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**French utilities committed to
globalization
(19th-21st centuries)**

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Abstract

Whilst being enrooted in public “common goods”, French utilities, either State-controlled or private, became more and more committed to strategies of developing abroad their portfolio of engineering and managing skills. They followed the past of economic imperialism along geopolitics in emerging countries (Russia, Ottoman Empire, Latin America), then also throughout the colonial empire; such offensives were embodied by the adventure of the Suez Canal. From the 1980s, the reconstruction of the worldwide connections opened doors to geoeconomics, that is the will to resist competition and to conquer market shares abroad thanks to the valuation of capital of competence and trust. Every public, privatised or already quoted companies took part to the run for concessions and the deliveries of engineering and managing services (waste, water, postal, railway, bus, energy utilities). This contributed to the competitiveness of French economy and economic patriotism.

Keywords: Internationalised public services, Concessions abroad, Suez Canal, globalised business models, colonial equipment

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French utilities committed to globalization (19th-21st centuries)

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For decades, French economic utilities—social and health utilities being set apart from this study—were oriented towards infrastructures and services earmarked to the development of a strong national economy (transportation, energy), and to local communities' life and economic clusters thanks to grids for water and transport services. A vision of proximity predominated; but the imperial and colonial expansion opened doors to some paths of globalization overseas, till the turn of the 1960s. Nonetheless, the run for competitiveness to reinforce the infrastructures of French economy or leftist minds pleading the reinforcement of the State economic apparatus (*appareil économique d'État*, with the Administration and an array of State-owned corporations) paved the way to a refocus on national and local *modus operandi*—even if the overseas territories (Antilles, Nouvelle-Calédonie, La Réunion, etc.) were involved. Later, the fresh neoliberal trends, first on a European dimension, second along a world-wide openness, questioned such ideologic and business models, which led to globalised mindsets and practices from the 1990s.

National and local roots

First dedicated to local or national developments, management, and use, French utilities assumed a philosophy of proximity which involved local railway transportation, networks of small canals, waste, water, and energy management, etc. Utilities have even carried out the mission to supply society and economy with shared services, along the philosophy of “common goods”, what is qualified in France by “public good” (*bien public*) and “public services” (*services publics*). Relying on basic infrastructures (energy grids, canals, pipes, railways, ports, airports, etc.) to be financed by the State, local institutions, or by market issues by quoted companies, along the diversified statutes inherited from the history of politics. Either the investments and management of utilities have been decentralized and externalised for the sake of some liberal minds, or they have been taken in charge by local or national authorities because their profitability was not promising or because political majorities asserted that a public control over utilities was necessary to avoid too much profit earned on common goods.

Railways had been privately set up, but were nationalised in 1938 and merged into SNCF, and the same for gas and electricity in 1946, with *Gaz de France* and *Électricité de France*, and for postal then also for telephonic networks (1889) under the cover of PTT (*Poste, télégraphe, téléphone*, 1879). Numerous local institutions (municipalities or communities) demanded a public management of water, waste, and local public transportation, whilst other ones betted on externalisation through concessions to private companies, for instance about water management (*Compagnie générale des eaux*, 1853; *Société lyonnaise des eaux & de l'éclairage*, 1880).

Some paths of internationalised were anyway followed: networks of telegraph crossed over frontiers; the transportation of postal items relied on maritime connections—with the famous *Malle Postale* for the State exchanges overseas, managed by private companies; connections were managed between European railway companies. The first submarine cable connecting France and the United States was laid in 1869 by the

Société du câble transatlantique français and connected Brest to Cape Cod near Boston via Saint-Pierre-et-Miquelon. But those services were quantitatively limited.

Globalization through imperialism (from the 1850s to 1914)

France challenged its competitors (mainly UK, Belgium, Germany) for international economic expansion. An example might be *Société lyonnaise des eaux & de l'éclairage* that was founded for “the acquisition, purchase, leasing and operation, in France and abroad, of any concession and undertaking relating to water and lighting”. The progressive accumulation of engineering and management portfolios of skills in France itself could be valued through foreign investments and contracts, even more because the Paris banking marketplace could seize on opportunities to finance foreign investments by French firms when they set up sister companies, for instance in Russia, the Ottoman Empire or even China.

French utilities companies were granted concessions to build and managed railways networks or commercial harbours. They were French-rooted because of the Paris location of headquarters, board and general assembly, and the flows of francs to foster the capital and bonds issues, thanks to investment banks, colonial banks and, for subscriptions, retail commercial banks, with in reverse dividends to be paid to French shareholders—with sometimes Belgian, British, Dutch or even German interests as co-stakeholders. Lead-managers and engineers were mainly French, even if more and more managers, technicians, and workforce were from local origin. And often French public works entities assumed the building itself, and whilst industrialists could supply equipments.

Internal West-European competition impulsed financiers to godfather railways companies in Spain—as for the Pereire with *Ccompañía de los Caminos de Hierros del Norte* (Madrid-Irun in 1856) and the Rothschild (*Compañía de los ferrocarriles de Madrid a Zaragoza y Alicante*, in 1856, which merged in 1898 with *Compañía de los ferrocarriles de Tarragona a Barcelona y Francia*)—private societies till the creation of public Renfe in 1941.

The Ottoman Empire lured investors and engineers, spurred by *Banque impériale ottomane*, the representative of French capital, in competition with Deutsche Bank—supervising the BBB-Berlin-Byzance-Bagdad— and the German-Swiss *Compagnie des chemins de fer orientaux*: *Chemins de fer Beyrouth-Damas-Hauran* (1891) to connect Beyrouth to Damas, followed by Société ottoman du chemin de fer Damas-Hamah (1901), *Smyrne-Kassaba* (1901), *Chemins de fer Constantinople-Salonique*, under the guidance of Philippe Vitali, the head of a big public work firm. In the second half of the 19th century, Russia became a key target, beyond mining, industry and banking. French investors and engineers accompanied a company that equipped and manage the navigation on Moskowa and Neva rivers; they set up in 1898 *Compagnie centrale d'électricité de Moscou* (with Belgian *Compagnie internationale d'électricité*); they conceived the Nord-Donetz railway through a huge project financing to build a 600 km railway in 1908, and a few other railways (Altaï, *Ouest-Oural*, *Chemins de fer russes*).

Transatlantic business also drew French utilities in Latin America, despite the hegemony of British and then US interests there. Investment banks supported French engineering to conceive and manage railways, in Argentina, with *Compagnie*

française des chemins de fer de la province de Buenos Aires in 1905, with 1,600 km, or also in 1911; in Chile with *Chemin de fer longitudinal Nord-Sud du Chili* in 1910; and harbours: Puerto Belgrano, in Argentina, in 1911; in Brazil: Pernambuco in 1906-1909, Para in 1906-1916, whilst Paris bank Société générale oversaw the Callao Port in Peru from 1887, financed it and managed its development in direct, with French engineers. A key example of this internationalisation move was the Pekin-Hankeou (Beijing-Wuhan) railway, financed and built by a French coalition from 1898 (1,136 km), till its sinisation in 1908.

Globalization through colonialism

The second colonisation move paved the way to Franco-French initiatives as the empire was mainly a preserve for French interests. The economic development of each territory required basic infrastructures, and first harbours and railways, before electricity from the 1920s. “Civilisation will follow locomotive”, argued Governor Paul Doumer. *Banque de l’Indochine* and the Paris marketplace set up *Chemin de fer de l’Indochine & du Yunnan* in north Indochina in 1901 to assert French predominance in Tonkin.

Public and especially private railway companies cross-lined North Africa. In Tunisia, several private compagnies were launched by Italian, English and French investors – like Algerian *Compagnie des chemins de fer Bône-Guelma* (from 1876 to 1922, when the State set up *Compagnie fermière des chemins de fer tunisiens*). The *Compagnie des chemins de fer algériens* (1860) built the first sections, before being taken over in 1863 by the PLM (*Paris-Lyon-Marseille*) more technically and financially able to build the basic network (Algiers-Oran, etc.) The *Compagnie de l’Ouest Algérien* (1881) multiplied local routes; then a vast program was designed in 1907 to densify these networks; implemented until the 1930s, it was based on more public funding. But the PLM remains powerful: although its networks and those of the *Ouest Algérien* were nationalized in 1921, it managed most of them afterwards, alongside a network of the State. The network of the *Compagnie des chemins de fer du Maroc* (created in 1920 by banking groups and companies Paris-Orléans and Paris-Lyon-Marseille) was less dense but grew from 585 km in 1926 to 1,550 km in 1936.

Subsaharan Africa emerged as a target for utilities, through State programs and the concurrence of private public works firms. Lines joined the ports and hinterlands: *Compagnie du chemin de fer de Dakar à Saint-Louis* (1885, 265 km), Dakar-Bamako-Koulikoro (1,287 km, 1904/24), Côte d’Ivoire, Guinea, Dahomey. Whilst the *Transcamerounais* launched by Germany was achieved by France in the 1930s (Douala-Yaoundé), the *Congo-Océan* doubled the Belgian line of the Congo straight line between Pointe-Noire and Brazzaville over 590 km, in 1921-34. A 1,054 km line linked the Gulf of Guinea to Sudan, from Abidjan to Bouaké (1912), then to Bobo Dioulasso (1933) and finally Ouagadougou (1955). Several firms of public works took advantage of these yards and become specialists of the overseas (*Société de construction des Batignolles, Société française d’entreprise de dragages & de travaux publics, Grands Travaux de Marseille, Schneider*). In Indochina and sub-Saharan Africa, “river courier” companies complemented these networks.

The colonies were equipped with modern ports, according to successive programs (Pointe-Noire, Casablanca, Haiphong, several in Algeria, etc.). A big and efficient harbour was developed in Algiers as soon as the 1830s-1840s with long piers,

supplemented by other ones in the interwar, in 1950s-53 and 1961-63. Saigon even became the eighth French port for tonnage in the late 1920s. Abidjan grew gradually: second wharf in Grand-Bassam, wharf in Vridi, canal of Vridi finally, inaugurated in 1950. Morocco was equipped with ports, in Safi and Casablanca before WWI; then a huge program conceived in 1913 led to a large port in Casablanca in the 1920s. In each overseas city-port and in mainland France, multimodality takes shape, between navigation, rail, and road; warehouses hosted the stocks arrival or departure; ferries and dockers ensured loading and unloading, with probably several tens of thousands of workers dedicated to merchant flows with the empire, French or indigenous.

A new wave of investments aroused to promote electrification. Morocco became a key target to provide energy to mining companies, harbours, and cities. In connection with private engineering, electrotechnics and public work companies (Schneider, etc.), private and State programs were launched in the 1910s-1920s—with a first dam on Oum El-Rebia River in 1929 and a few coal-thermal power centrals in Casablanca and Rabat—and complemented in the 1950s. Meanwhile several gas and electricity companies were established in the Maghreb empire to manage local production and distribution networks (*Société constantinoise d'énergie électrique*, *Société franco-algérienne d'électricité*, etc.), and water utilities were active too (*Société algérienne des eaux*, etc.), several of them depending from Metropolitan firms, like Thomson-Houston, whose *Compagnie générale de distribution d'énergie électrique* managed electricity in Algiers with a major plant in 1907, ceded in 1912 to *Compagnie centrale d'énergie électrique*, taken over in 1920 by *Société algérienne d'éclairage et de force*, with a new big power plant and another one in Oran in the 1920s.

Despite the independence of colonies at the turn of the 1960s, the influence of French utilities could be exerted through contracts for advices in engineering and management, as for new lines in Mauritania (1963) and Gabon (1974-83).

Globalization symbolised by the Suez Canal (1857-1956)

When converged imperial and commercial expansionism abroad, Saint-Simonian spirit of positivist development of entrepreneurship, and techniques provided by the first industrial revolution, the idea of connecting Mediterranean and Red Sea was seized on by diplomat Ferdinand de Lesseps. He succeeded in convincing the Egyptian and Ottoman Authorities to grant to a French group the concession of a canal through the Suez Isthmus in 1854, till 1968. He relied on the Paris marketplace to supply the funds to the *Compagnie universelle du canal maritime de Suez* created in 1858, on the technical engineering piled up to establish a dense network of canals in France itself, industrial knowledge to produce dredgers and tugboats, and portfolios of skills in the management of shipping flows in harbours to establish the canal, the Port-Saïd harbour and maintenance workshops.

From its opening in November 1869, the Suez waterway became a key axis to shipping globalization—which explains that the UK purchased in 1875 the 44 percent of the capital of the *Compagnie* that had been attributed to Egypt, because that latter struggled against financial crisis: in the 1880s ten of the 32 members of its board of directors were Englishmen, among whom shipowners. A duo supervision of the canal took shape, with the French Company to manage the waterway, and the British Empire to control Egypt from the 1880s.

Anyway, French engineers and managers led the *Compagnie* till the 1950s, from Paris, Port-Said, and Ismailia; but it relied also on Greek pilots and various sub-managers or workers coming from the whole East and Central Mediterranean. By its Europeanised capital, its workforce, its basket of ever renewed techniques for managing the transit or deepening the canal, the *Compagnie* embodied “growth in open economy”, even if a huge majority of the shipping companies crossing the Isthmus were British, then also, in the 20th century, from Germany, the Netherlands, Norway and Italia, joined by Japan and the US in the interwar period.

The efficiency of the canal was supported by the technical units in ports which provided ship maintenance and maintenance services, for small and medium-sized vessels and for the canal fleet (tugs, floating cranes, dredges, etc.), thanks to major equipment (presses, foundry, large fleet of machine tools, forge, underwater work, engine repair).

In 1930, a fifth of the tonnage passing through Suez was transported by diesel driven vessels; the growing world economy and the development of overseas empires benefitted greatly from this technological advance. Transits through Suez went up exponentially: between 1895 and 1900, some 3,400 to 3,500 vessels passed through annually; then 6,000 in 1928-1929. The yearly tonnage of transit reached records of 20,3 million in 1912, 33,5m in 1929 and 36,5m in 1937. While the Indian peninsula dominated the trade links, the Far East also played a part, as did Oceania and East Africa. Understandably, due to its crude oil, the Middle East too figured prominently in the 1930s (from 2% of transits in 1913 to 24.8% in 1938). South to North trade dominated the flow and accounted for two thirds of transits in 1910-1930 as well as in 1935-1937. Cotton, cereals (Indian and Australian wheat, rice), cane sugar, groundnuts, copra, soya, oilseeds, etc. were sent to Europe as were rubber, jute and Indian hemp and manganese. Later, Indonesian, and Middle Eastern crude too joined the list. In the 1950s, the canal benefited from the oil revolution and the flows of Asian minerals to welcome more and more South-North traffic. The *Compagnie* succeeded in balancing funds earmarked to the successive programs of modernisation (eight from 1870 to 1955-1960) and delivering important dividends, because it reaped huge revenues—till the nationalisation of the canal in July 1956 by the antiimperialist Gamal Abdel Nasser.

Beyond financial aspects, the impact of such an internationalised utility for French economy could be summed up by strong progress in the management of waterways and harbours in France itself, its empire or even in some Chinese French concessions. The skills of public works firms were sharpened among their technical and engineering teams, with a chain effect all along the sector, till their subcontractors. A globalised capital of experience could thus be developed abroad—even if the Lesseps’ Panama canal was a financial failure (1878-1889).

The contestability of French utilities, from liberalization to globalization

The key question aroused from the 1980s: what happened to the spirit of public service, the values of the general interest or common goods, the control of public power, at the heart of the process of transformation of the economy of public services (utilities)? A European framework of the regulation of entities was conceived; they became SGEIs, or “services of general economic interest”, within the ideological

framework of liberalisation and deregulation, even if the legislation continues to strongly regulate SGEIs.

Without mobilising here economic public law or meditations on the new macroeconomic balance of collective services, we must determine how the entities managing SGEIs have been increasingly subjected to financial, economic, and social issues: they were challenged in their identity and national roots, hence the use of the concept of “contestability”. Every guaranteed position or local and national monopolies fell down because of the liberation of calls for tenders and concessions, under the influence of the US then of the UK, that led the European Union to open doors to transnational competition for utilities (air, railway, port management, water management, waste management, and energy).

Governments had to submit decisive laws in 1984 and 1998 for transportation, and in 1992 and 2010 for general utilities. An international agreement, the Trade in Services Agreement, was even designed in the 2010s between the European Union and 22 countries (with the US) to liberalise the economy of services; even if it had not been concluded, it epitomized the philosophy of intensifying competition, in public services. The hunt for situation rents became little by little a rule through the questioning of the duration of public service delegations and the imposition of rigorous standards of transparency in the negotiation processes upstream and in the management downstream—which couldn’t but entail profitability. These liberalisation and competition policies led to a complete paradigm shift: it aligned the management of collective services linked to the general interest with the management of collective services integrated into the market economy, hence the term “marketization” or “commoditization” used in this regard, even more when some utilities firms were quoted on the Stock Exchange (Euronext) and were thus submitted to “financialization” philosophy.

Such strategic turning points opened doors to foreign offensives, mainly in energy, then in public transportation. This revolution shook business models and enterprise culture: could French utilities resist to such challenges? Internationalisation and globalization were strategic paths to be followed to “reinvent business models”.

The building of big utilities groups

Paradoxically, the name of *Suez* has been reawakened on the field of utilities at the end of the 20th century. From 1958, after the end of the Egyptian adventure, it has become the brand-mark of a financial group, *Compagnie financière de Suez*, with its investment bank Indosuez, and then the purchase of the financial holding *Société générale de Belgique* in 1988, which controlled several energy utilities. Both were broken down and their assets scattered among several groups, and a mere holding survived, *Compagnie de Suez*, that merged in 1997 with *Société lyonnaise des eaux*, of which Suez had become the controlling stakeholder in 1967-1974.

Lyonnaise des eaux had launched a strategy internationalisation since 1980, mainly in Asia (Macao Waters in 1985) and the UK (Northumbrian Waters in). In 1988, for the first time, the users served in the distribution of drinking water abroad exceeded those of France: 13 million against 10 million. Whatever the innovative nature of each operation, this did not change the centre of gravity of the group: *Lyonnaise des Eaux* remained a French firm in its power centres, its information networks, and its

decision-making procedures; it remained organized around a separation between France and the international. The process of weaving a globalized business model was completed in the 1990s-2000s after a boom of expansion (in 1993: Buenos Aires, Sydney, Mexico, Rostock, Chine; in 1997: Manille, Djakarta, Casablanca): in 1997, it got 40 million customers for water services abroad in face of 13m in France. Grouping water and waste management sectors from the various entities finally merged led to the subsidiary *Suez Environnement* in 2002.

Through several financial stages, the group, renamed *Suez* in 2001, ended controlling utilities in France and in Belgium (100 percent of Belgian leader Electrabel in 2003-2005). This strategy evolving from finance to utilities led to binational “champion”. It was still reinforced in 2006-2008 when it merged with GDF-*Gaz de France* after the privatisation of that co-leader of French energy with *EDF-Électricité de France*, which stayed under the State control because of its core atom branches. GDF-Suez was thus born as a giant in utilities: water management, waste management, overall energy, energetic services to companies. Its name changed to Engie in July 2008.

Transnationalisation therefore prevailed as a real European group took shape between 1988 and 2008. The legacy of the Suez Canal was a name, but also a refreshed spirit of enterprise, now onwards oriented towards a large panel of utilities, in France and Belgium as historical basis of Engie. It became the third worldwide group in energy (besides oil firms) and supervised a huge subsidiary specialised in non-energetic services, which reused the name *Suez* on the field of environmental activities (mainly water and waste management).

In parallel, each surviving group revolutionised its business model, and French economy was equipped with an array of utilities champions: EDF and Engie, in energy, Suez, Veolia—the inheritor of *Compagnie générale des eaux*—, Paprec, SAUR, in local services of proximity, SNCF, for railways and freight road transportation (Geodis), and its subsidiary Keolis for local transportation services, competing with a subsidiary of the public financial group *Caisse des dépôts*, Transdev, and *La Poste* (for postal services), not to speak of local public entities. The reshuffling was pursued in 2021-2022 when Engie sold its stake in Suez to its rival Veolia. Because the regulator intended to preserve some basic competition, Suez survived with its assets in France and few ones abroad, but it had lost its main aspects of a globalised group.

The threat of a competitive market for utilities, first mainly on a European field, exerted its crucial influence. Those French firms were submitted to harsh competition, in France, mainly on the European level, and then worldwide. They were therefore able to achieve their strategies of European and globalised developments as “multi-utilities” groups.

Globalized strategies: water utilities at the turn of the 21st century

This strategic revolution was embodied by the expansion of French water utilities all over the world at the turn of the 21st century. They conceived three parallel strategies: Europe, the USA, and emerging countries. Veolia (Berlin for 1998-2029) and Suez-Eurawasser got committed in concessions in Germany; Italy (Suez in Pisa in 2003); the UK (Southern Water for Veolia; Northumbrian in 1995—sold in 2003 because of its thin profit margin, Northeast Water, Essex & Suffolk Water, for Suez, with 4,3 million inhabitants for potable water and 1,6 m for potable water et 2,6 for

water treatment). Suez got allied to the Catalan group Agbar, then purchased it in 2014, establishing solid footholds on the Spain market. The European central and oriental countries were also prospected. In the US, the first contracts were signed in 1998 with Atlanta, the very first large city to privatise water management, and Milwaukee, leading Suez to control in 2000 US Waters Resources. Australia was penetrated, first in Sydney

The Chinese boom allowed Suez to federate a consistent pole: in addition to Macao, Chongqing, Shanghai and Quindao were among the 15 cities where it started managing water and sanitation services for a total of 12 million inhabitants through Sino-French Water Development, a joint venture with Chinese partners, at the start of the 2000s. In 2002-2003, Veolia obtained water management in the city of Shenzhen (2.2 million inhabitants) near Hong Kong and in the Pudong district (Shanghai), and the management of several water treatment plants. Both also used the association with local communities or societies.

Emerging countries have been integrated into this foreign strategy: their giant agglomerations have become targets for a transfer of legal and financial expertise and liquid flow management technology. Such a privatization would provide a solution to the lack of a sound public economic apparatus; the revenues generated by the management of water networks would go to the expenses necessary for their maintenance and extension. The groups have affirmed their desire to become actors of sustainable development, to demonstrate the viability of capitalist intervention in water management in urban agglomerations, even in deprived neighbourhoods.

South Africa was a main target, with ten million inhabitants served by Suez in 2002 in the Eastern Cape, Limpopo Province, and Johannesburg), accompanied by Morocco (Casablanca in 1997, with 4 million inhabitants), the Philippines (Manila in 1997) or the Middle East (Amman and Gaza in 1999). Footholds were established in Mexico (7.5 million people served in 2002, including 5 million in half of Mexico City), Chile (Santiago in 1997), Argentina (Buenos Aires in 1993, then the world's largest water concession with 9 million inhabitants) and Brazil. Suez ended gathering 9,000 employees in Latin America.

It could rely on Degrémont, a subsidiary that provides water treatment technologies and engineering for the construction of its sanitation equipment. All in all, French water capitalism conquered some geopolitical and societal legitimacy, beyond its grip on revenues and profits, and the valuation of the common pot of its technologies and engineering.

Following strategies of Europeanisation and globalisation in the 21st century

Energy became a key field for the internationalisation of utilities. The young GDF-Suez/Engie defined a strategy of external growth: in 2010, it purchased in the UK International Power, rich with plants in the US and Australia, and united its assets with its subsidiaries abroad into New International Power. It became then the first world energetic utility. Throughout the 2010s it acquired all over the world societies specialised in “energetic optimisation”, and *Transportadora Asociada de Gás* in 2019, managing half of gaz pipes in Brazil. Engie's workforce reached 171,000 in 2019, including 137,000 in Europe, but 6,300 in North America, 14,300 in Latin

America, 6,700 in Asia and Oceania, 3,500 in Africa and 3,100 in the Middle East. Europe (with €47.3 billion) accounted for a large part of the €60.1 billion turnover, ahead of Latin America (5.3m), North America (4.5m), Asia and Oceania (1.7m), the Middle East (1m) and Africa (0.2m).

Such a rapid and intense growth led anyway to some oversized and overindebted conglomerate at the turn of the 2020s, which explains the sale of its stake in Suez and of a large part of its activities downstream—management of energy in buildings, etc.—to Vinci, a public work company, in 2022. It refocused therefore on its key assets in utilities, as a champion able to compete with Spanish Iberdrola, German RWE, Swedish Vattenfall or Italian ENEL, to contest the growing influence of Chinese firms in Asia and Africa, and to develop its core skills in gas transportation and thermal plants. Whilst getting rid of its big coal-thermal plants (in Australia or elsewhere), it invested in “renewable energy” developments. It is a strong hydroelectric producer in Brazil, the United States, Belgium, and the United Kingdom; and it manages wind farms in Canada, Portugal, Australia, Latin America, Morocco, or South Africa.

On its side, the State-controlled EDF had to struggle against its own managerial issues: it depends on the oscillating policies of the successive governments about fuelling its capital, the openness to European competitors, the brakes put on the restart of a programme of investments in the atom sector, which deprived it of its strong historical skills in engineering and led to missing foreign orders, despite a few in China. It succeeded anyway to launch a technological programme dedicated to giant atom plants, the EPR (European pressurized reactor, then Evolutionary power reactor). In parallel with one plant in France, it reached contracts in Finland and in the UK (two at Hinkley Point, two at Sizewell). But the costs jumped considerably because of big technical deficiencies, and these projects are leading to intense financial setbacks. The alliance with Chinese CGN is swaying more and more: CGN overpassed EDF on the technological field and reaped contracts in China or else; and their couple for a plant in England suffers from the Western demonization of CGN alongside the anti-Chinese geoeconomic offensive.

Beyond this atom industry, EDF designed an international overall strategy in 1990 and chose a few countries as targets to build solid sub-groups. The UK prevailed with three companies: London Electricity Board, 1998; SWEB Energy in South West England in 1999; Seeboard in South East England in 2002. They merged into EDF Energy in 2002 which acquired in 2008 British Energy, a privatised nuclear power production company, making EDF Energy the largest electricity producer and distributor in the United Kingdom, with 15,000 people and 5.4 million clients in 2018—even if retail distribution activities, equipped with a grid of power lines serving London, the Southeast and East England and providing electricity to 7.9 million, were sold in 2010 to alleviate the debt. The second target was Italy, with first developments from 2005 and the purchase of n°2 Edison in 2012.

All over the world, EDF has proposed its electrotechnological engineering services, for mere advice or for building plants, with hydroelectric power stations like in Brazil in 2019, in Cameroun, Chile, etc, with solar parks (Abu Dhabi) and wind power plants (n°2 in Italy, a huge park in Arabia, etc.). Its subsidiary RTE International, specialised in high-tension grids, acted in parallel in consulting & audit, technical support, or completion of equipments. Three strongholds emerged, with 30 per cent

market-share, in the UK, Italy and Belgium; and all in all, 30 percent of the turnover is obtained out of France in 23 countries

EDF's capacity of production of electricity (Mwe) in 2021

France	93,195
Abroad (26.64%)	33,849
Europe (16.08%)	20,431
United Kingdom	10,853
Italy	5,826
Belgium	2,047
America (7%)	8,891
USA	5,810
Brazil	1,579
Asia (3.56%)	4,527
China	3,417

Water and waste management evolved considerably to confront the financial and technological requirements of globalisation. A harsh capitalist battle occurred in 2021 when Veolia launched a bid offer on its rival Suez, which had got its independence from Engie and succeeded in concluding huge contracts abroad in the 2010s: water desalination plants in Mexico or Australia, management of water infrastructures in India, in New Delhi, Calcutta, Bangalore, Madras or Bombay, with 44m Indians connector in 2016. The intent was to build another French champion in public services able to reach the size required by globalization, that it the ability to prospect markets all over the areas which invest massively into water and waste management because of the size of urbanisation and high-level consumption, in the Middle East and Asia for instance. The merger was achieved in 2022, even if the regulation rules to avoid a monopolistic size imposed to preserve Suez in France. But Veolia as a giant company (with 230,000 employees, of which 50,000 coming from Suez) will assume the transnationalisation of its capital of competences all over the world.

It proclaims decidedly its strategy of globalization, first in the Middle East: one hundred million inhabitants there need more and more equipments in public services, with sea-water desalination plants, water and waste management, climatization systems in commercial malls or buildings; and more and more recycling polluted waste for the account of oil and gas plants, and the same in China to tackle contaminated waste, in association with oil group Sinopec (2016). The remnants of Suez itself offer a serious foreign implantation, with positions in China, India (since 1978), Australia, the Middle East and Africa (Morocco, Senegal, South Africa), which produces 25 percent of its turnover in 2021, with an objective of 40 percent a few years ahead, to rebuild an international scope.

Postal services jumped from the sole French market to a European size when *La Poste* got conscious of the necessity to become competitive for the transportation and distribution of parcels. Within the new digital commercial ecosystem, orders exploded when firms delivered in direct their consuming goods, either being specialised (like Amazon, Rakuten, CDiscount, etc.), or joining the trend in parallel with their networks of shops. *La Poste* had to sharpen its skills on that field to evolve from a niche (*Chronopost* from 1985) to a large activity (*Colissimo*) and commonplace mass deliveries (BtoB, BtoC); it had to be competitive to seduce the commercial firms and get their trust. This explains the creation of Geopost in 1999,

which purchased companies managing the *DPD* franchise all over Western Europe, first in Germany in 2001 (*Deutscher Paketdienst*, then from 2008 *Dynamic Parcel Distribution*), or elsewhere, before uniting its brands under the *DPDgroup* trademark in 2015.

In parallel, the group took over companies in parcel transportation and delivery in Europe (Seur in Spain in 2004, Siodemka in Poland in 2014, wnDirect in the UK in 2014, BRT in Italia, etc.) and abroad (partnership Turkey in 2003, purchases in South Africa, India, Brazil, South-Eastern Asia, Egypt, Dubai, etc.). In 2021 *DPDgroup* is active in 24 European countries. In the 2020s, this branch gets 85 percent of its turnover from international subsidiaries, with 41,000 of its 48,000 employees active abroad. Whilst *La Poste* is steadily increasing its banking and finance retail activities through its French network and under the umbrella of public group *Caisse des dépôts*, it revolutionised its business model and culture thanks to the development of this express transportation and delivery which embodies the third industrial revolution through its aspects of massive, rapid, and transnational services.

Transportation as public services was also seized on by internationalisation. Public (*SNCF*, *Keolis*, a subsidiary of *SNCF* with a share of 30 per cent by *Caisse de dépôt et placement du Québec*, *Transdev*, *RATP*) and private (for local bus management) were submitted to the threat of European rivals reaping concessions and markets shares in France. They decided to answer it by launching offensives in Europe and then abroad, to counterattack—for instance in front of *Deutsche Bahn*, *Renfe* or *Trenitalia*—and preserve their turnover, but also and mainly to sharpen their skills and to benefit from their technical and managerial competitive advantage. It was a revolution of their business culture as they had relied for decades on employees with privileged social statutes and on a monopolistic way of life.

It was therefore a strong jump into the struggle to get new concessions contracts on foreign markets. First, *SNCF* can rely on its sister companies joining London (*Eurostar*), Brussels and the Netherlands (*Thalys*), Italy, and Switzerland, in the wake of a joint venture with *CFF* set up in 1984 for *TGV* connections, before the *Lyria* brand was adopted in 2002. Second, each European railway company fought to get concessions for regional services: in the US, *SNCF* (through *Keolis*) won contracts in the Great Boston (the sixth US suburbs network, in 2014), before Virginia (2009) and Massachusetts (2014). It broke through in the UK (London-Docklands, Manchester, then Wales in 2018), Sweden (2003), in India (Hyderabad) or in Australia (Melbourne), before Qatar (with *RATP*) in 2017. As soon as 2016, *SNCF* disposed of 50,000 employees out of France versus 210,000 in France, and obtained a third of its turnover abroad, whilst *Keolis* got 40 percent of its turnover from its foreign concessions in 2017. In 2018, *Keolis* began operating the *Pujiang* line, the first automatic line of the Shanghai metro, as well as the *Songjiang* tram lines in the suburbs of Shanghai, and it also won a six billion euros contract to operate the entire Wales rail network, the Wales & Borders network. Last, *SNCF* intended to manage its own trains between in a few countries and started in Spain in 2020.

On its side, *Transdev* had grown in France in public transportation since 1989, with the *Transdev* brand since 1992; its priority was to develop regional coach connections, which led to a portfolio of skills to be exploited in other countries. succeeded in gaining contracts in the US for fixed-route and shuttle bus systems in several states, in Sweden, and especially in Germany. In 1997, *Transdev* bought

London United, which operated 8 per cent of London's buses, and won tenders from Nottingham (tramway), Porto (metro) and the Melbourne tramway network; it became then the world's leading tram operator. It claimed to be one of the first European public transport operators, especially when, in 2006, it took control of the first Dutch operator, Connexxion, even though it abandoned its activities in Germany, Sweden, Belgium and Finland in the early 2010s.

Only a few large target areas remain: France, the Netherlands, North America (purchase of Voyago in 2019, Ontario Line in Toronto in 2022), Great Britain, Southern Europe, and Asia-Pacific. With Trenitalia, it co-founded *Thelio* for Franco-Italian in 2011 but retired in 2016 to refocus on regional connections. The perspectives of an alliance with the solid German utilities group Rethmann might be considered after that latter acquired 30 per cent of its capital in 2018 and after they merged their activities of transportation in Germany, which became thus the second foreign market for Transdev behind the US.

Following quite the same track, RATP, which managed the monopole of public transportation in Paris and its suburbs (bus, metropolitan, tramway), reacted to the threat of losing it from 2023 and anticipated such a revolution. It set up the RATP-Dev subsidiary in 2002 to prospect tenders in French regions and more and more in foreign ones. It intended to value its capital of competences in the management of lines on a large range of skills, to bring overall "solutions" beyond mere driving means of transport. All in all, RATP asserted itself as the third worldwide operator of public transports, with a presence in fourteen countries in 2022: in London, Italia (Firenze, Arezzo), South Africa (Johannesburg), India (Mumbai), Egypt (Cairo metropolitan), etc.

In parallel, RATP and SNCF could rely on their common engineering subsidiary SYSTRA—resulting from the merger of each of their subsidiaries in 1992—to conceive transportation infrastructures ahead of their management. From 50 percent of the turnover obtained abroad in 2012, its share jumped to 70 percent in 2019, either thanks to the diffusion of its capital of technical reputation, or to external growth, with specialised companies purchased in eleven countries.

Overall concessions in public services have prospered all over the world, first because State authorities longed to finance huge investments to extend and refurbish basic equipments; second such an externalisation could alleviate the cost of managing public employees; third private firms disposed of more power to negotiate subcontracts and there too to cut into expenses; fourth economic patriotism had to be taken into account in face of the harsh offensives of Chinese firms.

Airports became a target for French companies: the State-controlled ADP (*Aéroports de Paris*) wished to spread its baskets of skills abroad, whilst Vinci, a public works firm, bet on the revenues of concessions to stabilize its revenues, diversifying from motorways to airports, since 1995 in Cambodia, and mostly since 2013, with ten continental airports of Portugal. Vinci Airports purchased twelve platforms from the US Airports Worldwide in 2018 (Orlando in Florida, other ones in Costa Rica, Sweden, the UK) and succeeded in the UK (London-Gatwick, purchased as a property in 2019), in Japan (Kansai), or Brazil (seven airports conceded in 2021). It became in 2019 the second worldwide company on that (air-) field of operating airports, behind Spanish AENA and ahead of German Fraport and French ADP, as for

the number of transiting passengers (241 million versus 226m). But ADP started to challenge internationally its rival, and commenced prospecting concessions, the first at Santiago-de-Chile (2016), Turkey (46 % of Istanbul airport, 2017), in Jordania (Amman, 2018). ADP International managed thus 28 airports in thirteen countries in 2021.

Concessions of maritime harbours were also concluded by Bolloré Transport & Logistics—a group having prospered since its first paths in 1992 thanks to external and internal growth— in Africa. It managed ports (container terminals and “day ports” connecting maritime and road or railway transport) in several countries (Sierra Leone, Nigeria, Cameroon, Senegal, etc.). But it sold this subsidiary to Swiss group MSC in 2022 to focus on medias.

* Like the whole economy, the growth of economic public services or utilities was driven by managers and engineers with a spirit of openness to Europe, especially since the shareholders of companies, almost all private until 1938 (railways) or 1946 (energy), outside the PTT and ports, were led by business bankers eager to make the Paris square participate in the international expansion of capitalism. The financial ambitions and entrepreneurial spirit converged to highlight the technologies and the capital of skills of these companies and spread them abroad, in particular to respond to the British or German offensives, then also North American. Such growth prospects in the open economy explain the breakthroughs in Russia, the Middle East, and Latin America, but also the huge project of the Suez Canal.

The construction of a huge colonial empire in Africa and Asia provided an even more exciting opportunity for utilities. In each territory, the Public Authority has combined the private and public sectors for the growth of infrastructures and services essential to boost the economy of “development” of natural resources, urbanization, and the daily life of the populations, whether they were indigenous or European. From the 1890s to independence in the 1950s and 1960s, a field was opened for the deployment of technological engineering and know-how in the management of a public service.

After the relative decline caused by decolonization and the priority given first to the reconstruction and modernization of France, in face of the North American offensive in Europe in particular, the construction of the economic union of Western Europe, the growing integration of transatlantic economies and the multinationalization of enterprises, followed by globalisation, which began in the 1990s, have changed the European and global economic framework. They have been stimulated by global competition for technology markets, particularly in the areas of water and waste management, public transport, energy, postal services, and port management.

France therefore had to fight to not lose ground against European or Asian rivals and to build up counteroffensive technical, managerial, and financial schemes. The dominant thinking in France and especially in Europe in favour of the liberalisation of the public service sectors has stimulated these struggles since companies, public or private, have all engaged in European and global deployment strategies.

Thus, there have been several stages in the life of public service companies, from simple internationalisation and colonization to the revival of internationalisation, and then to transnationalisation within the framework of globalisation. Each time, it was necessary to change the body of mentalities of managers, public or private, adapt

the corporate culture, diversify the portfolio of technical and managerial know-how, and finally to welcome foreigners among the leadership teams.

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SUMMARY

Whilst being enrooted in public "common goods", French utilities, either State-controlled or private, became more and more committed to strategies of developing

abroad their portfolio of engineering and managing skills. They followed the past of economic imperialism along geopolitics in emerging countries (Russia, Ottoman Empire, Latin America), then also throughout the colonial empire; such offensives were embodied by the adventure of the Suez Canal. From the 1980s, the reconstruction of the worldwide connections opened doors to geoeconomics, that is the will to resist competition and to conquer market shares abroad thanks to the valuation of capital of competence and trust. Every public, privatised or already quoted companies took part to the run for concessions and the deliveries of engineering and managing services (waste, water, postal, railway, bus, energy utilities). This contributed to the competitiveness of French economy and economic patriotism.

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