). The key is to embed the initiatives of the external enterprises within the local diamond system, rather than forcing the whole diamond system to be fully indigenous.

A Reformulated Model

The diamond and the neo-diamond perspectives are not necessarily contrasting views of the world. While the diamond model better accounts for geographical cluster-effects in a world where the trade occurs largely in finished

products, the neo-diamond model recognizes the new world where most of the trade occurs in the intermediate products. In this new world, the firms can no longer afford to operate only within the closed confines of their geographical clusters, but must configure their value chain globally for augmenting their competitive advantage.

The new world of transnational corporations, with operations around the world, frequently conjures up the image of organizations that are as-if not more-powerful as the geographies in which they operate. Moreover, the transnational corporations are expected to be more concerned with their own competitive advantage, as opposed to the welfare of the communities and nations in which they operate. Indeed, under the neo-classical economic view, the transnational corporations might best contribute to the welfare of their communities and nations by remaining viable through globalization, even if it implies freeing themselves from the ties with the local geographies.

However, many transnational corporations remain strongly rooted within their local communities. They risk losing their institutional legitimacy and value-base if they do not deliver on the expectations of the local communities. Further, these corporations have historically cultivated strong networks of linkages within their geographical clusters, and they risk weakening these linkages if they were to follow autonomous strategies for globalization. It is, therefore, be critical to develop generic strategies that would enable the corporations to sustain the value

of their network linkages, and perhaps even enhance this value by using globalization as an opportunity rather than a threat.

What kind of generic strategies then the firms may follow to strengthen the local geography-effects, while also benefiting from the global opportunities?

The diamond perspective emphasizes the value of the local geography-effects. In contrast, the neo-diamond perspective, reviewed above, underlines the value of the global opportunities, as long as they are rooted in the local geography-effects. However, if a growing proportion of operations are configured outside the local geography, then the local geography is at threat of losing its dynamism and vitality. Thus, the local roots would weaken, and may force the firms to shift the operations fully out of the local region, with a consequent dilution of the linkages with local suppliers, workforce, community and customers.

Further development in the generic strategies of the firms is, therefore, critical for sustaining the viability of the local geography-effects. These local geography-effects may be sustained if the firms more perceptively identify the activities in which the local geography really has a technological advantage.

We illustrate our thesis by referring to the evolution of the furniture cluster in the Greater Grand Rapids, Michigan, USA. Grand Rapids has historically been known as the furniture city of the world, and is home to three of the world's largest office furniture companies (Steel Case, Herman Miller, and Haworth).

Evolution of the Grand Rapids Furniture Geography

Porter (1995) observes that a furniture cluster permeates the Greater Grand Rapids area in Western Michigan, USA. It comprises of wood furniture, building and transport furniture, office furniture, partitions and fixtures, and furniture components. Historically, it evolved and was sustained as a result of the following factors:

- (1) Firm Strategy, Structure and Rivalry: early collaboration among upstarts to raise capital and build infrastructure; later, home-base of leading office furniture manufacturers intensely competing for market share
- (2) Demand conditions: large population of Dutch, German, and Swedish immigrants with strong design culture
- (3) Related and supporting industries: early leadership in patents for machinery and equipment in furniture manufacturing, including cutting devices, sanders and carving machines; later, home base to metal, plastic and wooden furniture components and center for stadium and public transportation seating; and
- (4) Factor conditions: abundant early supply of soft and hard wood, high quality craftsmanship and entrepreneurial innovation, nationally-linked railroad shipping infrastructure, and creation of "The furniture City" international exhibition of furniture; later, furniture design program at Kendall College and the supply of top designers (Porter, 1995).

A historical review of the foundations of competitive advantage used by firms in Greater Grand Rapids highlights three major phases in the generic nature of competitive advantage:

- (1) In the early phase, "local" geography effects based on the economies of scale were prominent
- (2) In the middle phase, the firms began emphasizing "nationally enlightened" geography effects, by refocusing on the specific segments of furniture industry where they could develop innovation-based differentiation advantage.
- (3) More recently, there is a growing trend towards what we term as the globally intermediated geography effects, where the firms are refocusing on the specific activities in the value chain where the region has a technological advantage.

Shifting Basis of Greater Grand Rapids Furniture Cluster - Local, National and Global

Local Geography Effects:

In the late 19th and early 20th century, the furniture cluster in the Greater Grand Rapids derived its competitive advantage from economies of scale. The Greater Grand Rapids area enjoyed substantial amounts of factor endowments, in particular hard and soft wood forests. It attracted a large number of skilled immigrants from the Northern Europe, who began establishing both factories as well as banks in the region, earning the Grand Rapids region a nickname 'The Paris of Furniture Design' (Carron, 1998). Starting in the 1830s, with the arrival of cabinet-makers, a great many firms were established, and in the 1870s, an annual

international "furniture city" exhibition was launched to showcase the furniture products nationally and globally (Carron, 1998). The railroad infrastructure was created to help firms meet the national and global demand. The scale economies, on both demand and supply side, were deepened through connections with the firms founded in several related and supporting industries, including printing, plastics, metal products, automobiles, processed foods, and tourism and entertainment. For instance, the local furniture firms obtained large contracts to deliver office furniture to the local industry; they also could rely on a large number of alternative vendors to make furniture out of wood, plastics, or metal (Carron, 1998). Further, tools and equipment were developed to substitute some of the skilled craftsmanship with machinery, for cheaper mass production of the furniture (Carron, 1998).

Nationally Enlightened Geography Effects:

During the depression era, the Greater Grand Rapids region suffered a set back in its economies of scale, as a large number of firms closed down and people went out of work and demanded less of furniture. In response, the local firms shifted their emphasis from overall cost leadership to innovation, so that they may differentiate themselves, cater to more affluent segment of the population, and minimize the adverse impact of the limited incomes of the mass market.

While the Greater Grand Rapids firms were shifting towards innovation-based differentiation strategy, low labour costs and abundant access to the hard and soft wood became the basis for the shift of the

cost sensitive production down south to the Piedmont region, at High Point, North Carolina. Many firms closed down their factories, and shifted their plants to High Point. The shifts occurred primarily of the production where the machinery had substituted considerable amounts of skilled labour, because this production was less embedded in the skills of the local workforce, and could enjoy significant savings in the cost of labor by shifting to the South. More scale sensitive, lower priced residential furniture operations shifted to High Point.

More innovative operations were retained and upgraded at Greater Rapids. The innovative operations included office furniture, whose customers were companies that were not as price sensitive as the individual residential customers. They also included higher end residential furniture, targeted at relatively affluent residential communities, who had the ability and the willingness to pay for the skills of the craftsman.

The restructuring of the Greater Grand Rapids furniture cluster occurred over a period of time. Once the Great Depression got over and the mass-market demand grew, the High Point cluster enjoyed significant rise in the economies of scale. Introduction of new machinery and equipment, and new production methods, further strengthened and deepened the cost advantage of the firms situated in High Point region. A rival international furniture exhibition was launched at High Point, which soon became the center for the price sensitive residential furniture. On the other hand, Greater Grand Rapids firms focused on developing contract production

relationships with the office furniture customers, so that the utility of an open exhibition became less evident for them. The Furniture City exhibition stopped at the Greater Grand Rapids, and the High Point -once known as the "little Grand Rapids"-now became the informal furniture capital of the world because of its large scale of furniture industry built on a mass strategy of overall cost leadership.

Over time, the Greater Grand Rapids firms adopted a two-pronged approach. First, many of them moved to, or set up operations in the High Point region for the cost sensitive operations. In many cases, the firms decided not to renew their older plants after a while, and instead relocated those plants to High Point with a view to realize further cost savings using lower labor cost and the local economies of scale. Second, as for the operations within the Greater Grand Rapids region, they sought to differentiate their products by identifying specialized niches and innovating new production methods, technologies, and systems. The related and supporting industries were co-opted by many as key channel partners for both factor endowments as well as the lead demand. For instance, the automotive industry provided the option to develop innovative automotive seating with supplies from the automotive vendors and marketing to the automotive assemblers. Metal and plastic vendors for the automotive sector facilitated continued and leading edge innovations in non-wood furniture. Similarly, tourism and entertainment sector became the basis for innovations in stadium-tiered seating for the theaters, and reproduction of the antique furniture. Further, education and hospital sector spurred innovations in

specialized furniture for the educational and healthcare markets.

Globally Intermediated Geography Effects:

During the globalization era, a fundamental shift in the generic strategy, organizational capability, and the competitive advantage of the Greater Grand Rapids furniture firms appears to be under way. An emphasis on higher value adding office furniture and high-end residential furniture alone has ceased to be sufficient for the competitive advantage of the firms in the region. The firms are finding that significant cost reductions can be obtained by outsourcing a large proportion of the production overseas, especially to China where the labor costs are extremely low. Further, with the development of the container shipping technology, it has become cost-effective to ship quality wood from the US to China for production of furniture, and then to ship back highly processed components or even finished furniture pieces to the USA. There are limited gains from keeping even the innovative product designs in the US, because the cost of producing these innovative products is significantly less in the overseas geographies such as China. Moreover, the extent of cost savings offered by the shift of production to High Point, North Carolina has diminished over the decades, with the annual labor costs in that region as a percentage of that in the Greater Grand Rapids region rising from 45 per cent in 1900 and 64 per cent in 1940, to 76 per cent in 1997 (US Department of Commerce, various years)-as shown in Table 1. Consequently, participation in the vertically complete, sectorally inter-connected, value chain in the High Point region has ceased to offer historical levels of cost savings.

As pure innovation loses its appeal for competitive advantage, the Greater Grand Rapids firms are shifting to what we term as the 'globally intermediated' generic strategy. Pure innovation does make the product more appealing to the customers,

but still the stakeholders do not get the best possible value unless the firm also takes benefit of the option to reduce the cost of producing the innovatively designed product.

Table 1: Annual manufacturing wage cost per worker (current US\$)

Year	Greater Grand Rapids (Kent County, MI) US\$	Greater High Point (Guilford County, NC) US\$	%age
1900	409	182	45
1930	1445	853	59
1940	1220	779	64
1992	28341	21342	75
1997	33501	25294	76

Source: Computed from the US Department of Commerce, various issues

Table 2: The US Wood furniture shipments (\$ millions)

Year	1999	2000	2001	2002	2003(e)
US shipments	17,455	18,836	17,748	19,117	20,241
US production	11,091	11,285	10,122	9,991	9,271
Outside US	6,364	7,551	7,626	9,126	10,970
% outside US	37%	40%	43%	48%	54%

Source: Sligh Furniture Company (2003)

The downside of an outsourcing-driven transformation of the cluster towards a value-based generic strategy is a potentially negative impact on the scale of home-base operations. An increasing proportion of the final value of the product accrues to the overseas partners doing the outsourcing work. The scale effects of the outsourcing have been particularly detrimental for the Greater Grand Rapids furniture industry, because of the economic slowdown at the national level. Consequently, the firms are finding it difficult to boost their domestic operations, even as the outsourced operations are expanding rapidly. As shown in Table 2, the industry has been just about able to maintain its demand levels, without sufficient growth in the value of demand to compensate for the outsourced value. A substantial downsizing of the local cluster operations has occurred, with a loss of more than 100,000 furniture-making jobs in the US over 2000-2003.

A distinctive aspect of the emerging regional landscape in the Greater Grand Rapids region is the rise of what may be termed as "global intermediaries"-the firms that intermediate designs, machinery, raw materials, production methods, quality control systems, and other organizational and technological endowments to other nations, and then intermediate back the partially or fully transformed products from those nations, after some value has been added by the workforce situated in those nations.

One way the global intermediaries compete is by driving down the costs of intermediation. Some of the techniques for driving down the costs of intermediation include:

- (1) transfer of key staff for supervision and training overseas,
- (2) codifying methods and procedures for training, production, quality control, employee empowerment and continuous improvement,
- (3) integrating modern telecommunications technologies, using web-enabled systems, for communication and exchange of information and know-how,
- (4) streamlining international logistics and supply chain,
- (5) designing products for reliable manufacturing, using modular approaches and mass customization,
- (6) developing systems for overseeing overseas subcontractors, and helping them upgrade their own vendor systems, and
- (7) sharing best practices with the industry peers, and benchmarking best activities across industries.

Another related, and not necessarily a substitute, way for competing is adding value through intermediation in a broad range of activities, products, and services. For instance, the products that were previously too costly to make might now be made cost-effectively; consequently, the products that used to be bought for lifetime previously might now be recycled and replaced every year to match the changing lifestyle of the customers and changing activity profile of the offices.

Discussion

We reviewed the literature on geographical clustering. The diamond perspective emphasizes the gains from mutually reinforcing cluster of linkages, in particular the differentiation advantages realized

through sustained innovations, upgrading of the systems, and deepening of the connections among the various related sectors. Porter (1990) considers home base and co-location to be critical factors in the sustainability of the deep differentiation advantages. The neo-diamond perspective, on the other hand, asserts that global connections and a complementary relationship between the indigenous factors and the multinational firms can allow the geographical clusters to flourish, perhaps, even more effectively.

Thereafter, we contextually analyzed the historical development of the furniture cluster in the Greater Grand Rapids region. The analysis identified three phases in the development of the cluster. In the first phase, the cluster came into formation and enjoyed early growth based on the economies of scale in the cluster, and lower transport costs of accessing the inputs, as well as lower transaction costs of sharing knowledge. In the second phase, the depression in the national economy destroyed the economies of scale enjoyed by the firms in the cluster. The price sensitive operations were increasingly shifted down south to High Point, North Carolina, where the cluster of firms competing on overall cost leadership gained in prominence. On the other hand, the firms within the Greater Grand Rapids cluster were able to survive and thrive by diversifying and discovering niches that supported higher-end differentiation strategy reinforced through investments in research and innovation. The innovation and differentiation were anchored in the deep horizontal and vertical connections with related and supporting sectors, and in the abundant pools of skilled labor in the cluster. The cluster supplemented know-

how generated inside the internal R&D labs. The cost of internal R&D tends to be quite high, and the probability of success of the internal R&D projects can be as low as only 1 in 100 (Boer, 1998). However, contract production enabled the Greater Grand Rapids firms to combine differentiation with cost competitiveness. The know-how for the designs was sourced, so to speak, from the contractors and construction companies, and the benefits of lower costs of knowledge sourcing were then passed to the clients in the form of reasonable prices for sophisticated products. Similarly, the marketing costs were kept low by maintaining strong relationships with the clients.

Over the last few years, the rapid growth enjoyed by the Greater Grand Rapids cluster has matured, ushering the onset of a third phase. Despite strong value creation capabilities, most furniture firms in the Greater Grand Rapids cluster have been unable to capture differentiated value from their innovations for sustaining growth in the face of international competition, and depressed national economy. Yet, new strategies are being implemented for intermediating value from some of the cluster's endowments and multi-functional know-how. The global intermediation strategy is built on the ability of the firms to lower the cost of intermediating the know-how, and to discover additional, related domains of expertise, beyond just the manufactured products that can now be outsourced for lowering the costs. The firms are intermediating their cluster know-how internationally, so that they can deliver enhanced value; and are offering customized products for specific sectors, made possible by outsourcing and consequent reduction

in the costs of production. Specifically, as the firms outsource their production to China, they have begun intermediating their production methods and know-how to their Chinese subcontractors and factories. The transfer of intermediated production know-how ensures that the Chinese operations reach the desired level of quality without escalating costs of hiring technical support people, searching appropriate machinery, and reworking defects.

Further, some of the firms are generating value by expanding their intermediation beyond just manufacturing, to encompass other functional activities, such as marketing know-how, financial know-how, accounting know-how, human resource know-how, and sophisticated operations and logistics know-how. A major challenge remains the difficulties of getting Chinese subcontractors to pay for this valuable know-how, which is rare, difficult and costly to develop using substitute modes, and is already well organized for the furniture related operations. However, as the techniques for intermediating multi-functional know-how improve, the costs of intermediating the know-how are likely to decline, enabling the firms to enjoy increasing returns from their cluster know-how. Furthermore, multi-functional and cross-functional know-how need not be intermediated to just the Chinese factories to which the Grand Rapids firms are currently subcontracting their production. That know-how could also be intermediated to other nations who could benefit from the valuable domain-specific marketing, financial, accounting, human resource, and operations and logistics know-how. Yet, only a few of the area firms currently have the requisite international and global

networking expertise to pursue this option on their own. Further development of global skills within the cluster should help the firms generate more value.

Conclusions

In this article, our intent is to understand the influence of globalization on geographical cluster-effects, and to reformulate the generic strategies that may allow the firms to sustain the viability of their geography clusters while exploiting the global opportunities. We identified a global intermediation strategy deriving from the cluster's capacity to intermediate local know-how globally, and to offer greater value to the connected factors, customers, channels and rivals. The intermediation allows the firms to not only strengthen their connections within the cluster, but also to discover and develop new connections outside the cluster. The cluster capacity to create institutions and cultural systems that facilitate the connections of the international scale and scope is critical to the sustainability of the value generated by the firms, and their growth and competitive advantage. Our analysis of the Greater Grand Rapids furniture cluster suggested that the three models were connected in a sort of evolutionary or life cycle mode. In the formative stage, economies of scale and overall cost leadership were critical to success. In the growth stage, the market got segmented into two types: the cost sensitive product domains-in particular residential furniture were transferred to High Point, North Carolina, where the labor costs were lower and where a cost conscious culture took roots. In contrast, the higher end product domains-in particular office furniture-continued to grow at the Greater

Grand Rapids region; and the focus shifted to innovation for sustaining growth. The clustering did allow the firms to lower their costs, for instance through a relational approach to marketing and product development and through trading of know-how and sharing of common pool of factor and other endowments. Still, the thrust of the generic strategy was differentiation, with higher margins. Finally, in the maturity phase, globalization and technology is making the economizing on the intermediation costs a key to sustainable growth. The firms continue to set themselves apart through differentiation, and to derive cost benefits from the cluster's scale, but the overwhelming thrust is shifting to the intermediation of the local know-how overseas, and deeper and richer intermediation of the related sectoral know-how for better, customized value to the customers. The result is a significantly higher level of customization, at dramatically lower costs. While the third phase has allowed the firms to further upgrade the basis of their competitive advantage, the viability and scale of the regional cluster will depend on finding ways to recover the value that is being outsourced. The cluster's capacity to develop systems to help the local firms intermediate multi-functional and cross-functional know-how that can be used by the overseas firms, and to get compensation from those overseas firms for this service, may be the next step required to sustain the future sustainability of the cluster's advantage and growth.

The present article has interesting implications for the managers in the emerging markets. The firms in India, for

instance, risk losing considerable business should the American government put direct or indirect restrictions on the growing trend of business process outsourcing to India. A key political concern in the U.S.A. is the loss of jobs, and the risk of worsening the trade deficit and the budget deficit.

When the American firms use the option of business process outsourcing to India, they typically downsize their domestic operations or slow down the growth of domestic jobs. Further, the American firms who offshore, add to the growing trade deficit as well as budget deficit of the U.S.A., unless they are able to add to the local value added. Most American firms consider only intra-organizational value - added while deciding upon the off shoring option - typically, off shoring does allow the concerned American firms to refocus their resources on higher value adding arenas. Still, at the geographical cluster level, off shoring by a leading firm typically results in considerable erosion of the local value added, as several suppliers, workers, rivals, related industries, and customers might experience loss of business and escalating costs.

The firms in India can help alleviate the American political concerns by identifying areas where their business partners have key technological advantages. For instance, most Indian firms have a weak product development expertise, and a weak marketing expertise. Consequently, they sell intermediate services to the American firms, who in turn integrate those services into their innovative products and market the products to diverse groups of customers worldwide. The firms in India can go a step further and seek to purchase appropriate

product development expertise and marketing expertise from their American clients. They can also use the services of the American clients to forge linkages with the suppliers, related industries, customers, rivals, and workers in the American geography, so that they may source variety of technological endowments from these network linkages. Thus, they can augment the incomes of the American clients and of the local American networks of which these clients are members. And of course, they can complete their own capabilities so that they may offer better services to customers in India, rather than being just confined to servicing the large American clients.

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