Cross-border Industry Clusters: The Conduciveness of Border Regions

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ABSTRACT

Recently support for industry cluster theory has gained prominence in many parts of the world. A commonly stated aspect of industry clusters is the fact that they are bound only by the links that exist among the various actors and, as such, are not limited by political boundaries. Furthermore, those regions adjacent to borders have been argued to have potential for strong economic growth and innovation. This paper reviews the literature on cross-border clustering and emphasises the fact that minimum evidence exists to suggest that cross-border industry clusters are as commonplace as they are said to be. The paper then discusses four issues that face industry cluster development in border regions and suggests how they could be overcome.

Keywords: entrepreneurship and economic development; innovation; strategic entrepreneurship; emerging economies; international entrepreneurship; international strategy.

INTRODUCTION

In the past 20 years industry cluster theory has come to prominence in the economic development literature, recognised as increasingly important in a rapidly changing environment. Some factors that have caused this interest in industry clustering are said to be a reaction to homogenised globalisation which has led to a rediscovery of localisation and specialisation (Malmberg & Maskell 2002; Steinle & Schiele 2002; Waits 2000), as an alternative to inadequate post-Fordist theory (Giuliani 2007; Malmberg & Maskell 2002), and due to the perceived failings of economic theories such as neo-liberalism (Pitelis & Pseiridis 2006; Tordior 2006). An important aspect of many cluster definitions, including one of the most cited by Porter (1998, 2000), is that clustering activity is bound only by the extent to which organisations hold links, ties and interdependencies. As such, it is said that existing boundaries such as national, state and other sub-national political borders are not barriers to cluster development. In fact, it is assumed commonly in the literature that cross-border industry clusters are commonplace.

The reality, however, is that cross-border industry clusters are not commonly discussed in the literature and a limited understanding of cross-border industry clustering exists. This is despite calls for governments to improve the economic development of border regions, which have been recognised as areas with the lowest levels of prosperity (Buursink 2001; Van Gorp 2009), but also as areas with high potential for strong economic growth and innovation (Johnson 2009; Trippl 2010). Since early research on borders the very nature of borders has changed, as has the focus of the research (Newman 2006a, 2006b; Stimson, Stough & Roberts 2006). One research focus that has been
particularly limited has been managerial theory. In fact Kuah (2002: 224) has argued that ‘in the management literature, attention to geography or location has been minimal’.

Thus this paper will use a critical review of the literature to explore three questions. Firstly, to what extent are industry clusters crossing political borders? Next, how conducive are border regions for economic development and cluster emergence? Lastly, how could the border region environment be made more conducive to cross-border industry clustering?

**CROSS-BORDER INDUSTRY CLUSTERS**

The perennial question of economic development has been: to compete or to collaborate? While it appears that economic development theory (and practice) has been particularly fixated on the competitive model (Gordon 2007, 2009), it is recognised that competition in economic development efforts leads to inefficiencies and inequities (Goetz & Kayser 1993). This provides a strong argument for economic development efforts that are based on a collaborative model. One such model is the industry cluster model, which is widely recognised as particularly effective.

The first model to resemble the industry cluster model, used today, is that of *Industrial Districts*, which was conceptualised by Marshall (1920). The conceptualisation showed that geographically close firms in the same industry, usually in regions where a concentration of natural resources existed, caused the regions to become highly competitive through the development of positive externalities. The externalities that were said to be derived by businesses in such regions were access to a specialised labour pool, access to a specialised pool of suppliers and knowledge spillovers among firms (Belussi & Caldari 2009; Folta, Cooper & Baik 2006). Minimal attention was given to the concept, with the exception of Schumpeter’s (1942) creative destruction theory which was based on the thought that small entrepreneurial firm concentrations are the driving force for progress, until it was revived by Italian researchers decades later.

These researchers used the concept to explain why one-third of Italy was showing high levels of growth and innovation while the rest was performing dismally (e.g. Bagnasco 1977; Becattini 1979). Since this conceptualisation was developed it, and other concepts regarding firm concentrations, became accepted by academics in a variety of fields. Such fields include economics (McCann 1998; Salomon & Schofer 1990), strategic management (D alum, Pedersen & Villumsen...

A major contributor to the most recent interest in what has come to be known as industry clusters is the attention given to the area by Porter (1998), who aimed to bridge the theories of spatial agglomerations of firms in economics and sociology. Porter generated the following definition:

*geographical concentrations of interconnected companies, specialised suppliers, service providers, firms in related industries, and associated institutions (e.g. universities, standards agencies and trade associations) that compete but also cooperate* (Porter 2000: 15).

Although a discussion of the relevance and usefulness of this definition of clusters is outside of the scope of this paper (see Brown, Burgess, Festing, Royer, Steffen & Waterhouse 2007), it is important to recognise that while this definition has been faced with criticism (Asheim, Cooke & Martin 2006; Cooke 2006; Martin & Sunley 2003; Rosenfeld 2005; Sternberg 1991) it has also been widely used in the literature and in practice (Andersen 2006; Aylward 2004; Brown & Geddes 2007; Jackson 2006; Tambunan 2005). Furthermore, irrespective of the definition used in studying and discussing clusters many of the definitions state that clusters are not constrained by political borders.

Porter (1998: 79), again, made a substantial contribution to this debate by explaining that a ‘cluster’s boundaries are defined by linkages and complementarities across industries that are most important to competition… they may even cross state or even national borders’. As has been the case with regards to Porter’s cluster definition, his thinking on cross-border clustering has also been widely accepted in the literature (Braun, McRae-Williams & Lowe 2005; Desrochers & Sautet 2004; Roback 2003; Rosenfeld 1997).

From a theoretical standpoint this perspective has been supported by those, such as Stimson et al. (2006), who claim that globalisation is resulting in an increasingly *borderless society* where political borders are losing their influence. While there is strong opposition to this argument (Newman & Paasi 1998; Paasi 1996), even if this argument is accepted, it is difficult to know if this is indeed the case due to a lack of research on clusters that cross political borders. This issue has been recognised by others (Delgado, Porter & Stern 2008; Folta et al. 2006; Rosenfeld 2005) who have suggested that despite the wide acceptance of clusters crossing political borders minimal research has
been completed where the cluster, as the unit of analysis, has not been constrained by political borders.

This questioning of the propensity of clusters to cross political borders has led to two main conclusions. The first being that while clusters can, theoretically, cross political borders it is uncommon (Kuah 2002; Tripl 2010). The second being that due to the limitations of the current research methods used to study mainly mature clusters, which are dominated by statistical analysis of government-produced secondary data, cross-border cluster activity is simply being missed (Delgado et al. 2008). Support for this latter claim has been made by Delgado et al. (2008: 21) who found that ‘specialized clusters tend to co-locate in nearby regions’.

Further evidence of cross-border cluster activity has been reported by Porter (1998: 79), drawing on the work of Enright (1993), and includes a pharmaceutical cluster that crosses the New Jersey-Pennsylvania border and a chemical cluster ‘in Germany that crosses over in the German-speaking part of Switzerland’. A Tri-State Manufacturer’s Association that crosses ‘western Minnesota, eastern Carolina and South Dakota’ has been reported as being made up of business owners who are willing to travel ‘up to 100 miles to attend planned functions’ (Rosenfeld 2005: 11). However, in the same article Rosenfeld (2005) has also pointed out that two small information technology clusters, separated by a river and a bridge, in New York City have no links whatsoever.

Consideration of such cases has led Rosenfeld (2005: 11) to conclude that cross-border clustering activity appears to be ‘influenced by transportation systems and traffic but also cultural identity, personal preferences and social hierarchies’. Furthermore, Delagdo et al. (2008) and Porter (2009) have argued that their US-based findings suggest that state differences, such as differing tax systems, do not appear to limit co-location of firms or the movement of workers across borders. However, in the world’s most developed laboratory for cross-border co-operation, the European Union, recent research has shown that labour mobility, in particular, across open borders is much more limited. Van Gorp (2009) has found that, in spite of previous authors’ conclusions, one of the reasons for low labour mobility across borders is limited integration of tax and social systems as well as information problems, language barriers and prejudice.
Van Gorp (2009: 358) further explained that aside from labour mobility ‘the presence of borders seems to affect the highly important relations [for regional development] between and among firms, and education and research institutes’. Similarly, in studying cross-border co-operation, from the perspective of those charged with supporting such activity in the Baltic region, co-operative efforts were reported as low (Lepik 2009). Limited cross-border interaction was also found to be occurring in the Mass-Rhine Euregio, which includes regions of the Netherlands, Belgium and Germany, with firms having links foremost with other regions within the same country (Hassink, Dankbaar & Corvers 1994). Similar patterns have also been found with regard to interaction across the Canadian-US border (Kolossov 2005).

The fact that most of the cases cited here are concerned with international borders is an unfortunate bi-product of the fact that the border literature is ‘[f]ocused mostly on international borders’ (Strihan 2008: 540). In saying this, Strihan (2008: 552), in studying sub-national cross-border business linkages in Belgium, concluded that ‘analysis shows that firms cluster less according to geographical distance and more according to region and ethnicity’ and when the firms interact across borders they operate through a mediator business, limiting real ties.

Australia, a federation made up of a number of states and territories, also comprises a number of political borders that, while open and non-sensitive, may hold similar characteristics to other borders in the world where cross-border cluster activity is limited. Due to the limited interest that has been paid to industry clusters in Australia (Enright & Roberts 2001; Roberts & Enright 2004) and the limited interest in borders little is known as to cross-border cluster activity in the country. One study, which was primarily interested in tourism in Albury-Wodonga, has shown that despite the extremely close proximity and location within the same country co-operation across the border has not been strong. The authors concluding that significant inefficiencies are resulting from this lack of cross-border clustering activity (Jackson & Murphy 2002; Lade 2006).

If this is used as an indication of the level of cross-border cluster activity occurring nationally arguably an understanding of clustering in border regions would be important not only globally but also in the Australian context. The following section considers the issue of the border region environment for cluster development.
THE BORDER REGION ENVIRONMENT

In light of the limited evidence of cross-border clustering activity the question arises as to the conduciveness of those regions adjacent to borders – *border regions* – for economic development, specifically through co-operation. This section begins by briefly reviewing the origins of the border region literature, defines the term border region and then outlines the most cited issues surrounding border regions that may be influencing the extent to which clustering is occurring in such regions.

Early research on the frontiers of states was completed foremost by political geographers and was interested in how borders form and how they operate as frontiers of conflict. This interest peaked, unsurprisingly, around the time of World Wars One and Two, when interest was directed towards the way in which national borders form (Boggs 1940; Holdich 1916; Jones 1943). Since this early work the study of borders, also known as *limology*, has been considered by a variety of disciplines and from numerous perspectives (Newman 2006a). The most recent research focuses on those persons who live in border regions and the impact of border processes on their everyday lives (Newman & Paasi 1998). While this research is not conclusive in regards to clustering and economic development reviewing this literature provides an understanding of the environment of such activity.

Border regions have been given various labels including borderlands and frontier zones. Irrespective of the term used to refer to border regions, as House (1980: 458) has explained, it is ‘more readily possible to define the frontier zone in *operational terms* than to define theoretical justification for its existence’. While such regions are sometimes set within an arbitrary distance from the border it is commonly recognised that the region that is effected by the border is variable (House 1980). A widely accepted definition of border regions is ‘areas whose economic and social life is directly and significantly affected by the proximity to an international boundary’ (Hansen 1981: 19). Due to the significant importance of sub-national borders (Buursink 2001) and the theoretical opportunity for clusters to cross all levels of borders (Porter 1998) for the purposes of this paper Hansen’s definition is accepted, but applied to all levels of political borders.

Early consideration of border regions characterised such areas as holding a peripheral situation, as being thinly populated and as having a history of being dependent on transverse traffic (Buursink 2001; Hartmann 2006). Recently, however, it has been posited that border regions are
potential economic growth centres that are characterised by cross-border idea sharing and innovation (Johnson 2009; Perkmann 2003). Although this is an optimistic situation it could be argued that such arguments are relying heavily on the argument that all citizens are now a part of a ‘borderless’ world (see Newman 2006b). The following discusses the issues, drawn from the literature, that are faced by those actors in border regions in developing cross-border clusters.

Different administrative structures and directions among lateral actors. Territoriality is defined as ‘a spatial strategy which can be employed to affect, influence, or control resources and people, by controlling area’ (Paasi 1996: 72). Due to the importance of lateral actors, or support organisations, such as economic development agencies and local governments in industry clusters (Brown et al. 2007; Porter 1998) the territories, or jurisdictions, of existing lateral actors would be considered an important factor in the success of clusters. As such, the way in which such lateral actors operate within their territories and the direction of their activity is also an important component of cluster success. While it is difficult to ensure that lateral actors are compatible in clusters generally the issue is magnified when lateral actors from more than one region have influence.

This has been seen prominently in the case of the German-Polish border where frustration has been seen to exist among the actors on each side of the border due to differing administrative systems in each country. Specifically, the German government has a more decentralised federal system that allows for quicker decision-making at the regional level, while the Polish government has a more centralised system that requires decision-making to be carried out in the country’s capital (Scott & Collins 1997).

Furthermore, Hassink et al. (1994), reporting on research completed in Euregion Maas-Rhine, have established concern that governments at different levels within each state, while working toward the same goal, appear to perceive one another as competitors. The authors provide examples of this in discussing the unwillingness of governments to change policies to minimise differences in legislation across border regions; in the provision of ‘scatted funds’ that could be more effectively used if pooled and offered as larger grants; and the general reluctance of governments in a region to set clearly articulated, unified goals to collectively achieve.
To extend this issue it has been found that lateral actors on each side of a border are often more concerned with pursuing their own interests and directions, in an attempt to maintain their existing power (Hills 2011, Newman 2006b; Paasi 1996). An example of is the BUG region; which includes regions of Poland, Belarus and Ukraine; where each country has its own specific, conflicting tourism strategies and extreme difficulty exists for tourists to cross the border of each country in the region (Studzieniecki & Mazurek 2007). Gordon (2007: 73), analysing the perceptions of economic development agencies across a number of counties in a US Mid-Western state, emphasised that the ‘greatest obstacle toward cooperation [between counties] may continue to be ingrained attitudes of local government officials’ that see neighbouring regions as their strongest competition in economic development effort, and particularly in attracting new investment to the region. Even within the same country or state it has been found that agents in peripheral regions often see other peripheral regions as their primary competition (Goetz & Kayser 1993). Related to this issue are the laws that are enforced in each state.

**Conflicting regulatory environments.** Sovereignty, the bundling of rule-making authority with bounded territories, has been an important aspect of borders since the nineteenth century (Herzog 1990; Sack 1986). More recently, however, globalisation has led to an increase in the ‘importance, volume, speed and scope of cross-border flows of ideas, money, commodities and people’; putting such flows at odds with the regulatory environment (Hudson 1998: 89). As such those living within border regions will likely be regulated in different ways on each side of the border. Kolossov (2005: 262) has made the distinction, however, that it is the more educated in society who will be most impacted by differing regulatory environments as such individuals are said to have jobs that are closer to the ‘state apparatus and depend on public authorities’. Arguably any individual who is involved in economic flows in border regions (such as business managers), despite their level of education, will be impacted by differing regulatory environments.

An example of this influence on business people can be seen in differing liquor laws on either side of the Northern Ireland-Republic of Ireland border where businesses serving alcohol were regulated in very different ways, which then impacted competitiveness (Newman 2006b). A more widely-spanning regulatory difference can be seen in the case of labour laws and in particular
minimum conditions of employment on each side of the border in Europe (Scott 1999; Scott & Collins 1997). While businesses pay higher payroll and land taxes in New South Wales than in Queensland, where many businesses also have to hold dual licenses to operate. Differences in the regulatory environment have the potential to occur at both the national and sub-national levels and can have the effect of limiting co-operation across the border (Scott & Collins 1997). Such an environment can also have the effect of defiance.

Martinez (1994: 13) discusses the difficulty of those living in border regions who argue for ‘recognition of their special needs by the authorities, often insisting that some national laws have detrimental regional effects and must therefore be changed or enforced differently in border regions’. Going on to explain that in cases where the citizens are not heard ‘many merchants and traders in particular come to think of themselves as members of a self-contained and self-directed border economic community rather than pure citizens of a nation-state whose behaviour must conform to strictly national norms’, leading to some citizens breaking the law (Martinez 1994: 13). While this would suggest that many border region citizens may identify more with those in the border region than with their state this is not widely recognised.

Identity and ‘othering’. An emerging field of interest in the border literature is the relationship between borders and identity, with the belief that without borders there would be no such concept as identity. According to Passi (1996: 18) ‘[i]dentities are often represented in terms of a difference between Us and Other, rather than being something essentialist or intrinsic to a certain group of people’, with national identity being the most important identity to individuals. This would appear to be supported by the number of studies of cross-border clustering showing that more links occur within the country in which an organisation is situated than with the geographically closer firms across the border (Hassink et al. 1994; Kolossov 2005).

As part of this ‘othering’ at the national level are perceptions of those from across the border. Examples include German organisations perceiving those from Belarus as having a lower work ethic than themselves, while not finding this true of their direct neighbours in Poland (Scott & Collins 1997) and a number of Baltic countries accusing the Finns as using ‘unscrupulous efforts to consider only Finnish interests’ (Paasi 1996: 80). Even at borders with similarities, such as the twin cities of
Niagara in Canada and the USA, ‘othering’ has led to competition across the border (Buursink 2001; Jayaward, White & Carmichael 2008).

Similar perceptions would be expected to be found in border regions at the state level also, with such perceptions and ‘othering’ impacting on the potential for cross-border clustering to occur. Furthermore, it has been argued that ‘[i]dentity is being deeply modified’ with citizens associating themselves with the concrete place where they live – a settlement, a municipality or a region, and want to erect an administrative fence separating themselves from ‘others’ (Kolossov 2005: 619). This clearly has the potential to hinder cross-border clustering further. Related to this ‘othering’ is the last issue of concern.

Areas on the political and economic periphery. Buursink (2001: 8) explains that an important aspect of border regions ‘is their peripheral location, relatively far from the core region of the country and its main cities’, which is compounded by thin population in many areas. Due to the limited political influence of border regions it is thought that this peripheral location ‘commonly translates into political and socio-cultural marginality’ within the states to which the regions belong (Timothy 2000: 62), which has the effect of dislocation and a feeling of deprivation among borderland citizens (House 1980; Martinez 1994). This is not helped when it is considered that powerful political decision makers, located in the core regions of a country or state, may see border regions as ‘pitiful’ (Buursink 2001: 8) and as a result they may be ‘excluded from economic development programmes’ (Timothy 2000: 62).

As well as many states failing to support the potential of border regions it has been recognised that border regions face further economic disadvantages. Hassink et al. (1994: 7), for instance, has explained that regions on the edges of states face limited expansion possibilities, ‘lopsided production systems’, and insufficient infrastructure to support many industries. Van Gorp (2009) agrees with such suggestions in explaining that even regions where cross-border interaction is high border regions are often a distance from other economically prosperous regions both across the border and within the same state limiting the level of ‘spillovers’ that can be obtained. Resulting from this is the issue that border regions tend to have ‘economic structures that seem to consist of relatively slow growing
“industries”, as ‘industries that grow relatively fast prefer locations away from the border’ (Van Gorp 2009: 359).

In sum, by reviewing the literature on the border region environment it has been found that four main factors exist that have the potential to challenge the establishment of cross-border clustering activity. The factors that have been revealed are: different administrative structures and directions among lateral actors; conflicting regulatory environments; identity and ‘othering’; and border regions being on the political and economic periphery.

MAKING BORDER REGIONS MORE CONDUCIVE FOR INDUSTRY CLUSTER DEVELOPMENT

Given the limited evidence to suggest that cross-border clustering activity is occurring this paper has reviewed the main issues in border regions that have the potential to impact cross-border activity. Although further empirical research is needed to verify these factors, this section overviews some initial suggestions for overcoming them.

Different administrative structures and directions among lateral actors. Considering the importance of lateral actors in cluster theory (Brown et al. 2007) and, arguably, the relatively more important part that lateral actors play in peripheral border regions it is important that lateral actors understand the way in which clusters operate and the potential benefits to be gained from cross-border co-operation. In particular lateral actors must understand that cross-border clustering does not mean having to relinquish all power, while the potential benefits of working more collaboratively benefits all parties throughout the entire region. Furthermore, as Hassink et al. (1994) point out, without lateral actors setting an example for private enterprise by working to a common goal and limiting competitive activity cluster development is doomed to failure.

Conflicting regulatory environments. The most clearly evident response to this issue is to better align regulations that have the potential to result in conflict among businesses in border regions. Clearly this would mean regulatory changes at the level of the state or the country, but depending on scale could also mean that some law-making power could be shifted to lower jurisdictional levels. It could also be beneficial for governments to fast-track regulatory changes for earlier implementation in border regions, which feel changes in law most prominently (House 1980). Where it is not possible, or
undesirable, to better align regulation it is important for policy makers to show empathy for business people in border regions by offering assistance on how to best deal with differing regulation on each side of the border. In the context of Australia, this issue has recently been recognised on two fronts. The first has been a memorandum of understanding regarding cross-border collaboration being established between the Queensland and News South Wales State Governments (Queensland Government/New South Wales Government 2011). The second is the establishment of a New South Wales Cross-border Commissioner position to minimise the impact of State Government Legislation on people that reside and operate business near and across state borders (ABC News 2011; NSW Trade & Investment 2011).

Identity and ‘othering’. Due to the connection between borders and identity this is an important, but also very difficult, issue to deal with. In saying this, borders and, as such, identities are constantly changing and are said to be influenced by those in society with power (Paasi 1996, 2011). For this reason, in line with the recommendations of Trippl (2010), policy makers responsible for border regions should promote the emergence of a cross-border regional identity – as some have begun to do by naming Euroregions (Perkmann 2003) – while at the same time encouraging border region citizens to question the perceptions they hold of the ‘others’ across the border. An example of the success of such an approach is the region of Skärgården, a cross-border Swedish-Finish archipelago, where the region’s residents share a common identity – the region’s name literally translating to mean the ‘Garden of Islets’. The effect of this shared identity has been found to have resulted in a highly networked tourism industry, which is not seen in other European cross-border zones (Nilsson, Eskilsson & Ek 2010: 163).

Areas on the political and economic periphery. This issue may well have the most significant policy implications. Due to the peripheral situation of border regions, both politically and economically, it is unlikely that industry clusters will organically emerge either within or across state borders in such areas. In the words of House (1980: 463) ‘frontier zones do have special problems and merit specific policies, the more so in that problems are likely to grow worse with public inaction’. In other words a wait and see policy of supporting industry clusters – of the Porterian (1998) kind – that
waits to support clusters once they begin to emerge will seldom have results in border regions, with
policies to induce industry clusters being much more relevant.

CONCLUSION

This paper has looked to answer questions regarding cross-border industry clustering. It has shown
that minimal knowledge currently exists with regard to cross-border clusters and that the evidence that
does exist suggests clusters are not developing well in border regions. It has further reviewed the
literature on border regions in light of cluster development and discussed four issues that face cluster
development in these regions. Finally, it has provided initial suggestions on how these issues could be
overcome.

As has been discussed throughout this paper, more empirical research must be completed to
better understand how clusters emerge, develop and operate in border regions and specifically across
borders, given their special environment. As most of the research that has been completed so far has
dealt with border regions generally, and has been based primarily on regions situated on international
borders of European countries, research at the sub-national level on other continents is particularly
important. While various methods exist for the empirical study of industry clusters and border
regions, due to the cross-jurisdictional nature of border regions, some are not particularly well suited.
A case in point is research reliant on secondary government-produced statistics that provide minimal
insight into any form of cross-border linkages. More appropriate methods for future use are those
based on network analysis and narrative analysis.

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