



# The territorial competitive intelligence: a network concept

Yann Bertacchini, Henri Dou

► **To cite this version:**

Yann Bertacchini, Henri Dou. The territorial competitive intelligence: a network concept. 2003, 2. <sic\_00000436>

**HAL Id: sic\_00000436**

**[https://archivesic.ccsd.cnrs.fr/sic\\_00000436](https://archivesic.ccsd.cnrs.fr/sic_00000436)**

Submitted on 21 May 2003

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

**THE TERRITORIAL COMPETITIVE INTELLIGENCE: A NETWORK CONCEPT**

Yann Bertacchini\* & Henri Dou\*\*

Laboratoires LePont-Crrm

<http://lepont.univ-tln.fr>

<http://crrm.u-3mrs.fr>

\* **Université de Toulon et du Var**

dépt "Services et Réseaux de Communication"

200, Avenue Victor Sergent

F. 83700 Saint Raphael

Tel : +33 (0)4 94 19 66 02/03

Fax : +33 (0)4 94 19 66 09

[bertacchini@univ-tln.fr](mailto:bertacchini@univ-tln.fr)

\*\* **Université d'Aix-Marseille III**

Faculté des Sciences et Techniques de Saint-Jérôme

Laboratoire Crrm

Avenue Normandie-Niemen

13397 Marseille Cedex 20

France

Tél : (33) (0)4 91 28 86 77

Fax : (33) (0)4 91 28 87 12

[dou@crrm.u-3mrs.fr](mailto:dou@crrm.u-3mrs.fr)

**Keywords :** Intelligence, Local, Networking, Resources, System, Territorial.

Some terms used in the following article are typical of the French Administration lexical. We have tried to keep the most relevant meaning when translating into English these definitions.

**Summary :**

All local levels do not have the same capacity of access to development. If local authorities mean to geographically favor their own content, they must mobilize every expertise available while structuring their capital of resources and artificial intelligence in order to make their development policy succeed. Still, the exchanges and transfers of expertise available between local actors do not occur spontaneously. Indeed, on some territories, there is no hint of any interaction to be mentioned. To such an extent that a bill to promote intermunicipal links has been introduced to France Conference of Mayors and French Parliament.

If there are no exchanges between the so-called isolated actors, nor any capitalization of experiences, the local development process cannot rely on its two angles of development, meaning the endogenous and the exogenous ones. This harmonious matching is gained through mutual recognition of the members of the territorial network towards the information exchanged. However, the local history and the inadequacy of stability within the local system, both conflict sometimes with the gaining of such a reciprocal credit. From then on, how could we achieve cooperations and create a transfer of expertise between the local actors ? By gathering local actors of different cultures and experiences, indeed we believe that a territorial cell can originate local projects and favor a way to training adapted to local realities.

This article aims at:

- viewing the project to realise the quality and quantity of exchanges within the local environment (**Part A**).
- representing an application of the approach of the territorial intelligence as mentioned below by using the implementation of a network analysis (**Part B**).

## **A. New environment and concealed factors of local development .**

According to different points of view, territorial history and local custom may appear like either the reflection of one territory identity, or the components of its formal resources. This is to say the rules and procedures to formulate local habits for development purposes. Without identity nor formal resources, it's likely the territory will have to face new obstacles that would condemn its development and could become nearly insurmountable. We suggest the possibility that to be efficient, actions of local development should rely on two series of factors:

- 1) The territorial history, memory of custom and of local users, favors or penalizes the action of development undertaken by a local level.
- 2) A territory provided with a monitoring system would reinforce its capacity to mobilize local expertise available and to promote its transferability between local actors (Bertacchini et al, 2000)

A local level that would get involved in the development of its own territory and choose to elaborate a territorial monitoring system would therefore make the choice for a learning mode able to encourage exchanges between local actors and promote the transfer of their expertise. This research work aims at presenting the opportunity of a territorial monitoring system.

### **1. Territorial history, local custom memory.**

(Main idea.)

For developing, a territory can choose either one or the other, if not the two, of the following strategies.

\*Favor the setting up of companies : this will deal with an exogenous development mode.

Although this option is in favour with most of the elected representatives, it remains out of reach very often. Either the means to mobilize are too important, or the actors' local history unables them to subscribe to the project, or the number of companies, moving out or in, is probably constant.

\*Optimize the required conditions to allow local activities to generate more activity and more jobs.

This last option, endogenous development, is not so prestigious. Still, it may constitute the crucial step towards a lasting local development policy. The necessity to make these two development modes coexist is widely acknowledged and recommended. Still, their coordination in facts is rarely achieved. In these conditions, and whatever the chosen strategy of the local authority is, the lack of coordination (Godet & Pacini, 1998) among actors and their expertise do not allow to promote the potentials and local resources at their best.

#### **1.1. Relations deeply linked to a territorial history.**

Following the authors are referring to the third local level (Dionnet 1998). The area seen like an organization place in which local actors are striking up relationships deeply linked to a territorial history. The history of these relationships linked to the very past of actors is structuring their relationships. The content of their relationship history allows them or forbides them to invest in their future and conditions the development of organizing structures in favor of a development of cooperation relationships (Dawkins 1996).

We, therefore, will express the following hypothesis : “ the existence or non-existence of a relationship network between local actors could prove to be an obstacle or a catalyst of local development to creation and setting up of activities outside and inside the territory.” (Bertacchini et al, 2001) This relationship fabric would allow the mobilization of local expertises on one single purpose (Filbet & Tazi.1999) These inequalities of access would then lead to asymmetries in the mecanisms of evaluation of local history actors.

On the basis of this hypothesis, the areas which are involved and which are trying to improve would not all have the same capacity of access to development. The information transmitted and exchanged by their members would then appear like defective, distorted as for their content and their inability to constitute a relationship network (Bellavista & al., 1993). At first sight, local history doesn't allow them or forbides them to invest in their future. With the benefit of, when the lack of content within the exchanged information doesn't lead them or encourage them to take part in a relationship network (Storper, 1997). From then, the relationships aimed at but not shared on the same purpose of development cannot multiply durably and therefore compromise the spatial

valorization. This may be one of the reason for the lack of coordination between the two sides of local development, endogenous and exogenous, which local observers agree to designate like one of the decisive vectors in the accomplishment of a local development policy.

In facts, effective practice is rarely encountered : it may result of local history itself, memory of territorial customs that do not allow it. As a consequence, it cuts back both the content and the credit of the information exchanged by local actors (Glize & Gleizes, 1999) Still, in their defence, they must combine against a complex and always changing environment.

### 1.2. The local development based on shared practices.

According to us, the best way to learning at a local level consists in creating new relationships between already existing competences (Bertacchini & Dumas, 1999) and then transferring these competences between the actors themselves. But the ability of the territory to gather these competences depends on the network richness of cooperations existing or to be created. Even if most of the effective relationship inside the territory reveals to be informal (Wagensberg, 1999). Indeed, it would be more profitable to organize the meeting of local actors used to mobilize their competences independently. This result depends both on the way of acquisition of the required competences and the procedure underlying the local policy. Therefore, the choice between one or another mode of acquisition of competences can be made only after a local level survey.

This diagnosis will deal with the existence of interlinks, their proximity and the mobilizing competences of these actors. We shall present the main modes of acquisition of competences required for the implementation of a local development policy, the identity of the local structure depending on its organizational memory ( technical, scientific and administrative), the know-how and procedures allowing the local organization to act at the required period of time (Coburn, 1999)

### 1.3 Towards the transferability of skills.

The local learning can be achieved through the transfer of competences from one local structure to another (Thoenig, 1998). Still, Such a process is long and difficult to achieve. There is a risk not to be adopted. This learning can result from the juxtaposition of different experiences or experimentations, the combining of the two is privileged to promote the territory. The implementation of a monitoring system could help the appearance of a federating process, and the promotion of competences transfer (Roche, 1997).

Still, this requires a favorable attitude towards local development. This predisposal is not as frequent as the intending declarations : it avoids then every possibilities to learn and cooperate locally. While implementing a spatial valorization policy, new knowledges are developing in their turn which contribute to enrich the local development policy. These observations underline K.R.Popper's thesis : any learning result leading towards the emerging of new knowledge can't be anticipated (Popper, 1984)

The implementation of a monitoring system could promote the coordination, the meeting and the transfer of competences available locally.

## **2. A federating project of local customs: reinforcing the capacity to mobilize local skills.**

As mentioned before, every territory differs by its own organization and formal resources (Datar, 1997) The local identity may be the keystone of development at the local level.

### 2.1.The maintaining of an open and dynamic-balanced system

As we mentioned above, our approach is based on a cognitive analysis. The local organization relies on the interaction of direct or non-direct actors, and on their relationships regarding the environment. (Bertalanffy, 1963). The theories underline the multitude of aspects to observe, as well as the influence of environment on the local organization and on the other way on the attempt to achieve a dynamic balance of the system within its environment (Bertalanffy, 1972). Such a disposal develops to allow a structure to organize itself in order to keep its identity. (Bertalanffy, 1969)

For such a purpose, the local community needs a structure to lead its representatives and reach the purposes aimed at. When such skills do not exist, they can come through a learning process as seen before.

## 2.2. Typology of actions to be held by a monitoring system.

This richness indispensable to the territory needs to be protected at the same level that the richness of the organization (Bertacchini, 2000) It represents a nest of ideas and jobs. Once their protection is admitted, it allows an observation strategy towards the competitors, the markets and the environment. These practices lead to the economic intelligence approach, which, when applied to the territory, will be called *territorial intelligence*. (Raison, 1998)

The organizations faced with a strong international competition have to appropriate themselves with this process (Thompson, 2000). Local communities must do the same. Grants only are not sufficient enough to guarantee the success for a local development policy. They have to focus their policy on a monitoring system or an information system. This monitoring system may become a powerful learning tool leading to an endogenous development for local actors. Such a system would allow to understand and take every opportunities on the market of local development. And also to observe the competitive practices in order to discover and test the territorial capacity to answer through the gathering of local expertise. The territorial monitoring system can include two different types of actions :

- the systematic acquisition of information transmitted to the involved local actors.
- the protection of the territorial patrimony.

## 2.3 A powerful organizational learning tool.

The information system which we propose to elaborate relies on the listing of the existing exchanges between companies, educational and institutional bodies. The study of these exchanges will stand for a first step called the state of the links (Weissberg, 1999) This state will be realized through proximity sensors between the local actors. Our first mission will consist in producing information accessible to direct or non direct, inner or outer partners of local development (Edwinsson 1999).

. The second mission will consist in reinforcing the lisibility of the local policy achieved by local actors.

The monitoring system is meant for average towns (Bertacchini & al, 1999) It is also a powerful learning tool for the territorial setting up. Two main theoretical axes structure the monitoring device :

1. the evaluation of the permanent actors, private or not private, taking part in the given territory. It mentions the state of the patrimonies or relationship practices in the process. This step of evaluation can also be considered like a way to ease the organizational learning of local actors.
2. We shall also evaluate the commitment potential or will for commitment from local actors (Sfez, 1991) This measurement can represent the potential of endogenous development within the territory and materialize itself through what we call adjacent coefficients.

As measurements, we can list :

- Public and political administrations involved in the territorial activities.
- Specialized expert in a given field of activity.
- Financing organizations.
- Professional syndicates

These relationships can be represented with the help of software tools like (Dataview) and (Matrism) developed by CRRM Laboratory in Marseille. We shall represent now in this article an application of the approach of the territorial intelligence by using the implementation of a network analysis (Part B).

## **B. A way to show the territorial networking capabilities**

Should we deny differences and sociological, geographical, economic and cultural content inequalities presented by territories in relation to each others, to the point not to take it into account in order to define a territorial valorization policy ? (Major & Golay, 1998)

In these conditions, if these local districts want to appear attractive and competitive, they need to work out procedures allowing non naturally communicating ranges of actors to mobilize themselves for a common purpose (Baumard & Benvenuti, 1998)

But all over again, these procedures depend both on the capacity and will of local actors to proceed to exchanges of information as well as to grant credibility to the received information and to take part in local life.

### Steps to be followed :

On two distinct territories, designated by A and B for confidential reasons, we have conducted surveys, respectively 56 and 54, among three local actors categories : business companies, education and institutions. On the basis of the collected information, with the help of an analysis network and maps, we have presented the so-called relations as declared to be by these actors themselves and their involvement in local development actions.

## 1. The territorial valorization : an horizontal approach.

Whenever a territorial district is thinking about the next orientations of its own future, indeed it implies an act of development. In other words, it initiates a process of global competitiveness (Cavalcant, 1999) It is nothing less but reinforce the attractiveness capacity of the territory, endow it with specific arguments, make the potential partners know about them when they exist and finally, probably show a real will towards the associate partners related to the development program (Harvey & Chrisman, 1998)

. In our opinion, this process aims at making several categories of very different actors to adopt and share the same aim or approach. Planning to develop is also and mainly a state of mind : one foot in business, the other in duties of general interest (Bertacchini & Giron, 1999) Initiators of a development policy cannot be unaware of the double component of such an initiative : endogenous and exogenous, meaning companies and companies within their environment.

Declining a local development policy means to gather all kinds of businesses and companies in order to come along with these actors throughout their development and their mutations. The ideal development policy aims at setting various structures on the go so as to make the gathering of local actors easier and to set the required partnerships to the development of a region, district or any local entity (Coelho & Dou, 1999) In this perspective, the development plan becomes both an actor and an educational tool. Also, it proves to be a means to mingle with different cultures : business, education and institutions. Still, this movement relies on decompartmentalization, an horizontal approach based on three essential mainstays :

1.-As for the economic concern, the local decision makers have to face with companies needs: offering in an unique place, either physical or immaterial, both expertise and expected services as well as proven experiences, known or to be known. This offer consists of what we call the formal and organizational territory resources that allows the transfer of these expertise and experiences from one actor category to the other (Goldfinger, 1999)

2.- these resources can be assimilated to a current assets or current products portfolio owned by the territorial authorities (Jayet & Wins, 1996) The local level aims at protecting and enhancing them within the context of a local development policy.

3.- the interfacing section that favors local development by gathering energies through common projects between the environment ( universities, politics, research ) and the economic world.

Only men of good will, well-informed local actors with a rigorous diagnosis and an ambitious project, can realize such an horizontal approach. This stage is putting in relation three categories of local actors : companies, education authorities and institutions. Moreover, it favors proximity relations while creating development dynamics to create new jobs for youngsters (Reinhgold, 1993) Such a situation underlines one of the determining aspects of local development : the capacity owned by actors to cooperate, to validate the exchanged information and, finally, to exchange their expertise. In our opinion, the potential of development mainly relies on these capacities to exchange, that is what we are calling the transferability capacities (Lévy, 1997) This statement lead us to use the analysis network to try to represent these relations and the commitment of local actors.

Our intention consists in explaining why and how we managed to drive this diagnosis approach and what were the results gained through an analysis network.

2 Used analysis approach to characterize the state of local links through two observation spots.

2.1. Achieving results

This work aims at proposing a questionnaire processing method (annex 1) from the analysis network (Boutin & al., 1996)

**Starting point**

The starting point consists in a questionnaire which has been sent to areas A and B specially dedicated to the representatives of three institutional, educational and business groups. Each people of those polled is qualified by two identity features : age and gender. Thus it can be characterized by a code in five fields. For instance, D/inst/58/H/25 stands for information concerning a 58 years old man who belongs to the Institution group in the A area. This person ranks 25th in the survey. As the questionnaire has been sent to the same number of people in each of the two areas, the achieved results are homogeneous and can easily be compared.

**Structuring data**

The questionnaire consists of three groups of questions (B, C, D), each one relevant of a specific set of themes. Let's consider group C includes 5 questions :

- Question 1 includes a modes
- Question 2 includes b modes
- Question 3 includes c modes
- Question 4 includes d modes
- Question 5 includes e modes

Here is a possible way of presenting results after survey using a questionnaire :

Answer part C : m1@m2@m3@m4@m5.

**Dataview software processing.**

The whole of the questionnaire can be presented by a succession of lines, each one expressing modes declined by someone who has been polled.

This information can be processed under Dataview software (Rostaing, 1993) and transformed in a matrix called *Condorcet* matrix. This symmetrical square matrix stands for the number of modes shared by those who have been polled, two by two.

	<b>D inst 58 H 25</b>	<b>D edu 40 F 26</b>
<b>D inst 58 H 25</b>	<b>4</b>	<b>2</b>
<b>D edu 40 F 26</b>	<b>2</b>	<b>4</b>

The number 2 value means that these two actors have expressed two common answers in part C of the questionnaire they had to fill in.

**Matrisme software processing.**

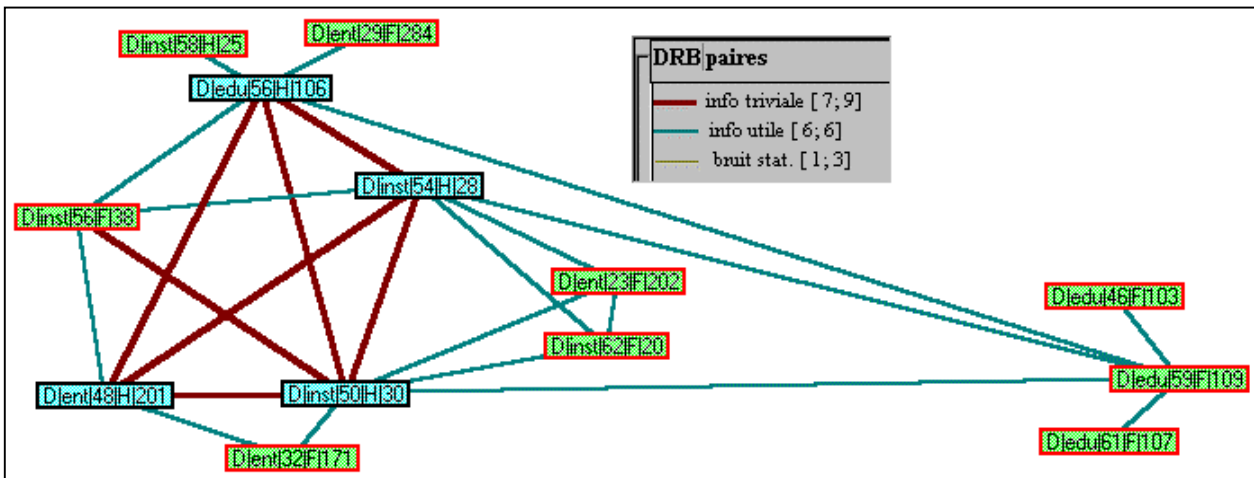
Processing under matrisme only transcripts this piece of matrix information with less distortion. Within the network, a peak represents the associate code to someone polled and one link between two peaks means that these two people at least have one common mode of answer.

The general network thus achieved when representing the links between every pair of peaks is inextricable since there is a good number of peaks connected to each other through tiny links ( making these apexes share one common answer ). If these fine links are being removed out of the network, the resulted graphs are more legible and ready for interpreting.

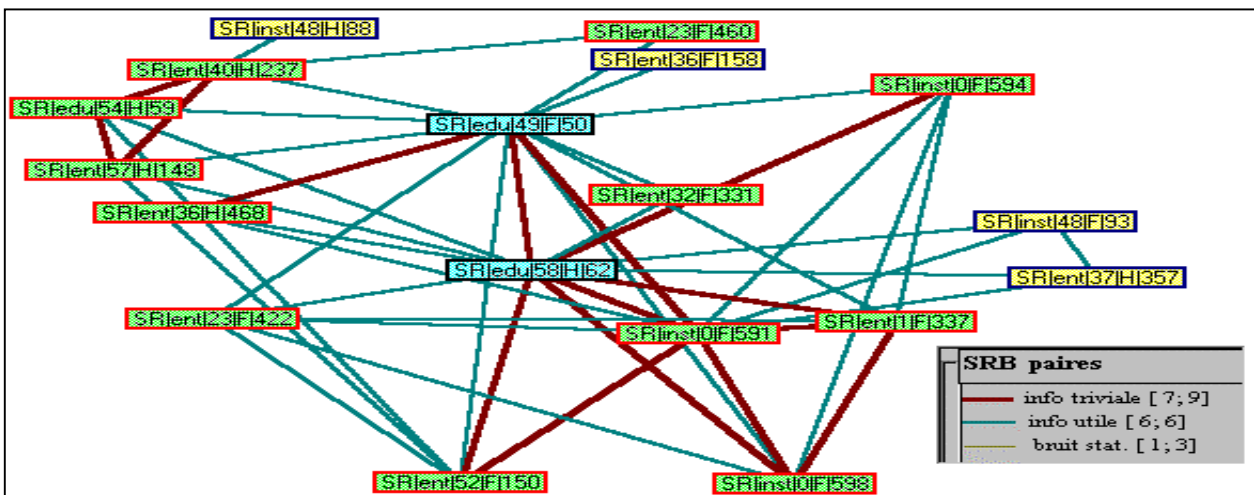
**Interpretation of results.**

Left B3 of the questionnaire " relations with the other local actors".

Aera A.



Aera.B.



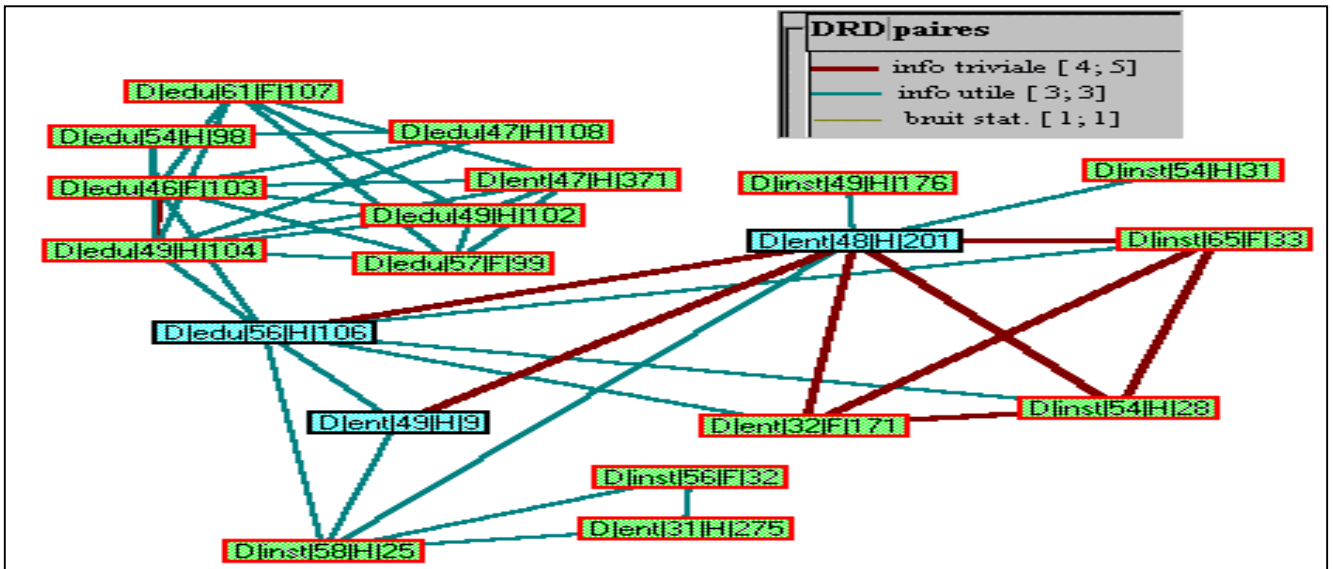
We shall compare all the answers collected from the people asked on the basis of the similarities expressed in their answer to part B of the questionnaire. As the number of people is the same in the two areas, the information that we get can be compared between the results of A and B. The two same filters have been applied in these two networks while keeping a link between two peaks when these two peaks stand for individuals with at least 4 common answers. The resulted network in area B is much more intricate than in area A. This means that actors of B have had closer answers to each others than actors of A. In area A, only 13 actors have less than 4 answers in common on part B of the questionnaire but 18 in area B. The distribution among the three sections in the two areas brings out an over-representation of companies which means, in other words, that companies express homogeneous and quite close answers.

	Education	Companies	Institution
Aera A	4	4	5
Aera B	3	10	5

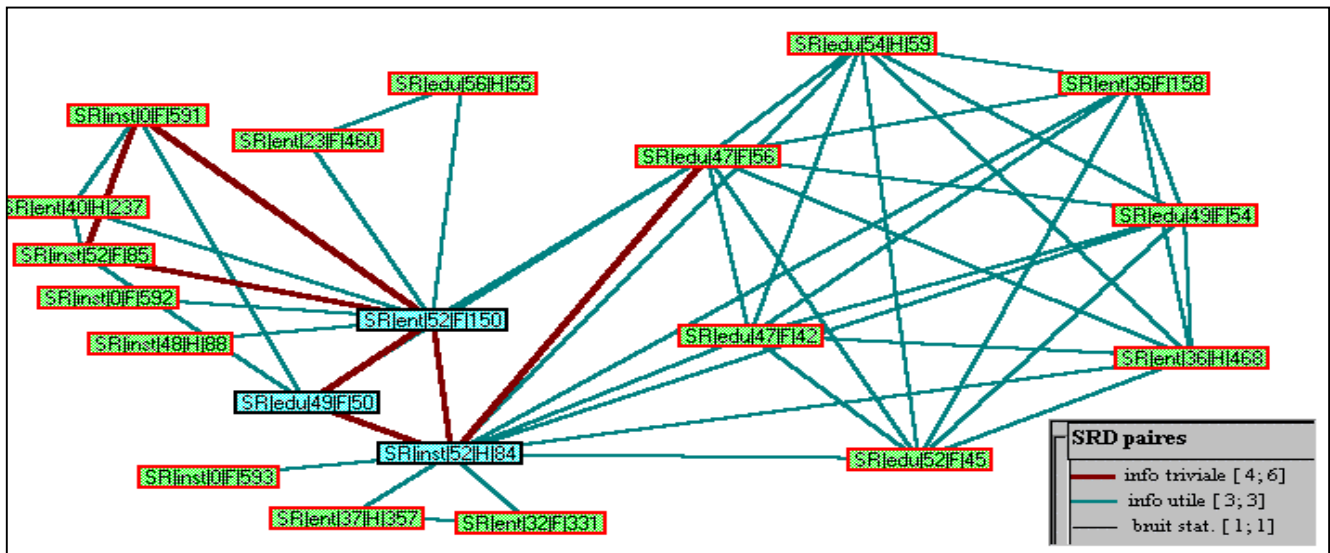


Left D9 of the questionnaire " Can this event gather rather ?

Area.A



Area B



On these networks, a link between two peaks means that both the actors share at least two answers. We can notice that on A, the actors of the educational world ( edu ) behave in a somewhat endogamic way. They tend to express quite similar answers as their position is shown on the top left of the network. They seem not to share a lot of answers with all the other actors (institution and companies). In area B, the answers coming from the educational section are much closer than those from the two others ( companies and institution ). Finally, we can notice that the number of peaks in each of these two networks as well as their distribution by categories are slightly the same between areas A and B, which was not the case previously. One finally observes that the

number of tops in each of these two networks and their ventilation by category is little different between the two areas A and B what was not previously the case.

	Education	Companies	Institutions
<b>Aera A</b>	<b>8</b>	<b>5</b>	<b>6</b>
<b>Aera B</b>	<b>7</b>	<b>7</b>	<b>6</b>

The approach we have implemented finds its justification in the following conclusion.

## Conclusion.

Today, European and French laws dealing with national and regional development are increasing : intercommunity projects, defining of plan agreements State-Region. What are the existing links between these technical and administrative laws? Without pretending to fully answer this fundamental subject, by the way we can give some criteria and strong features of those advancing socio-territorial entities. These entities could match politics and economics, spurred on by a willing councillor or elected representative (Vogelsang-Coombs & Miller, 1999).

These entities have organized themselves on one same experience and all share the same culture based on an historical continuation (Bartoli & Le Moigne, 1996) These entities are trying to get a network organization (Morin & Lemoigne, 1999)

. We believe our approach as exposed in this current article can contribute towards a better knowledge of the existing links between local actors and propose appropriate answers either by accentuating them when they exist already, or by improving them when they are still inadequate (Weiss, 1993)

## Bibliographic credentials.

- Bartoli J.A., Le Moigne J-L., *Organisation Intelligente et Système d'Information*, Economica, 1996.
- Baumard Ph., Benvenuti B., *Compétitivité et Systèmes d'information*, Paris, Editions Interéditions, 1998.
- Bellavista J., et alii., *Politica Científica y Tecnológica, Evaluacion del I+D en la Universita de Barcelona*, Universita de Barcelona, 1993.
- Bertacchini Y., «Information & Veille territoriale : représentation du complexe local et émergence d'un projet d'intelligence territoriale», Thèse de doctorat en Sciences de l'information et de la communication, Université d'Aix-Marseille III, Crrm, Marseille, 2000.
- Bertacchini Y., Dou H., Dumas Ph., Quoniam L., «L'appropriation territoriale: un phénomène informationnel.Vers la définition d'un dispositif d'information et de veille territoriale.», CNR'IUT, Roannes, juin 2001.
- Bertacchini Y., « TIC, Réseautique territoriale et médiations sociales », 8 ° Colloque Franco-Roumain, Medias, Nouvelles Technologies et redéfinition des Territoires de la Communication, Bucarest, 30 juin 4 juillet 2001.
- Bertacchini Y., Giron J., «Atelier d'E-Formation: Coopération Ville-IUT», Colloque *Les Territoires.Com*, MégaCité Picardie, Amiens, 24 novembre 2000.
- Bertacchini Y., Dumas Ph., Boutin E., «Vers une représentation de l'état des liens locaux par l'analyse réseau. », 5<sup>e</sup> Journées Internationales, JADT 2000, Ecole Polytechnique Fédérale de Lausanne, Lausanne, mars 2000.
- Bertacchini Y., Dumas Ph., « How to federate some local resources by developing new links? », *Proceedings of Third Triple Helix International Conference, The Endless Transition*, Rio de Janeiro, in *Sciences Studies*, USA, April 2000.
- Bertalanffy (Von) L., *General systems Theory-A critical review*, in J.Litterer, Organizations, Vol 2, New York, John Wiley, 1963.

# Université Politécnica de Catalunya

Barcelone

VSST 2001

- Bertalanffy (Von) L., *The Theory of open systems in Physics and Biology*, in F.Emery, *Systems Thinking*, Londres, Penguin Books, 1969.
- Bertalanffy (Von) L., *The history and Status of general systems Theory*, in G.Klir, *Trends in general systems Theory*, New York, John Wiley, Interscience, 1972.
- Besset.JP., « Le territoire, une nouvelle idée en France. », *Le Monde*, 1999.
- Boutin E., Dumas S., Rostaing H., Quoniam L., «Les réseaux comme outils d'analyse en bibliométrie. Un cas d'application : les réseaux d'auteurs. », *Les Cahiers de la Documentation Belge*, 1, 3-13, 1996.
- Cavalcanti M., « Sistema de Informação e Inteligencia-Polícia do Estado do Rio de Janeiro. Projeto Delegacia Legal. », *Semana do Conhecimento*, Rio de Janeiro, 18-22 octobre 1999.
- Coburn M., « Competitive Technical Intelligence: To Guide Design to, Analysis, and Action. », Oxford University Press, 1999.
- Coelho G.M., Dou H., « L'attractivité, un concept remplaçant la compétitivité dans un nouveau contexte. », *Colloque de l'île Rousse sur les Systèmes d'Information élaborée*, Octobre 1999.
- Cultiver le développement industriel*, Mission Antide, DATAR, 1997.
- Dataview: software of treatment bibliométrique developed by Hervé Rostaing in the setting of his thesis to the Crrm, 1993.
- Dawkins R., *Climbing Mount Improbable*, W. W. Norton & Co, 1996.
- Développement universitaire et Développement du territoire, L'impact du Plan U 2000.*, « Universités et Territoires : des relations nouvelles. », *Etude pour la DATAR*, Paris, la Documentation Française, 2<sup>e</sup> Trimestre 1998.
- Dionnet S., « Elaboration d'outils dans l'apprentissage de contenus environnementaux. », *Apprentissage, des principes naturels aux méthodes artificielles*, p 99, Edition Hermes, Paris, 1998.
- Dou H., « L'attractivité de zone, quelques réflexions comportements et indicateurs. », *I. S. D. M* n°3, 1998.
- Edwinsson. L., « Capital Intellectual: Sue Importancia. », *Semana do Conhecimento*, Rio de Janeiro, 18-22 octobre 1999.
- Filbet M., Tazi, « Le système d'information en "réseau" : une approche par l'organisation et par les nouvelles technologies de l'information. », *Congrès de Génie Industriel*, Montréal, mai 1999.
- Glize.P., Gleizes.MP., Camps.V., «Une théorie de l'apprentissage fondée sur l'auto-organisation par coopération. », *Apprentissage, des principes naturels aux méthodes artificielles*, p 331, Edition Hermes, Paris, 1998.
- Godet M., Pacini V., « De l'activité à l'emploi par l'insertion. », *Rapport au Ministre du Travail et des Affaires Sociales, Cahier du LIPS n°6*, 2e édition, Paris, CNAM, 1998.
- Goldfinger. ch., « The intangible economy and its challenges. », *Semana do Conhecimento*, Rio de Janeiro, 18-22 octobre 1999.
- Harvey F., Chrisman. N., « Boundary objects and the social construction of GIS technology. », *Environment and Planning A*, volume 30 pp 1683-1694, 1998.
- Jayet H., Duschène G., et Sachter.H., *Structures économiques et barrières à l'entrée*, Rapport au Commissariat Général au Plan, CESURE, Lille I, 1996.
- Lévy P., *L'intelligence collective ; Pour une anthropologie du cyberspace*, La découverte/Poche, p10, Essais,1997.
- Matrism: software of treatment infographique developed by Eric Boutin in the setting of his thesis to the Crrm and LePont, 1996.
- Major W., Golay F., « Territoire: de l'émergence du sens à l'identité territoriale. », 15<sup>ème</sup> Congrès international de cybernétique, Namur, 1998.
- Morin E., Lemoigne J-L., *L'intelligence de la complexité*, Paris, L'Harmattan, 208 p, 1999.
- Nevers B., Versace R., « Knowledge Acquisition in Long Term Memory: Activation and Construction of Traces. », *Apprentissage, des principes naturels aux méthodes artificielles*, p 125, Edition Hermes, Paris, 1998.
- Popper K.R., *La logique de la découverte scientifique*, Paris, Payot,1984.
- Raison D., « Intelligence territoriale : Le cas du Poitou-Charentes. », *NET 98 : le salon de l'Internet et de l'Intranet* : Paris, 9-11 juin 1998.
- Rapport du groupe intelligence économique et Stratégie des entreprises.*, Commissariat Général au Plan, Paris, La Documentation Française, 1994.
- Reich R., *The work of Nations ; Preparing ourselves for the 21<sup>st</sup> Century Capitalism*, Random House, New York, 1991.
- Reinhgold H., *The Virtual Community*, Addison-Wesley, New York, 1993.
- Rivelli C., *Intelligence stratégique sur Internet*, Paris, Dunod, 1998.
- Roche S., *Enjeux de l'appropriation sociale des technologies de l'information géographique pour l'aménagement territorial*, Etudes de cas en France et au Québec, Thèse de doctorat Géographie n° 395. Université d'Angers, 1997.
- Sfez L. et al, «Territoire et communication.», *Quaderni*, n°13, Paris, CREDAP , 01/03/1991.

# Université Politècnica de Catalunya

Barcelone

VSST 2001

Storper M., *The regional world. Territorial development in a global economy*, New York, Guilford, 1997.

Thoenig J-Cl., «Un agenda commun à consommer avec précaution.Regard international sur les systèmes infranationaux. » in, *Politiques locales et transformations de l'action publique en Europe*, R.Balme, A. Faure et A.Mabileau, dir., Grenoble, CERAT, 1998.

Thompson S H Teo., « Using the Internet for Competitive Intelligence in Singapore. », *Competitive Intelligence Review*, Volume 11, n° 2, Second Quarter 2000.

Vogelsang-CoombsV., Miller M., « Developing the governance capacity of local elected officials. », *Public Administration Review*, May/June 1999.

Wagensberg. J., « Complexité contre incertitude. », *La Recherche* n°326 p 111, décembre 1999.

Weiss G., « Learning To Coordinate Actions In Multi-agent Systems », *Proceedings of International tea Joined Conference one Artificial Intelligence*, 1993.

Weissberg D., *Monde de l'informatique et Informatique-Monde*, Presses Universitaires du Mirail, Toulouse, Collection Villes et Territoires 12,1999.