

ACEA thinking outside ACEA

How a 110-years old, asset-intensive company
innovates its Innovation model
and designs an Innovation Factory

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“It is not a project of a few people but a movement that involves the whole company in a participatory way”
(ACEA Innovation Award, SMAU 2019).¹

Even today, as in the times of ancient Rome, May is considered the month of sowing and new opportunities. Also, in Acea it is time for unveiling a new course of actions. Born in the south of Italy but grown up in Milan, Stefano Antonio Donnarumma, was aware of this opportunity, when he entered the Acea main building, in the role of the new CEO in May 2017. Donnarumma’s mission was not the most ordinary one: to launch Acea into the future, not in a progressive way but in an incomparable leap forward. In Donnarumma’s mind, a single imperative: how to turn an industrial, asset-intensive company into an open and smart company and do it fast.

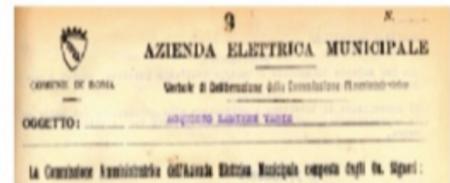
1. Excerpt translated and adapted by Garri’s interview (October 2019), SMAU Innovation Award, more information available at https://www.smau.it/milano19/success_stories/acea-modello-cultura-e-factory-per-favorire-lopen-innovation/, last retrieved in November 2019.

Acea wasn't built in a day

“[...] the constant search for modernization [...] Acea has always had in its DNA. A commitment that has now become the search for an increasingly sustainable industrial path. It is not a coincidence, thus, if Acea is experiencing a phase of great dynamism, after 110 years from its birth” (Donnarumma, “1909-2019, 110 years of light. Acea and Rome. Passion and innovation” (Exhibition, 2019)²

The history³

Acea was born in Rome in 1909 under the acronym of AEM (Azienda Elettrica Municipale) of the Municipality of Rome, with the aim of providing energy to citizens for both public and private lighting.



From the very beginning of its operations the company had always caught up with the innovation dynamics, denoting a marked propensity to invest in engineering and technological advancements and defining its distinctive trait of an industrial and asset-intensive company focused on innovation.

Among other achievement of that time, in 1912, there was the inauguration of the first public plant for the electric energy production ever realized in Rome, the Montemartini thermoelectric plant, named after the roman Technological Development alderman, Giovanni Montemartini. By the standards of those years, the work was among the most advanced ones in Europe, in terms of frontier machineries and architecture deployed.

Besides the recognition of the engineering value of this work, Romans also had a sentimental attachment to this plant. In fact, at the end of the Second World War, it was the only infrastructure that escaped being devastated by the bombing attacks, and hence it was the only one which the city could count on for running the daily activities. This aspect, which may be apparently negligible, overtime was reported as one of the main elements shaping the company's mission and values of “serving people (local communities and their citizens)”⁴.

2. Temporary Exhibition to celebrate the 110th anniversary of Acea history, further information is available at <https://www.gruppo.acea.it/en/media/events/2019/110-years-of-light>, last retrieved in November 2019

3. Detailed information is available on the corporate website at <https://www.gruppo.acea.it/en/about-acea/our-history>, last retrieved in November 2019.

4. “Serving People”, available on the corporate website at <https://www.gruppo.acea.it/en/serving-people>, last retrieved in November 2019.

In the 1980s, the introduction of technologies aimed at reducing environmental impacts allowed the company to take a more responsible position towards environmental issues. As a result, the logo was changed into Azienda Comunale Energia e Ambiente, to testify this shift.

The early 90s represent the turning point for Acea history.

In 1992, Acea gained greater autonomy by turning into a Special Company: a public non-profit company with its own legal personality, entrepreneurial autonomy and statute, for the first time. In light of this change, Acea enacted the first organizational redesign, implying a transition from a functional structure to a divisional one and with a strong rationalization of the activities carried out.

Was not until the 1999 that Acea overturned its nature, by debuting on the international scene, listed in the Italian stock exchange as a public limited company (Società per Azioni, SpA). This was the moment where Acea entered the open market and started facing the international competitive pressure. This circumstance forced Acea to instigate a process of change and organization redesign, which helped the company to open to the international market and expand the national coverage.

Indeed, as reported in the official website “In the year 2000, Acea entered the overseas market with the construction and concession of a water plant in Lima. In 2001, Acea acquired the Enel electricity distribution network in Rome. In 2001, as business consortium leader, Acea was awarded the management of the integrated water service in Campania for the so-called “Optimum Territorial Area No. 3” (Ato3) Sarnese-Vesuviano and in Tuscany”⁵

In the early ‘00s, Acea started its process of increasing digitalization centered around the customer care. First, in 2003, it establishes the Single Front End (FEU), reporting directly to the Chief Executive Officer, with the mission of guiding the citizens in the commercial/informative relationship with the company, thus implementing a first tool of *customer relationship management*. Toward the same mission, it created “MyAcea”,⁶ the reserved online area, which allowed the customers to simply and rapidly manage the water, electricity and gas supply from a single virtual account.

In 2014 the company’s governance and organization changed radically, with the appointment of a new management and with the establishment of a new ICT function.⁷

In 2017 the company underwent another round of change of leadership with the arrival of Donnarumma in the role of the new CEO.

5. Detailed information is available on the corporate website at <https://www.gruppo.acea.it/en/about-acea/our-history>, last retrieved in November 2019

6. <https://my.acea.it/myacea/it/login>, last retrieved in November 2019.

7. “Acea History” in ACEA 2015 Sustainability Report, p. 24, available at <https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/sustainability/SustainabilityReport/sustainability-report-2015-acea-group.pdf>, last retrieved in November 2019.

Today Acea is one of the leading Italian multi-utilities operating in public energy, water and environmental services with more than 3 billion of turnover, 9 million customers served, more than 6,500 employees and more than 20 participating companies in Italy and abroad (EXHIBIT 1).

The old innovation way

Innovation always lied at the core of Acea operations. However, it was traditionally engineering and technological in nature. A model of incremental technological innovation - in which Acea stood out among competitors - which was based on skills and assets available within the company, confined to each sub-system, *alias* each individual industrial area.

Hence, for many years, there was not a formal space for the innovation function in the organization chart of the Company divisional structure, defined in 1992. The technological innovation was informally present at all levels, as elicited in 2009 Sustainability Report, where they said: “[t]echnological innovation is considered an essential element in corporate success and there are various Divisions and Departments responsible for this aspect both in the Holding Company and in other operational Group companies.”⁸

This traditional innovation model unfolded unperturbed for several decades until the top management decided to undertake a first process of change, centered around the digitalization of its internal and external process, which was known under the label of Acea 2.0 initiative,⁹ in order to tackle with the ever-changing nature of the external environment, and the increasing competition due to the open-market dynamics which the company was slowly facing.

8. Excerpt translated and adapted from ACEA 2009 Sustainability Report, p. 142, available at https://s3-us-west-2.amazonaws.com/ungc-production/attachments/10148/original/Sustainability_Report_2009.pdf?1304524524, last retrieved in November 2019.

9. “The Acea 2.0 Programme”, in ACEA 2015 Sustainability Report, p. 28, available at <https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/sustainability/SustainabilityReport/sustainability-report-2015-acea-group.pdf>, last retrieved in November 2019.

Out of the innovation maze

"Our intention is that citizens and employees return to being proud of Acea"
(Donnarumma, 2017)¹⁰

The water crisis

The Management of water services has always been the beating heart of Acea, contributing to the larger slice of the company EBITDA compared to other businesses.¹¹

Since 1937, Acea had always managed the water supply system in the area of Rome and the surroundings, called the "historical perimeter".

By 2003, the company extended its perimeter of activity as Integrated Water Service Manager (drinking, sewerage and purification) to the entire so-called "Optimum Territorial Area No. 2" (ATO2) of the Lazio Region, the ATO3 in the Sarnese-Vesuviano area, and in Tuscany.

Today Acea is "the leading Italian operator in the sector of integrated water services, for the number of inhabitants served, and operates in four regions - Lazio, Tuscany, Umbria and Campania - through subsidiary and investee companies. We are also present in Latin America under partnership agreements".¹²

As reported in the official website, the water business area is made up of people, engineers and technicians, who continually supervise the proper functioning of the water service. They are called the "water watchers", and they care a lot about the work they do. This is the area in which Acea has always concentrated its energies and attention, both in terms of investments and in terms of innovative and technological efforts.¹³

When Donnarumma arrived, as the new CEO, in May 2017, he found the water management machine, capable of meeting the water needs of 9 million inhabitants, facing a severe test posed by a "natural disaster", due to an exceptional drought, occurring in the territory of the Lazio Region in those days.

Official sources (e.g. ISTAT) indeed declared the 2017 was a year characterized by an exceptional lack of available water resources, especially in some areas of the country.¹⁴ As a matter of fact, in the ATO2 it was registered the lowest amount of rainfall since 2009 (EXHIBIT 2). Among others,

10. CEO public release (July 2017), more information is available on <https://www.milanofinanza.it/news/acea-nuovo-piano-con-maxi-investimenti-201707282135571894>, last retrieved in November 2019.

11. More information on Acea business areas contribution to EBITDA is available at <https://www.gruppo.acea.it/en/about-acea/our-business-activities>, last retrieved in November 2019.

12. "Management of Water services", available at <https://www.gruppo.acea.it/en/about-acea/our-business-activities/management-of-water-services>, last retrieved in November 2019.

13. More information on Acea water watchers is available at <https://www.gruppo.acea.it/en/innovation/innovation-stories/environmental-operations-room-ato-2>, last retrieved in November 2019.

14. <https://www.ilsole24ore.com/art/istat-2017-eccezionale-carezza-d-acqua-servizio-irregolare-1-famiglia-10-AEtGxbLE>, last retrieved in November 2019.

the association of representation and assistance of Italian agriculture (Coldiretti) complained that "it [was] necessary to pass from emergency management with enormous waste of resources, to embrace a new culture of prevention in a situation in which almost 9 liters of rain out of 10 are lost. Italy is a rainy country with about 300 billion cubic meters of water falling annually, but due to the lack of infrastructure, only 11% remain".¹⁵

Had taken office only a little while earlier, Donnarumma faced a crucial challenge. He took action, urgently, to find a solution besides the option of rationing the capital's water supply, which was avoided in the end.

Pragmatically, he felt the urgency to get a complete view of the situation, because for him it was clear that "to protect water resources it will require the collaboration of all the institutions and the citizens", and "[i]t will be a continuous work of technological development.[...] Our intention is that both the citizen and the employees of Acea return to be proud of this Roman asset".¹⁶

To this aim, the strategy adopted by the CEO implied a wide inspection activity - never carried out before - on the entire ACEA water network. Based on those inspections, involving approximately 3000 kilometers of pipes, carried out during the summer 2017, it was possible to identify 750 hidden leaks, equivalent to an estimated dispersion of about 250 liters of water per second. In the following months, ACEA completed the inspection on the entire network (around 5400 kilometers) and began a second round of checks on the entire infrastructures. By November 2017, with 13,000 facilities already inspected and 5,000 restoration interventions, it was possible to recover about 2,300 liters of water per second. Since then, Acea has continued to implement constant monitoring and intervention on water infrastructures, thanks to the set-up of a control room dedicated to monitor and repair both hidden and non-hidden leaks on Rome water network.¹⁷

A new course of actions

The water crisis was a test case for the Company. It confirmed the necessity to focus on the development of the infrastructural assets of the Company and to put Innovation centerstage as one of the main pillars of the strategy, as underlined in the Business Plan presented to the financial community in Milano in November 2017.¹⁸ As declared in 2017 Sustainability Report: "[i]nnovation for the Group, identifying the strategic guideline and monitoring structure regarding innovative in-

15. Excerpt translated and adapted from "<https://www.ilsole24ore.com/art/istat-2017-eccezionale-carenza-d-acqua-servizio-irregolare-1-famiglia-10-AEtGxbLE>", last retrieved in November 2019.

16. CEO public release (July 2017), more information is available on <https://www.milanofinanza.it/news/acea-nuovo-piano-con-maxi-investimenti-201707282135571894>, last retrieved in November 2019.

17. Public information also available at: https://www.ilmessaggero.it/roma/cronaca/acea_a_roma_recuperati_2_300_litri_secondo_di_acqua-3372825.html, last retrieved in November 2019.

18. CEO public release (July 2017), more information is available on <https://www.milanofinanza.it/news/acea-nuovo-piano-con-maxi-investimenti-201707282135571894>, last retrieved in November 2019.

initiatives for 2018-2022 within the CEO Office Function which reports directly to the CEO and the new activities, shall be steered according to three “pillars”: • Customers: providing services focusing on customer experience and perceived value; • Infrastructures: focusing on the safety and optimal running of the infrastructures as an essential parameter of service quality and • People: with the objective of improving our peoples’ experience to improve Acea”.¹⁹

As executor of the new course of actions, specifically dedicated to developing the Business Plan “Innovation pillar”, Donnarumma chose an external consultant: Massimiliano Garri, Neapolitan by birth and Roman by adoption, as the head of the CEO Office (EXHIBIT 3).

However, when Garri crossed the entrance of Acea main building in July 2017, the orchestration of the innovation activities was still in the hands of the CIO Marco Poggi, head of the ICT department, who was tied up with the close-out period of Acea 2.0 program, encompassing post-mortem analysis, balance sheets closing and contracts termination.

Hence, during the first months, Garri was primary requested to support the close-out activities of Acea 2.0; and only after that, he was assigned two tasks: 1) to map the existing technologies of the company and hence developing a Maturity Model; and 2) to contribute to the drafting of the new Business Plan, with a specific focus on the innovation activities and investments in technological development.

In his duties, Garri therefore attended all the meetings about the administrative aspects connected to the closure and follow-up phases of Acea 2.0. Despite he personally defined this activity as “purely bureaucratic”,²⁰ he recognized that, thanks to that, he had the opportunity to have a closer look and therefore a fully understanding of the innovation model of the company. In addition, during the mapping activity of all the company’s technologies and assets, he lavished efforts for getting to know Acea employees, especially those who worked at the Acea 2.0 Program, and allowed others to know him, with the aim to open a dialogue and get feedbacks on possible problems, needs and undisclosed opportunities.

Crossing the chasm

Every single day, Garri met Acea people. But most of all, he met all the directors of the six industrial areas of the company to detect, collect, discuss and catalog all the innovation initiatives already undertaken or under development in each area”.²¹

19. “Technological and Innovative Context” in Acea 2017 Sustainability Report, p. 32, available at [https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/sustainability/SustainabilityReport/2017-sustainability-report-acea-group%20\(1\).pdf](https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/sustainability/SustainabilityReport/2017-sustainability-report-acea-group%20(1).pdf), last retrieved in November 2019.

20. Garri’s interview, recorded by the authors in July 2019.

21. Garri’s interview, recorded by the authors in July 2019.

"The entire process was carried out following the Technology Readiness Assessment (TRA) model, which allows us to assess the state of maturity of a technology; we therefore surveyed and clustered each innovation projects across four dimensions: domains (assets, customers and people); areas of application (for example: payments, smart meters); critical reference technologies (artificial intelligence, Internet of Things) and potential value of expected benefits",²² he assessed. At the end of this activity, Garri realized that Acea technological innovation was dispersed and pigeonholed into each industrial area. He told: "Acea innovation is mostly of technical nature [...]. For instance, drones were already introduced in Acea operations when I arrived, but they were employed by only one industrial area. And it was implemented to allow process optimization. This is how innovation was intended. It was an engineering innovation".²³

In a second phase, Garri promoted a new round of meetings with the main actors of the technological mapping activity, performed earlier, with the aim to collect additional information and insights, beyond the formal census of the existing technologies. Garri remembered that he started asking the directors of the industrial areas whether they were interested in exploring other areas of opportunities not falling in their existing domains.²⁴ This brainstorming activity led to the integration of the Maturity Model with the "potential areas/activities of interest", reflecting the full range of opportunities for the development of technological applications and innovation, which Acea could undertake in the next future. This broad and time-consuming activity strongly contributed to the drafting of the 2018-2022 Business Plan, which was "in discontinuity with the last years of management", and empowering "a strong strengthening of infrastructure investments"²⁵ (around 400 million euros allocated to research and innovation activities) (EXHIBIT 4).

In the meanwhile, several innovation initiatives were launched or carried out in each industrial area, with expected positive effects on customers, the community and the environment. Among others, the evolution of a Customer Relationship Management service hosted in the Acea 2.0. platform, the replacement of old water meter with an innovative remote reading system application; the modernization and extension of the public lighting network through the widespread employment of the LED technology, the adoption of a satellite geological and multi-parametric monitoring technology applying "machine learning" to detect violations of the protected areas by third parties, to prevent and foresee hydrogeological instability phenomena, as well as to protect the network of sub-services managed by Acea in the Capital.

All these actions contributed to make the Company's infrastructural network increasingly resilient and able to deal with critical situations - such as the water crisis of summer 2017 - with greater efficiency and to finally increase the level of Company's control over its infrastructural assets.

22. Garri's interview, recorded by the authors in July 2019.

23. Garri's interview, recorded by the authors in July 2019.

24. Garri's interview, recorded by the authors in July 2019.

25. Acea press release (July 2017), more information is available at <https://www.milanofinanza.it/news/acea-nuovo-piano-con-maxi-investimenti-201707282135571894>, last retrieved in November 2019.

Innovating innovation: The Innovation-as-a-Service model

“Innovation must reduce time and space to allow our colleagues to work at their best”
(Garri, 2018).²⁶

“Change the method (and the IT role) not the company”²⁷

At the end of 2017, Garri was appointed as the Chief Innovation & Information Officer (CIIO) of the company.

Garri, in his new role as CIIO, was put in charge of a new department, reporting directly to the CEO, entitled Innovation Technology Solution (ITS), which replaced the former ICT one, in January 2018 (EXHIBIT 5).

The direction of change was marked by the introduction of the vocal, “I”, which stood for Innovation, both in the acronym of Garri’s organization position and in the company’s organization chart.

Garri’s comment on this was: “[s]omeone told me that as a “Chief Innovation & Information Officer” I ‘m potentially in a very uncomfortable position. On one side #Innovation: risk taking, failure prone, future oriented. On the other side #ICT: max reliability, no risk, cost optimizing. I was puzzled... After some thoughts I must say I sincerely disagree. That’s the best position I could dream of to create a much-needed blend of a Chief Technology Officer (CTO)/Chief Digital Officer (CDO)/Chief Information Officer (CIO). As I like to say: The #CIO is dead, long live the #CIIO. Today #ICT and #Innovation are the core of the #digitaltransformation, are the source from which the strategy, the business lines, the people can obtain empowerment and tools to embrace the #technology and deliver results”.²⁸

He noticed in fact that the problem of centralized IT facilities, in a relentlessly changing business competition, was that they become a bottleneck, and not because of their inability or unwillingness to operate, but because “it is obvious that, when you have a company, like Acea, encompassing 25 companies, about 9 million of customers, and completely different business, with an extraordinary boost in terms of business plan future investments, if everyone asks for anything about technology to you (IT), the IT become inefficient. There is also another dimension to consider [...] [that is the] interpretation of [the] technology, [...] if the person, who [needs to use the technology in its [...] job, [...] cannot understand [the features and potential of the] technology she/he has available, [what can he/she do?]”.²⁹

26. Garri’s interview, recorded by the authors in July 2019.

27. Garri’s interview, recorded by the authors in July 2019.

28. Garri’s article on LinkedIn, posted on the 6th of November 2019, available at <https://www.linkedin.com/in/mgarri/detail/recent-activity/>, last retrieved on November 2019.

29. Garri’s interview, recorded by the authors in July 2019.

In the new approach to innovation, defined as "Innovation-as-a-service",³⁰ "technological innovation ceases to be centralized and remains within the innovation centers of the individual Industrial Areas; as a result, the ITS department stops being the owner of the technology and of the innovation, and it works serving all the units, offering a range of services that serve to simplify and innovate easily without creating bottlenecks and delays in performing day-by-day operations and activities".³¹ But decentralization means losing control. And "[l]osing control is not that easy".³²

The Open Innovation way

When the ITS function was set up, the Open Innovation unit was also created, and it was explicitly dedicated to promoting, facilitating and supporting innovation "both inside and outside Acea, by applying the "Innovation-as-a-service" model, capable of creating value by encouraging collaboration and involvement of internal and external players in the Group".³³

Garri explained the point very clearly: "If the director of the water area has to create a new product or [more broadly] to innovate to give a better service to 9 million users, he cannot start thinking about open innovation, making contact with the universities, set up open challenge with startups, collaborating with the Singapore hub, or even to purchase and management the procurement process, etc. It is not his core business. [...] We give the service, we remove the complexity from the innovation but the innovation, the project still remains in the dedicated area. No one is dispossessed."³⁴

By removing complexity, which means "[...] listening to staff, defining priorities, monitoring and using the tools most suitable for supporting innovation processes",³⁵ [...] the Open Innovation unit coordinates all actions for identifying, testing and carrying out important and valuable projects for the Acea Group",³⁶ therefore ensuring the achievement of a relevant "center-periphery balance".³⁷

The two cornerstones of the Open Innovation unit were ensuring openness and contamination across the entire organization. On the one hand, "[it allowed] Acea [to] open to the world of innovation outside the company, feeding a network of relationships with universities, research

30. "Open Innovation", available on corporate website at <https://www.gruppo.acea.it/en/innovation/open-innovation>, last retrieved in November 2019.

31. Garri's interview, recorded by the authors in July 2019.

32. Garri's interview, recorded by the authors in July 2019.

33. "Open Innovation", available on the corporate website at <https://www.gruppo.acea.it/en/about-acea/innovation-at-acea>, last retrieved in July 2019.

34. Garri's interview, recorded by the authors in July 2019.

35. "Open Innovation", available on the corporate website at <https://www.gruppo.acea.it/en/innovation/open-innovation>, last retrieved in November 2019.

36. "Open Innovation", available on the corporate website at <https://www.gruppo.acea.it/en/innovation/open-innovation>, last retrieved in November 2019.

37. Garri's interview, recorded by the authors in July 2019.

centers, technological partners, startups and SMEs. [On the other hand, it allowed] [...] to create a fertile ecosystem for collaboration and the development of ideas, promoting workshops and contests that favor the contamination of skills and the exchange of knowledge”.³⁸

Execution is everything but the commitment rules!

In March 2018 Carmelo Graceffa was appointed as the Head of Open Innovation and took the lead of the new unit activities according to the principle: "make everything happen every day",³⁹ because "Acea is an industrial company [and w]e must be pragmatic".⁴⁰

The first real test of the Open Innovation unit led by Graceffa, under the guidance of Garri, was the development of an executive dashboard for monitoring company performance in April 2018. Whereas the old management would have naturally developed the solution at home, owned by the ICT unit; the ITS function, under the terms of the new approach to innovation, opened the challenge to the outside. As a result, the Open Innovation unit launched the "Acea Challenge Prize – Data Edition" [as a] part of the project "Acea Innovation", a series of initiatives for young start uppers with the aim of generating value added for the Acea Group by selecting innovative proposals with a high technological value".⁴¹

Based on an intense scouting activity on data mining, data analysis, business intelligence and data visualization, eleven startups and companies were selected to compete with each other to define a new digital platform capable of presenting a prompt visualization of huge amount of data, allowing for immediate reasoning and informing decision making of the Group's management. The top three projects were awarded, by four top Acea managers, a monetary prize totaling 10,000 euros. One of these projects also entered the Proof of Concept (POC) phase by collaborating with the interested Industrial Area.

Armed with more than "1,000 startups analyzed and various events organized for stimulating the producing of ideas: Lumina Challenge, Acea Challenge Prize, LEGO® SERIOUS PLAY®, Future Challenge; [t]he creation of the new Innovation Community within Acea; [b]ut above all, more than 20 experiments [run], leading to the birth of projects in which to invest concretely for the Group's future"⁴² the Open Innovation unit finetuned its process of constant scouting and POC developments with an increasing number of new startups (EXHIBIT 6).

38. "Open Innovation", available on the corporate website at <https://www.gruppo.acea.it/en/innovation/open-innovation>, last retrieved in November 2019.

39. Graceffa's interview, recorded by the authors in May 2019.

40. Excerpt translated and adapted from "Innovazione in Acea, Massimiliano Garri: dalla cultura interna allo scouting di startup", available at <https://www.economyup.it/energia/innovazione-in-acea-garri-dalla-cultura-interna-allo-scouting-di-startup/>, last retrieved in November 2019.

41. Excerpt from "Acea Challenge Prize", available on the corporate website at <https://www.gruppo.acea.it/en/media/events/2018/acea-challenge-prize>, last retrieved in November 2019.

42. Excerpt from "Open Innovation", available on corporate website at <https://www.gruppo.acea.it/en/innovation/open-innovation>, last retrieved in November 2019.

The second test was to legitimate the approach among the main actors of the innovation activities. Garri knew very well that he must convince them about the value of the new approach to innovation and thus overcome initial skepticism and reluctance (“...wasn’t innovation what we used to do it earlier?”⁴³). Graceffa insisted on the point by stating “the process of idea generation and day-by-day innovation management is bottom up, but the commitment must be top down and must be very strong”.⁴⁴ As a result, an Innovation Board, composed of the innovation representatives of the all Industrial Areas, was formally established and coordinated by the Open Innovation unit, with the aim to define the innovation strategy of the company.

The main activities of the Innovation board were a) the detection and definition of the definition of the “innovation needs” of the Industrial Areas; b) the definition and prioritization of innovation activities; c) the creation and promotion of cross-area initiatives and projects and finally d) the monitoring the execution of existing projects and the innovation roadmap. According to Garri and Graceffa, the Innovation Board was therefore a fundamental pillar of the company’s new innovation model, since it gave legitimization to the model, it promoted its adoption and dissemination and allowed ensuring the execution and the fulfillment of the innovation roadmap.⁴⁵

With the endorsement of the Innovation board, Garri and Graceffa agreed that it was time to create an open, shared, participatory innovation involving all the employees across all the functions. In the 2018 Sustainability report the ITS department claimed that the “Innovation Model was created [establishing] guidelines and frameworks at a Group level to coordinate, manage and develop innovation, defining governance (management of the phases and methods of involvement of internal and external actors), processes (standardization of the phases of engagement of internal and external actors) and tools (offering support in the different phases of the innovation framework).”⁴⁶.

According to the new Innovation Model, the innovation process was intended to be pervasive and transversal and, most of all, “not as a movement of a few or a single business unit, but a process that involves the whole company”.⁴⁷

43. “Garri’s interview, recorded by the authors in July 2019.

44. Graceffa’s interview, recorded by the authors in May 2019.

45. Author’s elaboration from Garri’s and Graceffa’s interview, recorded in July and May 2019.

46. “The Commitment to Research and Innovation” in 2018 Sustainability Report, p. 172, available at <https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/sustainability/SustainabilityReport/sustainability-report-2018.pdf>, last retrieved in November 2019.

47. Excerpt translated and adapted by Garri’s interview (October 2019), SMAU Innovation Award, more information available at https://www.smau.it/milano19/success_stories/acea-modello-cultura-e-factory-per-favorire-lopen-innovation/, last retrieved in November 2019.

“A new culture of innovation”⁴⁸

Thanks to the activity of the Open Innovation unit, “[p]articipating in innovation is easy. [...]. The fertility of the context certainly helps. But, if there is not the right mix of components, goodwill is not enough. [...] The Innovative approach should become the regular approach, not the exception relegated to a specific event or initiative”.⁴⁹ “People Involvement is the most complicated path on which we are working with the greatest effort⁵⁰” said Garri and Graceffa with one voice.



Therefore, building a culture of innovation at all levels turned to be the most important pillar to make the “Innovation-as-a-service” model work in practice. This is the reason why an increasing number of activities were launched and developed throughout the 2019 to make the innovation spirit be pervasive and transversal to all the company’s employees.

First of all, Acea has promoted two training programs, “the Managerial Academy” and “the Digital Academy”; the first one is offered to middle managers with the aim to develop soft skills, such as leadership, creativity, problem solving to face innovation management issues; the second program, is instead offered to all the employees and aims to build hard skills, including specialized technical understanding and familiarity with new technologies (e.g. Big Data, Data Analysis).

Pierluigi Palmigiani - in charge of Human Capital Development of Acea at the time of the launch of the Managerial Academy, highlighted that “[w]e want to be able to make a difference to people’s quality of life, preserving and bringing value to the communities in which we operate. To achieve this, we have started a training program designed for managers of today and tomorrow’s multi-utility companies, to help them become responsible and involved in the ethical and sustainable development of their cities and the wellbeing of their citizens.”⁵¹

But the most recent and impactful program, the Open Innovation unit launched, was “the corporate innovation program, [called] “Innovation Garage Acea”, open to all employees of the Acea Group with the specific aim to promote the culture of innovation and entrepreneurship”⁵² across all the departments, functions, roles and positions of the company.

48. Excerpt from “Innovation”, available on corporate website at <https://www.gruppo.acea.it/en/innovation>, last retrieved in November 2019.

49. Garri’s interview, recorded by the Author in July 2019.

50. Garri’s interview and Graceffa’s interview recorded by the Author in July and May 2019, respectively.

51. Excerpt from “Innovation Stories”, available on corporate website at <https://www.gruppo.acea.it/en/innovation/innovation-stories>, last retrieved in November 2019.

52. Excerpt translated and adapted by Garri’s interview (October 2019), SMAU Innovation Award, more information available at https://www.smau.it/milano19/success_stories/acea-modello-cultura-e-factory-per-favorire-lopen-innovation/, last retrieved in November 2019.

As explained in official occasions, “the project aims to support the Group in achieving the objectives of innovation by leveraging internal know-how”, Donnarumma underscored, ““There is a new ACEA. [a]nd in this new ACEA the internal entrepreneurial potential is fundamental for the innovation of our business”. And those potentials can be discovered, supported and enhanced only by acting methodically and involving the whole company”.⁵³

The Innovation Garage 2019 initiative started with a Call4Ideas with the aim of developing innovative ideas to address the innovation needs of 4 industrial areas (Water, Commercial and Trading, Energy Infrastructures, Environment). Thanks to the great and constant effort and commitment of the top and middle management that provided officiality and authority to the initiative, stunning records of participation were achieved, accounting for almost 2000 visits on the dedicated platform created for the call, and more than 100 ideas submitted.

As a result of the selection process, 10 teams were identified and invited to participate to the Pitch day to compete one against the other. The 3 winning projects were therefore provided with dedicated spaces (in an international incubator located in Rome, nearby Acea main building), 50% working time and the support of coaches and technical mentors. During the 3-months long incubation period, they were requested to develop a prototype to be presented at the Investor Day in front of the four industrial area directors involved.

Along this process, Acea people had therefore the opportunity to concretely implement their innovation proposals as well as to be exposed to new working models and experience the culture of risk and failure. “We have created real startups that are therefore working as startups”,⁵⁴ Garri stated.

“The Innovation Garage initiative has been an incredible opportunity to think outside the box” [..] to [b]ring colleagues to a space where they feel free” [.] [And] [w]e have seen a great effort and incredible commitment by all the directors to spread this concept throughout their areas; considering that Acea is a company with 110 years of history, it is not that easy”.⁵⁵

53. Excerpt translated and adapted by Donnarumma’s interview (November 2019), available at <https://www.economyup.it/energia/innovation-garage-acea-come-valorizzare-limprenditorialita-in-azienda/>, last retrieved in November 2019.

54. Excerpt translated and adapted by Garri’s interview (November 2019), available at <https://www.economyup.it/energia/innovation-garage-acea-come-valorizzare-limprenditorialita-in-azienda/>, last retrieved in November 2019.

55. Garri’s interview, recorded by the authors in July 2019.

Acea outside Acea

“We deliver the future. We invest in innovative projects to make the quality of our services develop and grow. We bring the future into the homes of millions of people, to improve their lives.”

(ACEA corporate website, 2019)⁵⁶

The new (agile) Acea

The new Acea has taken its first steps. In only 2 years many things have changed, and a new course of actions has taken hold to launch Acea into the future.

To make this incomparable leap forward, not only have they innovated their Innovation model (“Innovation-as-a-service”), not only have they invested in People development and Corporate Entrepreneurship (Innovation culture), but they have also recently implemented an agile model of working (Innovation Factory). These are the three main pillars of the “new Acea”.⁵⁷

The Innovation factory is an agile model of idea generation and rapid prototyping. The factory works in 12-week cycles and involves all the Industrial Area. Garri explains the process as follows: “[e]veryone needs to participate, even if the project will only be applied in one area”,⁵⁸ and underlines the importance of the shared and participated process of innovation, where lateral thinking and contamination between different business areas is fundamental. For example, the Smart-comp,⁵⁹ a distributed composting system, developed by all the participants, was in the end attributed to the Industrial Engineering & Services Area, which took in charge the following phases of development.

The cycles are called “Tables”, named after the topic of the challenge. After a brainstorming session, all the participants vote the most impactful ideas, which can address the business needs

56. “Innovation” available on corporate website at <https://www.gruppo.acea.it/en/innovation>, last retrieved in July 2019.

57. Excerpt translated and adapted by Garri’s interview (October 2019), SMAU Innovation Award, more information available at https://www.smau.it/milano19/success_stories/acea-modello-cultura-e-factory-per-favorire-lopen-innovation/, last retrieved in November 2019.

58. Garri’s interview, recorder by the authors in July 2019.

59. SmartComp, “is a project in collaboration with ENEA and the University of Tuscia, dedicated to high volume business users (shopping centers, canteens, airports, train stations), who have to manage great quantities of organic waste. Thanks to mini composting plants, provided by Acea and equipped with revolutionary sensor technology, businesses will be able to transform their organic waste in compost using an aerobic process that produces ready-to-use quality fertilizers in approximately 90 days. Acea’s objective is to install 250 SmartComp plants by 2022 to create a diffused system with a 25,000-ton capacity per year – the equivalent of a plant that manages organic waste produced by a town with 250,000 people – saving 30% on management costs and cutting sensibly gas emissions by avoiding waste transport by road. With this project Acea places itself on the forefront of the waste transition, a new diffused and participated waste management model”. Acea Press Release, available at <https://www.gruppo.acea.it/en/media/press-releases-and-news/press-releases/2019/10/the-sustainability-day-sees-launch-by-acea-of-widespread-composting-for-the-management-of-organic-waste>, last retrieved in November 2019.

identified by the Innovation Board. Upon passing the first feasibility check, the ideas enter the prototyping stage. At the end of each cycle, a pilot is launched to validate the assumptions through a real market test.

Using this model, which is typical of startups, Acea can enact a process of innovation development based on rapid experimentations. “It is a very cool thing! In three months, we are able to move from an idea to a prototype platform”⁶⁰ Graceffa states excited.

The first tables implemented to date have been four: Mobility Table, Circular Economy and Energy Efficiency Table, Safety Table and Smart Health Table. The latter “in particular, embodies Acea’s desire to innovate and go beyond its own borders”⁶¹ Graceffa states. In this case, the concept idea selected consisted in the development of innovative smart health services platform, with the aim of improving health services such as prevention activities, diagnoses, therapies to fight diseases, strengthening health systems and improving citizens’ access to care.

What’s next?

As a visible sign of the new course of actions, Acea recorded the best financial results ever in 2019. Its recent financial income statement and balance sheet are shown in Exhibit 7A and 7B.

In April 2019 Acea presented an update to the previous Business Plan, where it confirmed the strategic pillars and envisaged investments in innovation totaling 500 million Euro. (EXIBHIT 8A and 8B).

Acea’s CEO, Donnarumma, commented on the exceptional results, during the press conference for the presentation of the updated 2019-2022 Business Plan: “In two years of intense work we have leveraged ACEA’s strengths, becoming increasingly aware of our potential ability to improve on our initial forecasts. Our Group is gaining in strength and this Business Plan clearly shows how and where we are looking to create value”. The CEO continued: “Our strategic pillars have not changed with respect to the previous plan, but we now intend to focus with constantly greater emphasis on five specific actions: to accelerate growth (Grow), to develop and diversify our business portfolio (Reshape), to concentrate on the innovation of our industrial processes (Innovate), to develop both a results-oriented (Deliver) and a dynamic and sustainable (Smart) approach. These factors, which make up the acronym “GRID S”, reflect a further evolution of the path along which we started two years ago”.

As a seal on these results, on July 2019 ACEA Innovation Srl, a subsidiary of the Parent Company, was founded and Garri was appointed as the new CEO. At the same time the Open Innovation unit changed its name into Innovation Unit and Graceffa was confirmed as its Head.

60. Graceffa’s interview, recorded by the authors in July 2019.

61. Graceffa’s interview, recorded by the authors in July 2019.

As stated in the Interim Report on Operations as at 30 September 2019, the new company “has the objective of researching innovations and start-ups to start experimental projects in order to apply innovative ideas to real cases, together with Group companies, as well as some collaborative initiatives in funded projects.”⁶²

“Acea Innovation is the company created to be the Innovation Factory of the Acea Group.⁶³ Ready to be an incubator and an accelerator. Ready to create new services and products. Ready to define what’s next for our Group.” Garri resonated on the web.

62. Excerpt from “Significant and subsequent events”, available on corporate website at <https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/investors/2019/reports/interim-report-on-operations-at-30-september-2019.pdf>, last retrieved in November 2019.

63. Garri’s linkedin account, available at <https://it.linkedin.com/in/mgarri>, last retrieved in November 2019.

EXHIBIT 1 – Acea business activities and highlights

Source: Company official website (<https://www.gruppo.acea.it/en/about-acea>)

The image is a screenshot of the Acea website's 'Our business activities' and 'Highlights' sections. The top section, 'Our business activities', features four circular icons representing different business areas: water services, energy distribution, electricity and gas sale, and waste valorisation. Each icon is accompanied by a title, a brief description, and a 'READ MORE' link. The bottom section, 'Highlights', is a dark blue banner with five key metrics presented in large white numbers and smaller text below them.

Our business activities

- Management of water services**
We are the number one Italian operator in the sector of integrated water services.
[READ MORE](#)
- Energy distribution**
We produce and distribute electricity and illuminate the Capital's roads and monuments.
[READ MORE](#)
- Sale of electricity and gas**
We are one of the leading Italian operators in the sale of electricity and gas.
[READ MORE](#)
- Waste valorisation**
We are one of the main Italian operators in the Waste Management sector.
[READ MORE](#)

[Find out more](#)

Highlights

- 9 mln**
CUSTOMERS SERVED IN LAZIO, TUSCANY, UMBRIA AND CAMPANIA
- 10 TWh**
OF ELECTRICITY DISTRIBUTED
- 6 TWh**
OF ELECTRICITY SOLD
- 1.1 mln**
TONS OF WASTE DISPOSED OF AND TREATED
- 6,500**
EMPLOYEES

EXHIBIT 2 – Water crisis in 2017

Source: Adapted from Acea ATO2 S.p.a. Emergency Plan 16/07/2017

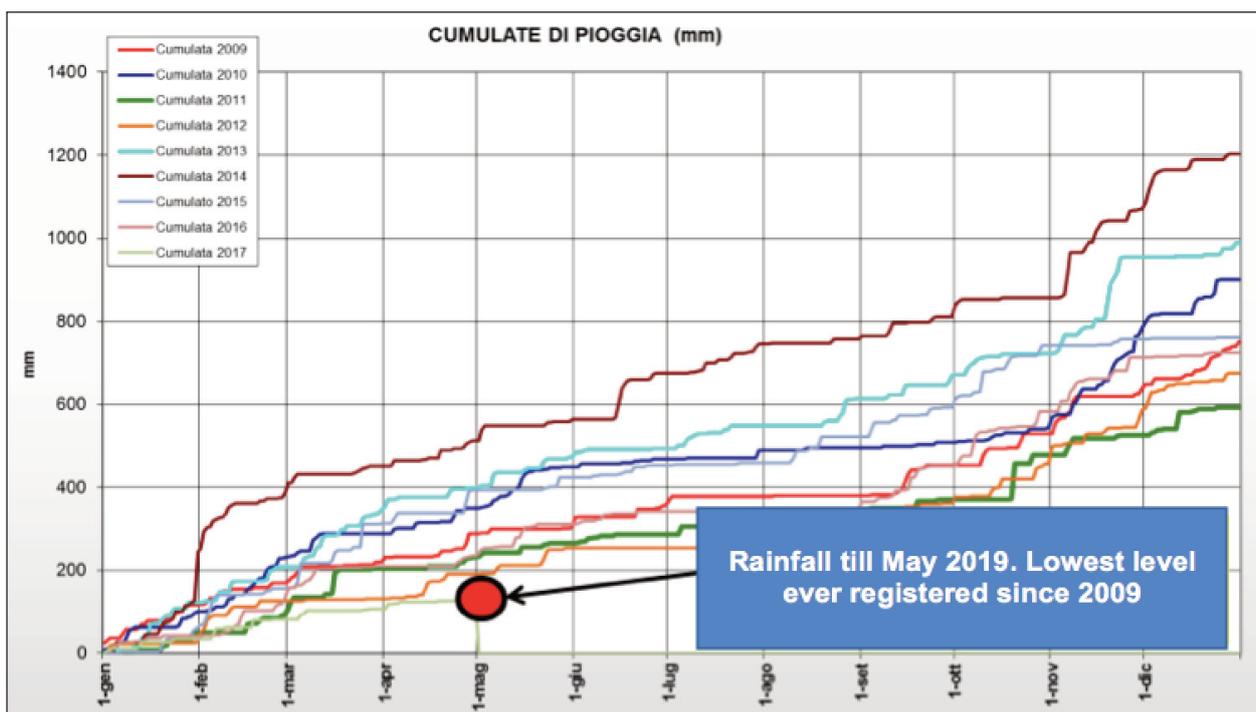


EXHIBIT 3 – Acea organization chart at 31/12/2017

Source: ACEA 2017 Sustainability Report ([https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/sustainability/SustainabilityReport/2017-sustainability-report-acea-group%20\(1\).pdf](https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/sustainability/SustainabilityReport/2017-sustainability-report-acea-group%20(1).pdf))

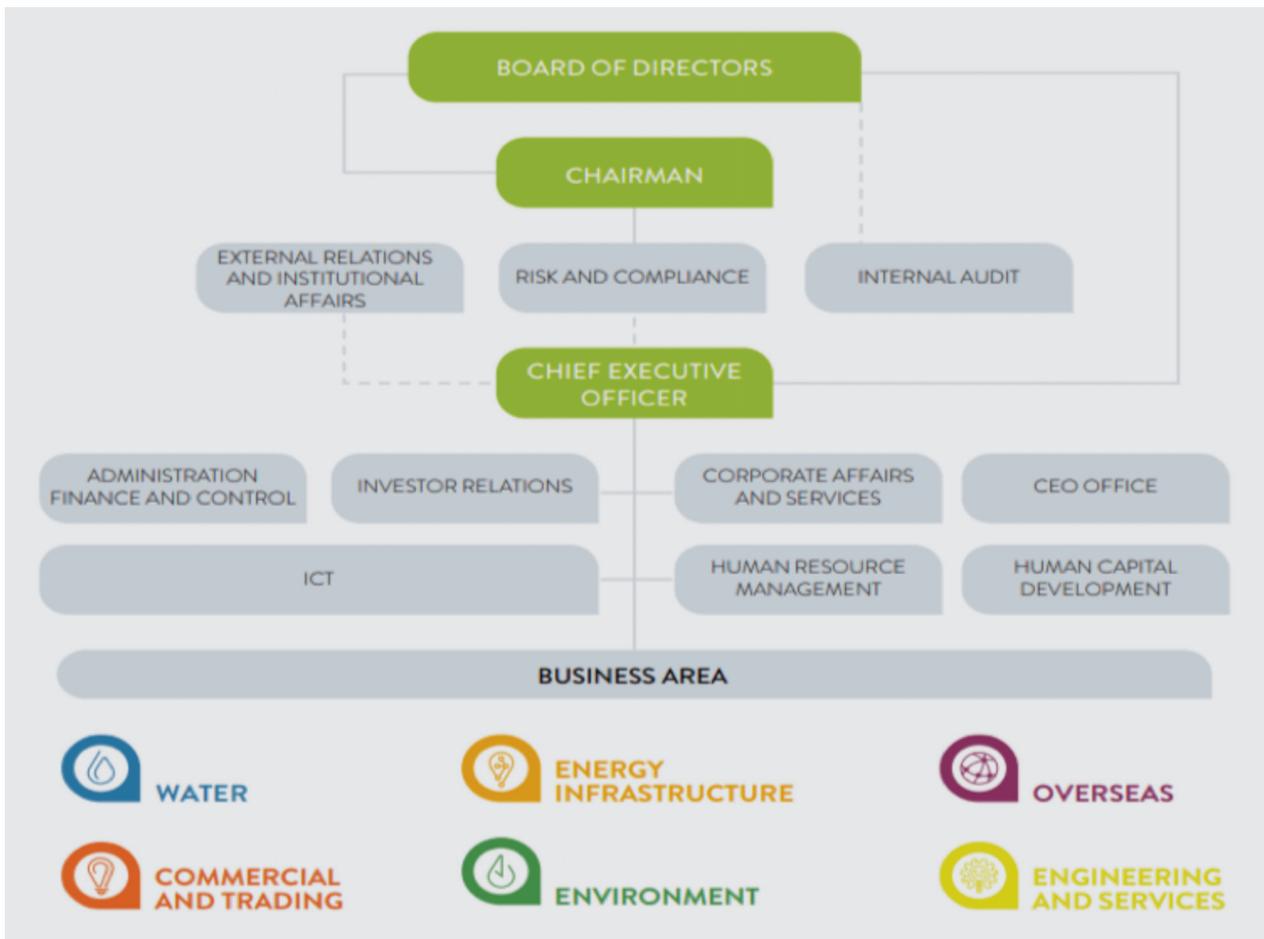


EXHIBIT 4 – Acea 2018-2021 Business Plan

Source: Acea 2018-2021 Business Plan Presentation (<https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/investors/2018/presentations/presentation-december-2018-en.pdf>)

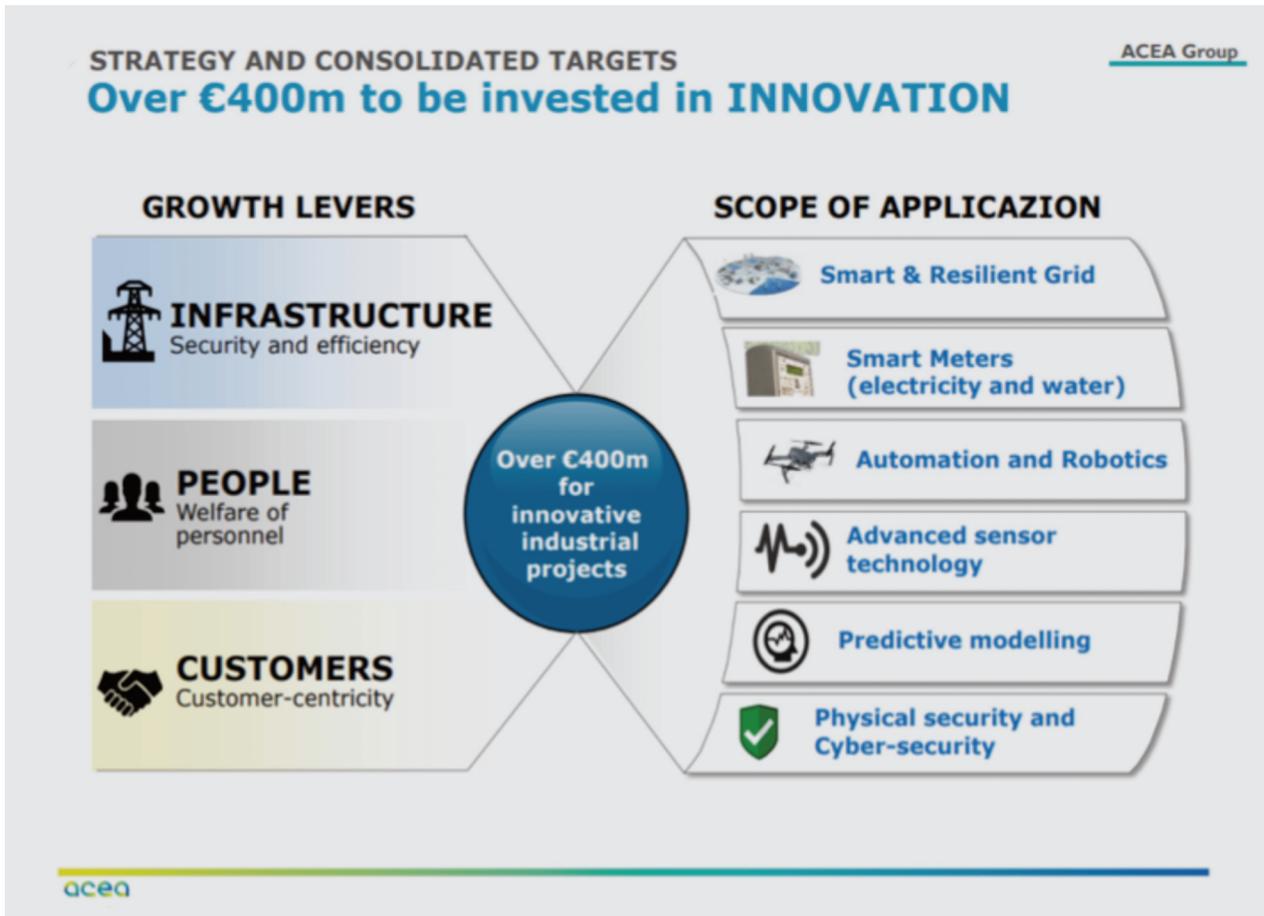


EXHIBIT 5 – Acea organization chart at 31/12/2018

Source: ACEA 2018 Sustainability Report (<https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/sustainability/SustainabilityReport/sustainability-report-2018.pdf>)

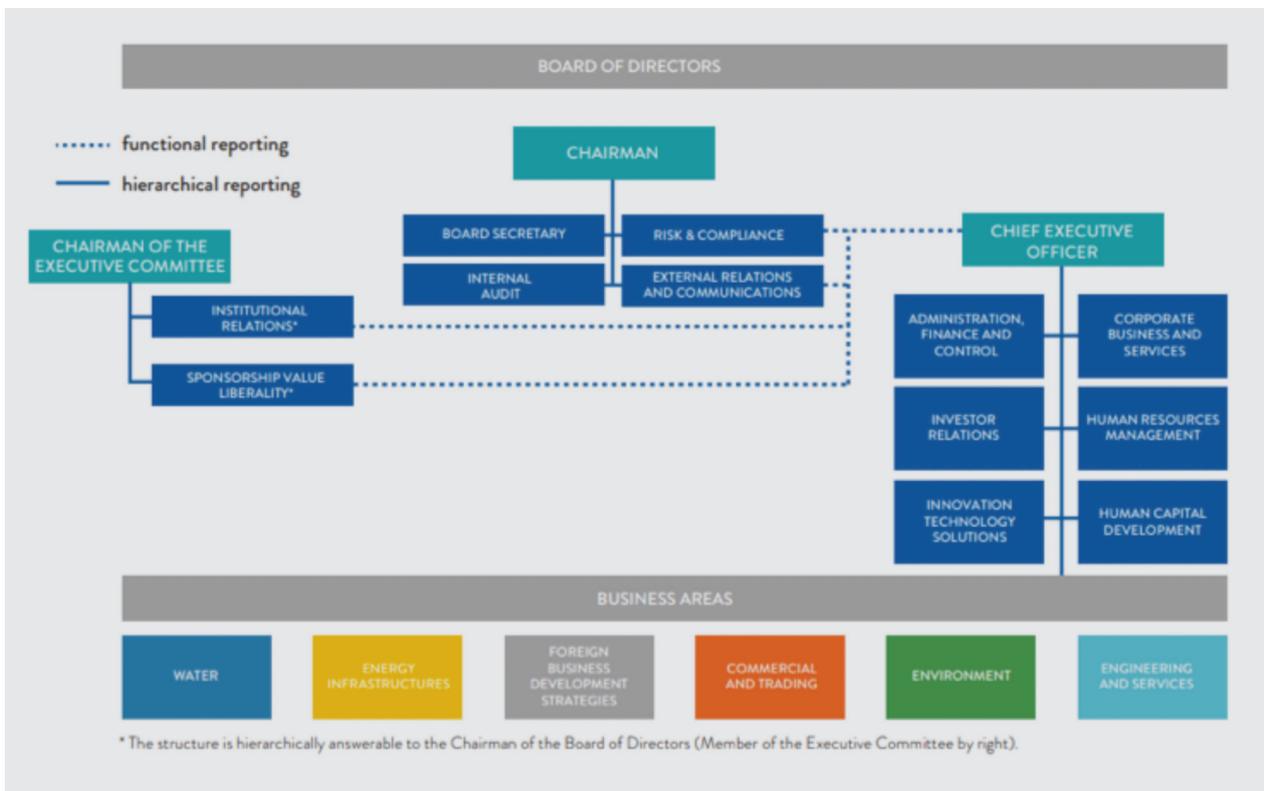


EXHIBIT 6 – Acea Open Innovation Process

Source: Acea Open Innovation (<https://www.gruppo.acea.it/en/innovation/open-innovation>)



EXIBHIT 7A – Acea Income Statement: 2017-2019 (in millions of euros)

Income Statement Data (€ million)	30/09/2019	30/09/2018	30/09/2017
Revenue from sales and services	2,245.9	2,091.1	1,977.3
Other revenue and proceeds	100.3	82.9	60.6
Costs of materials and overheads	1,418.4	1,354.0	1,272.2
Personnel costs	187.4	160.3	157.8
Income/(Costs) from equity investments of a non- financial nature	28.7	25.6	17.9
EBITDA	769.4	685.2	625.8
Amortization, depreciation, provisions and impairment charges	366.9	304.2	334.6
Operating profit/(loss)	402.5	381.0	291.3
Financial items	(65.5)	(65.9)	(51.4)
Equity investments	3.6	9.4	0.3
Profit/(loss) before tax	340.6	324.6	240.2
Income taxes	102.3	98.8	78.6
Net profit/(loss)	238.3	225.8	161.6
Profit/(loss) attributable to minority interests	19.4	11.0	9.0
Net profit/(loss) attributable to the Group	218.9	214.8	152.6

EBITDA rose from € 685.2 million at 30 September 2018 to € 769.4 million at 30 September 2019, recording an increase of € 84.2 million or 12.3%.

The change in intangible fixed assets is due to the investments, which reached € 529.0 million, and amortizations and value reductions, totaling € 306.7 million. The application of IFRS 16 (application of the new standard from 1 January 2019) contributed to the change in the period, with the recognition of fixed assets for a net value at 30 September 2019 of € 58.5 million.

See the following table as regards the investments made in each Operating Segment.

EXIBHIT 7B – Acea Income Statement: 2017-2019 (in millions of euros)

Source: Acea Interim Report on Operations as at 30 September 2019 (<https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/investors/2019/reports/interim-report-on-operations-at-30-september-2019.pdf>)

Investments per operating segment (€ million)	30/09/2019	30/09/2018	Change	% Change
ENVIRONMENT	29.4	13.1	16.3	124.3%
COMMERCIAL AND TRADING	31.8	9.5	22.3	n.a.
OVERSEAS	5.3	4.0	1.3	32.3%
WATER	253.5	224.6	29.0	12.9%
Integrated water service	252.8	224.5	28.3	12.6%
Lazio – Campania	252.8	224.5	28.3	12.6%
Tuscany – Umbria	0.0	0.0	0.0	n.a.
Others	0.7	0.1	0.7	n.a.
ENERGY INFRASTRUCTURE	196.5	156.2	40.3	25.8%
Distribution	185.0	145.4	39.6	27.2%
Generation	9.6	9.6	0.1	0.7%
Public Lighting	1.8	1.2	0.6	51.9%
ENGINEERING AND SERVICES	1.2	0.8	0.4	56.5%
ACEA (Corporate)	11.3	5.2	6.2	119.5%
Total	529.0	413.2	115.7	28.0%

The investments in the Environment Segment increased € 16.3 million compared to 30 September 2018 and refer mainly to the investments made by Acea Ambiente for: (i) the revamping of the Monterotondo Marittimo plant; the inauguration of the expansion of the plant for the treatment of composting and anaerobic digestion waste took place on 10 October; (ii) the works carried out at the WTE plants in Terni and San Vittore; (iii) the works for the extension of the landfill located in Orvieto.

The Commercial and Trading Segment recorded an increase attributable to Acea Energia for investments related to the acquisition of new customers in accordance with IFRS 15 (€ 11.3 million), for IT implementation projects (€ 10.2 million) and for cloud licenses that form the basis of the new Customer Relationship Management (€ 9.9 million). It should be noted that investments at 30 September 2018 did not include commissioning costs of € 6.3 million.

The Overseas Segment recorded an increase of € 1.3 million compared to the same period of last year, mainly due to the investments made by Aguas de San Pedro for the expansion and extraordinary maintenance of the water and sewerage network in the areas managed.

The Water Segment invested a total of € 253.5 million, an increase of € 29.0 million due to the consolidation of Gori (+ € 33.2 million), partly offset by lower investments by ACEA Ato2 (- € 2.7 million) and Acea Ato5 (- € 2.1 million). The investments in the segment mainly refer to the reclamation and expansion of the water and sewer pipes of the various municipalities, the extraordinary maintenance of the water centers, the work on the purifiers and the transport systems (connectors and feeders).

The Energy Infrastructure Segment recorded an increase in investments of € 40.3 million, mainly relating to areti (+ € 39.6 million). The investments of areti refer mainly to renewal and enhancement of the HV, MV and LV network, work on the primary and secondary substations and meters; intangible investments refer to projects for the re-engineering of information and commercial systems. This year the so-called "Resilience Plan" was implemented, which consists of interventions on substations and on the MV and LV networks. Investments made by Acea Produzione mainly concern plant revamping works for the Mandela and Tor di Valle and Montemartini hydroelectric power plants, static and functional upgrades of the tunnels deriving from the San Cosimato dam reservoir and the extension of the district heating network in the Mezzocammino district in the south of Rome.

Investments in the Engineering and Services Segment mainly refer to the purchase of equipment for the Grottarossa laboratory by ACEA Elabiori and investments in IT systems.

The Corporate Segment made investments in hardware and software as part of the various IT projects and maintenance work on the sites used for business activities.

Group investments concerning shared IT infrastructure totaled € 22.2 million.

EXIBHIT 8A – 2019-2022 Business Plan

Source: Acea Group Business Plan 2019-2022 (<https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/investors/2019/presentations/presentation-acea-group-business-plan-2019-2022.pdf>)

Challenges of today and tomorrow for acea

Strong awareness of our ability to outperform again

New Plan 19-22	Target EBITDA	2020: €1.1B	↗
		2022: €1.3B	↗

Targets already outperformed

2018 Results	EBITDA 2018: €933M	↗	Outperformed 2019 target
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Committed with challenging targets

Old Plan 18-22	EBITDA target	2019: €916M
		2020: €1.0B
		2022: €1.1B

Acea Today
Leader in the multi-utility market

Water

- 1° Italian player in the water supply sector
- With 9 millions customers served in Lazio, Tuscany, Umbria and Campania

Energy Infrastructure

- Among the leading Italian players in the electricity distribution market
- with 10 TWh distributed electricity

2018 EBITDA

933M€ EBITDA 2018

77% regulated

Shareholder structure

Market	20.7%
Suez	23.3%
Roma Capitale	51%
Caltagirone	5.0%

Source: CONSOB March 2019

Commercial & Trading

- Among the main national players in the energy market
- with 6 TWh of electricity sold

Environment

- Leading player in the Italian waste treatment sector
- with more than 1.1 mln tons waste treated/disposed

acea

EXIBHIT 8B – 2019-2022 Business Plan

Source: Source: Acea Group Business Plan 2019-2022 (<https://www.gruppo.acea.it/content/dam/acea-corporate/acea-foundation/pdf/en/company/investors/2019/presentations/presentation-acea-group-business-plan-2019-2022.pdf>)

