

THE GOLD COAST MARINE PRECINCT: PRE-PACKAGING ENTREPRENEURSHIP?

G. L. Casali

School of Management, Queensland University of Technology, Brisbane, QLD 4001, Australia, E-mail: luca.casali@qut.edu.au

Paul L. Robertson

Australian Innovation Research Centre, University of Tasmania, Hobart, TAS 7001, Australia; E-mail: plr090634@hotmail.com

ABSTRACT: We investigate the evolving quality of entrepreneurship in the Gold Coast Marine Precinct, a purpose-built industrial district in Southeast Queensland, Australia. Our findings are that the environment in the Precinct can be conducive to a better quality of entrepreneurship than may be feasible for firms in other settings; that a successful industrial district can be created artificially, with appropriate social relationships evolving afterwards; and that improvements in information and communications technology have undermined some aspects of traditional behaviour in the Precinct, but the essential nature of internal relationships remains intact.

Keywords: Industrial Districts, Clusters, Entrepreneurship, Innovation, ICT

1. INTRODUCTION

In this article, we examine the ways in which the relationship between entrepreneurship and location can be affected by a conscious attempt to create a cluster of firms at different stages in a common supply chain. Our objective is to determine and illustrate some of the advantages and limitations that can result from governmental policies aimed at building strong industrial sectors in an appropriate geographical setting. Firm behaviour and the scope for entrepreneurial activity depend heavily on the institutional and geographical contexts in which a firm operates. Spilling (2011, p. 25), for example, has recently followed Bengt Johannisson in distinguishing among contexts in which a firm functions as (1) a separate unit; (2) as part of an environment (milieu) of local service providers; (3) as part of a network of suppliers, customers and subcontractors; or (4) as an embedded member of a broader social environment. These contexts are not mutually exclusive,

however, and while some firms have only a few local ties, others may have ties that range simultaneously from the local to the national and even the global (Jacobson and Garibaldo, 2011; Fikirkoca *et al.* 2011).

Our focus is on entrepreneurship within one well-defined context, an artificially-created industrial district (ID),¹ to determine how members of the district interact with each other. The question that we address is whether productive relationships need to develop organically from the beginning or can be equally well developed in a framework that was initially imposed on firms. Moreover, as relationships are dynamic and likely to be transformed by exogenous changes in technology and other factors, we also show the ways in which improvements in information and communications technology (ICT) affect how firms within an ID relate to both their local and more distant environments. We find that, for the firms in our case study, developments in ICT are, on balance, increasing the scope for entrepreneurship on the part of firms in the district and that increasing the breadth of contacts of firms within an ID does not necessarily eradicate the value of purely intra-district relationships.

Our case study is the Gold Coast (or Coomera) Marine Precinct in the City of the Gold Coast in southeast Queensland, Australia. This is a rapidly growing area that, much like Florida, trades on its sub-tropical weather to attract both permanent residents and large numbers of visitors. Because of its location on the Pacific Ocean, the region draws boats travelling along Australia's long Pacific coastline as well as boat owners who have settled on the Gold Coast. To serve these markets, the Marine Precinct engages in the construction of new vessels, some for export, and in the repair of older boats. Because of the concentration of firms engaged in each of the trades associated with building and refitting pleasure craft, the area has gained a reputation as a 'one stop shop' that attracts boat owners who appreciate the speed with which diverse components can be located and installed.

In the discussion that follows, we adopt the definition of entrepreneurship of Shane and Venkataraman (2000, p. 218) as involving "the study of *sources* of opportunities; the *processes* of discovery, evaluation and exploitation of opportunities; and the set of *individuals* who discover, evaluate and exploit

¹ The Gold Coast Marine Precinct meets the criteria for an industrial district (see quote from Bianchi in main text).

them [emphasis in original].” On this basis, we develop a series of hypotheses that compares the resources available to firms and the consequent entrepreneurial outcomes experienced by firms located in the Marine Precinct with those available to firms in more isolated locations. We determine that, in almost all cases, firms within the Precinct are at an advantage relative to other nearby firms.

The remainder of this section outlines the relationship between entrepreneurship and agglomeration, as in industrial districts. This is followed by a discussion of the methodology and data employed and a summary of the characteristics of the Gold Coast Marine Precinct. In Section 3, we examine the advantages to firms of location in the Marine Precinct and the effects of improved ICT on the efficiency of the district, and then end with a discussion of our findings.

Entrepreneurship and Agglomeration

Entrepreneurship is not a one-off exercise in getting things going. In a dynamic environment, change requires periodic adjustment on the part of firms. While the extent of change varies from period to period, depending on both endogenous and exogenous factors, the prospect of possible change is present even when conditions are static. An important characteristic of entrepreneurship is therefore the flexibility to initiate or respond to changes that provide competitive advantage. Furthermore, entrepreneurship cannot be practised in a vacuum: as every firm must have suppliers, customers, or both, it is socially embedded (Granovetter, 1985). In many cases, firms belong to networks in which the other partners are also strongly or weakly tied to each other. As a result, each firm’s own ‘entrepreneurial capacity’ is augmented by ‘human, social, market, financial and technical’ inputs available elsewhere in the network (Jack *et al.*, 2008). Although networks may be viewed in relatively abstract terms, physical setting (the ‘community context’) is an especially important factor in determining the quality of entrepreneurship (Hindle, 2010). Here, we are dealing with a particular type of networking – physical agglomeration in an industrial district.

According to Bianchi, an industrial district is:²

a territorial agglomeration of small firms, normally
specialized in one product, part of a product or phase of
production, held together by interpersonal relationships, by

² A similar set of criteria is given by Camuffo and Grandinetti (2011).

the common social culture of workers, entrepreneurs, and politicians surrounded by an industrial atmosphere which facilitates the diffusion of innovation, generating, in this way, important flows of external economies that are still internal to the local productive system (as quoted and translated in Whitford 2001, p. 41).

The relationship between entrepreneurship and agglomeration is ambiguous. Physically isolated firms can exhibit high degrees of entrepreneurial behaviour; equally, entrepreneurship may sometimes be attenuated in firms located in industrial districts or other forms of clusters. Although in some cases location in an ID may simulate innovation and creativity, in others the smaller firms are effectively in thrall to larger ones and have little scope for independent action. This has occurred, for example, in Japanese districts organized and tightly managed around focused factories (Miyashita and Russell, 1994) as well as in highly centralised districts in some parts of Italy that are overseen by merchants and assemblers (*impannatori*) who act as gatekeepers in controlling flows of information from outside (Becattini, 2004).

Industrial districts and clusters may also be able to exert important collective action in relation to their external environments (Menzel and Fornahl, 2010; Wolfe and Nelles, 2008; Halbert, 2010). For example, because they can concentrate the power of numerous small firms with individual employment and sales that are negligible, but that cumulate to levels that are politically substantial, well-led IDs and clusters are better placed than outliers or singletons to lobby governments for better infrastructure and friendly regulatory regimes.

Concentration and specialization are not in themselves sufficient to guarantee progressive behaviours among firms. 'Social cohesion' must be consistent with 'self-realisation' – the ability of entrepreneurs to take effective action – if innovation is to occur when needed (Parrilli, 2009). Social cohesion can supply a foundation for strong ties by contributing to trust and easing barriers to communication (Dei Ottati, 1994, 2005; Paniccia, 1998; Ramazzotti, 2010). Informal Marshallian institutions (Marshall, 1975) such as the circulation of workers among employers and social meetings in the chapel or pub also contribute to homogeneity – to the creation, for example, of communities of practice (Lave and Wenger, 1991; Wenger, 1998) – that promotes the selection of best practice techniques and routines (Nelson and Winter, 1982) by members of an agglomeration. Furthermore, firms within an ID can gain in flexibility in comparison to firms operating in comparative isolation because of their ability to influence formal institutions as well as to generate informal ones. Their high degree of concentration makes them more visible to government and the press, which in turn improves their ability to lobby for suitable permissive regulation and to counteract unfriendly activity elsewhere in the community (Enright, 2003; Besser

and Miller, 2011; Bellandi and Di Tommaso, 2006; Iammarino and McCann, 2006). This may allow them to encourage public expenditure on better infrastructure and also to work with governments to devise cooperative ways of abating nuisances by spreading costs across several firms. Formal and informal *local* institutions must also be conducive to evolution as rigidities can stifle change by limiting information flows and reducing the ability of firms to perceive strategic options (Grabher, 1993). Although these actions may be carried out privately, they can also be undertaken by governments that provide a legal framework for cooperation and perhaps even control institutional activities, as in Italian industrial districts which are defined by legislation (Cainelli and Zoboli, 2004).

The origins of IDs and other types of clusters are extremely varied and context-dependent (Brenner, 2004). Governments may try to create an ID purely for developmental reasons – to establish another Silicon Valley or Route 128 within their jurisdictions (Phan *et al.*, 2005; Westhead, 1998; Quintas *et al.*, 1992; Chan and Lau, 2005). In other cases, including the Gold Coast Marine Precinct, motives may concentrate on curtailing activities that are seen as undesirable. In reality the two objectives may be complementary. Zoning is not necessarily entirely negative. It may go beyond the regulation of noxious conduct by firms and also adopt a ‘permissive’ (Pollard, 1931) agenda that assists firms in a designated category to perform better. In recent years, ecological concerns have featured in the development of a number of industrial sectors around the world and are likely to increase in importance in the future (Thomas and Ong, 2004; Tessitore *et al.*, 2010; Sayin and Yurttagül, 2010; Hilliard and Jacobson, 2010). Because of the importance of social relationships, it is legitimate to ask if a district can be created artificially, as by government action, or must evolve entirely organically within its own context (or perhaps with only modest governmental input) (Asheim *et al.*, 2011; Tödling, 2011; Hassink and Klaerding, 2011; Tödling and Trippel, 2005; Wrobel, 2008; Atherton and Johnston, 2008). We argue that a district such as the Marine Precinct may, in fact, be successfully created through government initiatives if other environmental conditions are right. When this occurs, tight relationships follow from activities within the district, rather than taking the lead in establishing cohesion. Nevertheless, they do eventually occur, leading to behaviour that is very similar to organically-generated IDs.

Formal and informal institutional and private relationships encourage strong ties. Although the importance of spatial proximity has been challenged (Håkanson, 2005), other authors (Audretsch and Feldman, 2004; Iammarino and McCann, 2006; Guiso and Schivardi, 2007) follow Marshall (1920, 1975) in arguing that flows of information and knowledge are enhanced in industrial districts and other types of agglomerations. This may be especially true in the case of tacit knowledge (Audretsch and Feldman, 2004), but as ICT improves and becomes cheaper, tacitness may become less of a barrier to long-distance flows, especially if the degree of codification increases (Håkanson, 2005). However, as we argue below, in the section

on ICT innovation in the Gold Coast Marine Precinct, because tacitness has more than one dimension, better access to knowledge on one level may not affect the importance of tacitness in other but still related contexts.

So long as an agglomeration such as an industrial district comprises firms in the innovative vanguard of an industry, strong ties among firms are beneficial because they offer local firms privileged access to the latest techniques and marketing intelligence, perhaps through movements of personnel between firms within the same ID, while decreasing the ability of outsiders to remain abreast of best practice (Bergman, 2008). If a district loses its advantage, however, and important new knowledge begins to be developed elsewhere, this can erode the value of existing competences (Tushman and Anderson, 1986) in an ID (Bergman, 2008; Grabher, 1993; Hassink, 2005; Menzel and Fornahl, 2009). As Granovetter (1973) has argued, close relationships based on proximity may be blinkered and encourage misplaced trust in firms that were once leaders but have been overtaken by new knowledge developed by outsiders. When this happens, firms in an ID require an ability to establish or strengthen weak or non-existent ties to external firms. In short, self-realisation for entrepreneurs (Parrilli, 2009) may be undermined when social cohesion is too tight, necessitating a realignment of social relationships. Collective institutions (such as technical colleges) and governments can help to reduce the problem by helping to establish new ties. This may be done on a district-wide basis as when an educational institution or research centre is provided with government support (Hervas Oliver and Albors, 2011; Fikirkoca *et al.*, 2011), but there can also be support for individual concerns such as grants to attend trade fairs.

Overall, therefore, the relationship between entrepreneurship and agglomeration involves several interrelated facets. Depending on circumstances, location in an industrial district can affect, among other things, relationships (1) with governments at all levels, (2) with external stakeholders, such as education providers or neighbouring householders, (3) with the labour force, and – both within and external to the ID – with (4) suppliers, (5) customers and (6) other firms. The issues can strongly affect pricing, infrastructure, innovation, and training and education. Taken together, they can have an overwhelming effect on the competitive advantage of the firms within the ID.

2. METHODOLOGY AND DATA

This study adopts a post-positivistic approach (Noor, 2008) by concentrating on identifying and discussing the different constructs and meanings that people in the marine industry in Australia place upon their experiences (Easterby-Smith *et al.*, 1991). Due to the approach taken in this paper, a case study method has been adopted

for two main reasons. Not only does the use of multiple case studies enable the researcher to gain an holistic view of diverse phenomena (Gummesson 1991), but case studies can be useful in identifying emergent and immanent properties in a particular domain (Hartley, 1994).

The Sample

Our research comprises a series of semi-structured interviews with a purposive sample strategically drawn from all categories of key stakeholders within the Gold Coast Marine Precinct. Our sample includes small, medium and large boat builders/repairers, suppliers, agents, and other specialty marine businesses both inside and outside the district, as well as lobbyists, industry representative groups, different levels of government, and educational providers. Taken together, they represent a rounded and comprehensive example of a purpose-designed industrial district in Australia, one that contains the highest concentration of boat builders, repairers and allied industries in the country.

Methodology

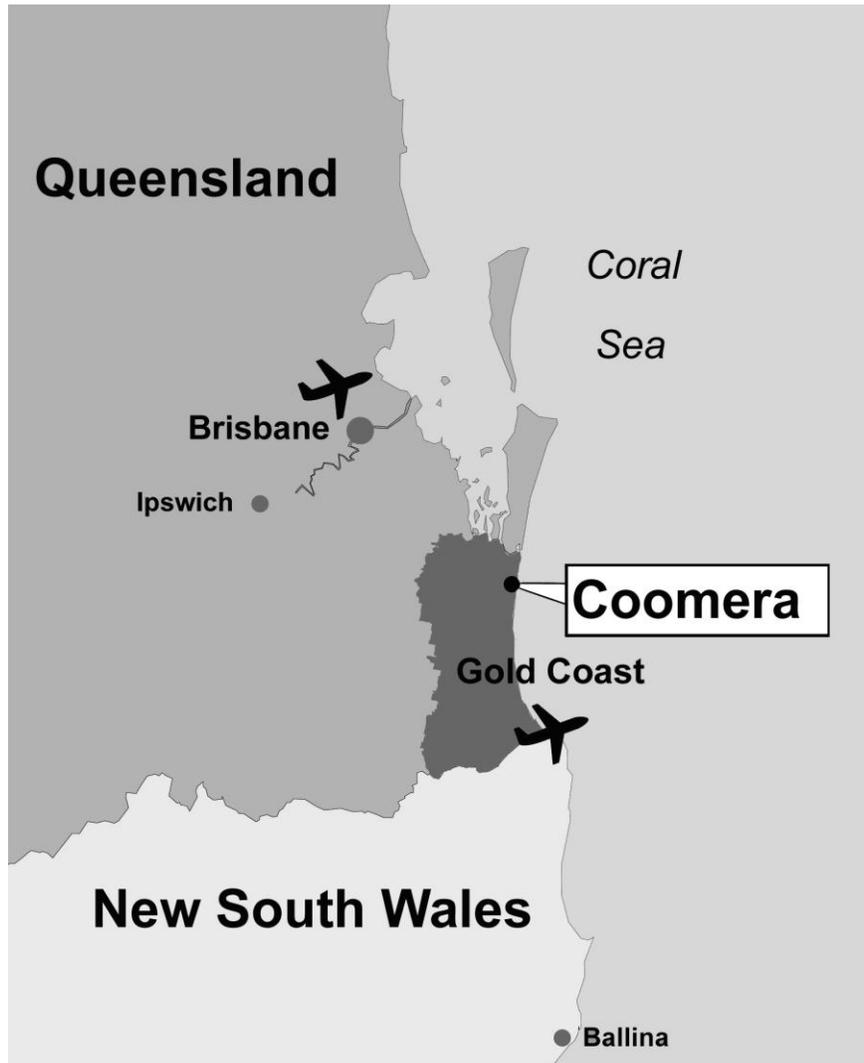
A semi-structured interview method has been employed because it offers sufficient flexibility to approach dissimilar respondents in different situations while covering the same areas of data collection (Noor, 2008). In total, 16 interviews were conducted, each lasting between 45 and 60 minutes. All were recorded and transcribed. This collection of primary data using a semi-structured interview method allowed the informants to tell their stories in their own way, thereby offering the researchers direct access to the experiences of the case (Clandinin and Connelly, 1994; Wickham and Fishwick, 2008). Interviews were conducted at the respondents' offices or at a location nominated by the respondent. Although there was a standard protocol, this was presented in different ways depending on the roles of the people to whom we were speaking. We asked informants a series of open-ended questions within three general areas: (1) their general views about the industry and key performance indicators, (2) their perceptions of the advantages, if any, of being located in an industrial district, and (3) their views on the importance of ICT as it affects personal relationships within the Marine Precinct and the ability of firms to innovate. Although our respondents have been divided into the three categories of firms in the Marine Precinct, industry wide bodies and government, they were all encouraged to comment on the roles and objectives of all groups.

3. BACKGROUND³

There are a few small clusters in Australia (Johnson, 2003; McPherson, 2002), but although many industries tend to be narrowly local rather than national or international in their focuses (Robertson *et al.*, 2005; Marceau, 1999), relationships between firms are rarely sufficiently systematic to qualify as clusters or industrial districts. Hence it is not surprising that the Gold Coast Marine Precinct is not an organic district, but has resulted from zoning and developmental moves on the part of the Gold Coast City Council (GCCC). A major aim of the government was the traditional one of concentrating activities that were seen as noxious away from existing and potential housing areas (Pollard, 1931). As its name implies, the Gold Coast stretches along the Pacific Ocean (Map 1). The water frontage is even greater because the area includes numerous islands, both natural and artificial. These are separated by channels, many of which require periodic dredging to remain navigable. Originally, the boat building and repair sector was dispersed, but in the 1990s the GCCC and the State of Queensland joined to restrict the industry to a designated area of 45 hectares (111.2 acres) in the district of Coomera. The purpose was in part to make it easier to deal with particular pollutants such as styrene, which is a major component of the fibreglass used for hulls. Noise was also an irritant. As the rapidly-growing population of the Gold Coast area began to encroach on existing sites, pressure grew to restrict working hours and otherwise scale back the operations of individual firms. By bringing the builders together in a spot that was, at that time, relatively far from existing housing, the GCCC hoped to confine problems and reduce complaints without harming the growth potential of the industry.

Map 1. Geographical location of the Coomera Marine Precinct. Source: the Authors.

³ The material in this section is derived from interviews with Alan Smith of the Gold Coast City Council and with others who were associated with the Marine Precinct in its early stages as well as more recently.



The GCCC also intended the Marine Precinct to be a magnet to recruit existing boat building and repair firms from Brisbane and Sydney as well as to encourage the establishment of new firms. The Council believed that the district could provide most of the advantages envisaged by Marshall (1920, 1975), including connections among firms at different stages of the supply chain, close social relations between people

employed there, improved information flows and the provision of pieces of capital equipment such as boat lifts that are too expensive for most individual firms. State and local governments have also provided important infrastructure, for example dredging services and a good road network. In addition, the Marine Precinct includes a well-respected campus of the Gold Coast Institute of Technical and Further Education dedicated to training apprentices in marine engineering and boat building. Encouraged by the success of the Marine Precinct, the GCCC has since backed eight 'flagship' districts in other sectors.

Despite a significant downturn associated with the current global financial crisis, at present there are around 300 firms in the Marine Precinct, of which approximately one-third are located in the Gold Coast Marina, a privately owned area within the Precinct that also includes berthing facilities. There are several builders of large luxury yachts with fibreglass hulls as well as firms that concentrate on smaller but still substantial pleasure craft. One large firm also specializes in aluminium dinghies. However, by far the largest number of firms are either specialists in repair and refitting or suppliers of intermediate inputs. There are also agents for hardware, chemicals, glass, marine engines and other inputs that are not sourced locally but manufactured in other parts of Australia or by large overseas firms such as Volvo. Altogether, the Queensland Government estimates that 70 per cent of Australian pleasure craft originate in the region.

Significantly, the relationships between Maritimo and Riviera, the largest builders of yachts, and the other firms in the Marine Precinct are relatively tenuous because these firms tend to deal directly with suppliers across a wider, even global, geographical canvas as well as being vertically integrated to a greater extent than the smaller builders in the Precinct.

In terms of the life cycle of the Marine Precinct (Bergman, 2008; Jack *et al.*, 2008), much of the 'pre-start up' stage occurred in other parts of the Gold Coast and its surrounding region before the mid-1990s. As we have seen, however, the creation of the district did not represent a coalescence of firms as might occur in an organic setting. Instead, geographical consolidation was accompanied by a significant degree of regulatory compulsion combined with important incentives offered by State and local governments. Since the turn of the century, the Marine Precinct has grown substantially but erratically because of cycles in the Australian economy. At present, however, the district seems to have acquired an internal momentum that should lead to further growth in the future, partly based on existing firms attracted from other locations. Whether the district is still in a high growth phase (discounting for the current general economic downturn) or has entered into slower growth and maturity still remains to be seen.

Possible Advantages Of Being Located In The Gold Coast Marine Precinct

On the basis of our interviews, we have prepared a comparison of the relative advantages or disadvantages for entrepreneurship of being located in an industrial district. As IDs by definition comprise diverse parties, these can be expected to be affected differently depending on the role each plays. To cover the various contingencies, we have divided the parties into three principal groups:

(1) Firms in the Marine Precinct, including:

- a. Larger firms that may be better qualified than the smaller members of the Precinct to perform certain roles (e.g. as flagship or gatekeeper firms) while in other respects benefiting from location in the Precinct in much the same way as other concerns;
- b. SME boat builders, and repair specialists that receive greater benefit in terms of externalities from agglomeration than the larger firms since, *inter alia*, the latter are more capable of higher degrees of vertical integration and possess more lobbying power;
- c. Suppliers of inputs produced externally that can benefit from close proximity to other firms in the Precinct but not only have ties to outside firms in their own industries but may be in a position to sell to boat builders, repair specialists and others that are not in the Marine Precinct. These suppliers would, however, be expected to benefit from agglomeration advantages when dealing with others in the ID while such advantages would not necessarily be present with external customers.

(2) Stakeholders representing the industry as a whole, in particular industry associations and lobbyists.

(3) Government bodies that are able to provide physical infrastructure, including roads and cranes, and other facilities (dredging and technical education), but that also control regulatory regimes such as zoning. In contrast to the firms, agencies and associations in the first two classes, these bodies have more general responsibilities and need to balance the welfare of boat building and repair against competing claims for resources from other industries. In this case, because the Australian government is a relatively minor player in the Marine Precinct, we concentrate on the activities of local (Gold Coast City Council) and state (Queensland) governments.

In order to determine the relative advantages, if any, that might flow from location in the Marine Precinct, it is also necessary to consider how firms that are not in the Precinct are affected by the extent of their geographic dispersion. In Table 1, we provide a 2x2 classification of the level of importance experienced by firms of various types and by other stakeholders that are located either within or outside the Gold Coast Marine Precinct. When boat builders, repairers or suppliers internal to the Marine Precinct have relatively strong ties or degrees of influence with the firms in the ID, this is denoted by an **A**, while when firms external to the Precinct have stronger ties or degrees of influence with their own suppliers or customers as a result of their dispersed locations, a **B** is awarded. When the ties or influence are weak, on

the other hand, a lower case **a** or **b** is used for internal and external firms, respectively. Strong ties and influence are held to be of greater importance to the success of a firm than are weaker ties, for reasons we have already discussed. In Table 1, therefore, cells that contain an **A** or **B** indicate that being in the Marine Precinct is advantageous for a given factor to local firms or that external firms gain by being outside the Precinct. When one letter is capitalised and the other is in lower case, **Ab** or **aB**, the type of location that is capitalised has an advantage over the other; when both are either capitalised or in lower case, **AB** or **ab**, neither type of location has a relative advantage. (As we found no examples of **AB**, this category is not included in our analysis.)

Table 1. Possible Combinations of Entrepreneurial Strengths and Weakness Arising from Being or Not Being Located in the Gold Coast Marine Precinct Relative to Other Locations. Source: the Authors.

	Being Located Outside the Marine Precinct of HIGH Importance	Being Located Outside the Marine Precinct of LOW Importance
Being Located Inside the Marine Precinct of HIGH Importance	AB	Ab
Being Located Inside the Marine Precinct of LOW Importance	aB	ab

- A: Relatively strong ties/influence of internal boat builders and suppliers
- a: Relatively weak ties/influence of internal boat builders and suppliers
- B: Relatively strong ties/influence of external boat builders and suppliers
- b: Relatively weak ties/influence of external boat builders and suppliers

In total, we have four primary aspects of doing business in the boat building and repair sector that can affect the quality of entrepreneurship for firms both within and outside an ID.

On the basis of our interviews, we have identified a number of hypotheses that are suggested by the predominantly qualitative data we have collected. As a result they are not subject to significance tests. These hypotheses are based largely on

theoretical considerations and presented below in relation to important themes in the existing literature.

Internal Networking Patterns By Firms In The Industrial District

Both Marshall (1920, 1975) and writers on post-World War II Italian industrial districts (Dei Ottati, 1994, 2003; Becattini, 2004) have cited the importance of strong ties in the success of IDs. A close community setting (Hindle, 2010) can contribute to ‘entrepreneurial capacity’ (Jack *et al.*, 2008) – to the ability of firms within an industrial district to join together to produce beneficial outcomes that could not be achieved as easily in the individualistic or dyadic environment populated by firms that are not located in an ID. This would be especially advantageous for smaller firms that could collaborate to generate the external economies posited by Marshall (1920, 1975). Larger firms, however, could individually possess higher degrees of vertical integration and better external connections that might dilute the value flowing from agglomeration for themselves. Furthermore, suppliers that are located within the district but represent firms elsewhere would also depend more heavily on strong external ties than would be true of small craft-oriented firms in the Precinct. Thus:

Hypothesis 1a. The geographical clustering of smaller firms in the Marine Precinct leads to professional relationships among them that are not normally available to more widely dispersed small firms in the sector.

Hypothesis 1b. Non-professional relationships among people working in the Marine Precinct reinforce their professional relationships in ways not as readily available to employees of more widely dispersed firms.

Around three-quarters of the firms we contacted indicated that that social cohesion focussed on work activities does exist in the district and is growing. This cohesion results not only from reductions in time, but also from greater ease in establishing trust that encourages repeated dealings with the same firms. Representatives of the local and State governments also felt strongly that firms in the Marine Precinct had access to important networking opportunities that are less commonly available to non-clustered firms in the boat building and repairs sectors. We therefore award a value of **Ab** to Hypothesis H1a.

On the other hand, as would be expected in a city with a population of approximately half a million people that is part of a larger metropolitan area of more than 2.5 million, our respondents reported that Marshallian social relationships involving meetings in non-work contexts are not significant. Pubs, churches and chapels are not important gathering spots in modern Australia. As there seems to be no advantage in this respect to being in the Precinct, we give a value of **ab** to Hypothesis H1b.

Networking can make it easier for firms to conform to the regulatory aspects of zoning, such as those that originally inspired the consolidation of firms into the Gold Coast Marine Precinct. When there are indivisibilities and the capacity of equipment needed to cope with nuisances such as dust and water pollution exceeds the requirements of individual firms, co-location makes it possible to share facilities, perhaps under the guidance of government enforcement authorities. Close physical proximity can make it easier and cheaper for firms in the Precinct to share privately-owned facilities than it is for firms that are further apart. In some cases, this is a matter of time, as in shifting components, but in others it relates to the investment costs required to allow fumes or other materials to be collected and disposed of in a single spot. Therefore:

Hypothesis 1c. Because of their proximity, firms in the Marine Precinct find it more feasible to share infrastructure and other facilities than is true for more widely dispersed firms.

Our interviews revealed that this proposition holds for the disposal of wastes to meet environmental regulations. Large firms that constructed facilities with expensive chimneys, for example, have hired them out for use by smaller firms when the capacity is beyond their own needs, indicating that **Ab** is the appropriate value for this hypothesis.

Networking based on proximity can lead to other entrepreneurial advantages (Romero-Martínez and Montoro-Sánchez, 2008; Thornton and Flynn, 2005). For instance, because of the closer relationships within IDs, internally-based suppliers are in a better position than external competitors to attract business from other firms in the ID. The converse may not hold, however, since firms outside a district, attracted perhaps by the strong public image of an ID, could also do business with suppliers in the ID rather than with external firms.

Hypothesis 1d. Suppliers in the Marine Precinct have an advantage in gaining customers within the district that is not shared by external suppliers.

Most of the smaller craft firms in the Marine Precinct agreed that their location helps them to win business from other firms in the boat building and repair supply chains in the Precinct. This was also true of large external international suppliers that have placed representatives in the Precinct to serve local customers. The **Ab** awarded to Hypothesis 1d is weakened to a degree, however, because the larger boat builders tend to trade directly with international suppliers regardless of location.

Finally, agglomeration of specialised trades and of suppliers can be hypothesised to be a magnet for boat owners, chiefly those whose vessels need to be refitted. As components wear out at different rates, yachtsmen can find it convenient to have several types of repair undertaken at once, especially if the vessel needs to be dry-docked, but the types of work to be done vary from boat to boat. As a result,

Hypothesis 1e. The presence of a full range of trades associated with boat building and repair attracts customers to the district.

All of the parties whom we interviewed agreed that the ability of the Marine Precinct to act as a 'one stop shop' brought in business both from locals and from people sailing along the long coast of Eastern Australia, again giving a value of **Ab** for Hypothesis 1e.

Flagship and gatekeeper roles in the Gold Coast Marine Precinct

Both Flagship (Rugman and D'Cruz, 2000) and Gatekeeper (Rychen and Zimmermann, 2008) roles are open to firms in an ID but not to firms that are geographically or organisationally more isolated. Smaller firms within a district are the principal beneficiaries of large firms that bring the district to the attention of a wider public. Not only may the smaller firms gain external customers if a larger firm's visibility attracts business to itself, but customers may bring business directly to smaller firms because of the improved reputation of the ID as a whole (Camuffo and Grandinetti, 2011).

Hypothesis 2a. The reputations of large firms in the Precinct, especially boat builders (whose activities are branded and integrative and who deal more closely with final customers) attract business to the Precinct.

Hypothesis 2b. Large firms have stronger leadership roles in the Precinct than small firms have.

Representatives of large and small firms and of local and state governments concur that, owing to their substantial reputations, the presence of important builders such as Riviera and Maritimo is of value to all firms in the Marine Precinct. In addition, as their buying power is relatively significant, larger firms also have the potential to guide the small firms in the Precinct through orders and the provision of information, but they do not always exercise this because of their tendency to deal directly with external suppliers. However, Bill Barry-Cotter, the owner of Maritimo and also the owner of large tracts of unoccupied land in the Precinct, has been leading a push to expand the Precinct and increase its facilities (Nichols, 2010). Hypothesis 2a merits a strong **Ab**, therefore, but the **Ab** awarded to Hypothesis 2b is weaker.

Hypothesis 2c. Other institutions such as State and local governments also work harder to attract activities to the Precinct than they do on behalf of firms operating in more dispersed environments.

Another **Ab** for Hypothesis 2c: Although neither level of government admits to favouring firms in the Precinct over others, the Gold Coast City Council has designated the Marine Precinct as an area that it feels is especially promising for development. This has led to substantial investment in infrastructure (see also Hypothesis 4a below). For example, facilities that are provided to firms in the Precinct, such as regular dredging of adjacent waterways and the use of facilities

such as communal cranes, are not routinely available to individual firms in dispersed locations. The Queensland Government has also strengthened the Precinct through the siting of a campus of the Gold Coast Institute of Technical and Further Education that, according to people we interviewed, is especially responsive to the needs of firms in the immediate vicinity. Furthermore, the firms in the Marine Precinct band together in associations to provide access to infrastructure and common publicity, factors that are more difficult for geographically-dispersed firms to agree upon.

Hypothesis 2d. Large integrative firms in the Precinct act as Gatekeepers that can feed important external information to smaller firms, but they can also withhold information when this is to their competitive advantage.

As the term implies, gatekeepers (who may also occupy flagship roles) are better placed than other firms in a district to gather information and knowledge. However, they may choose to keep some of this to themselves, either for reasons of commercial advantage or because they have received knowledge in tacit form and do not want to go the expense of codification so that they can share it with other firms in the ID (Morrison, 2008).⁴ Moreover, the ability of recipients to benefit from externally-sourced knowledge supplied by gatekeepers depends on their absorptive capacity, which can vary from firm to firm (Camisón and Forés, 2011; Lazaric *et al.*, 2008). As we have already argued, because of their tendency to by-pass locally-based suppliers, the larger boat builders do not act as Gatekeepers for information. More importantly, as we argue in more detail below, the growth of internet-based communication and transactions has eroded the need for gatekeepers by making it possible for smaller firms to collect much of the information they need online. As there seems to be little, if any, advantage from the gatekeeping activities of leaders in the Precinct, a mark of **ab** is appropriate for Hypothesis 2d.

Ability to innovate

As geographical proximity promotes stronger ties among firms located in an industrial district – through close social relationships, a focus on common problems that facilitates understanding of tacit activities, and other Marshallian externalities (Marshall 1920, 1975; Becattini, 2004; Becattini *et al.*, 2009) – exchanges of information can be cheaper and quicker within the district than outside, creating the possibility of an accelerated rate of innovation (Robertson *et al.*, 2009). In some cases, these exchanges may be spillovers (uncompensated transfers of information

⁴ Firms outside IDs may also share information and knowledge with others involved in dyadic relationships, but unless the recipients are themselves involved in suitable networks, the potential for spillovers is less than in IDs.

and knowledge) (Camisón and Villar-López, 2011, Audretsch and Feldman, 2004) but in others they are fully compensated. As transactions costs are low among firms in an ID (Boschma and Lambooy, 2002; Dei Ottati, 2003), however, even when knowledge is paid for it is likely to cost less than it would in a less well-defined market. Localised knowledge spillovers can be especially valuable in attracting skilled labour to a district (Gambardella and Giarratana, 2010). As noted, however, close relationships are more beneficial when the firms in the ID are leaders in innovation, but in other circumstances they may create barriers to gathering and assimilating knowledge generated externally. Furthermore, the presence of an ID strengthens the ability of industry bodies and governments to encourage information flows.

Hypothesis 3a. Because of good communications among firms in the Marine Precinct, they have better access to innovative knowledge than is true of dispersed firms that are not in an Industrial District.

Our respondents indicated that new technologies and techniques, whether developed within the district or uncovered by firms interacting with their suppliers or customers, are often shared, although at uneven speeds, with others in the Marine Precinct through ties such as internal supply chain relationships. Discoveries are also circulated more generally as people who are not directly involved are able to observe what has occurred. (This can take rather primitive forms such as monitoring the trucks that visit other firms in the Precinct.) The activities of trade associations based in the Precinct and governments also contribute to the diffusion of innovations through their contributions to the expenses of smaller firms in the Precinct that send representatives to overseas trade fairs. Together, these lead to an award of **Ab** for Hypothesis 3a.

Hypothesis 3b. Because of greater physical proximity and closer social relationships, firms in the Marine Precinct find it harder than firms in more dispersed locations to protect their intellectual property.

Logically, the converse of easy diffusion within the Precinct is that firms find it harder to keep knowledge to themselves than in more isolated situations where they have greater choice in what they divulge. Our interviews confirmed the validity of this proposition. A score of **aB** is appropriate for Hypothesis 3b.

Ability to influence government policy

The ability to influence external stakeholders is unevenly distributed. Large firms, as substantial employers, are better placed to have their individual preferences known and acted upon than are smaller firms that on their own are negligible contributors to a local economy. Therefore, large firms both inside and external to the Marine Precinct may all have some leverage in influencing government policy, for example on pollution regulations, and in attracting infrastructure investment and better

educational facilities. But when small firms can group together to lobby (Enright, 2003; Besser and Miller, 2011; Bellandi and Di Tomasso, 2006; Iammarino and McCann, 2006), they may influence policy very effectively in some circumstances. Membership in the Marine Precinct not only allows smaller firms to achieve a higher degree of cohesion when dealing with external stakeholders but also lets them benefit from the influence of larger firms in the ID. When infrastructure is provided to the ID, for example, all firms in the vicinity may potentially benefit, but when small firms are more widely dispersed, they are less likely to gain access to conveniently located facilities even when the larger firms that they supply are successful in attracting the attention of governments. Furthermore, even large firms that are relatively isolated can find it harder to gain government support than can large firms in the Precinct because they do not have the extra bargaining power that comes from agglomeration with smaller producers. For example, they may have to transport their completed vessels further to launch them because they do not have immediate access to communal crane facilities. Clustering advantages include access to appropriate ICT infrastructure which (as is discussed below) is becoming increasingly important.

Hypothesis 4a. Because of their greater total mass in terms of employment and investment, firms within the Marine Precinct find it easier to lobby governments on all levels and to acquire better infrastructure facilities than do more dispersed firms.

An impressive range of facilities and services testifies to the truth of Hypothesis 4a, justifying a score of **Ab**. These include regular dredging of the channels near the Precinct and the provision of boat lifts. Significantly, rather than place the facility more centrally within the region, the state and local governments have combined to locate a branch of the Gold Coast Institute of TAFE (technical and further education) dedicated to trades associated with boat building and repair in the Precinct, where it is in close touch with, and works consciously to meet, the needs of local firms and workers.

Summary of hypotheses

From interviews, we have determined that the most important contributions to entrepreneurship attributable to location in the Precinct are centred on the high quality information and knowledge flows in the Precinct, along with the ease of finding partners who were able to combine for quick and efficient operations in activities requiring the services of more than one specialist firm, and finally an improved ability of firms in the district to combine to influence the government and other local stakeholders. Although the primary emphasis is on firms, a particular line

of action was often enhanced by industry wide bodies and different levels of government.

Our results are summarised in Table 2. Seven of the twelve hypotheses have been strongly confirmed and two have been confirmed more weakly. In two cases, the results are evenly balanced between firms within and outside the Marine Precinct, and in only one case (intellectual property, H3b) do the findings favour firms in dispersed locations. Our conclusion, therefore, is that the entrepreneurial activities of firms on balance benefit from location within the Gold Coast Marine Precinct.

Table 2. Tally of Advantages from Being within or outside the Gold Coast Marine Precinct. Source: the Authors.

Score	Ab (Strong)	Ab (Weaker)	ab	aB
Hypotheses	H1a	H1d	H1b	H3b
	H1c	H2b	H2d	
	H1e			
	H2a			
	H2c			
	H3a			
	H4a			

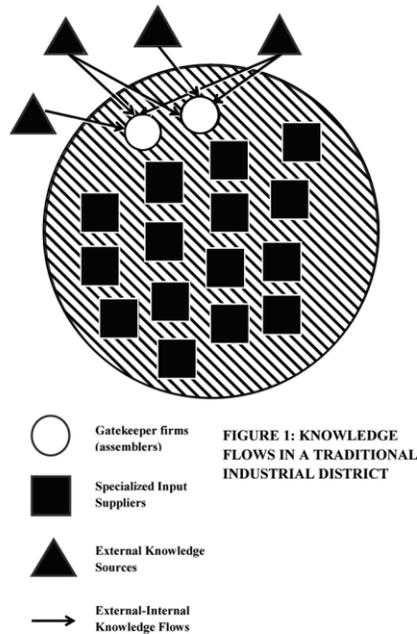
Key: See Table 1 and text.

The effects of improved ICT on entrepreneurial opportunities

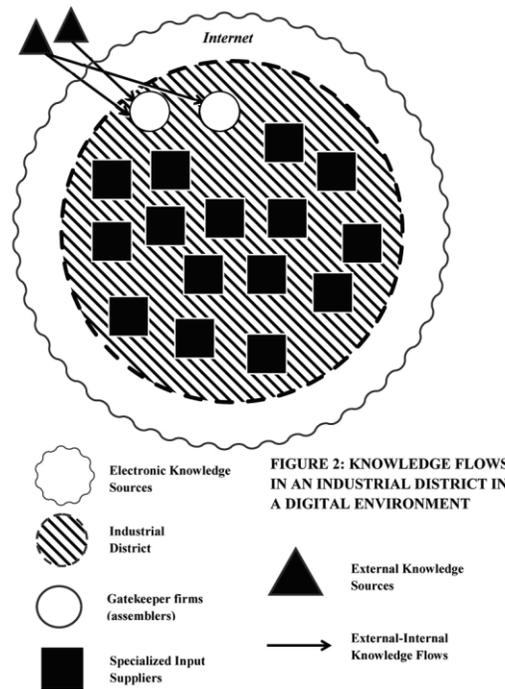
Collecting new knowledge through boundary spanning is increasingly important for firms in IDs (Belussi *et al.*, 2008; Balocco *et al.*, 2008; Camuffo and Grandinetti, 2011). Superior access to knowledge enables a better quality of entrepreneurship (Huggins, 2008; Gray, 2006). As a major characteristic of industrial districts is their ability (based on the embeddedness of firms and close internal relationships) to enhance the distribution of knowledge within the ID, the effects of cheaper and easier communication between members of a district and the external environment is a major issue because it may reduce the value of intra-district relationships or even make them superfluous to good entrepreneurship.⁵

⁵ Although some of the literature on improved communications refers to globalization and global supply chains (Belussi and Sedita, 2008), the phenomenon we are describing often entails anonymous and informal relationships between firms. As such, it involves traditional internationalization more than globalization (Stearns, 2010), and does not reach the degree of articulation among firms that the term 'supply chain' generally implies.

The distinction can be illustrated by comparing the ‘few firms gatekeeper’ and ‘direct peer’ (Belussi *et al.*, 2011; Tushman and Katz, 1980) models of communication and dissemination. The former, which is more often associated with traditional industrial districts, is shown in Figure 1, in which new information and knowledge are introduced to the ID through the activities of only a few boundary-spanning firms with broad external connections. Distribution then occurs through generalised connections between these gatekeepers – which are generally also flagship firms – and the other firms in the district. However, all of the firms of all sizes that we interviewed contend that, in the past five years, their use of the Internet as an additional source of external knowledge has increased greatly, a trend that they expect to intensify in the future. Although some privileged contacts persist, the Internet (illustrated by the larger circle in Figure 2) provides a pool of information and knowledge that is open to anyone to use as they wish. As a result the boundary of the ID is now permeable and new knowledge can enter (and exit) through many points, to then be distributed through close internal relationships to the remainder of the district.



Source: the Authors.



Source: the Authors.

To what extent does this impair the efficient operation of a district or transfer its major functions to other arenas? The answer varies depending on circumstances. In part, the move to electronic communications is a necessary response to the failure of the gatekeepers to fulfil their role by maintaining close contacts with other firms in the Precinct. Although the behaviour of the gatekeepers has been facilitated by improvements in ICT, their independence is mainly a reflection of their higher profiles and ability to establish strong external connections even before the internet became available. As noted, the largest boat builders often ignore intra-district relationships in favour of doing business directly with external, often overseas, firms.⁶ This is partly a function of the specific needs of the larger firms and of their

⁶ The neglect of small firms by larger firms in a district can also be a product of globalisation as leader firms move to consolidation and vertical integration in order to meet competition from overseas (Ramazotti, 2010; Campagnolo and Camuffo, 2011; Camuffo and Grandinetti, 2008). At Coomera, however, the isolation of the

bargaining power. Because the very largest yachts are often custom-designed, the choice of engines and other expensive equipment is more likely to be done on an individual basis than is true for smaller, more-standardised boats. As a result, large builders take specific problems straight to engine firms such as Volvo and negotiate solutions directly with engineers working for the suppliers rather than using agents in the ID as intermediaries. Furthermore, because of the greater use that the larger builders make of technologies such as cad-cam, they were able to transfer plans on disks for many years before adopting email. By contrast, the position of the smaller firms would now be untenable in the absence of the internet, because they would have found it very hard to keep abreast of external developments given the unwillingness of the gatekeepers to communicate fully.

Unlike the highly personalized external ICT connections of the bigger firms, both smaller builders and repairers and their suppliers in the Marine Precinct tend to use anonymous contacts for cheaper and more standardised components, relying initially on webpages, some which are located by surfing the net. Although the success of surfing the net is a function of, among other things, the absorptive capacity of the surfers (Whelan *et al.*, 2010), this does not seem to be a substantial problem in this case. When their interest is attracted, these smaller firms may proceed further by asking for additional information and eventually buying items for testing. Findings by individual firms are then spread through supply chain connections and verbal communications.

The most important reason for the continuing viability of IDs, however, is that proximity improves the ability of firms to *use* knowledge regardless of how it is obtained. Implementing change often requires tacit knowledge as well as a different set of skills than are needed to collect and sort knowledge. Even when knowledge is codified, people who wish to benefit from it may not choose to engage in the learning needed to use it themselves. As a result, they rely on the skills of suppliers or hire consultants who have already acquired the knowledge or who find it worth their while to do so because they intend to use it repeatedly (Robertson *et al.*, 2010). In these situations, despite improved ICT, the physical proximity that comes from being located in an ID offers advantages because it reduces the time and cost needed for suppliers to learn the detailed problems of their customers as well as to embody their own specialised knowledge in the choice and installation of equipment.

4. DISCUSSION AND CONCLUSION

larger firms is less important because of the substantial repair work that is undertaken by smaller firms in the district.

Entrepreneurship depends on having good access to knowledge in order to create profitable opportunities and to respond quickly when existing arrangements need to be changed. As the high degree of social cohesion that characterises industrial districts encourages relatively cheap and rapid acquisition of knowledge, firms located in an ID may have a significant advantage in comparison to firms that do not belong to similar agglomerations; but as the context of each ID varies (Brenner, 2004), patterns of knowledge exchange may be expected to evolve organically within their specific environments. On the basis of our case study of the Gold Coast Marine Precinct, however, we have shown that deliberate policies can also lead to the creation of a successful district in which social cohesion is a response to agglomeration rather than its cause.

We have also shown that improvements in ICT and the greater access that they provide to developments external to an ID can be regarded as a complement to existing arrangements. Far from undermining close personal relationships, use of the internet and other digital technologies can improve the functioning of a district by enriching the mix of knowledge available to all firms, building on such existing factors as the movement of workers from firm to firm and the common training provided by the Gold Coast Institute of Technical and Further Education. This can then translate into more efficient entrepreneurial activity within the district.

We acknowledge that our case study is by no means representative of all industrial districts,⁷ but even the differences offer points of value to policy makers. Because the firms in the Gold Coast Marine Precinct are in a mature industry with a reasonably low rate of innovation, immediate access to new developments is perhaps less vital than would be true of a high-tech sector where a failure to gain access to new knowledge can lead to an abrupt loss in competitive advantage. Moreover, because the industry is more mature, the degree of codification is high, which also reduces the need for interpersonal relationships, although not totally. This is especially true in the implementation phase of innovation.

In addition, Ricardian comparative advantage, building on natural strengths, is very important in boat building and repair. As a result, the scope for permissive regulation and collective development activities has been substantial. By bringing firms together on a good shoreline with access to a well-dredged channel and good infrastructure, the Gold Coast City Council has provided an environment that many firms would not be able to afford otherwise and that would be extremely difficult to

⁷ For example, in the pharmaceutical ID in Cork, which is also based in part on ecological concerns, there is very little communication among firms (Hilliard and Jacobson, 2010).

replicate artificially. The payoff to agglomeration may be less in sectors that are not as dependent on specific locational or other physical attributes.

Although further research is needed, our results suggest that policy makers who want to encourage entrepreneurship and local economic development through the creation of industrial districts and other types of agglomeration need to consider carefully the nature of the sectors they are targeting. Mature sectors may benefit more from artificially-created (as opposed to organically-derived) districts because instant access to new knowledge is not as important to comparative advantage as in rapidly-evolving sectors. Similarly, the chances of entrepreneurial success are greater for an industrial district if the reasons for agglomeration extend beyond knowledge exchange and include the provision of cost-saving physical facilities that enhance existing Ricardian comparative advantage that is hard or even impossible to duplicate in other settings.

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