

From Knowledge-Based Neighbourhoods to Knowledge-Based Regional Development

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Abstract

The digital revolution at the end of 20th century has opened some new doors for the communities to take active part in the creation of global knowledge. Telecommunication technologies have transformed how work/knowledge is produced and from where it is being done/distributed. This has led a number of scholars to advocate the concept of knowledge-based developments (digital neighbourhoods, wired communities, knowledge-based neighbourhoods etc.) to be the best localities that attract information workers, emphasise on the productive side of residential communities and finally boost the regional prosperities. This paper presents a review on the birth of knowledge-based neighbourhoods and sheds light on some of their promises in the literature. It then investigates the preliminary finding of an empirical study in a knowledge-based development in Queensland, and notes the third wave of local economic development supporting the growth of specified industrial clusters of related firms. The paper concludes that knowledge-based regional development will not happen unless a network of knowledge-based communities get established and work together.

Introduction

At the turn of the 21st century, the significance of knowledge to be the key factor in urban and regional development is well established. This has been accompanied with the opportunities that telecommunication technologies provide for communities to play more aggressive roles in the new economy and take active part in the process of knowledge production/distribution. The growing number of home-based teleworkers, E-entrepreneurs and high-rank information workers

who are very selective on their residential communities heralds a new era that has been celebrated by Florida (2002) previously.

It is too early to draw a clear picture of this new era or the detail of knowledge-based development process in residential communities. Even a theme in the literature still suggests that what has happened in forerunner knowledge-hubs like Silicon Valley was the result of complicated economical and technological situations that is not replicable in other areas. Yet, a growing number of scholars, admitting each community to be a unique instance with its special peculiarities, search for common themes that can be adjusted to different knowledge-based development projects. In this regard, very little consideration has been given to the way that different levels of knowledge-based development can communicate with one another. This paper specifically examines the interaction between knowledge-based development in the local (community) and regional level. It reviews the birth of knowledge-based neighbourhoods and focuses on their promises in the literature. The paper then presents some of the new findings from the third wave¹ of community development practice and crosses them with some empirical data collected from a case study in Queensland. This will hopefully corroborate how knowledge-based neighbourhoods contribute to the establishment of knowledge economy in the larger region.

The Birth of Knowledge-Based Neighbourhoods

The evolution of new information communication technologies follows three main trends in the literature. The first trend arises with the classic and popular studies that posit the decline of cities as the new technologies make it possible to replace the face-to-face activities that occur in central cities (Garreau, 1992; Gordon & Richardson, 1997; Negroponte, 1995). The second trend accuses the first one of shallow and declares that the information technologies develop the complexity of cities by increasing the number and type of interactions among individuals, firms and technical systems (Audirac & Fitzgerald, 2003; Castells, 1996, 2004; Graham & Marvin, 1996; Mitchell, 1996, 1999). Here, the authors refer to the empirical data from the forerunner cities in the digital age and note that telecommunication leads to both the centralization and decentralization of economic activities. They argue that the once clear distinctions between city and suburb, countryside and metropolis are now diminishing and there are both successful and unsuccessful places of every type in the new era (Clifford, 2002; Kotkin, 2000). This provides the foundation of the third trend- still emerging- that emphasizes the concept of “quality of life” (Florida, 2002;

¹ Third wave argues that as global economy arises, the communities that build the infrastructure to connect to this network will thrive.

Lloyd & Clark, 2001) and considers it as the main reason for location decision in the digital era. This new trend encourages communities to reassess their firm attraction efforts and reorient them toward people attraction. This approach has been particularly effective in the communities where the “quality of life” factor attracting knowledge workers shapes incubators for high-technology firms or inventors. This is interesting that the successful hubs could be as different as urban “creative centers” and elite rural areas.

Apart from some scholarly disagreements in the new trend, it seems that different studies are talking about a similar concept using different terms like digital neighborhood, wired community, broadband community, creative center, information district, computer mediated community and so on. Here authors introduce “knowledge-based development” to be the best localities that attract information workers, emphasise on the productive side of residential communities and finally boost the regional prosperities. The knowledge-based development is presented as technology-based mixed-use residential communities that can accept different urban and rural forms to offer the desired life style to information workers. A growing body of literature (Kotkin, 2000; Mitchell, 1999) describes these new settlement patterns of the twenty-first century as live/work dwellings and 24-hour pedestrian-scale neighborhoods that recreate what was best about old-style small towns in the digital era.

There is no real consensus on the urban form of knowledge-based neighborhoods. However, from a social science perspective, there is a relatively long list of promises that are to be addressed. Several studies suggest that these communities reduce the digital divide (Graham, 2002; Malina & Macintosh, 2004); others emphasize that the local web network increases the interaction among residential home computer users, helps them to arrange in-person get-togethers and form real neighborhoods as social units (Hampton, 2002). There is even a common theme throughout some studies to explore the ways in which the communities apply ICT to build a better and more sustainable future for all sections of their local society (Gurstein, 2000). Also, some research refers to the potential impact of knowledge-based neighborhoods on travel behavior, energy consumption and air pollution through telecommunications (Illegems & Verbeke, 2003).

All of this so far shows that growing number of scholars posit knowledge-based neighborhoods to reconcile urban environments and the new economy in the digital age. Yet, little knowledge has been produced on the way these forerunner communities communicate with the larger region. The following has a review on the theoretical base of local community development in the new era

and describes the empirical finding from a case study to see the role of these new communities in the prosperity of larger region.

The Third Wave in the Local Community Development

A consistent theme in the scholarly literature (Blakely & Bradshaw, 2002; Herbers, 1990; Ross & Friedman, 1990) describes three waves of economic development practice. Despite all the differences, for the first two waves local economic development has been based on the notion that a locality can provide all of the resources to build and sustain an economic base. They use tax inducement and provide expansion loans to either attract new businesses or retain existing ones. Yet, it is unclear in the digital age whether any resources that local authorities control are germane for economic development. It is also increasingly evident that the new economy is being formed more by global than by local forces. As a result of this the third wave is emerging. Third wave argues that as global hub centres arises, the communities that build the infrastructure to connect to this network will thrive.

This new wave (Blakely, 2001) states that economic development has to redesign development tools and see which firms are likely to establish hubs. There is actually an emphasis on the technology-based globalization as the new paradigm in the notion of this wave. It then notes that for a community to be competitive as a hub, electronic and human resource capacity is essential. Third wave suggests a link between education (schools, colleges etc.) and industry as a continuum in regional collaboration and creates context for better relations among firms. Here, it introduces a critical role for the local government in forging new partnerships across sectors, so that a new incubating environment can be created in every community across the nation. The third wave places a great emphasis on technological infrastructure that supports *a cluster of related industries*, not just single firms. It, rather than dealing with firms one by one, supports the growth of specified clusters of related firms to achieve the regional development.

These “industry clusters” are not actually dissimilar to residential communities seeking for productive roles in the new economy. This characteristic encourages the present paper to examine knowledge-based neighbourhoods in the new light of third wave to understand their interaction with related firms. The following describes the preliminary finding from a mixed-use residential community that originally has been planned to work with the global cluster/network. However, the lack of related firms/infrastructures in the region is retarding its progress.

The Preliminary Finding in Queensland

There is a dearth of articulated data on the characteristics of knowledge-based developments in Australia that worked as an incentive for an empirical study that this paper is reviewing some of its preliminary finding regarding knowledge-based regional development². This finding is based on in-depth interviews and participatory observation in a knowledge-based development in Queensland, namely Varsity Lakes that has been planned as a mixed-use community offering live/work opportunities to the residents through the telecommunication technologies (Bajracharya & Allison, 2008). The interviews are mostly on the live/work experience of residents/workers in Varsity Lakes, and the relation between the local community and its larger region. Interview participants include residents, developers' and local authorities' representatives in Varsity Lakes. The interviewee residents are from different backgrounds who have decided to live or/and work in the community due to the "quality of life" including telecommunication facilities, natural amenities and built environment diversities.

This brief review begins with some general information on Varsity Lakes as a new development and continues with the opportunities and challenges experienced in the interaction between the community and the larger region.

Varsity Lakes: A New Development

Varsity Lakes is a master planned community covering 343 hectares of land including 80 hectares of lakes and waterways and 56 hectares of open space. The community is located on Queensland's Gold Coast adjacent to Bond University and close proximity to golf courses, North Burleigh Beach and a number of canal residential estates. Development of the community commenced in 1999 and is expected to be completed by 2010. The built out population will be approximately 7,800 residents. The community has already attracted more than 6000 people.

Varsity Lakes contains a residential mixed-use community, business land uses, a range of green spaces and beautiful walking paths. The Varsity Lakes town centre, "Varsity Central" is a major business and innovation hub of Varsity Lakes with 150000 sq m. of commercial space and the employment of over 5000 people³. The town centre contains two precincts, namely, Varsity Central and Market Square. The Varsity Central precinct (which continues along Varsity Parade

² The empirical study is a comprehensive research investigating the new physical demands arising from the new social group of information workers living/working in knowledge-based neighborhoods. However, this paper just reviews some of the preliminary findings in the relation between local and regional level of knowledge-based developments.

³ It is interesting that this number is more than 4500 which was the original agreement between the developer and the council and shows just the long term employment (Short-term construction employment is not included).

axis) immediately adjoins the university and contains office park, mixed-use development, and education facilities. The range of businesses located in Varsity Central include those with expertise in areas such as ICT, law, finance, education, professional services, medicine and general business services. The Market Square precinct backs on to the lakes and contains a small local shopping centre, dining and entertainment facilities. Much of the early development of Varsity Lakes has centred on detached dwellings as well as the Varsity Central business precinct. The more recent stages of residential development are more focused on medium density dwellings and mixed-use developments. The future stages will include the second town centre which will fulfil more entertainment/shopping facilities and the community centre to empower the sense of community.

Varsity Lakes is a popular residential community for very different groups with different backgrounds due to its high quality built form and provision of natural amenities and business parks. The community also has a strong focus on attracting business and offices within the development. There is an emphasis to encourage ICT related industries and telework opportunities as part of the efforts to create fully integrated live/work communities. Broadly efforts have been made toward equipping co-work⁴ places and businesses to be smart and to ensuring that business parks have access to high-speed fibre optic Internet that support the high-end of the new knowledge economy. The greatest emphasis to offer live/work experience to the residents occurs in the town centre area where SOHO units evoke the memory of old European cities where people could live on top of their local shops. Here though the businesses connect to the bigger world through telecommunication and do not depend only on local customers. This does not mean that work opportunities (telework, E-entrepreneurial etc.) are limited to Varsity Central. Planning regulations in Varsity Lakes are generally very welcoming to home-based businesses as home owners are allowed to employ 4-10 people – in different parts of the community- for their home businesses which has resulted in many active home offices.

Varsity Lakes in the Region

In Varsity Lakes the natural amenities, IT facilities and the liveability and diversity of the community is offering “quality of life” that seems to be the key to success in the new economy. These opportunities have not only attracted professional information-workers to live/work in the community but also created a large number of high and medium ranked knowledge-related jobs for the larger region. The existence of regional office of big companies like IBM Australia,

⁴ Co-work offices or co-work places (Johnson, 2003) are common centres in a community where people could rent office spaces and share some common facilities like administrative and technological services.

AAPT, Conics, Stratapay and etc. that are connected to the headquarter through telecommunication shows how much the larger region benefits from the community. Yet, there are some problems in Varsity Lakes related to a lack of regional awareness on what could be done through such communities as technology nodes for the development of the whole region. Most of the problems seem to be beyond the control of the developer, and regional or even national authorities are needed to address them. Some problems also simply refer to the fact that Varsity Lakes is the only one in the nearby area. These problems threaten different aspects of knowledge-based development in Varsity Lakes. The following represents three main points-revealed during the in-depth interviews- in relation to lack of proper infrastructure and institutional relationship with related firms in the larger region which decrease the quality of life in the community.

- The main issue that Varsity Lakes is inheriting from the regional/national agenda is the non-competitive nature of IT infrastructure industry in Australia. As it was mentioned, Varsity Lakes provides high-speed internet though fibre optic in the Varsity Central which is the town centre and embeds business parks, office areas and the core of activities. Yet, the Internet provider company is unable, in spite of its size and dominance in the market, to provide enough broadband access points for the home offices scattered in different residential parts of the community. In the other words, the idea behind Varsity Lakes to attract information work at different levels is not fully achieved for people to operate from their home offices because of poor Internet connections in some parts of the community.
- The notion of network in the digital age puts a great emphasis on the relation between universities and knowledge-based developments. Here universities are the institutions that provide the human resource and direct the entrepreneurial spirit in the community. However, the complexity of the relation between Bond University and Varsity Lakes has been problematic over the past few years. Needless to say there is a very powerful spiritual bond between some individual academics in Bond University and small and local business groups in Varsity Lakes. The synergy between these two supports the entrepreneurial research environment with very direct benefits for the prosperity of community economic development. Also, half of 3000 students in the university are international and around 600 units in the community are occupied by the university students and staff. Yet, it seems that the university leadership is not interested in playing a role in the prosperity of Varsity Lakes. This study's investigation reveals that the unfriendly institutional relationship between

university and the community is strained by underlying tensions over land ownership in the past two decades. More recently the university put a lot of time and effort to be physically separated from the very immediate community of Varsity Lakes through new traffic arrangements that have even banned one of two main entrances of the community the passes through the university land. Unfortunately, these ongoing tensions impede constructive collaborations between these two related firms that could benefit a lot from each other.

- Telecommunication facilities in knowledge-based neighbourhoods could impact on travel behaviour of the residents. Here in Varsity Lakes, this opportunity has been used to offer a better quality of life to people who live, work and play in the same locality. Availability of a network of walking paths including a beautiful 2 km walking path besides the lake and bike paths are encouraging a culture of sustainable transport within the community. Though these green networks are connected to nowhere out of the community and whenever people need to leave the community all the sustainable options disappear. This is actually more important when you consider the number of people who work in Varsity Lakes and live nearby. The highway network just out of the community is designed as auto dominated movement system. This simply leads to the next regional problem in Southern Queensland which is the lack of reliable frequent enough public transport. This is the last straw that stops any other options but private cars for all external access in or out of the community. In the other words, one of the community attempts to offer a better quality of life through sustainable solutions to information workers is not fully achieved due to the lack of infrastructure in the larger region.

Conclusion

Varsity lakes is not just a case study, it is the start of a new era in response to the global movement pointing a knowledge-based scope for community and regional development. However, before jumping to any conclusion on the ways that Varsity Lakes is influencing the knowledge-based development in the larger region, there are three points that need to be taken into the consideration:

1. Varsity Lakes demonstrates that community economic development can still start in the community level. Here, the community did facilitate the co-workplace opportunities (Johnson, 2003) for local residents, attract professional workers and small businesses, and then got hunted by big names and companies not the other way. In the other word, having big plans in mind the community cultivated the innovating base through e-entrepreneurs which helped it to be attractive enough and chosen by niche players in the knowledge economy.

2. Varsity Lakes's experience also shows the importance of universities to shape "the organizational unit for community economic development"(Blakely & Bradshaw, 2002). Although the institutional relation between the university and the community is less than ideal in the new era, some academics supporting the entrepreneurial spirit in Varsity Lakes are playing a very significant role.

3. Varsity lakes shows that like any other residential community, in a knowledge-based development, there are some residents who are not directly involved with the knowledge aspect of the community and choose to live there because of the "quality of the life". It also acknowledges that the diversity brought by these residents contribute to the balance of the community; some of these people – like retired, affluent...- are actually welcomed for the amount of money that they could inject to the local economic development. However, these people seem to be more concerned with the broader relation between the community and the larger region. These residents feel that bearing with extra traffic of office workers and visitors, and providing a large number of job opportunities they are not getting that much in return from the larger region. This creates an attitude among the residents hostile to outside workers that may impede the future progress of the knowledge-based development in Varsity Lakes.

These three factors suggest a very important base of the third wave of community economic development to address the relation between local and regional level of knowledge-based development. Third wave's emphasis on a cluster of related industries- not just single firms- could be nicely implemented here based on the lessons learned in Varsity Lakes. Varsity Lakes shows that communities may start separately using the powerful mediators- like the developer in this case. Yet, the resources provided by a single community are not sufficient to guaranty the long term knowledge-based development for local and respectably regional level. A long term knowledge-based progress is impossible unless the larger region realizes the opportunities provided by different communities and supports the growth of specified clusters of related firms (knowledge-based communities, universities, IT infrastructures etc.) in the regional strategy making level. The last word here is that no knowledge-based regional development happens unless a network of knowledge-based communities gets established and works together. It means that though Varsity Lakes is playing an important role in the Southern Queensland, it will not necessarily result in an innovative region.

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References

- Audirac, I., & Fitzgerald, J. (2003). Information Technology (IT) and Urban Form: An Annotated Bibliography of the Urban Deconcentration and Economic Restructuring Literatures. *Journal of Planning Literature*, 17(4), 480-511.
- Bajracharya, B., & Allison, J. (2008). Emerging Role of ICT in the Development of Knowledge-Based Master Planned Communities. In T. Yigitcanlar, K. Velibeyoglu & S. Baum (Eds.), *Knowledge-Based Urban Development: Planning and Applications in the Information Era*. New York: Information Science Reference.
- Blakely, E., & Bradshaw, T. (2002). *Planning Local Economic Development: Theory and Practice*. Thousand Oaks: Sage Publications.
- Blakely, E. (2001). Competitive Advantage for the 21st-Century City. *Journal of the American Planning Association*, 67(2), 133-145.
- Castells, M. (1996). *The Information Age: The Rise of the Network Society*. Massachusetts: Blackwell Publishers.
- Castells, M. (Ed.). (2004). *The Network Society(A Cross-Cultural Perspective)*. Cheltenham: Edward Elgar Publishing Limited.
- Clifford, J. S. (2002). *Transcending Locality- Driven Lifestyle: The Potential of the Internet to Redefine our Neighbourhood Patterns*. Harvard, Harvard.
- Florida, R. (2002). *The Rise of the Creative Class*. New York: Basic Books.
- Garreau, J. (1992). *Edge City: Life on the New Frontier*. New York: Anchor Books.
- Gordon, P., & Richardson, H. W. (1997). Are Compact Cities a Desirable Planning Goal? *Journal of the American Planning Association*, 63(1), 95-106.
- Graham, S. (2002). Bridging Urban Digital Divides? Urban Polarisation and Information and Communications Technologies (ICTs) *Urban Studies*, 39(1), 33-56.
- Graham, S., & Marvin, S. (1996). *Telecommunications and the City: Electronic Spaces, Urban Places*. London, New York: Routledge.
- Gurstein, M. (Ed.). (2000). *Community Informatics: Enabling Communities with Information and Communication Technologies*. Hershey: Idea Group Publishing
- Hampton, K. (2002). Place-based and IT Mediated 'Community. *Planning Theory & Practice*, 3(2), 228 - 231.

- Herbers, J. (1990). A Third Wave of Economic Development. *Governing*, 9(3), 43-50.
- Illegems, V., & Verbeke, A. (2003). *Moving Towards the Virtual Workplace*. Cheltenham: Edward Elgar Publishing.
- Johnson, L. C. (2003). *The Co- Workplace: Teleworking in the Neighbourhood*. Vancouver: UBC Press.
- Kotkin, J. (2000). *The New Geography: How the Digital Revolution Is Reshaping the American Landscape*. New York: Random House.
- Lloyd, R., & Clark, T. N. (2001). The City as an Entertainment Machine. In K. F. Gotham (Ed.), *Critical Perspectives on Urban Development* (Vol. 6, pp. 357-378). Oxford: Elsevier.
- Malina, A., & Macintosh, A. (2004). Bridging the digital divide: developments in Scotland. In M. Mälkiä, A. V. Anttiroiko & R. Savolainen (Eds.), *eTransformation in governance: new directions in government and politic* (pp. 255 - 271): IGI Publishing
- Mitchell, W. J. (1996). *City of bits*. Cambridge: The MIT Press.
- Mitchell, W. J. (1999). *E-topia*. Cambridge: The MIT Press.
- Negroponte, N. (1995). *Being Digital*. New York: Knopf.
- Ross, D., & Friedman, R. E. (1990). The Emerging Third Wave : New Economic Development Strategies. *Entrepreneurial Economy Review*, 90, 3-11.