

32nd IASP World Conference on
Science Parks and Areas of Innovation 2015

Beijing, China

**Creativity Warehouses: the inland-bound strategy of
Porto Digital**

Parallel Session 5 :

Environments and spaces for innovative entrepreneurship

Author :

Adalberto Rodrigues
Porto Digital, Brazil

Co-authors :

Ana Roberta Souto
Cidinha Gouveia
Francisco Saboya
Porto Digital, Brazil

Hosted by:

Creativity Warehouses: the inland-bound strategy of Porto Digital

EXECUTIVE SUMMARY

Nowadays, Brazil faces a problem of a big regional disparity related to the social and economic development of the beach and countryside cities. Pernambuco state is not different of this national scenario. In order to reduce these inter-regional differences in Pernambuco, the state government has adopted the internalization of knowledge as a strategic target of economy management. As an urban technology park, designed as a local innovation system, Porto Digital has as one of its goals implement public policies for economic development of the State. Considering the Government of Pernambuco strategies for countryside development and the Porto Digital goals comes the Creativity Warehouses idea. This paper will explore the Creativity Warehouses idea, presenting its motivations, its conceptual model, its structure, how it is being implemented, the difficulties, the benefits, the contributions to the cities and how a technology park may influence the renewal of the city's economic matrix.

Key words: Creative Economy, Entrepreneurship, Technology Park, Porto Digital, Triple Helix

1. INTRODUCTION

The adoption for almost two centuries of models of classic liberal inspiration created conditions of extreme spatial concentration of growth and deep social exclusion, between countries and within each of them. Traditional economic analysis left out the regional issue and abandoned the economic dynamics to market movements. However, the deepening of regional disparities resulted in new approaches, especially from the 50s, it began to consider regions as sources of solutions to the problems of national development, and not just a problem arising from same.

In order to reduce these inter-regional differences in Pernambuco, the state government has adopted the internalization of knowledge as a strategic target of economy management.

In another scenario, Porto Digital comes by the turn of the twenty-first century as a way to modernize the productive base and revitalize the urban grid in traditional urban standards, at that time with only 3 companies and 46 employees.

Porto Digital is a technology park dedicated to the development of innovative business and is today one of the pillars of the new economy of Pernambuco and a major innovation environment in the country. Its work falls into two highly intensive activities in knowledge and innovation: Software and information technology services and creative economy, especially the segments of games, audiovisual, animation, music, design and photography.

In its actuation strategy, Porto Digital prioritizes the creation of new ventures, as well as the attraction and strengthening of the existing ones. Always acting in coordination with the private sector, university and government, Porto Digital currently has about 250 member companies and organizations, which together employ more than 7,100 people and revenues of approximately half a billion dollars per year.

By putting these two subjects together: the Government of Pernambuco, motivated to create new growth opportunities for the new economy in the inland cities, and Porto Digital, technology park that already has in its DNA the gene of innovation and uplift of economically devoured spaces, comes the Creativity Warehouses idea.

The Creativity Warehouses are special structures to support innovation and entrepreneurship, working seamlessly with instances of education, science and technology and in close coordination with the productive sector and public policy in the regions where they are located. The Creativity Warehouses strengthen the technological capacity of these locations and induce new economic dynamics based on creativity, knowledge and innovation. As a result, they encourage the rise of new innovative ventures to diversify and strengthen the competitiveness of the local economy.

The first units of the project will be installed in Caruaru and Petrolina. The choice of these cities is given by a set of essential features to the consolidation of an innovation area as Porto Digital: a solid academy, a strong productive dynamic and a mature public/politic structure. The existence of 'critical mass' in these three spheres (university, government and private sector) is essential to the effectiveness of the Creativity Warehouses's purpose.

The Creativity Warehouses have been designed to comply with young graduates of higher and technical educational institutions seeking ways to endeavor on new basis and the mature entrepreneur that understands the value of technological innovation and is willing to improve a product or production process to

consolidate its business.

This paper will present the motivations, the conceptual model, the structure, how it is being implemented, the difficulties, the benefits, contributions to the cities and how a technology park may influence the renewal of the city's economic matrix.

2. INNOVATION SYSTEM, PORTO DIGITAL INFLUENCY AND THE PARK EXPANSION

In the current Knowledge Era, the main asset of any productive enterprise lies in its human capital. It is remarkable the importance of human capital for the competitiveness of any company, especially for technology companies and knowledge intensive activities and creativity. The creative ability of local people takes prominent place in economic development strategies. Only people create, innovate and generate value. Encouraging them, especially the younger ones, is a major challenge in a world characterized by low educational standards and low awareness of the importance of science, technology and innovation for social and economic prosperity of a people.

In addition to expanding the possibilities for knowledge access, it is also necessary the entrepreneurial figure in order to have a prosperous society. Undertake in Brazil is not an easy task. There are multiple obstacles to productive activity in the country, such as (i) the prejudice against people of business, (ii) the stable employment culture - especially the highly paid public employment via public tenders, (iii) excessive bureaucracy for opening and maintenance companies, (iv) the distance of the academy towards the productive sector, (v) the lack of technological capacity, represented, among others, the absence or insufficiency of infrastructure to support the technology development and innovation.

This is where Porto Digital (PD) comes. Designed as a local innovation system under the specific format of an urban technology park, the PD began operations in 2001 and from the beginning, turned to fostering the innovative entrepreneurship. Before the prolonged framework of economic decay of the state, particularly pronounced in the 90s, Porto Digital was presented as a center of re-articulation and promotion of an active segment with great potential in the city of Recife made by the ICT sector.

The concept of the Triple Helix is the key point used as reference to structuring of innovation and entrepreneurship environments such as technological centers. The metaphor of the triple helix has been proven useful as an analytical framework for understanding innovation processes and the importance of coordination between academia, government and market and to induce new dynamics of development based on knowledge and innovation. The approach, developed by researchers Henry Etzkowitz and Loet Leydesdorff, considers the interaction between these three organizations propellers as a way to identify and address problems encountered deep change in the economic, institutional and intellectual world resulting from a society organized into knowledge. Innovation is understood as the result of a complex and dynamic process of experience in the relations between science, technology, research and development in universities, businesses and governments.

In Brazil, the governments take the lead and the role of induction of these types of arrangements, playing the role of induction of other triple propeller blades, due to the conservative innovation standard in the industry, the distance of the academy of the productive world and the political institutional Brazilian culture marked by

inducing strong state presence.

Porto Digital is a typical example of the use of this model. The PD began operations in the neighborhood of Old Recife in 2001, and had at the time only three companies and 46 people employed. Since that, it has grown to have, currently, about 250 enterprises and more than 7,000 people working with software development services based on information technology and creative economy.

PD operates in a full sphere of symbolic elements, which tends to increase from the recent incorporation into its scope of the Creative Economy activities, focusing in games, multimedia, cine-video-animation, design, photography and music segments. These activities are strongly present in the playful universe, social and professional youth of the population. About 8% of national GDP and employed population are related to the field of the creative economy. The largest global companies today are in the segment of computer science and culture / entertainment, and not the traditional activities. This seems to exert a special fascination on young people. Moreover, the computer technologies are increasingly accessible and friendly, a fact that encourages greater use and enables extraction of the economic benefits they provide.

If considered as a microcosm of the Recife city's economy with replication possibilities in other cities and regions of the state, the 'Porto Digital Model' of innovative business environments is presented to the interior as a significant enhancement to the structuring of new bases productive sub-regional intensive in knowledge and innovation, strengthening the actions to reduce intra-regional disparities.

Of course no experience or context can be replicated per se. There are no two Silicon Valleys. In the same way, there are no two Porto Digitais. What remains are the fundamental ideas and, between the rights and wrongs, the conviction that good public policy, properly managed, are able to transform local realities and design the cities towards the economy of the future. This is the starting proposition for the Creativity Warehouses.

3. PORTO DIGITAL

The main "hotbed" of knowledge and development of ICT applications in Pernambuco is Porto Digital (PD). This is a technology park located in Recife historic center. Porto Digital is the result of the innovation environment that was consolidated in Pernambuco in the last decades along with the coordinated effort of the university, the productive sector and the government, with the aim of entering the Information and Communication Technology industry in the economic matrix of the State of Pernambuco. Industry growth potential, ICT is also the basis for the increased competitiveness of a region in any strategy of contemporary economic development.

Its goal is to implement public policies for economic development of the State, urban regeneration, social inclusion, strengthening the ICT hub and other clusters through the use of these technologies. In 15 years of existence, Porto Digital (PD) is a leading technology hub in the country. The park has already generated for the state 7,100 jobs, attracted 536 entrepreneurs and 250 institutions including universities, governmental agencies, research and development centers and national and international technology companies as illustrated in the Figure 01.



Figure 01 – Porto Digital's environment

As a result of its actions, in 2005, the international consultancy, AT Kearney, classified Porto Digital as the largest technology park in the country, and a national benchmark in using public policy to promote innovation and strengthen the technology sector. In 2007 and in 2011, the National Association of Organizations Promoting Innovative Enterprises (Anprotec) considered PD the best technology park/ habitat of innovation in the whole of Brazil.

In 2008, the International Association of Science Parks and Areas of Innovation (IASP) published the first volume in the Learning by Sharing series, in which it highlighted the case of Porto Digital, along with three other science parks in Malaga (Spain), Manchester (UK) and Hyderabad (India). Also in 2008, the Brazilian Ministry of Development, Trade and Industry recognized Porto Digital as the Cluster of Information and Communications Technology of Pernambuco.

In 2009, a report published in the online edition of Business Week mentioned Porto Digital as one of the most innovative technology parks, listing it as one of the ten places in the world where the future is being created. More recently, McKinsey singled out Porto Digital, along with the Campinas Region, in the State of São Paulo, as the two centres for innovation with the greatest potential for generating business in the technology sector in the country.

In 2012, the park won from INPI - (National Institute of Industrial Property), the first Seal of Geographical Indication in the area of IT services. The seal certifies that the software produced in the Porto Digital has a quality certificate.

In 2013 BBC presented Porto Digital as a great tech hub away from the Rio-São Paulo axis that has a great success. In the same period, Financial Times Special Report titled "Brazil Innovation, Research & Development" highlighted Porto Digital's history and activities as a great example for the special report. In the same year, Porto Digital hosted the 30th IASP World Conference and the XXIII Anprotec's National Seminar. The events occurred jointly between 14th and 17th October, under the organization of Porto Digital. The event whose theme was "Science Parks Shaping New Cities" featured about 1,150 participants from 47 countries, of which 85 were speakers. In this event, the Porto Digital Incubator, C.A.I.S. do Porto, was elected by Anprotec, through the Innovative Entrepreneurship Award, as the best incubator in the country facing oriented local development companies.

In 2014, another Financial Times Special Report highlighted Porto Digital again. With the title "Latin America's

Regions – Doing Business in Brazil's Northeast", the text made reference to Porto Digital as a project not only designed to stop the city's brain drain but also to create an economic model based on information and knowledge.

In that same year, the business magazine Exame, nationwide, based on research by consultancy Urban Systems, highlighted Porto Digital as one of the main factors that make Recife one of the best cities in the country (10th ranking) to do business, placing it among the elite in the cities of Brazil in the economy competitive and enjoyable for residents.

Months later, Porto Digital was cover story in the magazine of TusPark, a Chinese Technology Park. The article wrote about the glorious history of PD establishment at initial stage, and development in the past two years with relevant limitations PD faced.

To manage the park, it was created in 2001 the NGPD – Porto Digital Management Unit, a social, private and nonprofit organization. This organization has a role in the success of Porto Digital. NGPD is the agent for implementation of public policies to promote the structure and Technology Park evolution, through the implementation of public and private resources.

NGPD's main objective is to increase the positive environmental factors in order to improve the innovative capacity and enterprises and cluster competitiveness as a whole. To do this, its main roles are: (i) to generate original ideas, (ii) to develop innovative projects from original ideas, (iii) to joint operating agents, so that projects can be implemented including sponsors, government, enterprises, universities, and (iv) to attract innovative ICT-based companies.

Given the above, it is understood that PD is a valuable asset of Pernambuco state, with the potential to contribute to improve standards of production efficiency in the ICT sector and therefore to improve the level of the park business development and competitiveness.

This indicates that there is great potential to improve competitiveness through strategies from the park management and, consequently, from the technological and innovative region development.

In order to share its experience in the Technology Park management that is evolving every day more, NGPD established key points listed in Porto Digital's management, which contribute to build a favorable socio-economic development of the region's environment, providing new ventures attraction, skilled jobs creation and higher income. These points will be addressed in the next sections of this document.

4. CREATIVITY WAREHOUSES

4.1 Concept model

The Creativity Warehouses are structures designed to foster innovative entrepreneurship in the cities of Caruaru and Petrolina, and unite 6 functions: (i) Coworking, (ii) Entrepreneurship, (iii) Experimentation, (iv) Credit, (v) Exhibition and (vi) Education. These activities are integrated operationally in the same space and create a favorable synergy to the development of creative and innovative projects.

(i) Entrepreneurship

Incubators and high standard corporate spaces for sheltering enterprises coming from the incubators,

universities or market.

(ii) Experimentation

High-tech laboratories to support creation and innovation. The selection of the equipment found in these laboratories introduce higher standards of innovation in key clusters of the local economy and took into consideration the economic vocation of each city aligned to Porto Digital areas.

(iii) Exhibition

Appropriate infrastructure for exhibitions and presentations of projects and products in various stages of development.

(iv) Education

Spaces of continuous formation of human capital, essential to qualify the technical basis for innovation in local productive ecosystem. The project includes two training rooms for each Creativity Warehouse, with specific training plan, focused on the laboratories use of each Creativity Warehouse.

(v) Coworking

Qualified and inexpensive space for cooperate work, meetings and interactions where young entrepreneurs often gather searching information, partnerships, insights, etc.

(vi) Credit

Advisory for fundraising and institutional or private funds to foster entrepreneurship and innovation facing at consolidation of startups. This function is performed in partnership with AGEFEPE, the state development agency of Pernambuco.

The Creativity Warehouses have the same focus of Porto Digital: ICT and Creative Economy. However, for each city was given a more specific focus based on its economic vocation. In the case of Caruaru, the theme of fashion was evident, since there is the textile polo of the state. Petrolina has its focus on games and software development.

The use of this equipment is intended mainly for young people. They are students of higher education; graduates of technical education; or even already active entrepreneurs, but that perceive on innovation a leverage opportunity of your business.

Porto Digital aims to reduce inter-regional differences and induce a new economic dynamic in both cities, enhancing innovation and creativity, and respecting the vocations of each location. It is an opportunity given to young people to develop creative activities in their cities, avoiding the brain drain and the accentuation of intellectual disparity between the municipalities.

The Creativity Warehouses are complete structures that, functionally, are independent of Porto Digital, however bound by their governance structure. The Warehouses of Creativity are advanced units of Porto Digital and respond directly to entrepreneurship superintendence of the park, which also subordinate incubators and accelerator Porto Digital.

4.2 The choice of the cities

The state of Pernambuco is divided into three regions: Zona da Mata, Agreste e Sertão. Zona da Mata is the region comprised in closer to the coastal strip, which includes the most developed cities of the state, including

Recife, Porto Digital's headquarters city. Thus, the Internalization Project of Porto Digital, aligned with the program of knowledge internalization of the State of Pernambuco, was premised allocate each of the units in the regions not yet benefited of a Porto Digital unit: the Agreste and Sertão.

In addition to the geographic question, it was necessary to analyze technical factors to consolidate the eligibility of cities. As explained, Porto Digital has bases in the triple helix concept, being the product of a synergy between market, government and academia. Thus, the environments where Creativity Warehouses should also have existing structure in these three areas to successfully receive the project.

Within the market, Caruaru and Petrolina are cities of great prominence in the state. Caruaru concentrates Textile State Polo, and has a very strong social and cultural heritage in the fields of music and crafts (manufacturing). Petrolina already has its economic dynamics strongly linked to irrigated agriculture for export and wine production.

The top 10 ranking of the cities with the highest GDP of the State of Pernambuco points out that only the cities of Caruaru and Petrolina are not in the Zona da Mata region, which demonstrates the strong economic dynamics of these cities.

Within the government, the cities of Caruaru and Petrolina have mature political structures, with offices and municipal laws aimed to technology issues and creative economy.

In academy, Petrolina and Caruaru are the academic hubs of their regions. These cities concentrate more than half of higher education institutions in the Agreste and Sertão regions, with courses in ICT and creative economy.

Therefore, it is justified the choice of Caruaru and Petrolina for installation of Creativity Warehouses.

4.3. The Project

The Creativity Warehouses are Porto Digital extensions in the state of Pernambuco in the areas of ICT and Creative Economy. However, the regional economic vocation of each city was considered for the preparation of projects.

4.3.1. Creativity Warehouse in Caruaru

In Caruaru, the Creativity Warehouse will focus in the areas of fashion and product design. This choice was made due to the economic vocation of this city for being the textile polo of the state and also for its tradition in the development of sculptures in clay - which nowadays can be translated as 3D modeling.

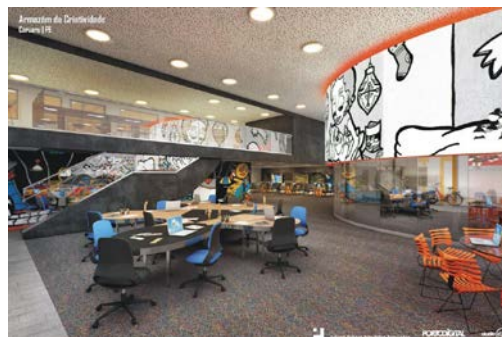


Figure 2 – Creativity Warehouse in Caruaru

The building will be located in the Polo Commercial Caruaru, a fashion mall with 64,000 m², responsible for the flow of production of the textile polo of the city.

The Creativity Warehouses of Caruaru and Petrolina have a unique concept and differ only in core experimentation, responsible for encompass the specific experiences of each city.

The Experimentation Core of Creativity Warehouse in Caruaru will include:

- (i) Creation Core
- (ii) Graphic Prototyping Core
- (iii) Fashion Prototyping Core
- (iv) 3D Prototyping Core
- (v) Pre-mixing Lab
- (vi) Image Lab
- (vii) Film Editorial Core
- (viii) Photo Editorial Core
- (ix) Photo and Film Editorial Core

These spaces are responsible for supporting the development of innovative solutions focused on fashion at the beginning and end of the chain: production planning and distribution.

These laboratories will support the development of collections, preparation of catalogs, fashion films, labels, brand and related activities of the chain.

4.3.2. Creativity Warehouse in Petrolina

In Petrolina, the Creativity Warehouse will focus on developing software and games.



Figure 3 – Creativity Warehouse in Caruaru

The building will be constructed as an annex to the city's convention center, located in the center of town and next to the federal and state universities.

The Experimentation Core of Creativity Warehouse in Petrolina will include:

- (i) Game Arena and Cinema

- (ii) Creation and 3D modeling Lab
- (iii) Music Studio
- (iv) Image Lab
- (v) Audio Mixing e Control Lab

Thus, these laboratories will support the development of software, games, soundtracks, music and etc.

5. THE CURRENT STATUS

Both structures are under construction. The Creativity Warehouse in Caruaru is set to inaugurate in July, 2015. Yet, aimed at starting operations at full blast, some activities have already begun. The enrollment period for the first courses is about to start in June; plus, the incubator has launched its first call for business proposals and a series of promotional events are being held in order to promote the incubation program and guide interested parties to ensure their participation.

In Petrolina, it is set to inaugurate only in 2016, but its first event already occurred. The Creativity Warehouse was a sponsor of the local Startup Weekend as a way to connect with entrepreneurs and other parties involved in this ecosystem. Some other articulation meetings are planned to happen in the city, focused on strengthening the links with stakeholders as the building construction is in progress.

In both cities, the arrival of Creativity Warehouses is being prepared. Porto Digital held meetings and seminars with agents of university, government and private sector to present the proposal of the project and align the expectations. These meetings were very important to shape the project according to each city's culture and needs.

6. EXPECTED RESULTS

The purposes that drive the actions developed by the Creativity Warehouses are as follows:

- To create a foundation for local economic development based on knowledge, creativity and innovation.
- To offer a future alternative for the young people to undertake business in the interior of the state after their technical training or higher education (incubation, training, labs, workspaces, financing etc).
- To reaffirm the commitment to the strategy of reducing sub-regional disparities through impact actions for the development of the "new economy" in the countryside.

In order to achieve this goals, outcome indicators have been established relating to each of the functions of the Creativity Warehouse:

- (i) Entrepreneurship
Incubation of 18 enterprises in each city.
- (ii) Experimentation
Support of 200 local companies in each city.
- (iii) Exhibition
Promotion of 28 events in each city.
- (iv) Education
Formation and qualification of 1.000 people in each city.

- (v) Coworking
Subscription of 500 users in each city.
- (vi) Credit
Financing 40 companies in each city.

7. CONCLUSIONS

The concentration of development has led the world to a worrying scenario of intellectual and technology disparities, so that became a public issue. The state government of Pernambuco already recognizes this problem as a priority and provides public funds for the promotion of new technologies on cities in the countryside.

Porto Digital, known for being the main vector of ICT and Creative Economy in Pernambuco, was asked to develop a project to reduce this social and technological liability in the interior, starting with the cities of Caruaru and Petrolina.

The Creativity Warehouses are the product of this partnership and has the mission to raise the local technological standard from offering an innovative environment and qualification policies of local human capital.

The expected results are challenging, but the Porto Digital is optimistic for the achievement of goals. This paper will be updated in the coming year with the results of this action, so will be possible to track this methodology from the beginning to the implementation.