

Turning a Rural Business Isolated Region (RBIR) into a promising territory

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Summary

Turning Mayenne department (www.lamayenne.fr) in France, a Rural Business Isolated Region (RBIR), into an innovative area is the main objective for Laval Mayenne Technopole (LMT, www.laval-technopole.fr). To achieve this economic development goal, a three step strategy has been implemented in the Mayenne territory starting from its main city Laval (www.mairie-laval.fr). First, the necessity was to find a relevant and differentiating positioning which will make the area visible and renowned on a national and international scale. The second challenge was to establish and implement an exogenous development strategy in order to find new sources of wealth (innovation, human capital...). After these first two steps were conducted at the scale of Laval, the remaining task was to spread key success factors in all the Mayenne territory. Fifteen years after the political decision to invest on technology and innovation as a key driver for economic development, Laval was designated the most innovative French city of its size. This prominent and successful example, allows to draw a development model for RBIRs, that is called the 3C's model.

Introduction

Apart from large cities which centralize today innovation champions and university knowledge, the sustainable economic development of rural territories may be a way to answer the main challenges of our present post-financial crisis world. Laval Mayenne Technopole, a young Science and Technology Park (STP) located in a rural area in western France, aims at finding new tools and support solutions to foster and accelerate creation and growth of new generation of innovative and competitive companies.

The city of Bilbao (Spain), which based its attractiveness on the Guggenheim Museum (www.guggenheim-bilbao.es) succeeded in transforming an industrial town into a modern, innovative and cultural city renowned worldwide. "The so-called Bilbao Effect was studied in universities throughout the world as a textbook example of how to repackage cities with "wow-factor" architecture."^[1] This world famous success story has been and still is an inspirational example for Laval.

This paper presents our tools and solutions to spin off a RBIR, here the Mayenne territory, into a promising territory. The main challenge in conducting this mission is to find a differentiating lever that represents a new source of value never offered before on the territory. This strategy inspired from the "Blue Ocean Strategy"^[2] is a way to find a new space in the challenging economic development competition, and can therefore be inspiring for any RBIR. The strategy followed for almost 20 years now, can be summarized in a three steps strategic plan, that can then serve as a guiding policy for other rural territories. This plan is called the 3C plan: Crystallize, Cast and Circulate. It will be developed in this paper, after a brief introduction to the Mayenne territory.

^[1] Bilbao 10 years later NY Times - September 23, 2007,

<http://travel.nytimes.com/2007/09/23/travel/23bilbao.html?pagewanted=2>

^[2] Blue Ocean Strategy: How to Create Uncontested Market Space and Make Competition Irrelevant? – W Chan Kim and Renée Mauborgne - Harvard Business School Press

Introduction (continued)

a. Mayenne territory: a small Rural Business Isolated Region

Located in a strategic place at the western French crossroad, heart of important communication networks, the Mayenne territory offers a privileged geographical situation. Laval is the main city of the Mayenne department.



Figure 1
The Mayenne department in Europe



Figure 2
The Mayenne department in France



Figure 3
Western part of France

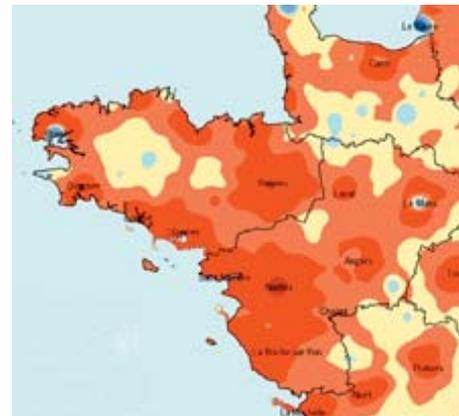


Figure 4
Population density in the Pays de la Loire Region (INSEE Source)

City (Department)	Nantes (Loire Atlantique)	Rennes (Ile et Vilaine)	Angers (Maine et Loire)	Laval (FR 513 ^[3] Mayenne)	Le Mans (Sarthe)	Paris (Ile de France)	France	European Union
Population (City)	291.604	209.860	149.017	50.658	143.599	2.240.621	66 millions	507 millions
Population (Department)	1.313.321	1.007.901	795.557	307.453	567.382	11.898.502		
GDP per inh. (€)	27.310	27.788	22.743	23.713	24.283	75.439	27.723	23.400
Area size (km ²)	6.899	6.775	7.166	5.175	6.206	12.011	671.308	4.493.712
Density (inh./km ²)	190	149	111	59	91	991	99	113
Students number	54.000	87.000	38.000	3.700	14.000	301.000	2.231.000	-
Industrial employment (percentage of the population)	6,8% (15,2%)	5,9% (15,8%)	7,3% (18,7%)	16,4% (22,2%)	12,4% (20,7%)	4,9% (9,6%)	14,6%	-

Table 1 - Mayenne key figures in comparison with the European Union, France, Paris and our immediate neighbours (Nantes, Rennes, Angers and Le Mans cities)

Sources: INSEE 2012 ("Population (City)", "Population (Department)", "Area size" & "Density"), INSEE 2007 ("Industrial Employment"), INSEE 2005 ("GDP per inh.") & 2009 Nantes and Rennes Academies ("Students number").

^[3] Mayenne NUTS (Nomenclature of Territorial Units for Statistics)

Introduction (continued)

Figures speak for themselves; Laval is a relatively small city in comparison to other cities of Pays de la Loire Region (FR51^[4]). The department economy mainly relies on Agriculture and Industry. Before the industrialisation era, Mayenne (FR513) was an agricultural place and this activity still remains very important today (8000 farms, and 800 000 cows). After WWI, textile and then food processing industry developed. Subcontracting, automotive and electronic industries emerged only after WWII. Today, industrial employment (automotive and food processing) represents 21% of the employed population, 50% higher than the French average (13%). Another strong characteristic of the Mayenne department is the very small number of Higher Education Institutions and Research laboratories students and researchers that induces an important brain drain. These characteristics are typical of what we call a Rural Business Isolated Region (RBIR): small when compared to its neighbours, poor attractivity, low proportion of high added value sectors and poor connection to the knowledge economy.

S <ul style="list-style-type: none"> - Quality and attractive living environment - Diversified industrial sectors - Reactive and dynamic local actors - Strategic location between Paris and Western France 	W <ul style="list-style-type: none"> - Department image deficit (weak fame and unawareness) - Structural handicap linked to the territory size - Very low number of students and researchers
O <ul style="list-style-type: none"> - Exogenous development - Differentiation - Project mobilisation ability 	T <ul style="list-style-type: none"> - Traditional industries weight - Economic potential of the immediate neighbours (Rennes, Angers, Le Mans...)

Table 2 - Mayenne territory SWOT analysis

When it was decided 20 years ago, to fight against the fatality, the challenge was to transform what is usually perceived as a weakness into a strength. Hence, small size, rural area and strong industry were going to be used as opportunities together with the quality of living environment and good social relations and dynamics. The strategic will to turn the Mayenne RBIR into an innovative territory started in 1996 with the creation of a Science and Technology Park, LMT, source of knowledge, creativity and innovation.

b. The political will: a trigger element

A strong political will was at the root of the innovative development of the territory. Indeed, starting in 1996, local authorities from Laval decided to create a Science and Technology Park (LMT) and to focus not only on historical strong sectors (e.g. automotive and food processing industries), but also to promote a promising and still confidential thematic, Virtual Reality^[5]. This thematic was strongly fostered by the Laval mayor, at that time French Minister of Research and Technology. The Mayor will definitely sparked off this new way of development. At the beginning of this initiative there were no development organisations such as laboratories, higher education institute, Science Park nor incubator. To develop a new and really innovative thematic on the territory was risky but full of opportunities. This bet revealed successful, and was followed by continuous action and funding to increase the impact and widen the scope by implementing each year new infrastructures, tools and competences. This action has been continuously supported by the successive mayors no matter their political background. Three of main political leaders of the Mayenne department of the last 15 years were national political leaders and had a chance to act as France ministers for a while, and this political weight has probably played a role.

^[4] Pays de la Loire NUTS (Nomenclature of Territorial Units for Statistics)

^[5] "Virtual Reality is a term that applies to computer-simulated environments that can simulate physical presence in places in the real world, as well as in imaginary worlds" – Wikipedia definition

Introduction (continued)

c. Laval Mayenne Technopole: a triggering tool for innovation

Initiated in 1996 by a strong political will for innovation, Laval Mayenne Technopole offers on the Mayenne territory know-how and networking opportunities to entrepreneurs, startups and SMEs in order to facilitate the birth and the development of innovative projects or businesses. Through its missions (animation, technologic and scientific skills networking, innovation support and territorial marketing) LMT develops world class tools and methods to create an innovative spirit on the territory and to quickly develop new innovative businesses.

LMT has 2000m² premises to welcome innovative start-ups, built in three steps (1998, 2003, 2012). There are currently around 25 tenant companies, 4 non-profit organisations, and more than 100 jobs in the incubator while there are nearly 500 jobs in the STP, i.e. 1.3% of the active population of the city. In the next two years, the Laval town will build a new office building for high-tech companies in order to offer to the incubated companies a place where they can settle their activities after the end of the incubation process. This initiative will permit to offer innovative companies a full real estate solution in Laval for their development.

In 2007, to structure its actions and to bring Mayenne territory at an international visible level, LMT launched a 7 years road plan, focused on 5 essential areas:

1. Strengthen the start-up creation dynamic
2. Develop the number and the quality of services
3. Structure and develop the thematic clusters
4. Give value to the international network
5. Strengthen and expand the communication

This plan was successfully conducted and lead to numerous implementation of new tools and programs to support the development of innovation on the Mayenne territory, with lead to a great increase in economic outputs as shown below.

A new strategic plan has been drafted for the period 2014-2020 to sustain the continuous development of the territory based on innovation processes.

A 3-step path: Crystallize, Cast and Circulate

a. CRYSTALLIZE: Choose a very special theme for the future and develop the minimum required competence as a seed for the crystal to develop, in order to stop being an anonymous RBIR

In 1996, Virtual Reality (VR) has been chosen on the territory as a promising sector to be developed. The bet in developing this new technology in Mayenne was to take the lead on a subject that was still emerging in the laboratories worldwide and had not yet fully reached the market. In 1996, the development of Internet and web-based applications for the general public was exploding and it was obviously sterile to foresee a real differentiation by choosing this field. As a consequence, skipping Internet technologies which were chosen by many regions as a key driver for their development and bringing on the front of the stage VR was a risky challenge. It turned out to be a real winning bet. Technological tools and platforms have been implemented to foster the local development around this thematic and gain first place in this field. The embryo that served as a seed was the ESIEA (Engineering school, specializing in Computer Science, Electronics and Automated Systems, www.esiea.fr) created in 1993 in Laval, as a provincial branch of a Parisian school.

A 3-step path: Crystallize, Cast and Circulate (continued)

Meanwhile the creation of Laval Mayenne Technopole, a resource centre called CLARTE (www.clarte.asso.fr), was created. It is a research, study and advice centre on augmented and virtual reality for companies, that developed to become a national reference. In 1999, Laval Virtual (www.laval-virtual.org), the yearly international conference and fair on virtual reality was initiated, and has now become the largest European Fair in the field with 15000 visitors. In 2000, the Ingénierium, a VR technological platform was established and the first Master class in VR began. A second higher education institute, the ESCIN (Numerical interactive creation school, www.escin.net) with digital real time 3D art course was created in 2003. In 2005, a research lab, Presence & innovation Research Team (www.pi-lab.net), has been formed. In 2006, a second Master course in engineering of virtual reality and innovation started.

A VR network named LVRC (www.lvrc.eu), standing for Laval Virtual Reality Capital, was created to federate the Laval VR actors and boost international visibility. Strong relations with regional (Images & Networks^[6], ID4CAR – cluster in up market automobile www.id4car.org – and EMC2 – cluster in complex composite and metal sets www.pole-emc2.fr) and international clusters are developed.

Following the election of a new mayor (the fourth since the beginning of the development of VR), there is a will to strengthen the development of the Laval Virtual Reality cluster by featuring a branding, building a new research and showroom centre, and establishing a new development strategy for the coming years.

As a result of this on-going effort, fifteen VR companies acting in all the different aspects of VR fields (VR, 3D, Haptics...) were born and are growing on the STP. In 2014, the American company Eon Reality (www.eonreality.com), the world leader in Virtual Reality based knowledge transfer for industry, education, and edutainment, chose Laval to install its continental Europe research and development centre, with the aim to create 150 jobs within 5 years. Yann Froger, Managing Director of EON Reality SAS said at the inauguration of EON Reality premises: "With Laval's position as a global focal point for Virtual Reality and EON Reality's world leading VR knowledge transfer software, we are definitely in the right place and at the right time."

Today, thanks to this powerful innovation triangle (Higher Education Institutes, Laboratories and Companies) composed of around 200 persons, Virtual Reality is definitely a leading knowledge economy thematic in Laval. Indeed, during its lecture in Laval titled "2020: scenario for the future", Joël de Rosnay^[7] claimed that "*Laval Virtual has become today an international recognized brand*". Laval is generally identified as the VR Capital throughout Europe and even in Japan.

Despite these numerous strengths, VR still represents a market niche and thus it became obvious that this thematic could not be sufficient to achieve our development goal. Economic spin-offs (employment and development) are not fully satisfactory for the moment since VR is only slowly emerging as a widespread technology and a successful market.

For all these reasons, Laval Mayenne Technopole conceived in 2005 an attractiveness strategy by implementing powerful and innovative tools to accelerate the start-up creation process.

^[6] World Leading Cluster in the information, telecommunications and multimedia fields www.images-et-reseaux.com/en/index.php

^[7] Writer and prospectivist, PhD from the Massachusetts Institute of Technology, <http://www.cite-sciences.fr/derosnay/cv.html>

A 3-step path: Crystallize, Cast and Circulate (continued)

b. CAST: Attract start-ups companies to boost local economy through the development of advanced and innovative tools

As demonstrated before, Laval is not intrinsically a fertile ground to give birth to innovative projects, partly due to the small number of researchers and research laboratories. In order to increase the number of innovative projects LMT has conceived or took part in a series of well targeted innovative programs. These programs aim to cast new innovative projects which are carried mainly by people coming from outside the Mayenne territory (Idenergie and incubator), to enhance the number of start-ups creation among students (Entrepreneuriales), and women (Pionnieres), or to draw international attention (Neoshop, European projects).

At a time when nobody was talking about start-up accelerators in France, though this concept was invented in the USA in 2005 by Y-Combinator (www.ycombinator.com), LMT started **Idenergie** (www.idenergie.fr) an 8 months start-up accelerator program, the first ever in France. Applicants come from all over France. Each year, Idenergie provides entrepreneurs with an eight-month training delivered by a team of experts (business coach, mentor, lawyer, accountant, bankers, investors, technical experts, marketing and sales consultants, local networking partners) and benefits from the advice from national organizations such as bpifrance (innovation funding) or INPI (Intellectual property). The most advanced tools in start-up training are used such as the lean start-up method, the business model canvas, the blue ocean strategy... etc... Two awards of €20,000 and €10,000 are offered to the best projects at the end of the program.

After 8 years of existence, Idenergie has an impressive 85% attraction record: most of the entrepreneurs who started their companies (61% of the total participants) did it on the Mayenne territory. Since its creation in 2007, 34 start-ups have set up resulting presently into 125 jobs, and several millions seed capital invested. These impressive results were recognized by a nomination at the European Enterprise Awards^[8], in Madrid, 2010.

To answer the growing demand of local people willing to create start-ups, LMT started a new pre-incubation program called **IDfactory**. It is a 6 months program aiming at validating market demand and preparing a business-plan.

Created in December 2007, **LMT incubator service** developed a specific support program for young entrepreneurs to help them launch their start-up. The incubator team is composed of project managers who support and foster innovative and technological businesses. Within the 3 years incubation process, entrepreneurs get advice, training and funding; up to €25,000 can be allocated to businesses in order to cover market studies, law counseling, technical expertise, intellectual property. LMT has already incubated 58 innovative projects and 44 start-ups were already created.

Thanks to **Idenergie**, **IDfactory** and the **incubator**, LMT provides a strong professional support to the Mayenne innovative start-ups. But, to foster the projects, development funds are also necessary. Therefore specific financial tools were created to sustain start-ups: Mayenne Initiative^[9] Innovation (loan on trust for entrepreneurs) and Business Angels clubs. These territory key players offer funds and loans to support the development and increase the start-up creation.

To stimulate student entrepreneurship, LMT implemented "**Les Entrepreneuriales**" (www.les-entrepreneuriales.fr) a national program to train students and give them the basic entrepreneurial skills. Les Entrepreneuriales is an innovative competition which trains students to simulate a company creation. It helps them to realize that entrepreneurship should be considered as an

^[8] http://ec.europa.eu/enterprise/policies/sme/files/awards/download/eea_entryforms.pdf

^[9] www.mayenne-expansion.com/seveloppeur/mayenne-initiative

A 3-step path: Crystallize, Cast and Circulate (continued)

option for their career just like being employees in a company. The training program lasts 5 months and it is free of charge for all higher education organizations and students. Since 2004, several thousand students have followed this program in many French regions.

Since there are much less women than men in the start-up entrepreneur population, LMT joined a national program called “**Les Pionnières**” (www.lespionnieres.org) to support innovative women entrepreneurs.

Many of the start-ups created in the incubator deal with innovative physical products. We observed that it was then very difficult for them to launch commercially. The big retailers do not easily accept to distribute innovative products and using an e-commerce website needs a lot of promotion and takes time. Based on these observations, LMT decided to launch a completely innovative concept: a shop to launch the products of the start-ups and provide customer feedback to them. After a one year hard work to set up the project, **Neoshop** (www.neoshop-laval.fr) opened in the heart of Laval, on September 4th, 2013.

For the first year of operation, Neoshop received 14 000 visitors, and 60 media coverages by almost all the national papers, magazines, radio and TV. Neoshop gives LMT a good connection and visibility to the start-ups all over the country, and to the incubators through Europe.

The next steps include opening an e-commerce website, distribute products from European start-ups and open other shops in major European cities. Neoshop aims at becoming the gateway to commercial launch for European start-ups, thus giving Laval a good visibility in the European start-up scene.

After intensive coaching at the local and national levels, companies graduated from LMT incubator have to consider international growth which is an essential step in their expansion strategy. *“More than ever, internationalisation is a key element for the economic development of our country and for every French company”^[10]*. SMEs with an international presence are more competitive (European Commission Survey – July 06, 2010). An important part of the company growth comes from their ability to be opened to new markets in the world. It is in this perspective that LMT has developed an internationalization strategy (International Development Strategy: IDS) with the aim of converting innovative start-ups into international players. These start-ups often target niche markets and international development is therefore a fertile loam full of growth opportunities. With the constant will of developing internationally its companies, LMT has created and maintained strong connections to more than 50 international networks and strong partnerships with similar structures in strategic areas for Mayenne start-ups. LMT is for instance currently developing an international network with German and Swedish virtual reality clusters to foster at the same time exogenous and endogenous international development. LMT is an accredited member of the European Business Incubator Centre association (www.ebn.be) that gives access to 350 business incubators around Europe.

A **mentoring champions program** has been implemented which aim at supporting champion innovative companies in their international development. This program of course relies on the international network built over the years by Laval Mayenne Technopole. Current international development for LMT start-ups include UK, Germany, Italy, Spain, Portugal...

In order to strengthen its international actions and network, LMT takes part in many European projects, such as Open Innovation (www.openinnovationproject.co.uk), Rural Alliances (www.rural-alliances.eu), TESLA (www.teslaproject.eu), or Erasmus for Young Entrepreneurs (EYE, www.erasmus-entrepreneurs.eu).

^[10] Anne Marie Idrac – former French State Secretary for the foreign exchange market

A 3-step path: Crystallize, Cast and Circulate (continued)

The LMT strategy and comprehensive offer which could be sum up in three key words (mentoring, funding and real estate) begins to bear fruits: 80 start-ups have been created since 2005, thus constituting a small but vivid ecosystem. But, even if figures speak for themselves proving that the LMT support actions are relevant and efficient, these actions are concentrated in the Laval area, the main city of the Mayenne department. A few years ago, it was decided to irrigate the whole Mayenne territory and thus several new actions were implemented.

c. CIRCULATE: Irrigate the whole territory to create an innovative spirit

The Cast step of the 3Cs strategy has been mainly conducted in the Laval town. This step is continuing, but thanks to all the specific programs, LMT had sufficient elements to launch the last step of the 3Cs strategy. This third level is about irrigating the most rural areas in the Mayenne territory, and to address the less innovative SME's. The aim is to bring all types of companies, economic stakeholders, community and local governments to increase their level of mastering innovative approaches. In order to spread the innovation mind at an extended level and to target different type of actors, three main actions have been created and implemented outside of Laval.

In 2009, LMT initiated an annual event called "Inov'dia" (www.inovdia.fr) that was designed to be rather different than the traditional and conventional innovation spreading event. Oryon (La Roche sur Yon STP; www.oryon.fr), Atlanpole (Nantes STP; www.atlanpole.fr) and LMT went into partnership to create Inov'dia, a one day innovation regional meeting. Innovative itself, Inov'dia, is a mix of speed business dating, innovative art performance, creativity coffee sessions, innovation fair, formal and informal workshops that gather all the innovation actors (institutions, companies, associations...). The last edition of Inov'dia in October 2014 gathered 400 participants.

In 2009, LMT and the SVET (Syndicat à Vocation Economique et Touristique des Coëvrons: the former organization in charge of the animation of the local territory called "Coëvrons" situated around the city of Evron. This structure was replaced by the "Communauté de Communes des Coëvrons" 2013, www.coevrons.fr) initiated an action to detect the innovation potential of the companies situated in the Coëvrons territory. It is one of the most rural Mayenne sub-territory – where there are more farms than people working in companies.

LMT set up a program called "Réussir" which main objective was to create value thanks to innovation. The program included raising awareness about innovation through monthly meetings called "les Cafés de l'Innovation", coaching of entrepreneurs to start innovative projects in their companies and a feasibility study of an innovative technical platform.

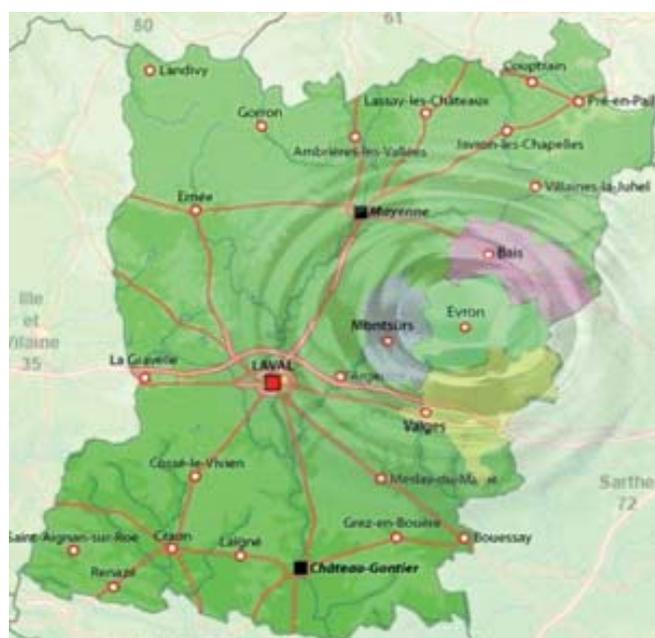


Figure 5 - The Mayenne department and the Coëvrons territory

This program involved 89 structures, launched and supported 74 innovative projects whose 15 were completed in 2014, supported the creation of 2 companies, enabled companies to use new skills by hiring 10 interns, provided local economic stakeholders 50 events (information, training...) and allowed companies to get almost €152.000 of public subsidies and €580.000 of loans or repayable advances (from March 2010 to December 2014).

A 3-step path: Crystallize, Cast and Circulate (continued)

The program is now being launched on another rural territory called "Pays de Mayenne".

A third action has been launched in 2011 and extended in 2014, to help companies in all rural areas to innovate: it is called "**Challenges Compétences**", and is a simple but very effective Open Innovation challenge where students specialized in different fields (Virtual Reality, Electronics, Computer, Mechanics, Marketing, Biology) help traditional SME's to innovate. After visiting a SME for a half-day, a team of 4 students works for a few days to propose an innovation and draft a mock-up. This program served 44 companies and involved 200 students in 2014. The power of this program, is that it gives great opportunities to company to launch innovative projects they couldn't imagine themselves, with a very small effort at the beginning: more than half of the SME's that follow the program, decide to continue the project initiated by the students and several companies that participated to the first editions of the challenge have pursued their project to the end and launched their innovation on the market.

Conclusion

Efforts have already paid off since Laval has been recognized in 2009 as the most innovative city in France in the less than 100,000 inhabitants category, and distinguished in 2011 as a "Territory of tomorrow" by the Foundation "Territoires de demain" (www.territoires-of-tomorrow.org). Laval Mayenne Technopole is now the second largest technopole in France, though Laval is only the 36th city holding a Technopole.

The 3 steps strategy has brought promising results and objectives have been overtaken:

- The **Crystallize step** allowed the powerful development of an innovative thematic in Laval: Virtual Reality. As a VR key player in Laval, LMT task was to turn this political will into innovative companies cluster which would contribute to territory development.
- To do so, LMT initiated a **Cast step** first on local and national level and secondly on the international level. This broad casting has been successful thanks to a series of relevant and efficient actions and tools.
- To spread this innovative spirit on the whole Mayenne department, LMT recently started a **Circulation phase**.

Eventually, the 3Cs strategy seems to be a successful practical methodology to turn a RBIR into a promising territory. It remains to be tested elsewhere to make sure that it is fully applicable. Coming issues are for LMT to maintain and improve this iterative and fast growing process by for instance attracting more international companies.

KEY WORDS: Innovation, Entrepreneurship, Start-ups creation, Rural territory, Competitiveness, Growth, Strategy, Heritage, Patrimony.

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