



30th IASP World Conference on Science and Technology Parks, 2013

Local Institutions, Culture and Competitiveness: Porto Digital s Geographical Indication of Software

PARALLEL 5

Linking STPs to people and cities

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IASP 30th CONFERENCE ON SCIENCE AND TECHNOLOGY PARKS
Parallel session 5: "Linking STPs to people and cities"

Local Institutions, Culture and Competitiveness: Leveraging Porto Digital's Reputation through a Geographical Indication of Software

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Executive Summary

The global competition, marked by the advance and standardization of ICT, increasing commoditisation of software and rapid technological change, is no longer bounded by geographical frontiers. In such scenario, price formation of knowledge services goes beyond neoclassical quality signalling mechanisms, so that information on quality standards becomes central element. When considering Science and Technology Parks, the concept of external economies alone cannot explain their growth and success. The main explanatory source might be in the institutional element: social networks and the evolution of culture and institutions, embedded in the history of the location. Geographical Indications (GI) are shown as part of branding strategies, serving as source identifiers, indicators of quality and promotion of products through the association with those very intangible elements. Porto Digital's GI of Software Services constitutes a unique strategy of promotion and branding, which materializes the intangible aspects which are the source of its creativity and innovativeness.

1. Introduction

The current state-of-affairs of the global competition - marked by the advance and standardization of Information and Communication Technologies (ICT), decreasing transaction costs and rapid technological change and diffusion - is no longer bounded by geographical frontiers. Regions with higher costs of labour and production factors must develop strategies based on knowledge, innovation and creativity in order to supersede the cost advantage of competitors. In such scenario, price formation of knowledge intensive goods and services go beyond the neo-classical model of market pricing and quality signalling through price mechanisms, so that the definition of and information on quality standards become key elements to global competition. This is even truer considering the trend to commoditisation of software and ICT services.

When analysing competitiveness and the degree of success of Science and Technology Parks (STPs), one must also consider their impact on the economic development of the localities in which they operate and how they contribute to development strategies for their regions. Usually, the success factors for STPs, both in developed and in developing countries, can be summarized in the following broad categories: (a) the presence of companies and of an entrepreneurial culture; (b) connections with a university or knowledge production centre, generating research/ knowledge and training workforce; (c) public and governmental institutional support; (d) a pro-active and entrepreneurial management⁴; (e) an institutional environment conducive to the attraction of

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⁴ For an analysis and case study on the crucial role of management in the performance of a STP, see: Querette, E. et al. (2009) "Porto Digital: a model of implementing a Technology Park as a driver for economic

knowledge workers/ creative class and the production of knowledge-intensive, innovative and creative goods and services, i.e.: the business culture, particularly in relation to Intellectual Property (IP) protection, quality standards and institutional safety; an established market for knowledge and technology-intensive products; the propensity for knowledge diffusion, etc.

All these elements were present in the creation and along the trajectory of *Porto Digital*, making of it a platform for the development of its region (city of Recife, state of Pernambuco, Brazil). Currently, Porto Digital hosts approximately 230 firms in the ICT and creative industries, and is subject to a myriad of structuring projects undertaken by its management unit, the NGPD. It has been twice awarded as the “Best Innovation Habitat in Brazil” by the National Association of Science Parks and Incubators⁵ and served as benchmark to many other parks and clusters globally. The name and the brand Porto Digital reflect many attributes that add value to the services provided by its tenants. The protection of that reputation and the creation of mechanisms of transference of this intangible value to the competitiveness of its tenants should be in the heart of Porto Digital’s strategy.

In order to differentiate commodity products, branding strategies may include the reference of a product’s geographical origin. Geographical Indications (GI) serve as source identifiers and indicators of quality to consumers, and are also an important strategy to promote the goods and services of a certain region. According to the World Intellectual Property Organisation (WIPO), “a geographical indication (GI) is a sign used on goods that have a specific geographical origin and possess qualities, reputation or characteristics that are essentially attributable to that origin”⁶. GI branding strategies have long been available in Europe, particularly to wines and spirits and also to other food products such as cheese. This type of consumer protection and producer promotion is subject to a variety of legislation and regulation, ranging from national norms to multilateral agreements. Commonly, Geographical Indications protect agricultural goods, but other manufactured goods may also be covered, as long as they have characteristics due to human factors associated with place of origin, such as design, skills and tradition; Swiss watches, for instance.

Although the most common case is the protection exclusively to goods, the Brazilian legislation grants GI protection to services as well, based on the same criterion of geographical attributes related to human factors. Porto Digital was granted with a Geographical Indication to its software services, being the first institution in Brazil - and one of very few in the world - to possess a services GI. The set of features and brand values present in Porto Digital GI include: quality assurance, innovation, competitiveness, coo-petition (cooperation among competitors), social and environmental responsibility, among others.

The international experience of companies marketing their products using GIs shows that their market value is considerably increased, allowing them to capture premiums in the marketplace. As to the outcomes to the region, since Geographical Indications relate to a collective of companies operating in a specific geographical area, they add value to all companies, fostering collaboration and leveraging the region attractiveness.

In this paper we review the rationale behind Geographical Indication and the potential for generating market value from that protection. The intangible aspects behind the attributes and characteristics of Science and Technology Parks’ production are explored, especially considering its embedded condition. Finally, the expected benefits and outcomes of a Geographical Indication for services are discussed, particularly in the context of technology and knowledge-intensive services and as a strategy for promotion and development of a Science and Technology Park.

development” In: *Proceedings for the XXVI IASP World Conference on Science and Technology Parks*. Raleigh, 2009.

⁵ Brazilian National Association of Science Parks and Incubators - Anprotec, 2007, 2011.

⁶ WIPO webpage on Geographical Indications: http://www.wipo.int/geo_indications/en/

2. On Location, Institutions and the Competitiveness of Science and Technology Parks

Science and technology parks are usually cited among the main initiatives for benefiting from the positive externalities and competitive advantages generated by the agglomeration of enterprises in clusters and industrial districts. Following the marshallian tradition⁷, the literature usually refers to external economies - such as economies of scale and scope, specialized factors (labour and suppliers) and spillovers of knowledge and technology - as the main source of competitive advantage of clusters and industrial districts⁸. That approach considers firms as atomistic units, therefore not being able to grasp the importance of the interplay of people (inside the firms) and the cultural and institutional environment (outside them) as well as the relationship among firms and between the firm and the institutions in a cluster.

The evolution of a Science and Technology Park is a path dependent process that may or may not have the predicted outcome based solely on the marshallian assumptions of external economies. That is the reason why so many STP projects begin and not that many are successful. A good example of that phenomenon is the (not always successful) attempt to replicate the case of Silicon Valley in California, widely known for its characteristics as a Local Innovation System and as an industrial cluster in the Information and Communication Technology industry. Silicon Valley is usually seen as the outcome of the cumulatively self-reinforcing agglomeration of skills, knowledge, entrepreneurship, venture capital and specialized suppliers and services. All those elements are key to explain the formation and development of Silicon Valley - one may say they are necessary elements - but they are not sufficient. By comparing Silicon Valley with Route 128 in Boston area, Saxenian⁹ was able to point that, despite their similarities (in terms of agglomeration and external economies) they were rather different and, in fact, went through two very distinct paths, mainly due to institutional aspects. From what one may conclude that the concepts of agglomeration and external economies alone cannot explain why and how those mentioned elements (skills, suppliers, information...) produce a self-reinforcing dynamic such as seen in Silicon Valley. Similarly, since the very same elements were also present in the case of Route 128, they can't explain its decline. Nor can spatial proximity explain why and how firms become capable of adapting and responding to the fast-changing environment of technology and global competition.

Saxenian then argues that the main explanatory issue behind the success and growth of clusters and industrial districts is the institutional element: the social network and the evolution of culture and institutions embedded in the history of a certain location: "Regional institutions and culture are difficult to change. An industrial district is the product of historical processes that are not easily imitated or altered"¹⁰. Saxenian's observations are consonant to Putnam's¹¹ analysis of the economic development and institutional performance of Italian regions. Putnam argues that institutions are deeply embedded in the culture of a region and are self-reinforcing processes that are very difficult to change: either for good (in the case of the rich and developed regions in the north of Italy) or for bad (in the case of the south). That understanding leads to the realization that the success of a Science and Technology Park - even though influenced by the investment in a number of factors, such as skills, knowledge channels, specialized suppliers and services, etc. - depends on a broader set of issues that deal closely with the culture of the place and its people.

The genesis of Porto Digital was enabled by the large pool of specialized labour force, continuously flowing from a world-class university, which also conducted research and generated knowledge in Information and Communication Technology; available government support and the public policy intention of promoting economic growth and regional development through science and technology¹². All those elements, as seen, were necessary for the creation of Porto Digital, but cannot solely account for its growth and development. One other element of crucial importance is the existence of an innovative and pro-active governance organisation, acting as mediating body

⁷ Cf. Marshall, A. (1920) *Industry and Trade*. London: Macmillan

⁸ For example: Porter, M. (1990) *The Competitive Advantage of Nations*. New York: The Free Press.

⁹ Saxenian, A. (1996) *Regional advantage: culture and competition in Silicon Valley and Route 128*.

¹⁰ *Idem*.

¹¹ Putnam, R.; R. Leonardi, R. Y. Nanetti (1993). *Making Democracy Work: Civic Traditions in Modern Italy*

¹² Cf. Querette et al. (2009) Op. Cit.

among the Triple-Helix of private entrepreneurship, government and university. And, underneath all that, the cultural and institutional context of the city of Recife, which fosters the innovative and creative behaviour of its work-force and enable the creative production that takes place in that region.

3. On Geographical Indications of products and services

Intellectual Property - and the protection and exploitation of Intellectual Property Rights (IPR) - is of growing importance in a Knowledge Economy, particularly for developing countries facing increasingly globalized competition. The current context of competition - gradually more intangible and globalized - is both an opportunity for developing countries to overcome their historical deficiencies and a threat of lagging further behind in the global economic field. Geographical Indications are a particular type of Intellectual Property that relates certain products (goods or services) to the place where they were produced, and protects the intangible attributes that such relation entails.

Geographical Indications (GIs) are defined as “signs (most usually proper names) which identify a good as originating in the territory of a particular country, or a region or locality in that country, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin. It is a separate type of intellectual property”¹³. Usually GIs are the proper name of the region or location where the good is produced, most common examples include Parma, Roquefort, Champagne, but non-geographical names can act as GIs as well, such as the case of “Feta” cheese, which is not the name of the region, rather a traditional and historically recognized Greek product.

The rationale behind Geographical Indications is based on the concept of a *public good*. In Economics, a public good is one that is subject to certain market failures associated with the impossibility of restraining its consumption (non-excludability) and of obtaining the appropriate revenues and profit for its production/commercialization (non-rivalry). Such characteristics result in a disincentive for the producers to invest, therefore, public goods are often subject to public (government) intervention, such as protection or subsidies. Considering that a particular region acquires expertise and superior quality in producing a certain good, such reputation constitutes a market advantage. That advantage might eventually be illegitimately exploited by someone outside that region (by merely stating that the product was originated in the region), resulting in loss of revenue by the producers and potential dilution of the value of the product to the consumer. Geographical Indications act to protect that intangible value, avoiding “free riding” and opportunistic behaviour (which results in unfair competition) and eventual misleading of the public (who might consume a different product/ with lower quality that was intended).

The importance of reputation in markets is derived from the asymmetry of information between producers and consumers¹⁴. In a context of imperfect information, the search for information on the quality of the products results in significant transaction costs for the consumer. Reputation may act as a signalling mechanism of quality and efficiency, therefore reducing transaction cost. However, in order to perform such role, it is required that that reputation be protected by institutional mechanisms, among which are Geographical Indications. GIs protect the reputation by institutionalizing the relationship between the place of production (the origin) and the product, through the use of legal instruments that prevent the opportunistic appropriation of its associated benefits. A fundamental feature of GI protection is noted: it functions as both a protection for the producer and for the consumer.

The protection of reputation through association of the product with the place of origin is not a novel thing. Even before the current treaties and agreements on Intellectual Property and International Trade, producers tried to protect their reputation by establishing collective

¹³ Insight Consulting (2007) *Geographical indications and TRIPs: 10 Years Later... A roadmap for EU GI holders to get protection in other WTO Members*. Report to the Commission of the European Communities.

¹⁴ Cf. Shapiro, C. (1982) “Consumer Information, Product Quality and Seller Reputation”. *The Bell Journal of Economics*. 13(1) Spring, 1982, pp. 20-35

trademarks and certifications that ensured a certain standard of quality. In the Common Law, for example, appellations of origin were usually used to protect local producers against false claims of geographical origin. Geographical Indications, as protected and reinforced by the current international treaties, was proposed in the scope of TRIPS - the Agreement on Trade Related Aspects of Intellectual Property Rights, an international agreement administered by the World Trade Organization (WTO). A brief review of the treatment of indications of origin and source by the international agreements is presented below.

1.1 Appellations of Origin: The Paris Convention of 1883

The *Paris Convention on the Protection of Intellectual Property*, held in 1883, was the first multilateral agreement to deal with the protection of Intellectual Property and to address the protection of “indications of source or appellations of origin”. The Paris Convention stipulates that Intellectual Property Protection must include the protection of “patents, utility models, industrial designs, trademarks, service marks, trade names, indications of source or appellation of origin, and the repression of unfair competition”¹⁵. The Paris Convention identifies geographical indications as a separate intellectual property right, but does not clearly define this concept. Two things are of notice in the treatment of indication of source in the agreement: (i) the need of a clear link between the indication and the geographical origin (the place), rather than any other criterion of origin (e.g. “made in”, rather than “made by”); (ii) the absence of a requirement for distinguishing qualities or attributes of the good.

1.2 Indications of source in the Madrid Agreement of 1891

The *Madrid Agreement for the Repression of False or Deceptive Indications of Source of Goods*¹⁶ was focused specifically on indications of source. It was the first treaty to set rules for the repression of false and deceptive indications of source. The Madrid Agreement did not add much to the protection provided by the Paris Convention, but it extended its protection against deceptive indications of source in addition to false indications. An example of a deceptive indication of source is the use of the actual name of the place of production of certain good, which, nevertheless, does not comply with the quality standard or attributes associated with that indication.

1.3 The Lisbon Agreement of 1958

Along with *indications of source*, the Paris convention also mentioned *appellations of origin*. That type of protection was then addressed by the *Lisbon Agreement for the Protection of Appellations of Origin*, defining it as “the geographical name of a country, region, or locality, which serves to designate a product originating therein, the quality and characteristics of which are due exclusively or essentially to the geographic environment, including natural and human factors”¹⁷. According to the Lisbon Agreement, appellations must (i) be direct geographical names; (ii) serve as a designation of geographical origin of the product; (iii) exhibit quality attributes and characteristics than can be essentially attributable to the designated region of origin.

1.4 The WTO TRIPS

Geographical Indications as they are considered nowadays were initially defined and approached by the *World Trade Organisation’s Agreement on Trade-Related Aspects of Intellectual Property Rights* (WTO-TRIPS), which presents a specific Section dedicated to geographical indications. According to the article 22 of the TRIPs Agreement, geographical indications are: “indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially

¹⁵ Cf. WIPO (1883) *Paris Convention for the Protection of Industrial Property*. Last revised in 1979. World Intellectual Property Organisation. Available at: http://www.wipo.int/treaties/en/ip/paris/trtdocs_wo020.html

¹⁶ Cf. WIPO (1891) *Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods*. World Intellectual Property Organisation. Available at: http://www.wipo.int/treaties/en/ip/madrid/trtdocs_wo032.html

¹⁷ Cf. WIPO (1958) *Lisbon Agreement for the Protection of Appellations of Origin and their International Registration*. Last revised in 1979. World Intellectual Property Organisation. Available at: http://www.wipo.int/lisbon/en/legal_texts/lisbon_agreement.html

attributable to its geographical origin”¹⁸. In contrast with the indications of source and the appellations of origin (subjects of the previous Paris and Lisbon agreement), to obtain a geographical indication the product must exhibit specific qualities and characteristics attributable to the place of origin (rather than only the reputation, as in the case of indications of source), but the indication does not need to be the exact name of the region (as in the appellations of origin). The protection limits the use of geographical indications by the producers located in the region designated and who comply with the minimum standards of quality and attributes. Usually geographical indications refer to physical goods, predominantly of agricultural nature, but many countries (Brazil included) allow the registration of Geographical Indications of Services, e.g. Azerbaijan, Bahrain, Croatia, Estonia, Jamaica, Liechtenstein, Peru, Saint Lucia, Singapore, Switzerland and Uruguay^{19,20}.

Brazil is a signatory of the TRIPS agreement and member of the WIPO. The Brazilian Law of Industrial Property, which governs the protection of intellectual property such as patents, utility models, trademarks and industrial designs, and is enforced by the National Institute of Industrial Property, includes the possibility of registration of Geographical Indications of goods or services²¹ and considers human as well as natural factors among the causes for the specific attributes of the product linked to the region of production²².

4. Geographical Indications and the strategy of STPs

Branding strategies, including the protection and promotion of trademarks and brand names, allow producers to obtain market recognition, add intangible value to the production associated with reputation, and ultimately derive greater profits (a premium) from their commercialization. Such strategies are not usually available for commodity producers: since their products are not differentiable based on its attributes, the price is mainly determined by demand and offer. Geographical Indication has been an alternative to commodity producers to aggregate intangible value to their products and market distinction, originated in the tradition, history, folklore and special quality attributes of the product associated with the place of production.

Following those same lines, Geographical Indications may be useful for Software producers. The comparison of agricultural goods and software services is not so far-fetched. Despite its crucial and increasing importance in all aspects of human life, Information Technology is gradually becoming a commodity. With the growing expansion of IT adoption, and mostly because of its network aspects, the activity of software development can no longer guarantee the competitiveness and growth of firms²³. Moreover, it is the content - creative services and goods that are enabled by software and IT - which is going to generate value and revenues.

Besides the aforementioned benefits associated with GIs, i.e. protecting the reputation of determined region against false or deceitful allegation of origin and adequately informing the consumer about the qualities and attributes of certain product associated with a location, which are in fact the benefits expected by the drafters of the cited Agreements, GIs may have other positive impacts to the competitiveness of Science and Technology Parks. Such impacts include improved access to market by the Park's tenants; added value to the production leading to bigger; incentives to other firms to locate in the Park; and incentives to improve the tenant's competitiveness and efficiency.

¹⁸ WTO (1994) *Agreement on Trade-Related Aspects of Intellectual Property Rights*. Annex 1C of the General Agreement on Tariffs and Trade (GATT). World Trade Organisation. Available at: http://www.wto.org/english/docs_e/legal_e/27-trips.pdf

¹⁹ Cf. Insight Consulting (2007) *Geographical indications and TRIPs: 10 Years Later... A roadmap for EU GI holders to get protection in other WTO Members*. Report to the Commission of the European Communities.

²⁰ WTO (2003) *IP/C/W/253/Rev.1: Review Under Article 24.2 of the Application of the Provisions of the Section of the TRIPS Agreement on Geographical Indications. Summary of the Responses to the Checklist of Questions*. Council for Trade-Related Aspects of Intellectual Property Rights, World Trade Organization, November/2003.

²¹ Cf. Brazil (1996) *Brazilian Industrial Property Law*, Law n°9279 of may/1996, Article n°177.

²² Cf. Brazil (1996) *Brazilian Industrial Property Law*, Law n°9279 of may/1996, Article n°178

²³ Cf. Garr, Nicholas (2003) "IT Doesn't Matter". *Harvard Business Review*. May/2003.

By augmenting the value of the product, through intangible attributes derived from the “cultural *terroir*” where it was made, Geographical Indications facilitate the access of such product to market and make possible to obtain greater profits. Based on a strategy of differentiation and niche marketing, GIs appeal to particular audiences, separating the products from its similar competitors. At the same time, a Geographical Indication raises barriers to entrance in the market, since it delimitates the specific region/ area to which it applies. The firms located within those boundaries may benefit from lower competition, when compared to the external market. Such condition creates incentives to firms outside the Science and Technology Parks to locate within the Park, favouring the growth of the Park and the intensification of all the positive externalities derived by the agglomerations. Also, in order to be allowed to use the GI, firms in the Park must comply with specific standards of quality and attributes, notwithstanding locating within the region. This second aspects would lead to a search for better performance and efficiency, improving the overall quality of the Park’s production. Finally, such strategy might as well derive benefits for the region, related to the contributions to the regions reputation as a whole.

5. Concluding remarks

Science and Technology Parks, as particular types of clusters and industrial agglomerations, are an important instrument of regional economic development in many parts of the globe. The main factors of success of those initiatives are well explained by the literature on industrial agglomeration, which attributes the main source of value to the firms to external economies (such as economies of scale and specific factors of production). The approach on Local Innovation Systems also contributes to the understanding of the main importance of knowledge and information spillovers that are characteristic to those clusters. All these elements, however, cannot fully account for the success of failure of a cluster, as seen in the example of Route 128. As seen, institutional and cultural factors play a most significant role in shaping the institutional stage where clusters develop, factors that are deeply embedded in the region and are influenced by history and path.

Therefore, besides providing its tenants with all the necessary technological and knowledge infrastructure, allowing the firms to leverage the externalities generated by the agglomeration and the interwoven production chains, Science and Technology Parks may also search for ways to capitalize the intangible assets related to the institutional and cultural context of a region. Geographical Indications, which are a special type of Intellectual Property Protection that relates the specific attributes and characteristics of goods and services to the location where they were produced, may be included in the promotion strategy of a Park in order to derive market benefits from the reputation and other intangible aspects of its products. Porto Digital’s Geographical Indication of Software constitutes a unique strategy of promotion and branding for its tenants, which materializes the intangible aspects associated with the institutional and cultural framework that made possible to Porto Digital to exist in the first place, and which is ultimately the source of its companies’ creativity and innovativeness.