

LA COMPAGNIE GENERALE DES EAUX :

The dynamics of corporate networking.

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This case was made possible through the generous co-operation of La Compagnie Générale des Eaux. The case is intended as a basis for class discussion rather than to illustrate either effective or ineffective handling of management situations.

La Compagnie Générale des Eaux, as an in-circumventive political partner in its relations with local municipalities and a social heavyweight with more than 200 000 employees, encapsulates the spirit of all the economic revolutions in French society over the past 150 years. Due to the different trades it practices in terms of services to the local communities, it is the spearhead of the major transformations that have marked the rise of industrial capitalism.

This case study retraces the firm's history and focuses especially on certain aspects of the group's operations between 1980 and 1996. During this period, La Générale des Eaux set about a bold diversification policy outside of its traditional activity of water distribution. This diversification strategy was centred on the client and on demand. It relied on the setting up of ad hoc subsidiaries, where skills were fostered internally via team projects, or were more frequently outsourced at the rate of one corporate acquisition per day. This implied running the risk of engaging the company in a myriad of trades and professions which might be badly controlled or turn out to be unprofitable.

In the wake of the vicissitudes of diversification, there followed a period of disengagement from 1996-1998 in order to improve the company's financial standing. Firmly believing that the period of expansion in the 80's was over and that the company was in an environment where supply was in excess in several sectors, the group proceeded to strip some of its assets: La Compagnie Générale des Eaux withdraw completely from mass catering, health, real estate, parking lot management, public works and finally from the energy sector. It was the most significant business reengineering project ever undertaken by a group of this size in France : 18€ billion worth of assets were sold. Increased shareholdings brought in 7,5€ billion.

Two years after the arrival of its much publicised general manager Jean Marie Messier, the group was re-baptised **Vivendi** in 1998. From then on, the firm was to concentrate on investing in telecommunications, multimedia and Internet. The year 2000 saw the merger with the Canadian audiovisual group Seagram and consequently produced the second largest Communications group in the world Vivendi Universal. The group developed by exploiting the synergies between telecommunications tools (satellite, Internet, cable, telephone) and editorial content (sport, cinema, education, games and health) in order to satisfy the end user. July 20, 2000 witnessed the division of the group's accounting practices, thus enabling it to be quoted separately on the New York and Paris stock exchanges for their communications (Vivendi Communications) and environment sectors (Vivendi Environment) which covered all their environmental activities : Vivendi Water, Onyx (waste disposal), Dalkia (energy) and Connex (transport). Under mounting pressure from the crash of the stock markets and the Internet implosion, Jean Marie Messier tendered his resignation in 2002. His departure triggered a new focusing of the group on telephone applications (Cegetel), music (Universal music) and pay TV (Canal+). Vivendi Universal completely disengaged itself from its historical environmental and town planning trades by selling its shares to **Vivendi Environment**.

A new group **Veolia Environment** was created in 2002 with an aim to taking over the historical trades of the first Compagnie Générale des Eaux i.e. water management, waste disposal, energy management and passenger transport management. Made up of delocalised, independent business units that were 'close to their customers', Veolia Environment, world leader in environmental services, is present on the five continents. Towards the end of 2002, Veolia environment employed 300 000 people and had total sales in excess of 30€ billion, half of which were made outside of France.

PART 1

THE GLOBAL DYNAMICS OF NETWORKING

THE CREATION OF THE COMPANY

As stipulated in La Compagnie Générale des Eaux's founding articles of association in 1853, the company's mission is to satisfy the basic needs of towns in terms of potable water treatment and distribution. It therefore benefits from the support of bankers and engineers that make up the principal core of founders/administrators. Most of them have already taken on similar responsibilities in the railway management field.

There are indeed a great number of similarities between managing a railway network and a hydraulic network. Both activities centre around directing water or passengers from one point to another within a physical network in the best possible conditions as regards turn-around time, cost-effectiveness and safety. This is the reason why the railway model strongly influenced the original organisation of La Compagnie Générale des Eaux in terms of human resources and methods : a centralized and hierarchical organisation orchestrated by an impressive number of procedures.

La Compagnie Générale des Eaux's founders also tried to reproduce the development strategy which heralded in the French railway network. In order to reduce operational costs and turn-around times, a network is absolutely necessary.

The network of sites must cover as big a territory as possible. In order to achieve this, the company sets up branches in strategic sites where it is relatively easy to extend and control the network. This positioning is determined by taking two basic criteria into consideration ; a geographical criterion and a demographic criterion. At ground level, it is necessary to be able to access sites that are close to natural aquifers so as to reduce transport and stocking costs. From a demographic standpoint, it is more suitable to locate near large, densely populated conurbations so as to increase the size of operation and thus benefit from economies of scales.

HORIZONTAL INTEGRATION

La Compagnie Générale des Eaux's administrators first attempted to take up position near to the six biggest fluvial ports and six biggest French towns.

The first contract for water distribution was signed in conjunction with the town of Lyon in 1853. In 1854, a second contract was envisaged with the town of Nantes. Consequently, La Compagnie Générale des Eaux set up distribution operations in both these towns, as well as establishing a water purification network in Lyon.

During this period, La Compagnie Générale des Eaux also took advantage of privatisation opportunities in the public sector in order to extend its activities. Thus on July 11, 1860, the town of Paris negotiated a contract with La Compagnie Générale des Eaux whereby the latter agreed to operate the network, while the municipal authorities reserved the right to build and improve the necessary infrastructure for abducting the water.

In 1867, La Compagnie Générale des Eaux continued to extend its sphere of influence to the communities located in the Seine department, which the Paris authorities had hitherto declined to operate. In 1869, the town of Paris handed over to La Compagnie Générale des Eaux the installations of the 25 communities located on the outskirts of the city.

The private contractor continued its expansion around the capital by taking over local branches and by dealing with communities where operations had not yet been initiated. This trading strategy enabled the company to share out the fixed costs involved in operating the infrastructures used in water abduction.

Moreover, by increasing their cover of the national territory, administrators from La Compagnie Générale des Eaux were able to familiarise themselves a lot better with the technical peculiarities of each region in France.

The knowledge they acquired enabled the company to offer to local communities a link-up to the national grid at a very cheap cost. This quest for new markets allowed the company to diversify the financial risks entailed by offsetting any shortfalls in the more difficult areas with profits made in areas where it was much easier to operate.

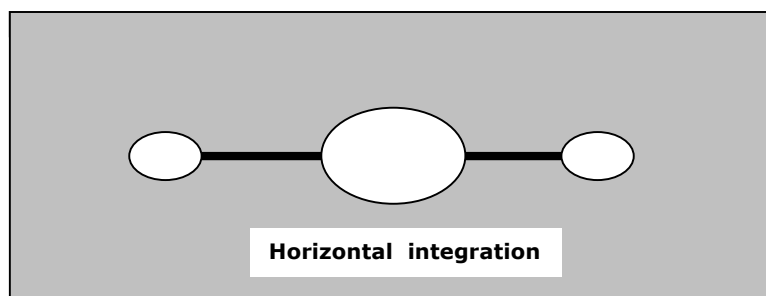
Due to the substantial cost involved in such investments, La Compagnie Générale des Eaux's administrators were obliged to resort to the financial markets in order to raise fresh capital. The successive increases in capital attest these transformations. The company's articles of association followed the same pattern and in April 1873 during the annual shareholders meeting, the decision was taken to transform La Compagnie Générale des Eaux into a public company, in conformity with the law of July 24 1867 concerning joint stock companies.

The transformation of the company continued in 1881 when La Compagnie Générale des Eaux's general manager proceeded to issue debentures, with a view to supporting the effort of investment.

The company enjoyed constant growth right up to 1914, before being hampered by the advent of the first world war. During the period 1864-1914, La Compagnie Générale des Eaux positioned itself on new markets, while, at the same time, renewing contracts that had recently expired.

After the end of the first world war (1918), this expansionist policy was stimulated by the introduction of new operations in the big cities. In order to speed up the process of post-war reconstruction, shares were taken out in local and regional SMEs, to whom La Compagnie Générale des Eaux offered technical backup and financial support.

These acquisitions were in line with the logic of horizontal integration.



The network of business outlets developed by integrating competing firms located in the vicinity of the communities. This development was entirely logical in as much as La Compagnie Générale des Eaux was seeking to attract as many customers as possible. In order to appease the preoccupations of the local authorities, La Compagnie Générale des Eaux's administrators offered them a "service of proximity" working from companies of a human size. The management of these services was controlled from headquarters, whose objective was to establish contracts and ensure customer follow-up.

In this way, most major decisions were centralized at the headquarters in Paris. The latter adopted the role of a central office broken down into different functional areas ; the Board of Governors, the Commissions office, the Archives department, the office for litigations and a general secretariat.

These functional branches took over the problems of human resources management, legal and fiscal problems when contracts were drawn up and cash flow problems for financing the infrastructures. At the sales level, the follow-up of the contracts was carried out by regional management ; operations in the provinces, in the Parisian suburbs etc. This breakdown according to function and geographical zones is characteristic of a horizontally integrated, single-activity company. It corresponds perfectly to the model of the big network company reminiscent of the French Railways or the Electricity Board. Compared to other public utilities

companies enjoying a quasi monopoly on the marketplace, La Compagnie Générale des Eaux differs slightly in as much as it took the precaution of negotiating with the local authorities before gaining their trust.

VERTICAL INTEGRATION

From the 1950's onwards, the search for new profit sources intensified due to the saturation of the French water market. Even if the control of the potable water distribution network was still the main factor of growth, market share began to stagnate at around 40% of all water distribution contracts in France. Development was achieved at the detriment of state owned concerns by replacing the local management of the water network.

From 1970 onwards, La Compagnie Générale des Eaux supplied on average an extra 300 000 inhabitants a year (15 million inhabitants in 1970, 24 million in 1975). Turnover followed the same pattern progressing from 5 billion francs (€ 0,76 billion) in 1975 to 15 billion (€2,28 billion) in 1979. The parent company controlled the majority of the water distribution operations via thirty or so subsidiary companies. By dint of financial stakeholdings, the company consolidated between 50-60% of the trading account.

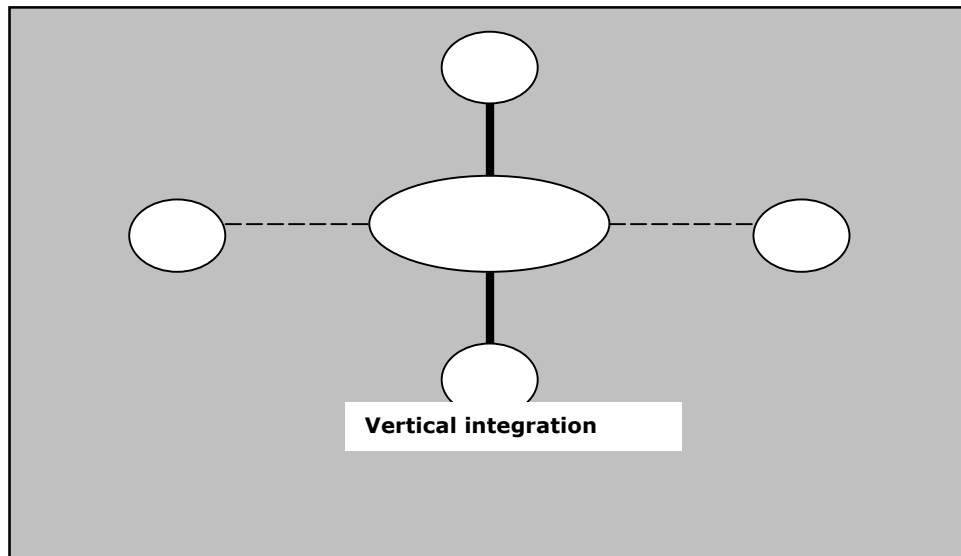
In 1975, the year of the first publication of the group's consolidated accounts and the arrival of its new president, La Compagnie Générale des Eaux had integrated 96 companies into the network. Its main activity, that accounted for 75% of its revenue, was related to water distribution services. Due to the saturation of the home market, however, the general management team at La Compagnie Générale des Eaux was faced with the necessity to tap new sources of income in order to sustain corporate growth.

La Compagnie Générale des Eaux's administrators began to search for complementary industrial services linked to water distribution, in other words, spin-offs from contracts signed with local authorities. This strategy enabled some branches of La Compagnie Générale des Eaux to ensure sewage treatment for certain municipalities such as Boulogne, Rennes or Frontignan. Other subsidiaries dealt with renting out and maintaining water metres in apartment blocks in Paris for example. Other diversified services included the maintenance of water-pipe connexions. These complementary operations helped to increase revenue without abandoning the company's technical area of expertise and without changing sectors.

By establishing contacts with housing syndicates and representatives from the local communities, these companies became genuine "local partners", and were in a position to offer these communities a broad spectrum of turn-key solutions such as water purification, potable water distribution,

technical maintenance, metre rental, new pipe construction and factory management.

In the coming years, these industrial synergies were to be reinforced by the acquisition of spin-offs from the water industry, namely hydraulic heating, water-pipe construction, hydraulic factory construction. This strategy was implemented by inviting the suppliers to take out a stake in the company.



In fact, water distribution runs parallel to urban development ; the more the building trade tends to develop, the more opportunities La Compagnie Générale des Eaux has to close new contracts with new customers.

The public works or real estate development are up-market compared to La Compagnie Générale des Eaux's normal activities. In a more general sense, they are up-market compared to other convenience services such as electricity, telephone, gas. In this respect, activities in conjunction with the public works can be seen as complementary to water installation ; but it is also vital when it comes to building purification centres and therefore minority shareholdings in the public works sector are totally justified.

In 1978, La Compagnie Générale des Eaux bought into Titania's capital with 33% of its shares.

It also placed a stake in Obéron, a company specialising in civil engineering and public works. In a more direct manner, it bought out the company Bottom, specialising in the design, manufacture and installation of pipes, as well as Flitox, specialising in the laying of water-pipes.

The energy sector could also be seen as constituting a growth area and a natural spin-off from the water industry. The very nature of the trade

makes it necessary for La Compagnie Générale des Eaux to produce substitution energy : hydraulic energy, which is able to produce electricity to heat houses. This is why La Compagnie Générale des Eaux reinforced its positions in the heating and energy sectors by teaming up with the company Urbaine de Chauffage (URB-C).

Apart from the building and heating sectors, La Compagnie Générale des Eaux has also directed its efforts towards the waste disposal market which is also a complementary trade to the water industry in so far as the technical problems of water purification are linked to the technical problems of waste treatment and recycling. This is why La Compagnie Générale des Eaux decided to take out shares in several companies specialising in the purification process.

It took control of the company OPUR at the end of the 1970's. In fact, OPUR had all the necessary skills to design, construct and operate water production plants, or refining stations for used water of urban, industrial or agro-food origin.

The integration within La Compagnie Générale des Eaux of these new trades in the cleanliness and heating sectors together with new partners such as OPUR and URB-C completely transformed the physiognomy of the company.

While La Compagnie Générale des Eaux was developing within the framework of a stable and predictable environment in the water sector, it was confronted with cyclical and competing sectors such as the public works or hi-tech sectors like heating where it is difficult to apply the same management rules. This is the main reason why headquarters only retained certain operational prerogatives in the water area, but decentralised the tasks and responsibilities in other sectors.

DIVERSIFICATION

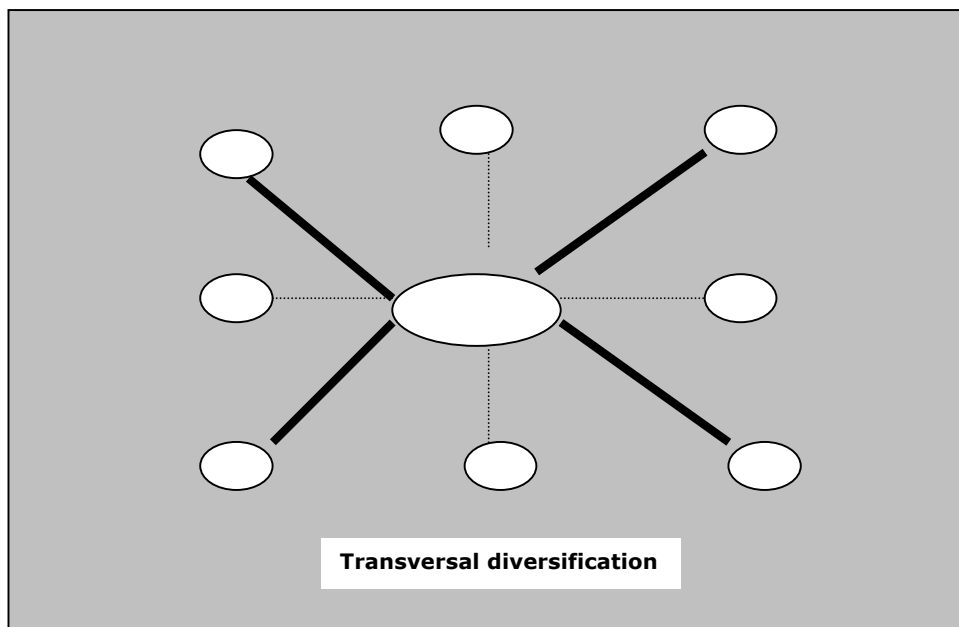
After having implemented the industrial synergies linked to the water industry, La Compagnie Générale des Eaux also benefited from customer synergy at the beginning of the 1980's further to changes in the regulation of public markets, which aimed at increasing the prerogatives of the different communities and municipalities.

With the bill of decentralisation which was adopted by the French parliament in 1982, communities and boroughs were authorized to decide on their own future plans in terms of public utilities (parking lots, swimming pools, sports fields, mass catering, public works etc.). Local governors took advantage of this new ruling to commission local public services (catering, local transport, public works, health, advertising, etc.) to contractors or private entrepreneurs, such as La Compagnie Générale

des Eaux . Local markets were opened to competition in all these areas and were offered new prospects of growth.

Eager to respond to these new commercial expectations, the president decided to proceed to diversify La Compagnie Générale des Eaux in 1975.

The basic concept concentrated on developing customer synergies in line with the territorial and industrial synergies that had been established during La Compagnie Générale des Eaux's first two phases of external growth. Starting from the business units that had been created or recently set up, the idea was to spread the offer of services to new markets (public works, health, communication, parking lots), by emphasizing the Group's broad-based vocation.



During the 1980s La Compagnie Générale des Eaux's external growth accelerated at the pace of one corporate buy-out per day.

The choice of acquisitions or financial investment stemmed from the desire to reach a critical size in all collectivity-related sectors, first of all at national level, then at a global level. This corporate growth c. 15% a year bolstered total sales from 17,4 billion (€ 2,65 billion) in 1981 to 116,8 billion francs (€ 0,76 billion) 10 years later.

From an organisational standpoint, the major difficulty consisted in absorbing this rapid growth. By multiplying the number of subsidiaries and by diversifying the profit sources, the Group ran the risk of increasing its

sources of contradiction and conflict amongst the redundant business units in certain professions or territories.

La Compagnie Générale des Eaux's physiognomy started to resemble a jigsaw puzzle, in which a large number of the pieces no longer fit. The overlapping of the business units emanated from the reluctance of general management to streamline their operations. By proceeding in this way the management team endeavoured to preserve the local identity of business units which were related to the history of any one collectivity. The headquarters could not just content itself to run everything in a "top to bottom" manner in so far as the business units carried out very different trades in niche markets which were too varied to be systematically grouped together.

Providing local services depends on the constraints imposed by local adaptation and not on the demands of global standardisation. Consequently, headquarters avoided becoming involved in the everyday management of the companies it bought out and preferred to maintain the management teams already in place. While maintaining autonomy it sought, nevertheless, to demonstrate the technological or industrial synergies in different mediation committees : activity poles or economic interest groups. In the light of these transformations, La Compagnie Générale des Eaux was run from a complementary or competing network of subsidiary companies.

A MULTI-SERVICE GROUP

After having diversified in the 1980s, La Compagnie Générale des Eaux concentrated on the vocation of its own multi-service group, which would satisfy the needs of the local communities including those that required a global response by combining specific skills.

La Compagnie Générale des Eaux's business units were considered as adjustable entities, sharing a common know-how : servicing local communities, managing network infrastructures, signing specific contracts with back-dated return in investment, managing subscriber files and key-account customers required certain skills in invoicing and factoring.

These transversal skills were required in each trade carried out by the business units, including when they were faced with an industrial customer base (joint-generated heating for companies) or a private customer base (mobile telephones).

In order to encourage this type of cooperation, general management carried out a policy which aimed, on one hand, at unifying the subsidiaries and, on the other hand, at bringing the different players together in the framework of a common cause. The subsidiaries were therefore broken down into eight industrial groups according to their branch of activity :

water, energy, cleanliness, the building trade, town planning and real estate, transport and parking, health, communication.

In each subgroup, companies were attached to top-ranking subsidiaries, who, in turn, were attached to head-office. For example, the energy group was divided into two sub-groups : thermal and electrical energy. In each sub-group, a top-ranking subsidiary controlled several hundred subsidiaries and produced consolidated accounts several times a year. The former had the peculiarity of operating in the same field or with the same customers.

One of the senior executives explained the logic of this organisational strategy :

" The field of responsibility between the subsidiaries is not broken down according to a functional, geographical, financial or industrial pattern. The breakdown of activities is carried out by means of a network logic, whose functional, geographical, financial or industrial features form the linkages. It is impossible to transfer all these different dimensions onto the same organisation chart without running the risk of diminishing the complexity and dynamics of the network. And it is this very complexity, this principle of complementarity, these overlappings that give richness and variety to our Group. Excessive rules impoverish variety. It is important to preserve a degree of variety."

Subsidiaries therefore retain a considerable space for manoeuvre and have no assigned objectives ; by seeking their own profit, they will contribute to improving the community's profit.

DECENTRALIZED MANAGEMENT

General management advocated a decentralized, project-based management style when dealing with inter-subsidiary communication problems. There are two reasons for this :

" Standardising procedures and task-assignment rules are necessary from the moment that it provides added value. The problem is that we are operating in professions where there aren't any real standards. Our organisation has been based on this specific feature. Take water, for instance, one type of water can vary tremendously from another; and no watershed resembles another in its outline.

Generally speaking, formalisation provides a greater coherence within the company, with a greater visibility of action and a common language between the different members; on the other hand it doesn't really mirror the real world".

The second reason why decentralisation is preferred stems from the contradictory nature of the objectives fixed by the business units and the Group, this factor was often evoked by the different network members :

" The global and local objectives which enable us to define the notion of general interest are so different that it is impossible to compare them. In the water distribution field, for instance, the primary objective consists of supplying quality water which conforms to potability norms; the second objective is to ensure that water can be supplied in sufficient quantities whatever the situation; the third objective is to make money.

Due to the quality criterion, the company increases its infrastructure costs. Due to the second objective, it doubles the number of machines on each site in anticipation of the risk of dysfunction or breakdown of the water abduction network. This preventive measure increases operating costs, whereas it should normally decrease them according to the principle of profitability.

Nobody ever establishes any precise ranking order for these objectives, since it is impossible to compare them. For instance it is not easy to ascertain what would be more harmful between a drop in profitability and a breakdown on the network. This is why we don't fix broad-based objectives and let each subsidiary decide what their objectives should be by granting them a free rein".

From a collective point of view, the splintering of these decision-making centres enhances the difficulty of cashing in on local experience and expertise:

" The lack of harmonisation can have some adverse effects. At group level, between companies, even within the same company, one wonders how it is feasible to transmit knowledge when there are no precise procedures. Technical know-how is easily transferable since it is standardized. However, as soon as knowledge is customized, like knowledge of a territory or an organisation, it is increasingly difficult to transmit information.

Without any formal rules and procedures, network members are compelled to repeat several times the same tasks and functions that have been memorized by a member who has left the organisation. On the other hand, a lot of time is saved since nobody is obliged to leave any written trace. In the accounting area for instance, there are no specific rules dictating how expenses should be entered.

Experience shows that members stick closely to past customs and habits and thereby refuse to innovate. Without specific laws or directives, customs seem to hold their own".

In this decentralized universe, where business units validate their own rules on the spot, one can question the role of Headquarters. By not assuming any operational responsibility, the latter frees the business units of certain administrative tasks: human resources, communication, cash-flow management, information systems.

It also directs the important strategic decisions via buy-outs and asset stripping. Lastly, it ensures control of the business units' results when the consolidated accounts are being drawn up.

However, as one of the senior executives pointed out, its role is bound to be restricted in a network-type organisation:

“ The sharing out of responsibilities between headquarters and the subsidiaries is based on the principle of subsidiarity, in other words on the principle of added value. Taken to the extreme, headquarters is not useful in any area, just as the brain is not useful as far as regulating the pulse and filling the lungs is concerned. You don't need to think in order to breathe. Relations between headquarters and subsidiaries could be compared to the role of the nervous system when breathing. There are smooth muscles and other types. Others are sufficiently autonomous so as not to have to depend on the central system.

In a similar way, intervention on the part of headquarters can only be justified if it provides some kind of added value. According to the state of the subsidiary, headquarters considers how it can enrich the subsidiary by its contacts or expertise. There are no general rules or systematic procedures. It is hard to imagine a general management rule, which encapsulates all the different situations encountered at ground level. It is therefore preferable that subsidiaries validate their own set of rules on the spot”.

In order to implement this work ethic, the Chairman is supported by a group of general managers who have several missions either at the Headquarters or in one of the activity groups. The general managers are the real driving force in channelling information to the top level.

At the heart of this information centre, the Chairman governs without the aid of an executive or supervisory committee. He can only monitor the execution of operational decisions during the bilateral meetings with the group of general managers. In this way, he has a global vision of the organisation, which legitimises his authority at the head of the Board. From this privileged vantage point, he is able to steer the network of 2600 subsidiaries via personal contacts with a few dozen people.

The originality of this type of governance has led outside observers to compare La Compagnie Générale des Eaux to a biological organisation due to the way that responsibility is broken down into molecular-type parts. Human resources management programs, designed to foster a spirit of

initiative and solidarity between network members, are, however, instigated from headquarters.

AN ENTREPRENEURIAL CULTURE

In order to foster a spirit of initiative in terms of the collective interest, newcomers are sensitised to the necessity of working in a network. For each member, the first task is to discover one's scope of responsibility and the criteria on which the others make their judgments.

Working in a network implies adjusting one's position in relation to those members already present. The mode of integration of new members allows the selection of those business units that have been earmarked to operate in an autonomous way; in other words those who are capable of taking initiatives with an entrepreneurial spirit. These are vital qualities in establishing contacts and creating their own network of relations.

Over and above the necessary ability to adapt, members have a moral obligation to work together. In exchange for a large freedom of action and a share in the profits, they agree to conform to the network system and enable the other members to fully benefit from their dynamism. From an organisational standpoint, La Compagnie Générale des Eaux thereby benefits from the flexibility of the smaller business units which are supervised by extremely innovative entrepreneurs.

In exchange, the business units benefit from the financial clout of an internationally renowned Group, that has a vast network of relations at its disposal, including relations at the highest government level. According to one of these entrepreneurs, this recruitment policy attracts the best talent:

" Despite having a broad-based education, they have to be able to communicate with entrepreneurs who have very specialized skills. They have to be very conversant in financial transactions. Finally, they have to adopt the appropriate tone and attitude to manage their entrepreneurs: if you are too rigid you will scare off the best ones, if you are too slack you let them loose on an adventure trail".

After having seduced the entrepreneurs, there is then the problem of getting them to work together in spite of their individualistic nature.

In order to bond these individualists into a collective whole, headquarters set up the Apollo Academy of Management¹ in 1933. The training it

¹ Apollo is the fictitious name given to La Compagnie Générale des Eaux's Management Training Centre. It is an open-access centre designed for exchanging experiences and developing skills. It caters for senior executives and managers from the Group's satellite companies who are eager to improve their professional skills by working on comparative practices and expertise. It opens a window onto the Group by providing a more thorough knowledge of its components and professions, which in turn are the source of future professional mobility and commercial synergy.

provides focuses on transversal questions such as knowing the Group and its professions, project management, financial analysis and project funding, establishing partnerships with local communities or total quality control.

Between April 1993 and April 1995, Apollo received more than 1000 participants in 70 training sessions. In proposing these sessions Apollo focused on two main ideas. Firstly, the diversity of the network constitutes its intrinsic richness and secondly, coherent development strategies account for the multiplication of the different professions. In order to enhance the value of difference and individuality by joining them together, the Training Centre recruited participants from all professional spheres and at all levels of responsibility.

Besides these training programs, other tools such as the executives' yearbook or the monthly Group news bulletin reinforce member cohesion.

PART 2

THE LOCAL DYNAMICS OF NETWORKING

THE AZUR PROJECT

Under joint pressure from the increase in population size and a context of strong regulation leading to the prohibition of waste disposal zones, the local Horseville councillors decided to contract a private firm whose mission was to design and run a modern plant for the treatment of domestic garbage.

This was to comprise collection, sorting and eventual recycling of garbage. In response to the tender put out by the Horseville councillors, three of La Compagnie Générale des Eaux's subsidiaries (URB-C, URB-P and OPUR-D) coordinated a joint project from a joint drawing office (VEGA). This partnership can be explained in terms of the complementary nature of the three subsidiaries. Each partner was located at the extremity of the waste disposal chain. At one end of the chain, URB-P ensured the waste collection and sorting. In the middle of the chain, URB-C dealt with the incineration process and at the end of the chain OPUR-D saw to the recycling process. This complementary nature incited them to work together on the Horseville market in order to design and operate a joint treatment plant entitled AZUR.

AZUR was the first contract that VEGA dealt with. The contract was handed over to an engineer from URB-C who became the project manager at the head of a team of 15-20 people. As a coordinator and team leader,

the project manager had all the technical choices validated by the parent company of each partner subsidiary. This working method prevented La Compagnie Générale des Eaux's business units from having to work sporadically with external partners, who didn't share the same corporate culture or the same market approach.

The coherence of the offer is reinforced by benefiting, in a harmonious way, from all these individual specificities.

After tendering, this effort of concertation was rewarded by clinching the Azur market. A 25-year lease was then signed between the Horseville councillors and different business units from La Compagnie Générale des Eaux which had been grouped together for this occasion under the joint subsidiary URB-PCD.

Under the cover of a Public Company with a capital of 2 million francs (€ 0,304 million), this new structure served the interests of the partner subsidiaries : URB-C, URB-P and OPUR-D. It was piloted by URB-C. Specialising in waste incineration, URB-C took over the project because the sale of steam is the biggest source of revenue in the Azur division. Besides, the necessary investment in order to deal with the incineration process represented 70% of the subsidiaries costs compared to 20% for selective sorting by URB-P and 10% for compacting carried out by OPUR-D.

As far as technical aspects are concerned, the Azur project integrated all areas connected with waste from the picking-up and sorting stage to the recycling stage. The division's functional organisation relied on voluntary back-up equipment, with 400 sorting columns for glass, paper/cardboard or plastics. It also relied on door-to door selective sorting.

In this manner, waste was sorted at the source before being directed to waste tips or the main processing centre. From a financial and economic standpoint, the project had a global processing capacity of 187 000 tonnes per annum. Its cost was estimated at 420 million francs (€ 64 millions) of which 40% was financed by the General Municipal authorities and the Regional Council, 3% by ADEME (agency for the environment and energy control), and more than 50% by the operator URB-PCD.

The market that URB-PCD captured obviously had consequences for the other members of La Compagnie Générale des Eaux. In fact, in order to run the station, URB-PCD was obliged to delegate certain specialised tasks such as green field maintenance or waste recycling. In order to achieve this, it called upon suppliers who were preferably in the network. When it came to attributing sub-contractor work, URB-PCD was encouraged, in an informal manner, to work principally with other La Compagnie Générale des Eaux subsidiaries.

In fact, La Compagnie Générale des Eaux's relational network relied on oral tradition and a good understanding between individuals. This is why sales relations relied on habits rather than on rules or procedures. In this way, La Compagnie Générale des Eaux general management team was not forced to impose its will upon URB-PCD in order to deal systematically with one of the companies in the network. On the other hand it had to conform to certain tacit rules that were universally accepted in the network.

For instance, an informal code of conduct imposed payment conditions of 45 days for all internal transactions. Other non-written laws established "the right of first refusal" when consulting another company within the network. According to this rule of pre-emption, the member-company of La Compagnie Générale des Eaux had priority in refusing offers if they were deemed not to be sufficiently competitive. In this case, it had the possibility of aligning with the lowest bidder or with the price that would be accepted in the case of a refusal.

URB-PCD respected these principles and sub-contracted waste transport (ex-works) to one of URB-PCD's subsidiaries, operational control of the waste tips and the glass-paper containers to other URB-P subsidiaries and ash and toxic waste treatment to other La Compagnie Générale des Eaux subsidiaries.

All things being equal in economic terms, a La Compagnie Générale des Eaux subsidiary would always favour working with another subsidiary in the network. But beyond certain limits, the notion of network presence was subordinate to price competitiveness. It would indeed be unacceptable to customers if they had the impression that URB-PCD was running up extra costs by favouring certain network companies to the detriment of those that were cheaper. This is why URB-PCD decided to hand over the maintenance of the boiler oven to a competing company outside the network.

The HVA case

In the treatment of waste water, several La Compagnie Générale des Eaux subsidiaries were capable of ensuring the same level of service for the whole or part of the operating sector. Amongst these, OPUR and SRO were competing on water treatment markets within the same geographical zones (see Annex 1).

These two subsidiaries were to confront each other for a contract offered for preliminary consultation by the Horseville councillors. This contract concerned the construction and operation of a water purification station which was to respond to the needs of a town population which had doubled in less than 20 years. In this field, it was very difficult to circumvent SRO who already managed the town's drinking water network as well as certain parts of the purification network of 11 communities

surrounding Horseville. It also managed all the invoicing procedures for water services throughout these communities.

As for OPUR, it held a technically innovative patent for reducing the size of the station and thereby reducing noise levels. Thanks to a revolutionary process of water filtration, the OPUR project had the advantage of protecting the natural site of the community by avoiding traditional types of open-air building and favouring confined processing factories which were very compact and produced less pollution. To win over the market OPUR relied heavily on its technological advantage whereas SRO counted on its territorial trump card.

The local councillors made it known to the two companies that they would not capture the market if they didn't combine their forces and skills. Consequently OPUR and SRO decided to submit a joint tender which brought together their technical and commercial specificities.

At the end of the consultation phase, OPUR-SRO's offer was accepted and finalised by a 30-year tenure contract which aimed at the construction and running of a purification station evaluated at 200 million francs (€ 30,48 millions) and capable of treating 40 000 m³ per day, the equivalent of 200 000 inhabitants.

Success was due to the fruit of cooperation between OPUR and SRO, which was facilitated by the fact that they belonged to the same company network. Their association with La Compagnie Générale des Eaux fostered the sharing of experiences and the exchange of confidential information in a climate of trust. The two companies decided to share out the work according to their expertise : OPUR managed the design and construction of the plant while SRO managed the maintenance.

Upstream from the project, OPUR drew up the specification of the plant and entrusted its construction to a civil engineering sub-contractor, chosen preferably from within La Compagnie Générale des Eaux network.

When the construction work was complete, the problem of managing the project and the partners' retribution was laid on the table. This delicate issue gave rise to a new litigation between SRO and OPUR.

Due to its territorial leadership, SRO insisted on running the operational side of the enterprise. But OPUR also laid claim to this responsibility due to its technological dominance. A compromise was eventually found by creating a new joint subsidiary : HVA (Horseville-Purification) to administer the station. Due to its knowledge of the local market and its skills in invoicing procedures, SRO took control of the group with 51% of the shares. The remaining shares were held by OPUR.

Acting as a genuine independent cost centre, HVA managed the station's operations for OPUR and SRO, whom it kept informed on a regular basis. HVA's profits were turned over to the two companies on a pro-rata basis according to their financial holdings. HVA also managed the spin-offs from the water plant such as mud collection from used water. In this field the plant manager called on sub-contractors that he chose in priority, but not exclusively, from within La Compagnie Générale des Eaux network. By doing this most of the sub-contractor contracts such as waste disposal were awarded to other members of the network. Certain tacit rules of conduct pushed HVA to choose partners from the inside before turning to the external market. Even if business units from La Compagnie Générale des Eaux were automatically placed in competition with outside firms, certain principles such as the 'right of first refusal' were factors that played in their favour.

Nevertheless, belonging to a network did not justify in itself the choice of suppliers. In certain cases the plant manager preferred to contract with outside firms in spite of the recommendations of the parent companies OPUR and SRO. In this manner, he defended the station's interests before those of the other La Compagnie Générale des Eaux subsidiaries. Consequently, competitors benefited from certain sub-contractor markets. For instance, green field maintenance was not granted to one of La Compagnie Générale des Eaux's subsidiaries, whose offer was judged too costly.

The IRIS case

The rivalry between Cofreda and URB-C can be found at the intersection of two poles of activity (see annex 2).

In fact Cofreda is under the umbrella group BTP (Public Works) whereas URB-C belongs to the energy group. In spite of this distinction, the two business units compete together on certain markets, at the interface of the energy and public works poles : the METP markets (Marché – Enterprise- Travaux – Publics) cover the construction and management of waste recycling plants. This overlapping of skills can be explained by historical and managerial reasons and has led Cofreda and URB-C to compete against each other on the same market.

One of the markets concerned the construction of a global waste treatment division in Rosseville. This came about further to a tender made by a syndicate of municipalities who were eager to adapt to the development of European norms in the field of waste processing. Amongst 16 applications, the tendering committee received separate proposals from Cofreda and URB-C. In its proposal, Cofreda presented itself under the label of the Group URB-TP, whereas URB-C emphasized its affiliation to La Compagnie Générale des Eaux network.

The two companies decided not to ally their forces in the wake of a breakdown in negotiations. In the capacity of multi-activity subsidiary (construction, public utilities, water processing, cleanliness), Cofreda insisted on defending its good standing within La Compagnie Générale des Eaux by responding to multi-service markets without any outside assistance. By avoiding having to work with URB-C, it therefore demonstrated its legitimacy within the network. For different motives, URB-C had to capture multi-service markets in order to justify its technological leadership inside La Compagnie Générale des Eaux. Due to the good references it holds in the field of global subsidiaries for waste processing, URB-C has built a solid reputation for being one of the best constructor/managers in the world. On this type of market it also benefited from the logistical back-up and the joint drawing-office : VEGA. This is why it didn't envisage working together with Cofreda.

In the absence of any form of hierarchical arbitration on the part of headquarters, the two subsidiaries Cofreda and URB-C made a parallel application for the contract. At the end of the first phase of consultations, the tendering committee eliminated Cofreda on the grounds that it was not acceptable to have two companies from the same group capable of carrying through a project (both from a technical and financial point of view) worth 350 million francs (€ 53,35 million).

At the end of the second phase, URB-C's offer was considered to be too costly compared to a competing consortium. The committee preferred to retain the offer of an oven manufacturer who worked in association with an operator of international renown. This type of coupling reassured the councillors, since it constituted very sound technical and financial warranties. Besides, the competing consortium proposed lower prices for the technical part of the incineration process.

This proposal also integrated the back-up and the knowledge of a local company that already carried out waste retrieval upstream from the project. Finally, the competition between URB-C and Cofreda backfired, in as much as it multiplied entry costs on the same market. Instead of pooling resources, they lost out to a competing consortium who appeared to be bonded and coherent in the customer's eyes.

The SAS case

Several dozen firms compete to corner the market of waste retrieval, and there are very few technological or financial barriers. This internal competition has repercussions on La Compagnie Générale des Eaux as a whole.

In order to rectify the incoherencies thrown up by repetitive and quasi-systematic confrontations, URB-P (see annex 3) created a cleanliness label at the end of the 1980s. This label aimed at uniting the company

members of La Compagnie Générale des Eaux network, who operated in the field of urban cleanliness and solid waste retrieval.

This policy enabled customers to identify the sub-contractors belonging to La Compagnie Générale des Eaux network who specialize in all the different spheres of waste recovery : street cleaning, garbage collection, industrial and commercial solid waste collection, management of tips and transfer centres, sorting, recycling, and the running of over a hundred technical waste burying centres. This grouping together under a common label is aimed at encouraging synergy amongst the different trades.

In order to exercise better control over the different trades, URB-P's general management went about separating the running of the transport and cleanliness branches by doubling up the management teams : transport/cleanliness. Back-up activities such as credit and capital management, human resources management and technical know-how were dealt with by headquarters in order to take advantage of economies of scale between the two branches. Grouping together the administrative departments indeed allowed the company to reduce structural costs. From an operational standpoint decentralisation is effective. Local agencies, however, were accountable to regional management centres. A good deal of flexibility and autonomy were granted to the regional management centres which constituted an intermediate link between headquarters and the different plants.

This action of streamlining undertaken by headquarters and carried out by the regional management centres had an impact on the local "multi activity" agencies (transport/cleanliness). They were restructured in the form of independent cost centres with a dichotomy between the transport and cleanliness sectors. These versatile, "all-rounder" management teams were therefore replaced by more specialized management teams. This development was put down to the increasingly specific nature of contracts which necessitated the separation of the transport and cleanliness sectors.

In the community of Rosseville, these structural reforms affected the smooth running of URB-P's operating centre. Before restructuring, relations between the agency and the regional management centre had been decentralized in order to conform to the demand for local adaptation. At this time the decision to conquer new markets or renew contracts was taken almost exclusively at agency level. However, in the wake of restructuring, the agency lost its independence to the regional management centres.

In fact, the manager of the URB-P S Rosseville centre did not really appreciate this transition of power since he was responsible for a turnover of 60 million francs (€ 9,14 millions) and yet he could only sign for up to 30 000 without referring to his hierarchical superiors for authorisation. He therefore considered that he no longer had sufficient power to impose his

choices. At the same time he entered into conflict with the regional management centre. His objectives for recruiting sales people were not in line with the cost-cutting policy that the regional management centre was defending.

In more general terms, operating problems were underpinned by norms which gradually eroded the manager's autonomy to take decisions. At the financial level, for instance, the agency operated on the basis of a budget which was proportional to last year's results. At the sales level, it was required to apply price directives set out by the regional management centre. All these measures considerably reduced the plant's flexibility by multiplying the number of middle men. For example, the turn-around time to order a skip was 6 months compared to two months offered by an independent contractor.

Generally speaking, this rationalisation process (introduction of bureaucratic rules and regulations and hierarchical echelons to manage the separation of the business activities) seemed to impair local initiative by favouring non-productive functional departments. In these circumstances, the URB-P Rosseville manager did not adhere to the process of rationalisation and preferred to hand in his resignation.

After his departure, two former assistants replaced him to manage the cleanliness and transport sectors. But this change in governance did not go down very well with customers who were accustomed to having just one contact person. Little by little, the constant turnover of managers tarnished the agency's corporate image.

During this transitional period, the manager who had resigned, set up, with a few of his ex-colleagues, a small new independent company specialising in cleanliness : SAS (Société d'Activités de Services). This new company was able to take advantage of all the contacts and experience acquired during URB-P's operations in Rosseville.

The arrival of SAS gradually became a threat to URB-P's survival in Rosseville. For instance during the procedure of contact renewal for garbage disposal in the community of Yoko, the URB-P Rosseville agency found itself confronted with 8 or 9 local competitors. Amongst these competitors they were confronted with SAS who eventually won the contract. Further to this initial success, SAS decided to operate under the label of a big German group, that specialized in local services and subsequently they became their first outlet in France. In so doing, SAS afforded itself the financial means to develop its activities outside the reaches of La Compagnie Générale des Eaux.

A little later on, SAS renewed its success on the garbage disposal market in the community of Tzuno, despite efforts from URB-P Rosseville to make the lowest bid i.e. the cheapest price. The fact that the councillors voted

in favour of SAS was indicative of their eagerness not to let everything slip into the hands of a big group, namely URB-P Rosseville. The notion of plurality and transparency of choice was not in itself the entire reason for URB-P's failure in Rosseville. Its costing policy was also questioned.

The Rosseville councillors in fact questioned the credibility of the URB-P agency whose prices they considered too high compared to those of their competitors. URB-P's regional management centre appeared to side with the Rosseville council on this score and offered a price reduction on garbage disposal services in the form of a financial credit. In this climate of suspicion and mistrust, the councillors were initially inclined to reduce the volume of services for the transport and cleanliness sectors. Subsequently, during the procedure of the cleanliness contract renewal, they clearly demonstrated their preference for SAS. Besides, this choice was entirely consistent with decisions taken by the communities of Yoko and Tzuno, who worked in collusion with the Rosseville councillors.

In the final count, this accumulation of market losses led to the demise of URB-P on the waste disposal market in Rosseville. The urban transport sector was, however, not affected. From a managerial standpoint, this loss of territory shows how a small independent company can become far more competitive than a business unit which is linked to a large network.

In this way, SAS was not hindered in its actions by hierarchical directives and did not have to bear as many structural costs as a business unit linked to a large group. Apart from price considerations, SAS became the symbol of an alternative to the proposals of the three biggest cleanliness groups in France of which La Compagnie Générale des Eaux is one.

By choosing SAS, the Rosseville council also affirmed its independence, which in turn reinforced the idea of transparency in terms of public tendering. Furthermore, it seemed that the URB-P Rosseville agency had suffered too much from its policy of large-scale diversification. URB-P Rosseville was the last multi-activity centre in the region.

In fact, in order to offer a global solution, URB-P Rosseville was offering to dispose of selected household garbage, industrial waste, mud from the purifying station and deal with recycling for a group of companies or for the hospitals.

Now URB-P Rosseville did not have an integrated structure for carrying out all these operations. Its broad-based vocation meant that it had to sub-contract the water recycling business to local competitors. This situation of interdependence had the adverse effect of artificially inflating the cost of services.

In addition to this, URB-P Rosseville also had to pay real estate rental charges which increased its fixed costs, contrary to other plants such as

SAS. Furthermore, URB-P Rosseville was affiliated to the national union of waste disposal professionals, which required it to run its operations over 5 working days per week by using two skips and back-up equipment. On the other hand, because SAS was not affiliated, it could ensure the same service over four days (9 hours per day) without any back-up equipment.

These different procedures reduced the structural and operational costs. All these factors influenced the tendering prices but were not the only criterion taken into consideration in the competition. A relationship of mutual trust between the client and the service provider was also a decisive factor as far as renewing contracts was concerned. If sales relations deteriorated, local councillors could always decide not to renew a contract even if the service provider remained within a reasonable price range.

URB-P Rosseville's market losses also had other consequences. They risked tarnishing the reputation of URB-P's other plants that were located in the vicinity of Rosseville. However, thanks to the efforts of the regional management centre and of URB-P headquarters, the loss of the Rosseville market fortunately had no further repercussions.

ANNEX 1

La Compagnie Générale des Eaux network

Further to a policy of steady growth conducted by its President, La Compagnie Générale des Eaux has become the world leader in urban development. Operating in all public services delegated by the local communities and municipalities, it achieved a turnover of over 150 billion francs in 1995 (€22,8 billion). It employs more than 200 000 people of whom 150 000 are located in France.

La Compagnie Générale des Eaux's economic foothold has been extended to very differing fields of activity from the more traditional activity of water treatment to the more marginal activity of luxury hotels on the Croisette in Cannes or rat extermination in Papouasie. For reasons of coherence this myriad of activities is broken down into clearly defined divisions.

In 1995, water treatment was the largest division representing 25,8% of total sales revenue. This figure confirmed La Compagnie Générale des Eaux's position as world leader in the field. In energy construction, where La Compagnie Générale des Eaux achieved 24,5% of its turnover, it has become the second manufacturer and the first heating specialist in Europe. The company has also become the leader in France in the waste disposal market (garbage removal and disposal) with 7,7% of its turnover.

In the field of real estate (5,5% of sales revenue) it manages 600 000 m² of office space in the Défense district of Paris. Its activities also stretch to public transport networks (4,9% of turnover), to communications (3,7%) and hospital services (3,4%). In each of these fields La Compagnie Générale des Eaux is either in first or second place : it is number one in car park management and leader in private clinics. It is also leader in the field of cable operations and is the second French mobile-phone operator.

Its development outside France has been is a carbon copy of its practices on the domestic market. Revenue made in France is often used to finance a part of the foreign investments. The French management principle of setting up dealerships has served as a model for exporting. The group's international expansion has also presented a means of testing its knowledge or acquiring know-how outside the national markets which are protected by the regulation on public monopolies : distributing energy to the USA, operating the rail network in the UK, home phones in Europe, etc.

By dint of this, La Compagnie Générale des Eaux was able to enlarge its offer of services from one country to another according to the development of the regulatory context. In general, the lifting of French public monopolies should provide it with the same development prospects as can be observed currently in other European countries further to the privatisation of public utilities. In the space of 10 years La Compagnie Générale des Eaux has become the biggest French company in the UK, the second biggest water provider in Spain, the first in Mexico, the first independent electricity producer in the USA.

The consequences of these investment choices have provided La Compagnie Générale des Eaux with an extremely diversified trade portfolio. This rapid expansion has also had some very beneficial effects on the company's dynamics in as much as it has allowed the company to be present on numerous world markets. This is one of the main arguments propounded by its President in justifying his corporate strategy

*" In this ever-changing world (and we must be careful to decipher those things that can change in a useful way!), versatility is neither a fault nor a weakness. The group's development in several directions, some of which are very new, retains great coherence even if a certain diversity-complexity is a necessary characteristic of its spectrum of activities."*¹

But this policy of diversification (2600 subsidiaries present in more than 50 trades and professions and split up into 8 different activity divisions) is conducted partly outside the group's original customer base. This throws up new management problems and challenges which are not easy to resolve. Therefore, a certain involvement in large-scale distribution or in

¹ Extract from the address given by the Director General of La Compagnie Générale des Eaux at the general assembly 26 June 1992

real estate investment steps outside La Compagnie Générale des Eaux's field of competency. Other activities such as large scale mobile phone retailing or public works in a cyclical sector, have raised new organisational problems. Finally, with regard to traditional trades, problems of coherence still prevail due to the industrial or commercial redundancy of the business units. The accumulation of these problems was the main cause of the 3,5 billion franc deficit that the group registered in 1995.

ANNEX 2

The OPUR and SRO corporations

OPUR was created in 1980 and emanated from the merger of several companies specialising in water treatment. As a subsidiary of La Compagnie Générale des Eaux, OPUR was able to benefit from 60 years of experience in the construction of potable water production units and purifying stations. Today OPUR is a broad-based company capable of dealing with all problems related to water distribution from collecting and piping to re-dispatching in a natural setting. Its range of skills also covers the design and construction of water treatment stations. It is also in a position to ensure the management and even the sale of licences or offer consultancy services in design engineering.

OPUR is a global company and achieved a 3,1 billion franc consolidated turnover in 1992. It employs a staff of almost 1000 people (divided into 6 regional agencies in two distinct service sectors : operations - 560 people and construction - 370 people). With nearly 5000 references, OPUR has become one of the world's leading companies in water treatment, and in this capacity is one of the spearheads of the water sector of La Compagnie Générale des Eaux.

In contrast to OPUR, SRO is a regional company created in 1928 in the north of Arnoville. Its field of action does not go beyond the outskirts of Arnoville where it has experienced rapid development thanks to the acceleration of urbanisation. In 1992 SRO registered a total sales revenue of 800 million (€ 121,95 millions) and employed 660 people. Located in Arnoville, headquarters grouped together the general management and the functional departments (human resources, communication, administration and finance). Sales activities were decentralised to three regional operating units by means of a geographical segmentation which covered 180 communities : the eastern unit, the unit west of Horseville and the northern unit.

Peculiarly, SRO operated on the same water treatment markets as OPUR with the same customer base located in a periphery which both companies

shared i.e. the Arnoville suburbs belt. As far as OPUR is concerned, contracts established in the Arnoville area serve as technological window dressing in order to attract foreign customers. On the contrary, for SRO this type of contract is used to defend its sales expertise and its legitimacy in the heart of a region that has been compared to a "historical fief".

ANNEX 3

The COFREDA corporation

Within La Compagnie Générale des Eaux structure, Cofreda comes under the control of URB-TP (urbaine de travaux publics) which runs the sector of construction and public works. With more than 400 specialised subsidiaries divided into 15 operational sub groups, of which Cofreda is one, URB-TP is responsible for the activities of road and building construction. It is present in public services management and environmental trades and is a dealer in technical and industrial hardware.

Cofreda is URB-TP's largest subsidiary. It operates as an all-purpose company in the field of construction, civil engineering, piping and other services, covering a network of 180 subsidiaries scattered all over France as well as in the overseas territories and foreign operating units in more than 30 countries. 25 of these countries are located in Africa where it serves as a bridge head for the other network members.

When drawn to scale, Cofreda represents a « mini La Compagnie Générale des Eaux » being divided into 7 operational business units. Each of Cofreda's business units operates as an independent cost centre with a specific budget and a broad-based vocation : public works and utilities. Each all-purpose unit has a staff of all-rounded engineers, who are able to step in simultaneously in the two fields of activity.

For instance, a Cofreda unit which has contracted a piping market in the construction field can also offer to manage the water distribution for the community involved. This all-rounded, versatile feature of the company serves to enhance synergies within Cofreda. It enables the company to carry out, in a very confined manner, all the different operations of a global cleanliness subsidiary from the design stage up to the operational level.

Due to this versatile nature, Cofreda is often confronted with other specialized subsidiaries. In the field of water and purification, Cofreda is often in competition with OPUR for the same tenders.

In the field of cleanliness, Cofreda is often in competition with URB-C and URB-P. In public works, Cofreda has positioned itself on the same markets

as other URB-TP subsidiaries. These conflicts are more often than not resolved without having to resort to hierarchical arbitration by applying the notion of decentralisation. As long as subsidiaries can finance their operations, they can choose their own courses of action. It is only when there are financial losses that the major stakeholder regains control of operations.

In this framework, Cofreda has the peculiarity of being able to offer communities a wide range of services which goes well beyond the field of public works. It is for this reason that it seeks out markets that require multiple skills, i.e. those companies that combine cleanliness and public works like an METP (Marché, Entreprise, Travaux Public). However, other La Compagnie Générale des Eaux subsidiaries also possess the necessary skills for building and operating a plant in the framework of an METP. For example, URB-C can design, build and operate incineration factories. To achieve this, it develops partnerships with public works or cleanliness specialists drawn from within La Compagnie Générale des Eaux network.

ANNEX 4

The URB-P corporation

URB-P is a top class subsidiary, leader of the cleanliness division of La Compagnie Générale des Eaux. It provides the consolidated accounts for over 300 specialised business units in the fields of transport and cleanliness. Its total sales revenue is 7,8 billion francs (€1,19 billion). The company is constantly expanding in the export market due to the geographical synergies between France and the foreign markets.

URB-P originally specialised in public transport systems, but nowadays it has staked a lot of its future development on the market of environmental protection : waste collection and disposal. It entered the waste disposal market at the beginning of the 1970s when a lot of the communities were becoming increasingly sensitive to the environment. In order to respond to this demand, URB-P injected capital into specialised companies operating in the field of waste treatment : in industrial waste, in sorting and recycling or in industrial cleaning.

In these fields, concentration and increasing specialisation on the part of competitors compelled URB-P to conduct its expansion externally in order to attain a critical mass. At the beginning of the 1980s it took advantage of the opening of new public markets, which were in line with the new decentralisation bill, in order to extend its cover of the French territory.

At the same time, it proceeded to buy out a transport company which operated a network of different plants in the provinces and which enabled

it to move beyond the constraints of its empire located near to Arnoville. Further to these developments, URB-P integrated nearly 300 small and medium-sized companies into its shareholding. This rapid growth produced certain structural problems which were linked to the multiplication of specialized companies sharing the same skills.

LA COMPAGNIE GENERALE DES EAUX :

The dynamics of corporate networking.

Instructor's notes

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Christophe ASSENS (Université de Rouen, France)

This case was made possible through the generous co-operation of La Compagnie Générale des Eaux. The case is intended as a basis for class discussion rather than to illustrate either effective or ineffective handling of management situations.

Teaching objectives

- To comprehend how and why corporate networks are formed
- To identify the specificities, strengths and limits of network organisation
- To demonstrate that several types of interaction can co-exist within a network (collaboration, cooperation, confrontation etc.); to trace the origins and measure their impact

Summary and problematic

La Compagnie Générale des Eaux (later to become Vivendi) case study focuses primarily on the workings of corporate networks. The dynamics of networking are dealt with in turn in a global perspective and then from a more local setting.

The global dynamics describe the historical stages of the creation of La Compagnie Générale des Eaux and enable us to understand the causes of the emergence of a network organisation and to underline the main traits of its structure and management. Local dynamics serve to demonstrate the logic of the interaction processes between the component parts of the network.

The global dynamics of the network, presented in the first part of the case, demonstrate that they have been influenced, since the creation of the company, by various integrating forces. Horizontal integration was the key feature of the 50's, followed by a more vertical approach during the next two decades and ending up with a matrix structure from 1975 onwards. The territorial synergies of the early days of La Compagnie Générale des Eaux were substituted periodically by industrial and customer-based synergies. The history of the network therefore relates how these developments have contributed to the formation of a multi-service conglomerate, composed of adjustable business units and sharing, above all, common know-how. The pilot figure – the GM of the Group – has focused almost entirely on decentralized management in order to foster the notion of entrepreneurship.

The local dynamics of networking are highlighted in the second part by the illustration of 5 practical cases. Each case allows us to better comprehend how, and to what extent, apparently conflicting principles such as the hierarchical relations between headquarters/subsidiary, internal competition and the defence of collective interest are applied. The case Azur demonstrates the harmonious collaboration amongst several complementary business units, the case HVA combines the notion of collaboration and competition between two competing business units, the

case IRIS focuses on non-resolved competition leading to market loss while the case SAS describes a streamline operation leading to the exclusion of one of the network components and the emergence of quasi-internal competition.

The problematic and data are the result of an empirical observation over a period of 5 years. The case therefore presents a whole string of primary data collected from more than 40 interviews and secondary data obtained from corporate communication and internal documents and archives.

The teacher's notes provide a grid juxtaposing theoretical principles and the logic of networking dynamics.

The case La Compagnie Générale des Eaux, together with its theoretical back-up, was first finalised in 1996 and has been constantly updated to 1999.

Target audience and pre-requisites

The case in its present form is suitable for use with undergraduate students (preferably in their final year) at University or Business School. It can also be used effectively in continuing education programs as a tool for reflexion in seminars that deal with network development and cooperative relations.

Pre-requisites include initial training in Management as well as a basic grounding in general Business Policy and Corporate Strategy. To be more specific, the case is best preceded by input on ;

- The diversity of networks (typology...)
- The component parts of a network (nodes, links, positions etc.)
- The essence of networks (autonomy interdependence...)
- The features of working in networks
- The pre-conditions for developing cooperative behaviour (references to games such as the 'prisoner dilemma' or the 'tit for tat' strategy ...)

We recommend that students read and prepare the case well in advance in order to give themselves ample time to step back and adopt an objective interpretation of the facts.

1) Running the case

The following information provides a suggested plan for running the case.

The instructor will find a teaching plan as well as supporting documents that can be effectively exploited at the summing-up stage. A minimum of 3 hours is recommended in order to get as much as possible out of the case

(this naturally excludes student preparation time). Teaching time should include the aforementioned pre-requisites, which can be increased two or three fold according to the number and level of conceptual and theoretical references covered by the instructor.

2) Teaching approach and strategy

Introduce La Compagnie Générale des Eaux as a conglomerate with numerous ramifications and whose products and services we consume on a daily basis wherever we may find ourselves (the train in the UK, electricity in the US, internet, television and the mobile phone sector, water and heating in France...).

The conglomerate is a driving force of the European Economy in the 1980s thanks to its position of leader in numerous fields and its position as stakeholder, parent company, partner and acquiring company for a large number of firms in the service sector.

a) Explaining the contents of the case to the participants.

The global dynamics describe the historical stages of the creation of La Compagnie Générale des Eaux (later to become Vivendi) and enable us to understand the causes of the emergence of a network organisation. This part also provides a recent snapshot of La Compagnie Générale des Eaux and highlights the features of networking in terms of management and structure.

Local dynamics endeavour to outline the logic of the interactive processes between the component parts of the network.

b) Splitting students into working groups and organising feedback sessions.

Students can be divided into groups of 4 or 5 in order to study the different situations presented by the local dynamics of networking. Each group will then prepare a short 20-minute exposé which should illustrate :

- The protagonists in the case : the network business units
- The progress of interaction processes : the main phases of exchange, concertation and coordination within a set time scale
- The causes and consequences of these exchanges in the local and global dynamics of networking
- The logic of interacting forces
- The piloting mode for these exchanges
- The advantages and constraints of working in networks in the light of information supplied via local and global dynamics.

The idea consists of normalising work procedures by using an analysis chart in order to facilitate comparisons between the different cases and to obtain a more transversal vision at the feedback stage.

d) Evaluating group work and consolidating support materials

The instructor evaluates the groups' capacity to analyse, synthesize and to present their group work, focusing on the quality of their presentation materials. As regards the theoretical content, the instructor should check that the logic of interaction has been correctly assimilated :

- Project Azur : harmonious collaboration between complementary business units ;
- The case HVA : collaboration and competition between two competing business units ;
- The Iris case : unresolved competition with ensuing loss of market share ;
- The SAS case : the streamlining and subsequent exclusion of a component part of the network and subsequent emergence of quasi internal competition

At the summing-up stage, the instructor collates all the group materials and gives a general overview of how La Compagnie Générale des Eaux operates while at the same time emphasizing the key teaching points that he wishes to consolidate.

3) ANALYSIS AND SUMMARY

After a brief reminder of the main features of a network, the instructor will be able to demonstrate that La Compagnie Générale des Eaux case presents many interesting peculiarities in terms of theoretical input.

The network can be defined according to the numerous contributions of Swedish and Italian Schools. For example, according to Guilhon and Gianfaldi (1990), a network "constitutes an effective means of acquiring external resources (Hakansson and Johanson 1988) of managing complexity by dividing up complementary strategic roles (Miles & Snow 1986), of accumulating technological competency which constitutes sources of power (Thorelli 1986) ; of developing activities by submitting them to the principle of specialisation and coordination via multi-dimensional relations : products, contractual relations, technologies (Soderlund 1988)."

According to Imai and Itami (1980), " the crucial strategic consideration for a company nowadays is not to find the best balance between internalised and externalised operations nor to establish the most efficient hierarchical structure [...] it consists of creating an economic and social

context thus creating a sound structure which channels [...] or stimulates the company's internal and external interactions". This systemic vision is upheld by Gugler (1991) in whose eyes the geometrical structure of a network is comprised of "peaks" which are determined and linked together by "arches" ; the former representing the players and their interdependence in terms of space and functionality, the latter representing their respective activities and resources.

Presentations might be in multiple form (cf document 1) ; according to Barnes (1972) networks constitute ; "a jungle of terminology in which each newcomer is likely to plant a tree!". It is however possible to give a framework to the network by referring, for example, to the representation provided by Hakansson (1987) (cf document 2)

As regards La Compagnie Générale des Eaux network, it first developed from the kernel of a big company which gradually externalised its activities and functions. This development plan roughly corresponds to the trend of industrial firms such as Ikea, Benetton or Ford.

We cannot, however, assimilate completely La Compagnie Générale des Eaux's operations with those of an extended and monitored network system, even if the headquarters i.e. the pilot, owns all or part of the business units. In principle, this financial bond allows it to exert greater control on members of the network Bakis (1993). On the contrary, we can observe that headquarters has limited powers in as much as it cannot act as a consignor. Its role is limited to setting up the necessary conditions for bringing the different subsidiaries together without depriving them of free arbitration. In this context it doesn't intervene in exchanges to designate tasks. La Compagnie Générale des Eaux is therefore not comparable to the centralised and supervised model set out by Butera (1991).

La Compagnie Générale des Eaux can also not be compared to an industrial district or to an organic network as described by Inzerelli (1990). In fact, in spite of the autonomy that they enjoy, subsidiaries are subjected to a collective authority. They are accountable to a common stakeholder who obliges them to honour certain financial criteria in the framework of their consolidated accounts.

Consequently, **La Compagnie Générale des Eaux is neither a completely supervised network nor a totally destructured and non-centralised network.** The case in fact shows how a pilot company and its peripheral business units coexist in an organisation where exchanges are self-regulated. Periodically, individual rivalries will hinder the attainment of the collective goals ; these situations are highlighted in the network's local development.

The project Azur therefore presents forms of cooperation between subsidiaries that are keen to emphasize their industrial complementarity. They manage to harmonize their behavior for the sake of the general interest without seeking any hierarchical arbitrage from the Headquarters. This occurs at two precise stages : upstream from the project when the three components of the Group URB-PCP work together in a joint drawing office (the partnership), and also downstream when internal sub-contracting is initiated (sub-contracting). Certain tacit regulators assist in maintaining a necessary spirit of trust in order to exchange information and to share resources.

This said, this type of flexible and decentralised coordination is not always effective in avoiding conflicts of interest.

The H.V.A case highlights several contradictory interaction processes : confrontation is a forerunner to collaboration and a sub-contractor relationship within the network. At this stage of observation we notice that Françaises des Eaux's development process is extremely complex. It goes beyond the framework of "complementary cooperation" previously cited and illustrates different types of cooperation between competitors that Weil (1997) refers to as "co-opetition". This phenomenon is explained by the dearth of skills which account for the strengths and weaknesses of La Compagnie Générale des Eaux : strengths in as much as the company proposes a very diversified product and service portfolio to its clients while reducing the external forces of competition ; weak in as much as it reinforces the areas of local discord which are not arbitrated at a global level. In the present case the competing subsidiaries succeed in harmonizing their positions by a process of mutual adjustment.

The IRIS case demonstrates the constraints of working in a network starting from an unresolved conflict situation between the different business units. Now this logic of competition can be foreseen through the nature of the management style. From the moment Headquarters refuses to arbitrate in conflicts between partially or completely replaceable subsidiaries, confrontation becomes inevitable. Out in the field, this absence of concertation acts as a catalyst to bring the Business units to the table of negotiation. But that is not always sufficient to eradicate a process of confrontation, which multiplies the cost of market entry and which causes "dis-economies of scale".

The SAS case deals with the problem of "the fight to influence" inside La Compagnie Générale des Eaux network. When decentralising, it is sometimes difficult to standardize behaviour in the general interest without the arbitration of top management. There is therefore a strong tendency to rationalize tasks by sharing out responsibilities. The SAS case shows us that a fine balance must be established between the degree of task decentralisation and the extent of centralisation of the decision-making process within the organisation. On one hand, too much

centralisation of decision making kills off any autonomy that the business units may have and, on the other hand, triggers off voluntary departures from the company, whereas too much slackness only nurtures conflict. In this way, the concentration of power at the regional, middle-management level and the streamlining of tasks improves global coherence. On the other hand, this development creates a great deal of red tape which is contrary to the notion of entrepreneurship which is by far the driving force at La Compagnie Générale des Eaux.

In order to resolve conflict within an organisation, it is therefore necessary to reflect on the means of finding a compromise between a policy of centralisation which reinforces the notion of complementarity and at the same time threatens the autonomy of the business units, and a policy of decentralisation, which recognises the need for initiative but reinforces the idea of compartmentalisation and conflicts of interest as can be seen in the Iris case.

The cases studied bring into question several preconceived ideas relating to how networks operate.

In the first instance, this type of structure does not appear to be disorganised, even if it operates outside the market norms and eludes the control of a centralised regulatory body whose mission is to plan and coordinate exchanges. Contrary to the criticisms aired by Miles & Snow (1992), the autonomous business units succeed in acting in a concerted manner when it comes to working in the collective interest. Certain tacit regulatory mechanisms such as substituting trust in the place of hierarchical control serve to incite the members of the network to work together harmoniously.

By placing the emphasis on trust and mutual adjustment in the framework of cooperation (Ring 1996), the cases underline a vital aspect of the workings of a network. The former relies on informal norms which control the structure and facilitate exchanges (Nonaka, 1988). Consequently, the lack of central coordination is by no means a handicap. On the contrary, the absence of operational hierarchy fosters, according to Granovetter (1973) adjustments between individuals. In fact, in order to compensate for the weakness of structural links, the members are obliged to reinforce their interdependence and thus improve the coherence of the network.

Following the idea of Weil (1997), the business units of a network are pushed into cooperating on a regular basis, firstly to write off the start-up costs or the entry costs related to this "structure of mutual trust" and secondly to give full weight to synergies amongst individual skills. In this way, partnerships are doubly efficient ; on the one hand due to the weakness of transaction costs and on the other hand by dint of the added value obtained in the exchange (Dyer 1997).

By reducing the uncertainty linked to opportunist behaviour (Jarillo 1990) and by letting all the business units benefit from the competitive advantages of cooperation, the network thus becomes a concrete alternative compared to a market deemed too instable (Baker 1990) or a hierarchy deemed too rigid (Bartlett, Goshal 1993).

It is, however, advisable to qualify this affirmation in the light of the two case studies IRIS and SAS. We have indeed observed on several occasions that belonging to a network is not a sufficiently strong argument to prevent conflicts and rivalries amongst the members. From a certain standpoint, conflict would appear to be more frequent in networks than in other organisations because the political dimension is far more ostensible. The risks incurred seem fewer and the points of discord appear more legitimate for the business units.

Consequently, **a network does not always work in a consensual fashion.** It also engenders a certain number of negative, external features. For example, in the IRIS case, conflicts increase market entry costs and means are considerably reduced. They also prevent the exchange of resources because information is compartmentalised. Lastly, they exacerbate the vulnerability of the business units in relation to the outside world due to a lack of synergy.

In the SAS case, in-fighting has even more aggravating consequences leading to relationships being broken off inside the organisation. In both cases, the tacit regulatory mechanisms are indeed too flexible to contain any show of strength or to arbitrate in conflicts of interest. Internal competition is therefore not always the driving force in the process of network development.

To summarize, **it appears futile to oppose the two notions of cooperation and competition inside a network.** On the contrary, collusion and discord appear to constitute two facets of the same operational logic. A minimum amount of concertation between the business units is required for the organisation to grow and develop, in as much as it facilitates the coordination and regulation of exchanges. This collusion is, however, not always attainable because of difficulties in reconciling the opposing interests of the members. In fact, in the absence of collective directives or hierarchical arbitration, the business units are always able to defend their own interests before other people's with a risk of triggering conflicts which are detrimental to the general interest. This is one of the main reasons why coordinating bodies are set up (common drawing offices, research centres and joint trading subsidiaries) by the business units to offset the lack of collective authority. We could stress the **utterly singular logic of articulation between cooperation and conflict** linked to different parameters : the coordination structures ; negotiation between the business units ; market size and synergy potential.

Particular attention should be paid to the use of relations.

The question of how interaction between partners is rendered operational appears paramount in comprehending the network phenomenon (Bouteiller 1995). A reminder of the classic "prisoner dilemma" (Shubik 1970) as well as a short presentation (cf document 5) of the "tit for tat" model (Axelrod, 1990) represent, from our standpoint, important analysis grids in understanding a continuum extending from confrontation to exclusive cooperation. In this regard, Axelrod's observations turn out to be extremely useful. It is by working on behavioural aspects and by transforming the context (cf document 7) that cooperation can flourish in a world "populated with egoists and devoid of central authority" (Axelrod 1990).

Sources of conflict of a more organisational nature could be avoided :

- Lack of skill creates tensions and trials of strength due to the overlapping of skills and territorial segmentation;
- Autonomy of decision enables business units to protect their interests before those of others ;
- Management style fosters competition amongst the business units and thus stimulates their competitiveness.

In this field, Bourqui (1990) confirms the principle whereby members protect their own interests before those of other people. As an illustration, he explains that a conflict in network A, B, C may oppose A and C in relation to resources controlled by network B ; or that the relationship between A and B can reduce or prohibit a relationship between B and C. In this way, business units confront one another on one hand in order to diminish their dependence on others and thus legitimize their position within the network, and on the other hand to acquire more power by making the others dependent (see the strategies of defence via cooptation and attack by coalition formulated by Lazega 1994).

The instructor may care, at this stage, to invite participants to reflect on the **regulatory modes** that can be developed inside a network in the absence of any hierarchical arbitration.

Competition amongst the business units is thus likely to be regulated in three very distinct manners : outside mediation, market arbitration and collective bargaining. External mediation is ensured by a third party, generally the customer symbolising the stakes of the rivalries. Market arbitration concerns price mechanisms and competition rules in the framework of a tendering procedure. Negotiation leads to three possible outcomes ; regrouping, withdrawal and conflict. First of all, business units can settle their differences by reconciling their interests in the framework of cooperation. Subsequently one unit might bow out in favour of one of the others. And finally, if negotiations break down, business units may enter into confrontation.

The clarification of these conflict/arbitration mechanisms complete Grandori and Soda's work in this field (1995) in so far as regulatory methods can partially or totally escape the control of the network members. Regulation is therefore no longer determined solely by the business units (negotiation of the terms of the exchange), it is also dependent on external factors such as the market.

Minimum coherence is however necessary within the network ; this is referred to as "domain consensus" by Thorelli (1986). But this consensus is always incomplete because of the inherent difficulty of finding a perfect match of objectives at the individual level. In this regard, the self-regulatory nature of the business units and the pilot company's action are extremely complementary.

It is interesting to underline the advantages and drawbacks of a multi-service operation.

From one point of view, internal competition appears to be useful in a company's day to day operations. To be more precise, this organisational duplication can be seen in a positive light even if it gives rise to discord from time to time. The excess of resources (organizational slack) is in fact a safety valve and an energy reserve from which the company benefits in order to adapt itself in a flexible way to the changing environment (Bouchikhi, 1991). However, as Morin points out (1982), this duplication is not always desirable when it causes disruptive conflict.

Two solutions can be envisaged in this case : 1) tolerate a certain amount of conflict and duplication which is conducive to adaptation and innovation, while provoking risk of contradiction and incoherence ; 2) eradicate conflict and remove duplication so as to improve the coherence of the whole and the coherence between the business units. This, however, may seriously restrict ability to adapt and to innovate.

The first solution is illustrated in the IRIS case. We notice that competition is harmful to the development of the network. It tends to compartmentalize the business units. It prevents the linking together of skills and the sharing of resources. It therefore hinders organisational growth.

The second solution is applied in the SAS case where we witness an attempt to resolve conflict by eradicating duplication. But the streamlining process does not only touch the rival subsidiaries, but also deprives all the business units of their freedom. We notice once more that the company's growth is restricted.

Too much competition disrupts the smooth running of a network. On the other hand, too much hierarchy also disrupts business units' work capability.

On the basis of this observation, we can surmise that systematic or excessive conflict tends to place the network in a sort of marketplace where the different business units are no longer supportive of each other. At that stage, the organisation forgoes all the advantages of regrouping. In the opposite manner, systematic or excessive cooperation imposed by the hierarchy leads the network into a sort of integration. By proceeding in this way, the organisation loses its ability to adapt and to be flexible, which is, in turn, linked to the business units' autonomy. In this context, the creativity which stemmed from original associations and unforeseen combinations is jeopardized.

The network is therefore likely to disappear and be replaced by another type of organisation. Now, this type of development was not originally foreseen in the life cycle established by Larson (1992). New development perspectives bring into question the automatic and programmed sequencing of the different transformation phases. In fact the company's development is not always carried out in the same direction. In this way, the network is not always developing. It can stagnate or contract. It can also be faced with the risk of failure. As regards the notion of a continuous, linear life cycle, it is necessary to insert break points and back-tracking phases.

These remarks also have implications as to how to pilot a network by avoiding the two extremes i.e. the market and the hierarchy, in order to preserve simultaneously the solidity of a permanent and organised whole and the agility of small structures. This forces the coordinator to manage without any excess of authoritarianism or laxity (cf document 3).

The coordinator can be defined as the person who, in order to obtain a product, generates and coordinates a web of inter-company relations known as a network. Each player is potentially a coordinator, according to Bouvier-Patron (1992), from the moment he calls upon other players to materialise his project. If the former wishes or not to exert a power of coercion, the network will be marked by stability or will display a certain flexibility.

The search for stability is inherent when trying to realize a shared activity. The development of a variety of business ventures and the search for quality give rise to regular and normalised exchanges. The distribution of information, the search for common efficiency foster mutual learning and reduce opportunist inclinations. A certain routine of efficiency can be detected which is an intrinsically stabilizing factor. The features of joint investments can also be of great importance. Their specificity, when strongly pronounced, enhances dependence and can constitute an element of "lock in" which partners either search for, negotiate or are subjected to. This situation can often be observed with exclusive sub-contractors who are highly specialised.

The flexibility of a network can originate from three different series of factors. Within the network itself, the advantages and benefits that each member gains, modify the features, the intensity and the durability of exchanges. Technological developments can also bring about profound modifications in the roles and attributes of each player. Lastly, market pressure is likely to produce changes in terms of respective competitive advantages and positioning.

These factors help in developing links in terms of shared or divergent interests. The links are very often representative of the sharing of power inside the network. According to Kamann and Strijker (1989) this determines how "surplus synergy" is divided up and appropriated amongst the network members. Each party seeks therefore to optimize positive connexions and to minimize the negative ones ; this is the essence of networking.

Although stability and flexibility constitute the very nature of the network, this nature can be placed in question or even disappear if the former is taken to the extreme. Hyperstability is generally detrimental to network dynamics, which are paramount in a situation where information is building up ; hyperflexibility can gradually cause the network to vanish in so far as each player is potentially mobile. The role of the coordinator is vital in each case that he exerts his power of negotiation on other network members. Hyperflexibility can be observed when the coordinator applies low negotiating power, hyperstability occurs in the opposite case. As a rule, the former depends on the specificity acquired by the network members and provided by the coordinators' output.

Balanced interdependence (cf document 4) amongst the network members is crucial in stabilising the network. The former can be reinforced by the specificity of the "output" by a protocol of exclusivity for a specific service provided by one of the members. In this case, stability is achieved on the base of a service while mobility is preserved by offering the possibility to each participant to associate himself with several networks for different services.

The role of the coordinator must also be linked to the "concept of position" developed by Thorelli in his article in 1986. Position is thereby defined as "giving empowerment" which enables people to initiate, to influence and to coordinate the network. According to the author, position depends on the coordinator-company's area of strategic activity, on its position in other networks and on the power exerted by the coordinator on the other members of the network.

Position may therefore relate to focused, contextualized power. It evokes one of the key factors in the life and existence of a network, namely the behaviour of its members.

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LA COMPAGNIE GENERALE DES EAUX :

The dynamics of corporate networking.

Technical Notes

Document 1

UNDERSTANDING NETWORKS

**"A jungle of terminology in which
any newcomer is likely to plant a
tree !"**

(J.A. Barnes)

**Players taking up positions and maintaining internal and
external relationships.**

(C.Bouteiller)

An efficient means of acquiring external resources.

(H.Hakansson and J. Johanson)

An accumulator of technological skills, sources of power.

(H.B.Thorelli)

Allows people to manage complexity

(R.E. Miles and C.C. Snow)

to develop activities - specialisation and coordination

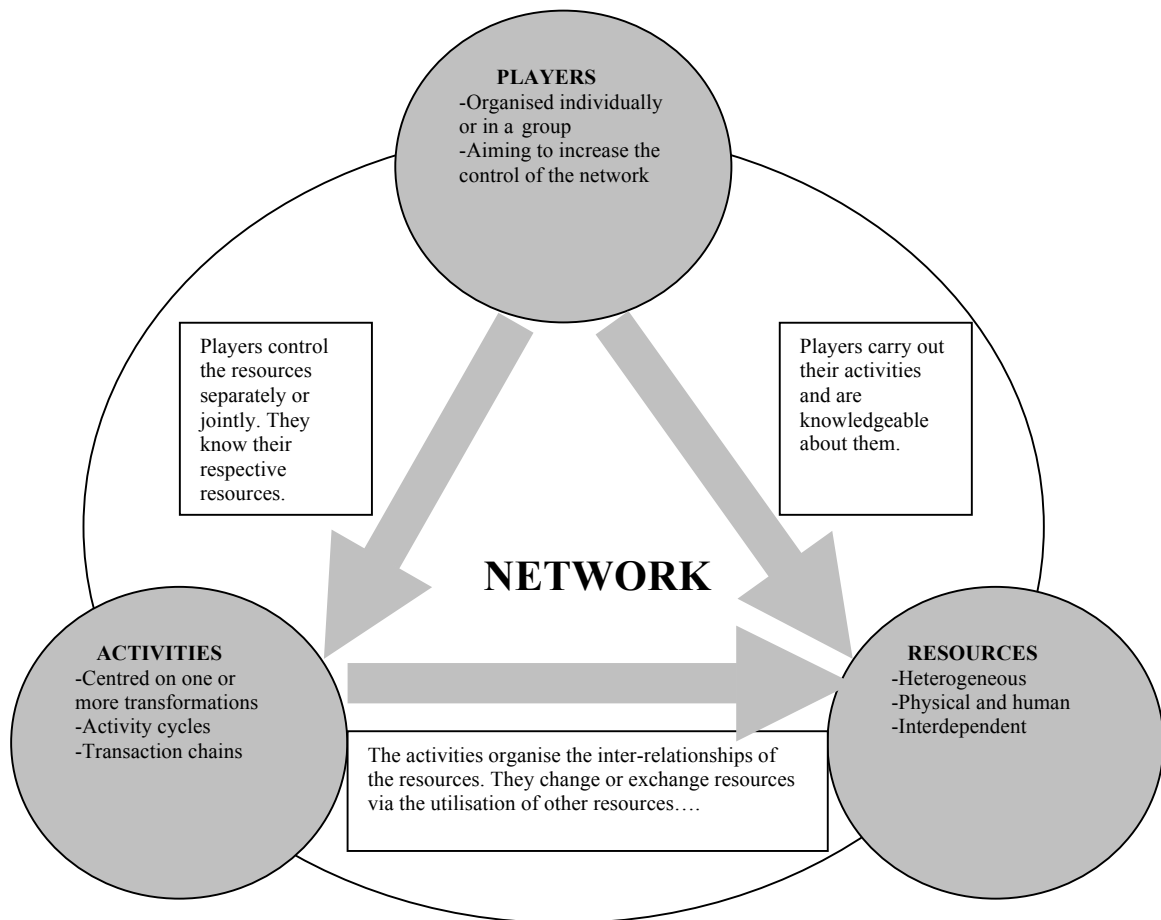
(A. Soderlund) "

Allows people to construct an economic and social context.

(K. Imai et al)

Document 2

The Network according to *H. Hakansson*



Document 3

WORKING IN NETWORKS

The role of the coordinator : coordination vs. control

**Stability : normalised and regular exchanges ,
action learning , nature of investments.**

**Flexibility: advantages and benefits gained by
each participant, technological development,
market pressures.**

**Connexions and power sharing within the
network.**

***In general, Hyper stability has the effect of
breaking up the network dynamics whereas hyper
flexibility, in the long term, can bring about its
disappearance ...***

Document 4

BALANCED INTERDEPENDENCE

Interdependence, one of the major concepts in the theory of networking.

**Reciprocity between the coordinator and the other members of the network.
Proportionality of sales volumes achieved by each member.**

Exclusivity of services offered by one member to the rest of the partners.

No symmetrical dependence (no "lock in"). Non specific investments ("no informal barriers to mobility").

Balanced inter-dependence: the mutually beneficial meeting of players who are both free and committed ...

Document 5

THE « TIT FOR TAT » STRATEGY

**Formalised and studied by *R. Axelrod*²
in response to the dilemma of the prisoner.**

Cooperation from the first round of negotiations.

**Systematically adopts, throughout the game, the strategy
applied by the other player during the previous round of
negotiations.**

Works on behavioural considerations.

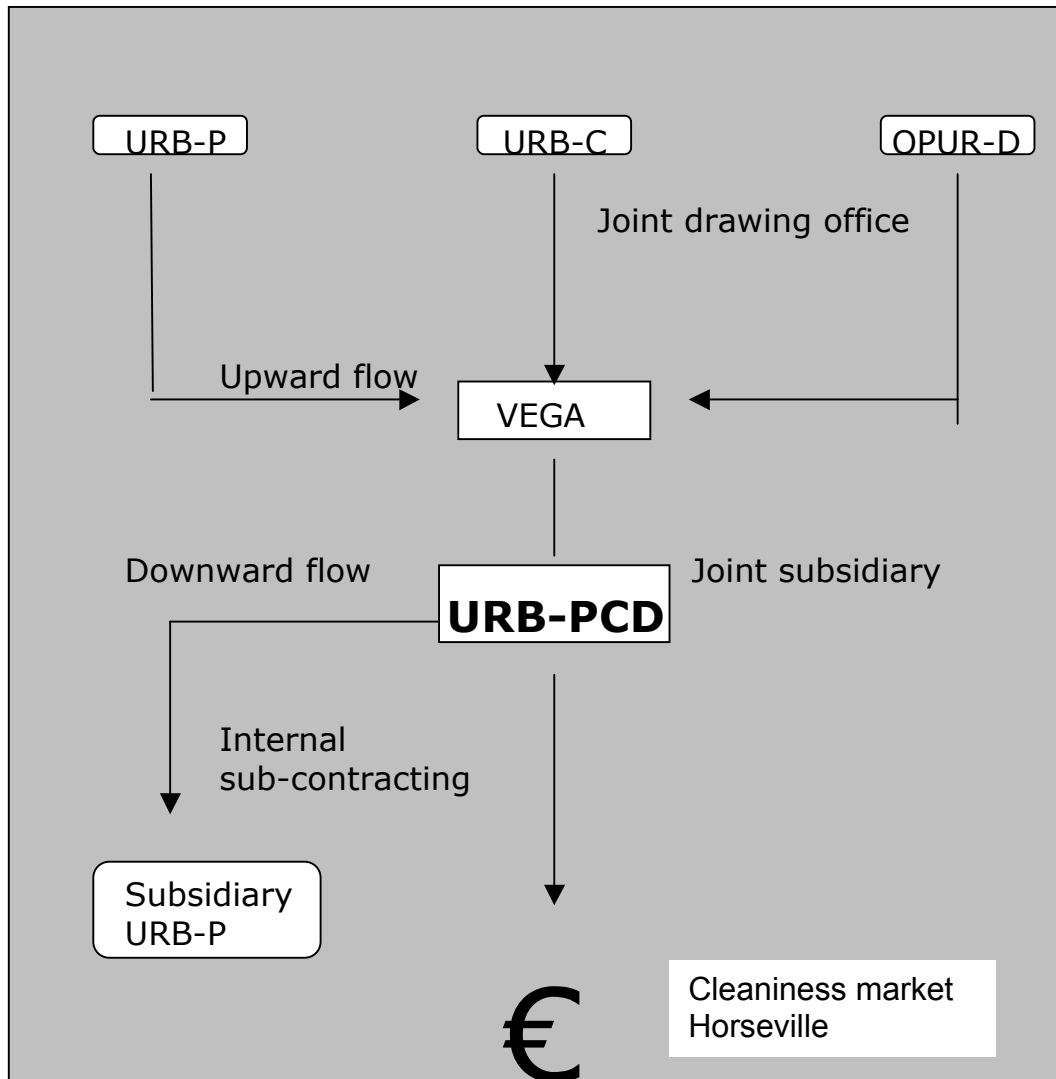
Transforms the context.

² Axelrod, R. (1990), *The evolution of co-operation*, London, Penguin Books.
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Document 6

PROJECT AZUR :

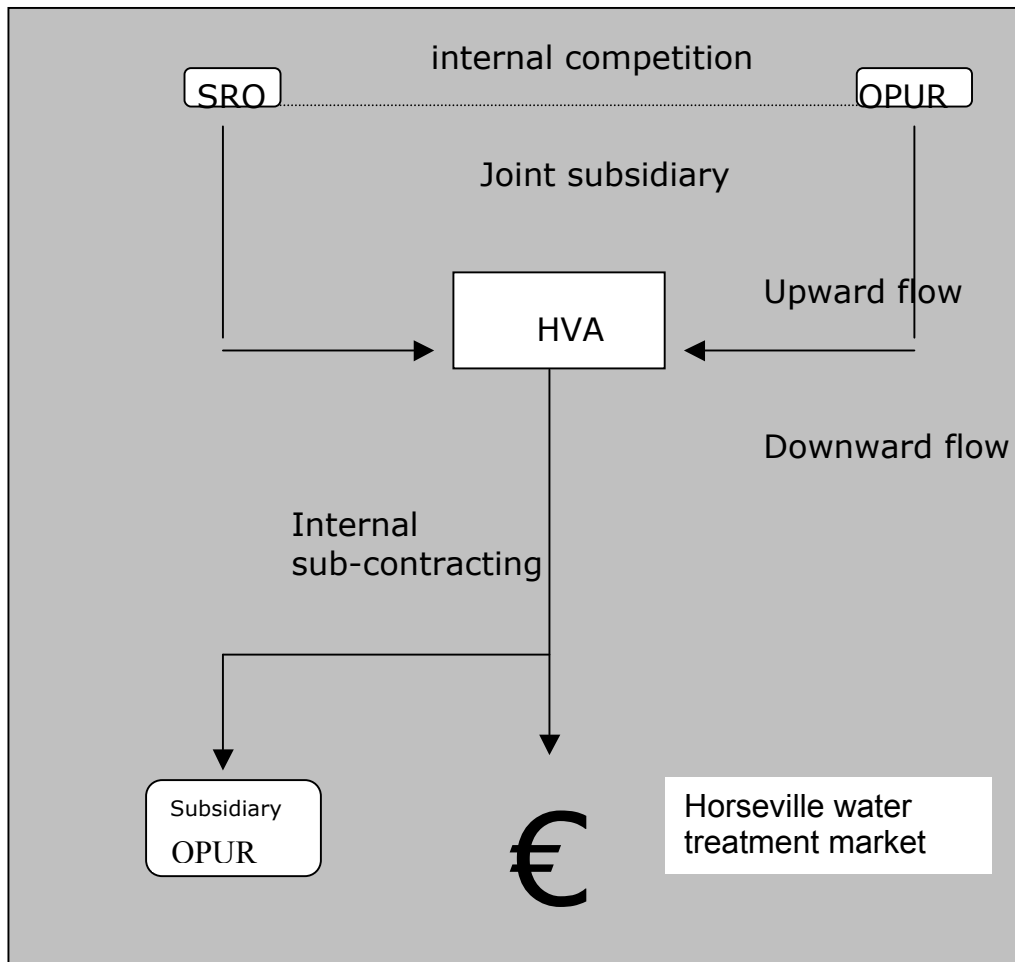
« Harmonious collaboration among complementary business units »



Document 7

CAS HVA :

« Cooperation and competition between competing business units »



Document 8

IRIS CASE :

« Non-resolved competition with resulting market loss »

