

Urban services and sustainable development

Analysis of six experiences in delegated management world wide

Comprehensive report written by
Christophe Defeuilley and Dominique Lorrain

with the support of THE AGENCE FRANÇAISE DE DEVELOPPEMENT GROUP

MINISTÈRE DE L'ÉQUIPEMENT,
DES TRANSPORTS ET DU LOGEMENT
DIRECTION DES AFFAIRES
ÉCONOMIQUES ET INTERNATIONALES
(METL-DAEI)

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Urban Services and Sustainable Development

Experiences in Delegated Management

The explosion of needs and the limits of public authority financing capacities are bringing new pressures to bear on the management of urban services. New organizational forms are emerging, based on closer involvement of private companies. Providing these new procedures are well thought-out, they offer an appropriate response to people's requirements for access to public utilities, quality of service and environmental protection. But although public/private partnerships are shaping a new general framework, a single reproducible model does not exist, but rather solutions tailored to local situations and specific problems.

There are many challenges to be met – reconciling investment and profitability with access to services for the most disadvantaged, ensuring that the private (often foreign) operator is drawn into, and gets to know, the local context, creating the conditions for efficient regulation, and meeting requirements for sustainable development. An in-depth study of six urban service management experiences¹ holds valuable general lessons that highlight the pitfalls to be avoided in planning regulation frameworks and in managing contracts.

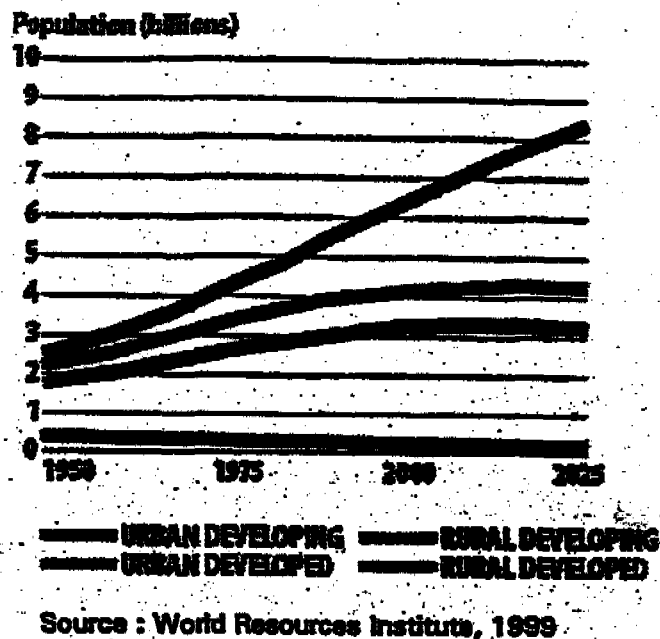
Urban services, the challenges of delegated management

1. Limits of public management

In most cities in developing countries, public management of urban services is fraught with difficulties. Increasing needs, population growth and rural-urban migration have required municipalities to satisfy an ever greater number of inhabitants by extending networks and building new infrastructure. Millionaire cities are multiplying: 157 in 1975, 320 in 2000. The number of cities with at least eight million inhabitants (*megacities*) increased from 2 in 1950 (New York and London) to 23 in 1995. And of these, 17 are in developing countries. In 2015, *megacities* are expected to number 36.

¹ Water in Chengdu (China), waste in Hong Kong, water and electricity in Ivory Coast, electricity in Brazil, water in Buenos Aires (Argentina) and energy in Prague (Czech Republic).

World population trends (1950 – 2015)



Three major difficulties combine together – a shortage of financial resources, management problems leading to a decline in the quality of service, and a lack of local operators with the technical skills required for large-scale operations.

The shortfall in public financial resources has often hampered the rehabilitation of urban networks. For instance, Buenos Aires with its 11 million inhabitants, had a water distribution network covering no more than six million people in the early 1990s. It had evolved little since the second world war. Treatment of household and industrial effluents was almost non-existent, with a single plant for 300,000 inhabitant equivalents. Brazil, a fast-growing country, must satisfy heavy energy requirements (at the risk of creating bottlenecks). Coping with these requirements entails work to extend the transport and distribution systems and to build new power stations, for an overall cost estimated at \$ 64 billion during the ten-year period from 1995 to 2005. There are many more examples of this kind.

In conjunction with the resource gap, the habits adopted in “uncontested” monopoly situations may explain the deterioration in the *quality of service rendered* by public operators. A lack of care taken with customer management, persistent overmanning, long response times and low invoice recovery rates have sometimes made it necessary to restrict the financial capabilities of public corporations and penalize some user categories. For this reason, the first measures taken by *SODECI* in Ivory Coast (water distribution), *Aguas Argentinas* in Buenos Aires (water distribution and drainage) and *Light* in Rio de Janeiro (power distribution), prioritized the rationalization of commercial management of the service and corporate housekeeping.

In addition to these two constraints, there may sometimes be a *lack of national public operators* able to carry out projects involving highly sophisticated technology. This makes it necessary to seek the services of international groups with adequate techniques. For instance, when the city of Hong Kong needed to build and operate landfill sites meeting the most stringent standards, it opted for world-class private firms (Waste Management, BFI and SITA) rather than local partners. In the international competition between major groups, French firms are particularly well-placed.

Some major contracts with French firms on the international front

- Senegal. SAUR (Bouygues group) won a contract to distribute water in Senegal in 1996 (3.5 million inhabitants concerned)
- Casablanca (Morocco). Suez-Lyonnaise signed a 30-year contract for the distribution of water and electricity in 1997 (3.5 million inhabitants, 18 billion francs of planned investments)
- Gabon. Vivendi won the concession for water and electricity in Gabon in 1997 (1.5 million inhabitants concerned)
- La Paz (Bolivia). Suez-Lyonnaise secured a 30-year contract for water distribution and sanitation in the Bolivian capital in 1997 (1.3 million inhabitants, \$ 360 million planned investments)
- Budapest (Hungary). Vivendi and Suez-Lyonnaise obtained contracts in 1997 for water distribution and treatment respectively
- Jakarta (Indonesia). Water production and distribution in the west area of Jakarta was awarded to Suez-Lyonnaise in 1997 for 25 years (5 million inhabitants, \$ 300 million investments planned for the first five years)
- Berlin (Germany). In 1999, Vivendi was the successful tenderer for the takeover of the Berlin water and sanitation company, for a value of DM 3.3 billion (service for 3.5 million inhabitants)
- Santiago (Chile). In 1999, Suez-Lyonnaise won the privatization of the water company in Santiago (5 million inhabitants)

2. Delegation and regulation

The basic tendency in developing countries is to open up towards the private sector. Between 1990 and 1995, private funding of infrastructure in the developing countries increased from \$ 2.7 billion to \$ 37 billion. In 1994, the governments of thirty developing countries transferred 75 companies engaging in public services to the private sector for a total value of \$ 10.1 billion.

Year	Amount	Number of privatized firms
1989	2.8	11
1990	6	32
1991	6.8	41
1992	9.8	63
1993	4.4	90
1994	10.1	75

In \$ billion. Source: World Bank, 1997

The delegation and privatization trend is general but with diverse solutions. The degree of opening up to the market, the selection criteria and the greater or lesser involvement of international organizations are elements that vary depending on the objectives of the public authorities when they decide to utilize the private sector.

The organization around the contract

For the *selection* of an operator, the spectrum is broad. It ranges from a system in which the private operator is solicited under a private contract (without tendering or official notice) and is allocated a particularly large service area (for instance *SODECI* and *CIE* in Ivory Coast), to the most open procedures in which the preparation of projects, the organization of tendering and the selection of operators meet the recommendations of the international organizations. This was the case for tenders in Chengdu, China (production of drinking water), in Buenos Aires (water distribution and sanitation), in Brazil (electricity supply) and in Hong Kong (waste).

As regards the *choice of the private partner*, public authorities have often sought out internationally recognized firms with sound technical resources. They have then prioritized the development of sustainable strategic partnerships. But sometimes they have chosen companies with more of a financial profile, which invest in operations and then seek to form a pool of firms or teams able to provide the operators' skills they lack. This is particularly the case when public authorities aim primarily to maximize the income derived from opening up to the private sector.

The definition of the *main contract features* is another determining factor. Although their legal characterization depends on prevailing national legislation, the proposed contracts refer back to instances of delegation (in the broad sense of the term). These contracts are for periods varying between 15 and 50 years, depending on the investments to be made, the type of service and the public authority requirements. Thus the 50-year period of the contract between SITA and the Hong Kong authorities is explained by the inclusion of a 30-year after-care period (site rehabilitation and change monitoring) after the actual operating phase of the landfill site. Contracts provide for several remuneration options. These are intended to encourage the operator to achieve productivity gains and improve commercial management of the service. Some of the gains are passed on to users in the form of a greater or lesser reduction in charges.

Example of an electricity distribution contract in Brazil

In 1995, the Brazilian government introduced new regulations for distribution concessions. The main provisions are as follows:

1. Delegating to the private sector is preceded by the introduction of competition through tendering. The selection is made on the basis of the acquisition price of the concession and the technical characteristics of the tender.
2. The term of contract is set at 30 years. At the end of this period, there is a new call for tenders.
3. The service must meet requirements in terms of continuity, efficiency; safety, customizing, courtesy to users and low charges.
4. Users are entitled to benefit from a satisfactory service, to receive the necessary information for the defence of individual and collective interests, and to report any illegal acts or practices of the concession company to the appropriate authorities.
5. The concession company must submit to periodical in-depth inspection of its activities by the regulatory agency. Prices are adjusted according to a partial cost reimbursement formula included in the contract.
6. Penalties apply in the event of failure to comply with contractual and regulatory obligations. They can range from a simple fine to the cancellation of the concession.

Regulator – regulated

Regulation is in the mainstream of urban service operations. It must guarantee good functioning of the service, the defence of users' interests and the earning power of private operators while reconciling often contradictory tasks. To achieve this, various ways and means of implementation are being experimented.

The first variable to be considered is the regulator's *degree of independence*. This independence may be marginal when regulation is an inherent part of the concession structure and the urban services are controlled from within the administrative or technical departments of the governmental machinery (cf. Ivory Coast). Or when the regulator is quite separate from the public authorities but does not have sufficient technical and financial resources or the legitimacy required to be in the foreground of public debate. In this case, it may prove difficult to organize regulation.

A good case in point is the episode of the renegotiation of the Buenos Aires water distribution and sanitation contract in 1997. In a context in which the independent regulator had little political weight, discussions towards a compromise on the formulation of certain contractual changes were conducted in a confrontational atmosphere. A way out was found but only after all the standard solutions had been exhausted. The regulator's lack of independence (whether or not it is formally acquired) has an adverse effect on management by making the post-contractual discussion phases more critical. Conversely, the examples of electricity in Brazil and landfilling in Hong Kong show that the regulatory bodies with clearly identified powers, recognized competence and a degree of independence, have a positive impact on the contractual relationship and reduce urban service management uncertainties. In Brazil, the independence of the regulatory body gradually came to be a fact because this body held its own in the discussions, defended its interests and stood apart from the public authorities.

The second strong point in regulation is the *extent of the regulatory powers*. Depending on the situation, the regulatory bodies may have strong or weak prerogatives. They sometimes have considerable possibilities of control and action on private operators. This is the case of Hong Kong, Buenos Aires and Brazil, where the regulators have strong control capabilities, organize monitoring of the activities of the operators, require detailed information from them and are able to enforce penalties. Regulation also ensures that operators comply strictly with their obligations. Sometimes particular attention is paid to the means used (investment plan, techniques), sometimes to the results, which are measured, checked and compared with the objectives (quality network extension). Users' rights are often one of the declared priorities of regulators, who must ensure users are provided with information, servicing and connections according to the terms of the contract documents. In this case, regulation is of considerable importance and the operators' activities are closely monitored.

But such is not always the case. The control bodies may sometimes perform more remote, less specific monitoring, allowing greater latitude to the operators. In this case, the public authorities opt for less formal relations in which the spirit of the contract, confidence and partnering matter as much as the letter of the contractual commitment. This is the option taken in Ivory Coast for example. These different configurations are based on two main regulation models that co-exist at international level. The Anglo-Saxon model of regulation performed by a specialized "arms length" agency and the French model that lends more credit to contractual relations, confidence and partnering.

The two "types" of regulation

Typology of regulation methods	Regulation by specialized agencies	Contractual regulation
Independence Information Control and monitoring Penalties Degree of freedom Quality Relations	Strong Detailed With indicators Clearly defined Supervised Standardized Formal	Weak General Problem-based Not specified Extensive Not standardized Partnering, confidence
Examples	Honk Kong, Buenos Aires, Electricity in Brazil	Electricity and water in Ivory Coast

The action of Suez-Lyonnaise in Buenos Aires

Since 1993 with the signature of the concession contract in Buenos Aires, the action of the consortium of companies led by Suez-Lyonnaise des Eaux has already enabled the following significant improvements:

- Higher level of customer satisfaction, now over 90%, through the opening of reception centres and the creation of a round-the-clock phone service.
- Improved technical management of the network – 90% of leakages and water shortages are put right in less than 48 hours.
- 20% progression in the collection of individual bills in the larger districts. Putting customer file in order, reducing outstanding payments.

3. The challenges

The many solutions adopted for urban service management and the many forms taken by the delegation/regulation system produce contrasting results. While some contracts start off on a good footing, others are negotiated under difficult conditions or even come to nothing. Day-to-day operations raise problems and unanticipated questions such as how the private sector option will affect industrial structures, how regulation responds to changes in corporate organization policies, how to manage crucial renegotiation phases, learning the local institutional framework, the place of users, respect for their rights and access of the underprivileged to public utilities. To address these problems, priorities must be determined. Four factors, which all pose challenges, form the core of the requirements to be met to ensure fair and efficient management of urban services.

A balanced, adaptive action framework

To provide urban services in the best conditions, develop networks and make investments, it is preferable to have a balanced, adaptive action framework. An action framework covers all the institutions, rules and practices that play a part in contracts and regulation. The action framework must be stable to reduce risks incurred by operators, facilitate their understanding of unfamiliar mechanisms (frequently the case when do not come from the country concerned) and give them the benefit of a degree of predictability. The operator/regulator "pair" must be balanced to prevent one party taking precedence over the others and imposing its views. Otherwise blocked situations, misunderstandings or friction may arise between the stakeholders (private firms, public authorities, users, etc.). The examples of the "Prague Cleanup Campaign" or of Chengdu and Buenos Aires illustrate the importance of this parameter in project management and contract performance.

The action framework must be adaptive, i.e. amenable to adjustments. Both the operators' obligations and the regulation principles must be able to change as required. This will prevent the regulation rules from losing in efficiency because of changeable conditions. It also makes the management of crisis situations easier when an unexpected event occurs that adversely affects the continuation of the contracts². A *way out* must always be provided so as not to form an entirely closed regulator/regulated relationship in which formal or informal negotiations would have no place. This is because negotiations may be an efficient way to appease strained situations and handle conflicts. In a stable but adaptive context, learning and mutual adjustment can take place in good conditions.

Efficient regulation

Once the linkage has been achieved between private interests, the institutional context and public decision-taking, it remains to be ensured that urban service management meets requirements of transparency and economic and industrial rationality. Firstly, action must be taken to prevent the potentially negative effects of market openness and regulation on the industrial structure. An action framework tending towards the fragmentation of structures and the formation of ad hoc alliances is not the best guarantee of sustainable service management

² This may occur when a contract clause has been misconstrued or badly negotiated or if a long-term contract must be revised to better meet ad hoc requirements or major technical changes.

under satisfactory conditions. Secondly, it is important to prevent any risks of collusion or capture liable to have a detrimental effect on users and the public interest by resulting in a decline in the quality of service and the inability to manage prices.

Several mechanisms can be used for this purpose:

- Define tendering procedures that are not based on a purely financial logic (aimed at maximizing the sales price) but that integrate industrial concerns.
- Introduce monitoring and control procedures that enable the regulator to observe the operator, understand how it works (requirements and constraints) and whether its requests are justified.
- Set up incentive procedures to change and update charges, and ensure that any productivity gains achieved by the company are partially passed on to users.
- Assess the operator's performance using information available to the regulator to perform benchmarking.
- Use competition to induce operators to do their best under the most advantageous financial conditions for the users.

These mechanisms can be used together or separately in both "arms-length" and "contractual" regulation systems. They do not run contrary to a desire to create genuine partnership conditions with the operator. It is how they are used by the regulatory bodies (formally or otherwise, as intangible performance indicators or as benchmarks in negotiations) that makes the difference. At all events, they are essential to prevent an initial confidence-based partnership from gradually developing towards a situation in which the public authorities, through lack of vigilance, lose control over urban service management.

Access of low-income groups to services

The third challenge is to ensure access to facilities for the most underprivileged. In the majority of developing countries, a significant proportion of the population is unable to pay water or electricity bills, let alone finance the investment required to extend the supply systems. According to the World Resources Institute, cities in developing countries have 25% to 50% of low-income inhabitants who have no access to basic urban services (or under poor conditions). It is estimated that a majority of the inhabitants without access to potable water or sanitation (1 billion and 2.9 billion individuals respectively) live in disadvantaged urban areas.

In a context of private management in which the operator must be capable of making his investment pay, it is impossible to supply a service free of charge, or not to collect the bills, without jeopardizing the financial integrity of the contract. But neither is it conceivable to leave low-income groups without access to services, as this will only exclude and marginalize them even more and consequently slow down development. Profitability achieved partly by limiting the supported social charges and reducing investments would clearly run counter to the public interest. Means must therefore be found to reconcile both these requirements of profitability and service to people of little or no creditworthiness.

The first solution can be to improve the commercial management of the service and control expenditure, through appropriate incentive measures. This will generate additional resources for the same service, which can be reserved mainly for low-income households – providing the regulatory bodies and the operator are willing to devote some of their efforts to this

population fringe. A second solution is to devise specific commercial and technical tools adapted to the disadvantaged. One of the possible mechanisms is that of cross-subsidization which pools the expense of extending the service (e.g. by organizing cross-subsidized charges). It is usually the inhabitants of outlying districts that combine poverty and lack of access to services. It is inconceivable to make these people pay the costs of servicing their districts, as shown by the case of Buenos Aires. Expenditure must therefore be phased over time and be defrayed not only by newly-serviced households but also by the others, i.e. the entire population within the contract area. Other solutions also exist, as the following table shows.

Financial solutions to facilitate access of the poorest population groups

	Charge	Meter installation	Infrastructure (secondary networks)	Work on private land
Cross-subsidizing	x			
Social bracket	x			
Payment methods		x	x	
Labour participation		x	x	
Subsidies		x	x	x
"Social" supported connections		x		
Work fund			x	
Micro-loans		x	x	x
Prepayment	x			
Tontines		x		x

Source: Suez-Lyonnaise, 1999

These solutions are naturally tentative and will not provide an overall solution to the problem. The integration of low-income groups, which are increasing in number in urban areas, is definitely the key challenge for private operators and public authorities.

Contribution of urban services to sustainable development

In many respects, urban services are the core elements of any sustainable development policy for cities. They help to ensure that today's development is not achieved to the detriment of tomorrow's generations. Quite the reverse, as the modernization and extension of the water, sanitation, urban transport and electric supply systems participate in urban development that engages the future and makes provision for prospective changes in requirements and population movements. These services may have bandwagon effects on the current development of economic activities while preserving the conditions of future development (by helping to improve quality of life, protect resources and reduce pollution). It would be a bad move by a municipality to sacrifice the modernization of its urban services so that it could reduce charges payable by users and increase their short-term purchasing power. That would undermine the basis of the city's future development.

The public authorities and urban service operators must tackle this challenge of sustainable development. They must therefore build their action and decision-making into a long-term perspective, which is the only way to make sustainable development a reality. First and foremost, the action framework and regulation must be responsive to adjustment and change in the services. A management method following contractual commitments to the letter might make it difficult to modify the service to meet demographic or socio-economic changes. A

modular action framework is essential if urban services are to be organized and developed to keep pace with the structural changes experienced by towns and cities. Secondly, authorities and operators must ensure that their technical choices are tailored to the context and to requirements. Techniques must be chosen that will not create a "locking" phenomenon making it impossible or costly to move on to a more efficient generation of techniques.

Delegated management experiences

For the past few years, the French presence in urban service management has considerably increased on the international scene, with contracts in Buenos Aires, Casablanca and Sydney for Suez-Lyonnaise, the build-up of SAUR's activities in Ivory Coast, the international development of EDF (French Electricity Company) in Brazil and England, and Vivendi's activities in the USA, Indonesia and Gabon. The following six cases illustrate, each in their own way, the "history" of this internationalization with its problems, challenges and lessons, and the significance of specific local methods of regulation, project development and operation management.

1. Water in Chengdu (China). The complexities in mounting a project

In July 1998, Vivendi announced that an agreement had been signed with the city of Chengdu, capital of the province of Sichuan, for what can be considered the first contract of the BOT type (Build Operate Transfer) for the production of drinking water in China. The contract concerns the building and operating of a drinking water production plant with a capacity of 400,000 m³/day, at an estimated cost of \$ 200 million. It reinforces other already-existing facilities (operated by the municipal services) and aims to meet the drinking water requirements of 2.3 million inhabitants. The city of Chengdu thus becomes the reference city in China for this type of project, which marks the transition from government-run management to an economy in which the market has greater impact. It also symbolizes Vivendi's presence on the Asian markets. But despite the exemplary nature of this project, it highlights the difficulties inherent in the transition between one institutional architecture and another. The "Chinese-style" decision system³ is gradually giving way to a "market" system based on the autonomy of businesses, an appropriate accounting framework and attention to the economic, technical and financial conditions of urban service operations.

The first discussions were held in December 1996. The Chinese authorities thought that a foreign operator acted primarily as a banker and provided funds rather than skills or technical operating knowhow. On this basis, they determined all the technical specifications without giving the company any latitude. Some patient explaining to the local technical advisers was therefore required, as they were not well acquainted with the contractual arrangements applicable to this type of project or the foreign companies by whom they were approached. They thus had to be initiated into relations and organization systems that differed from those of a government-run economic system. Throughout 1997, a small Vivendi team ran the risk of not following the usual procedures adopted by the authorities, and endeavoured to persuade them of the relevance and economic advantages of the new technical solutions they proposed (compared to standard Chinese solutions). Vivendi accordingly trusted to luck that this liberty taken with the specifications, which was never formally accepted, would not eliminate them from the final selection.

The selection procedure lasted a year, from July 1997 (prequalification stage) to July 1998 (final agreement). It then took another nine months to finalize the financial side. The selection procedure used by Chengdu followed the principle of selecting the most attractive offer through competitive tendering in several stages: an international call for tenders, prequalification, putting in the tenders, examination and ranking of tenders and negotiations with the successful tenderer. The main selection criterion consisted in opting for a technical

³ Characterised by interacting political and technical institutions and a lack of interest in operational matters.

solution while keeping the price of water in check. Replies were received from eight major groups – the municipality attracted the best bidders on the international market. It was a lengthy, costly procedure and Vivendi spent some \$3 million in preparing the tender documents.

The period between March and July 1998, when the contract was signed, was devoted to negotiations between the parties, which proved rather difficult. Several types of Chinese participants were involved (national and local authorities) but Vivendi itself did not take part. Then the arrangements had to be made, which consisted in setting up the companies, mobilizing the funds and entering into the contracts – all in nine months. The building work as such was spread over thirty months, then the plant operation over 15 ½ years (amounting to 18 years in all). The project arrangements were rather complex as they involved several parties (Vivendi and its partners), several loans, the creation of a project company (the project owner that signed the contracts with the construction company) and an operating company.

In the event of overexpenditure on the building work, entailing a re-examination of the agreement (increase in loans from banks), the Chinese administrative regulations, which are complex and fairly rigid, are liable to cause problems and friction between the authorities and the companies. But the nature of Vivendi, a "big integrated business" acting as both the builder and the operator, is flexible enough to cope with such contingencies. And the integration of the various project components within the same group makes the adjustment of results less complex at each stage. Doubtless, Vivendi will need all its internal resources and adaptive capacities to become skilled in its relations with the local authorities over the longer term.

2. Waste in Hong Kong – closely supervised technical achievement

In many respects, waste management in Hong Kong is an exceptional case. This is a city with a very high density (5.8 million inhabitants for an area of 1,000 sq. metres), strong, enduring population growth and high-income inhabitants, which is a hub of international trade in goods. More and more large volumes of waste are being produced here (some 16,000 tonnes per day in 1996, and twice that amount in 2006), while environmental, geographic and physical constraints (density and humidity) are very heavy. The experience of the DBO (*Design Build Operate*) contract⁴ for Hong Kong's third disposal site, which involves SITA (Suez-Lyonnaise waste subsidiary), is a benchmark operation. This contract is highly instructive because it requires considerable technical skills and is performed in an original regulatory context in which the public authorities have considerable scope for controlling and monitoring the activities of the private company. However, the experience does have a limit – the fact that a rigid, strictly defined regulation procedure comes up against operators with drive, whose unfolding dynamics it may not be able to hold in check.

The Hong Kong authorities, aware of the constraints besetting waste management in their territory, thus decided to draw up a waste treatment plan for the 1989-2000 period. It included the creation of three large-scale landfill sites, which will be the main disposal sites for the next twenty years, with input from transfer stations. The new disposal sites and transfer stations were to be privatized through *Design-Build-Operate*-type contracts. International invitations to tender were issued on the basis of strict specifications that nevertheless left a

⁴ This type of contract assigns responsibility to the operator for designing, building (obtaining adequate funding) and managing the facilities required for the service specified by the organizing authority.

few technical options open (excavation site plan, waste storage plan). Only major international firms with a sound reputation and recognized experience were eligible to tender. Each of the three disposal sites was awarded to a different group: Waste Management Inc. (Sent site), SITA (Nent site), and BFI (Went site). The Nent contract is for a period of 50 years: 3 years of work, 17 years of operation and 30 years of after-care (site rehabilitation and change monitoring). Operations began in June 1995. The contract amounts to HK\$ 2,610 million, which includes HK\$ 2,006 million for site operations. The disposal area stretches over 63 hectares and the site is designed to receive 35 million cu. metres of waste with a maximum 140-metre height of piled waste.

The authorities obtained substantial guarantees, including the transfer of a large amount of money as security to prevent the company from eluding its after-care commitments by not putting the site back in order for the public authorities once the operating period is finished. The contractual relations are strictly regulated. The company deals with a single partner, the Environmental Protection Department, which holds all the supervisory powers. Secondly, this department exercises strict control, which requires a person to be employed full-time by the company. Eight people from the Environmental Protection Department, assisted by a single paid consultant, continually monitor the site. Their task is to ensure compliance with environmental standards through monitoring with regular sample collecting, particularly on leachates. If quality standards are not met, the charge per ton can be reduced. In addition to this on-site control work, the inspectors regularly visit local people (residents, municipal councils) to obtain their points of view and detect any problem that may arise (smells, nuisance, etc.). Thirdly, the contract management and control activities are separated within the Environmental Protection Department (into two separate departments). This separation has the advantage of encouraging the contract monitoring officers to be strict under pressure from the field controllers.

This regulatory framework has the merit of being clear and rigorous but it has its drawbacks. The cost of this mode of operation is high (it is passed on in the landfill price) and it is not very well-equipped to cope with major changes and developments during the performance of the contract. With the buy-out of BFI international activities by SITA, the regulatory body now has to deal with two operators instead of three. The aim of allotting each of the sites to three different operators was probably intended to compare their performance levels. This benchmarking, which is a powerful regulation instrument, will be less likely to work in the new system.

3. Electricity in Brazil. A breath of fresh air for foreign firms.

In 1995, Brazil engaged in a far-reaching experience to restructure and liberalize its entire electricity sector. The regional economic weight of Brazil, the size of its market and its sustained growth prospects are a major challenge to electricity companies seeking to extend their sphere of influence and increase their presence on the international front. The main features of the Brazilian electricity sector are a hydro-electric component that is strong but remote from the areas of use, a complicated extension of the transmission network further intensified by the country's continental dimension, a time-sharing system, escalating demand set to double in ten years, and great socio-economic diversity.

Before the reform, the Brazilian system was structured around *Eletrobras*, a Federal State holding corporation in charge of technical and financial co-ordination of the entire sector and

long-term planning of investments. Power generation and transmission were provided by four major inter-regional companies owned by the *Eletrobras* holding company. Distribution was globally shared between thirty public corporations. In the 1980s, the Brazilian electricity sector came up against major difficulties of a mainly financial nature. Corporate expenditure was no longer offset by charges, which were fixed by the State. In 1993, the sector was almost bankrupt, obliging the Federal State to intervene and defray the corporations' \$ 26 billion consolidated debts, which were the direct consequence of the old charges.

In 1995, the reform of the electricity sector was initiated. It consisted in the following measures: 1/ setting up an independent regulatory agency; 2/ launching an action plan to stimulate investment and interlinking with neighbouring countries; 3/ "privatizing" distribution, or more precisely, selling to the private sector the right to carry on distribution activities over a specific period (the assets remain public sector property); 4/ implementing a new regulatory, legal and commercial framework. The overall objective was to ultimately achieve a "decentralized, competitive" model of organization of the electricity sector. In the first half-year of 1998 after three years of privatization, 59% of the distribution expressed in terms of billed energy had in fact been privatized and 16 corporations sold. The first of the public corporations to be offered for sale during the summer of 1998 was *Gerasul* (10% of the power generation market). The process should be completed by 1999-2000, except for the *Itaipu* Dam and the nuclear power stations (which account for 20% of the market).

The government chose to privatize the corporations by selling most (or all) of their capital to one or more companies (organized into consortia). The selection criterion adopted by the public authorities was that of the highest bidding price, which was used to enable the Brazilian authorities to make as much money as possible. In this respect, the bidding procedure is successful for the moment, as takeovers of the public corporations have brought in \$ 18.7 billion for the authorities. This has mainly been made possible by opening up the sector to foreign companies, which has increased the number of potential bidders, provided additional financing capacities and increased the takeover price.

Consortia of foreign companies bought most of the distribution corporations (11 out of 16) (with significant or controlling interest). Most major international operators were interested in the Brazilian market, submitted tenders and often raised their bids considerably in order to buy out the distribution corporations. This was the case for EDF, American groups such as Houston, Enron or AES, and for ENDESA, Iberdrola, Tractebel and EDP. The companies' main motivations for moving into Brazil are two-fold: 1) Learning new trades is a way of acquiring skills in as-yet unexplored segments of the electricity sector, either upstream to downstream (production to distribution or even marketing) or downstream to upstream (production to resource). It concerns not only electricity companies seeking to broaden their activities in the field but also firms in related sectors such as gas. Enron, for instance, which is traditionally established in the USA gas market, is diversifying its activities by investing in power generation and distribution in many countries including Brazil. 2) Targeting new growth areas and breaking into new markets, particularly for companies with a limited development potential in their countries of origin (horizontal expansion logic). This is the case for EDP, ENDESA, EDF and Tractebel. Brazil is a benchmark experience in which the movement towards the private sector has resulted a massive entry of foreign firms whose main aim is to become established on a growth market. This has brought about overall industrial restructuring of the sector, with the co-existence of new consortia, each grouping together companies that may have markedly different interests, histories and structures. These alliances, which may give the impression of being the result of short-term circumstances and

interests, form a fragile, unstable base. In the years to come, this situation is liable to have an adverse effect on the regulation policy framework, which will be ill-equipped to cope with the major restructuring that is bound to occur.

4. Water in Buenos Aires (Argentina). Contractual adjustments of a sensitive nature

The management contract for drinking water and sanitation services in Buenos Aires is so far the biggest concession in the world for water services (some 9 million inhabitants). It was signed in April 1993 between the Argentinean State and a consortium of private companies (*Aguas Argentinas*) led by Suez-Lyonnaise. The size and the care in the preparation of this concession has made it a benchmark operation in Latin America and beyond. But the early years of the contract were marked by friction between the concession company and the regulator. This was caused by the rigidity of the contractual structure and the lack of any precise definition of the regulator's role.

For many years, the drinking water supply in the Buenos Aires area was beset by problems of quantity (the sewage system only covered half the population) and quality (cut-offs, shortages in summer, long repair times, etc.). Added to this, the economic and financial situation was disastrous, due mainly to poor commercial management (bill collection problems). It was therefore decided in October 1990 to put the water and sanitation service up for concession. The award of the contract was preceded by a preparatory period during which the concession feasibility study, specifications, selection criteria and the contract itself were prepared. These tasks were assigned to two consulting firms, one British for the technical aspect and the other French for the financial aspect. This pre-project phase, executed under the auspices of the World Bank, lasted several months and incurred expenses of around \$ 5 million. The main task consisted in drawing up a particularly detailed thirty-year investment plan (term of the concession). This plan was imposed on all the tenderers and had a contractually binding effect on the concession company selected by the public authorities. The tenderers were selected on the basis of a reduction in charges compared with the price paid by users before the contract award.

A regulatory body (ETOSS) was formed, under the control of the municipality, the province of Buenos Aires and the State. Its mission is to control and monitor the concession company, but it has no other water sector responsibilities elsewhere in Argentina (or even in the province of Buenos Aires). For its mission, it has a staff of 72 people and a budget of about \$ 10 million, funded by a charge paid by users of the service through their water bills. One of the main tasks of the regulator is to check that the concessionaire performs the work according to the specified plan and schedule. In practice, the regulator checks whether the lead times are met and the work is performed satisfactorily. The other main task is to control the quality of the service and arbitrate disputes between the concession company and the users. The regulatory body must evaluate and audit the company accounts to provide input for its estimations in the renegotiation phases.

In the case of Buenos Aires, the authorities opted to organize the regulation around the definition and monitoring of a particularly detailed investment plan. The aim was to prevent any out-of-control drifting of the company's commitments, which might eventually generate heavy supplementary costs and/or not achieve the expected results. To this end, the contract specified work and engineering structures carefully and set out optimum guidelines for phasing investments over thirty years, which were intended to enable the water and sanitation networks to be modernized and extended to cover some 5 million more people. The contract

worked to plan until 1996/1997, when it had to be renegotiated. This was mainly due to a blockage of the network extension financing mechanism, which met with strong opposition from local residents, who objected to the way it was determined. This slowed down and even stopped the connection work and consequently prevented the investment plan from working properly. This fact, together with the company's intention to revise the charge adjustment mechanisms, triggered a major crisis with the regulation authorities. ETOSS accused the company of not meeting its contractual commitments as regards both the works construction schedule and the extension of the coverage. The difficulty in reaching a compromise caused ETOSS to take the conflict before the contract enforcement authority (conceding authority's representative) at the end of 1996. In the end, the regulatory body's supervisory organizations negotiated the terms of an agreement with the company, paving the way for a renegotiation of the contract. ETOS was not involved. This crisis was mainly due to the regulation system's rigidity but also to some degree to its political weakness and limited independence in relation to its supervisory organizations. Stronger regulation would no doubt have enabled the dispute to be settled sooner without resorting to complex arbitration proceedings.

5. Water and electricity in Ivory Coast. Successful involvement of a foreign operator.

Ivory Coast has opted for an original organization and management model of its urban services. Water in 1973, and electricity since 1990, have been managed by two private subsidiaries of the French company, SAUR (Bouygues group). They each have their own sector of a national monopoly. Ivory Coast has sought to solve its water and electricity problems through the devolution of all the services to a single private group, thereby prioritizing preferential relations and a sustainable partnership. Despite the problems and challenges that have had to be addressed at various stages, Ivorian experience is an example of successful involvement of a foreign operator, which has managed to take local specificities into account and develop relationships of trust with the public authorities.

SAUR has been present in the Ivory Coast water sector (via SODECI) since 1959, when it was selected to manage and develop the city of Abidjan network. In 1973, the government selected this company to manage water distribution throughout the country and to implement a national programme to develop facilities in urban and rural areas. Right from the start, SODECI was keen to become part of local life and enable Ivorians to participate in its activities at the highest level. The company was listed on the Abidjan stock exchange in 1978. This operation enabled Ivorian investors to hold over 50% of the capital. More than 50% of its managerial staff are Ivorians, as is the general manager appointed in 1978 (he subsequently became chairman and managing director of SAUR International). Only 7 non-African members of staff are currently working for the company (out of a total of 1,337 people). The company soon became dynamic and, to avoid the risk of bureaucracy, developed modern management methods that consisted in decentralizing departments and objectives, computerization, an intensive staff training policy and attention to customer management, etc. In 1987, the company and the government signed a new contract. It was a "concession" type contract signed for twenty years.

SODECI had the benefit of an uncontested monopoly. This was helped by its good performance (profitability, quality of service, network extension) and the good corporate image it had in political circles, particularly as the firm's development in a non-competitive context went hand in hand with a reduction in water charges in 1987. But this does not mean that no regulatory framework exists. The State, via the Water Directorate, monitors and

controls regulations, water quality and services provided by the concession company. It determines changes in charges to the consumer, negotiates the company's remuneration and approves and monitors the execution of work. The Central Directorate of Major Works also analyses the company's costs, to provide the Water Directorate with elements for discussion on the remuneration of the concession company and the determination of consumer prices.

Building on its long-standing presence in the country and its good performance in the water sector, in 1990 SAUR became the manager of the electricity distribution, transmission and generation network, set up a company (CIE) in which it held a majority interest and signed a 15-year leasing (*affermage*) agreement (once again with no tendering). The sector was restructured along the same lines as the water sector. CIE set out to model its development on that of SODECI with a view to becoming a modern, efficient company. The company aimed to improve customer management, reduce fraud and increase the billing rate. It managed to keep pace with the development of power consumption without suffering any adverse consequences on its financial health. But although this is hailed as success story, it must not blind us to the challenges to be met by the company. Corporate earning power has been maintained in the water sector at the cost of reducing the numbers of beneficiaries of "social" supported charges, which has resulted in a reduction in consumption. Rural areas are still poorly provided with electricity. A rural electrification plan exists, but the financial resources are lacking. Since 1996, objections have been raised to the empowerment of SAUR in Ivory Coast, including from government circles. A move towards increased competition is likely to be made in the years to come.

6. Energy in Prague (Czech Rep.) Institutional blockages and differences of opinion

Right from the early years after the "iron curtain" came down in 1989, French companies have been showing an interest in the Eastern European countries. In 1990, a "Prague Clean-up Campaign" was implemented between the municipality and a group of French companies comprising Compagnie Générale de Chauffage (Vivendi group), Gaz de France and Charbonnages de France. This French initiative sought to find solutions to the district heating problems encountered by Prague: excessive heating consumption, inappropriate facilities, use of coal (which produces sulphur fumes and dust and creates heavy pollution in winter). The clear aim was to propose a long-term contractual arrangement to the municipal authorities, associating French companies that would serve as a support to modernize the facilities. But this project has remained a dead letter, because it came up against institutional blockages and differences of opinion, which resulted from the French companies' lack of understanding of the local decision system and were exacerbated by inter-firm competition. This project illustrates the importance of socio-economic contexts in the operational management of urban networks.

The French companies' commercial proposition consisted in drawing up a "contract on future contracts". This involved the provision of a series of services (including an in-depth study) that were to result in solutions on which the municipality would take a decision. Within 6 months of the end of the study, the municipality could choose to carry out or abandon the "Clean-up Campaign" programme. The task consisted in making systematic diagnosis of the condition, management and consumption of the systems and then proposing financially viable solutions that would enable a French group to enter into a contract for at least fifteen years. The project was initially conceived from the technical standpoint of optimizing a district

heating system and reducing air emissions and costs. But to accomplish this, many changes were necessary at various levels and the agreement of several local partners was required.

Political hesitation in the face of the social risk of changing the charging policy, together with the clash of interests of Prague companies supported by foreign (German and American) firms, were the downfall of the project. The French companies came into particular conflict with the Prague District Heating Company, previously engaged in cooperation, considered as strategic, with the Compagnie Générale de Chauffage (completion of the Melnik power station). This project came into competition with the "Prague Clean-up" programme and the cooperation was called into question. There resulted a conflict of interests, which gradually grew more bitter within the framework of the technical commission in which the Prague District Heating Company was represented, which had been formed to monitor the French companies' study. This conflict of interests was the main reason for putting off any decision concerning the French proposals. Furthermore, the City of Prague's slow decision-making process, the many different decision levels from the operator to the civic office, not forgetting the administrative district, compounded the legal obstacles that blocked the proposals.

Another problem was that the French proposal, based on aggregate risk-taking by the operator, was confronted with Anglo-Saxon logic, which consists in separating the study, equipment, work and operation phases. The commercial argument was new to the Czechs. It was a long-term "package deal" (from service to financing) covering very different installations that were owned and managed by various bodies (the municipality, cooperatives, companies), but for which common handling with a single service supply was suggested. The Czechs were wary of this contract, as it was not consistent with bidding for each lot. It gave a potential monopoly to one company, with no possibility of going back on the contract in the event of a better bid, or of benefitting from a more favourable context in the event of economic improvement. For the Czech authorities, moving from a communist system to a more liberal system must involve developing competitive space. But the product proposed by the French did not meet this requirement. This difficulty in understanding the local decision system persisted throughout the operation. It was above all a problem of perception, a cultural problem between French companies and the Czech authorities. Similarly, the legislative system, which is developing quickly in a country in transition, does not facilitate the accomplishment of this type of project.