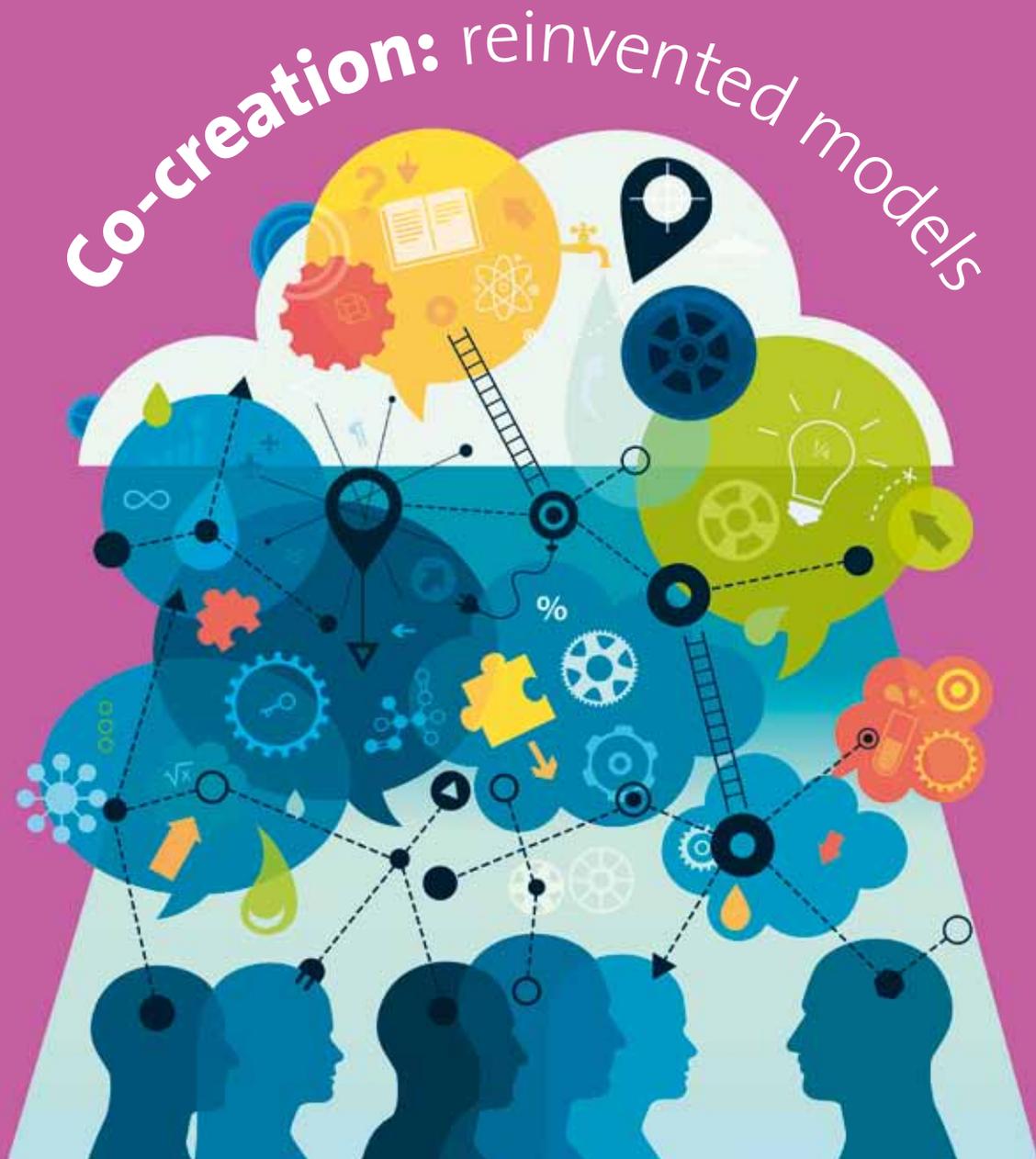


PLANET

#July 2016



Forum
Why has co-construction become a must?

Frontline
Mexico: Innovative ecosystem

Outfront
Creating growth together

Explainer
First complete circular economy loop

TABLE OF CONTENTS

JULY 2016

03 THE POST

by Antoine Frérot

04 CONTRIBUTORS

Aude Joël, Megan Beck, Arnaud Mourot, María Fernanda Ramírez Castillo

06 CURRENT

The news in brief.

An infographic on the four value-boosting business models

12 FORUM

Laurent Auguste, Megan Beck, Arnaud Mourot
Why has co-construction become a must?

16 SPOTLIGHT

Fleur Casassus, Jessie Huynh

20 FRONTLINE

NEW ORLEANS Weathering the storm
THE NETHERLANDS Philips boosts its appliances with recycled plastic
MEXICO Innovative ecosystem

34 GALLERY

Mario Tama, Katrina, 10 years already

42 OUTFRONT

Co-construction: creating growth together

47 COMMUNITY

Non-stop solidarity in Ecuador

48 EXPLAINER

First complete circular economy loop

50 FUTURIST

The Mushroom Chair - or how to grow your own furniture



Antoine Frérot
Chairman and CEO
of Veolia

March 29, Dubai. Dealing with the scarcity of natural resources such as water and raw materials and reducing greenhouse gas emissions is the double environmental challenge facing the Middle East. Veolia offers cutting-edge solutions to help public authorities, cities and local businesses rise to the occasion. For example, in Ajman up to half of the city's wastewater is retreated and then reused for irrigation (watering parks, gardens and leisure areas, among others) or as process water for industry. This approach is doubly effective, because it decreases withdrawals of seawater for desalination and leads to a sevenfold or more reduction in CO₂ emissions, depending on the technology used. In Dubai, the energy saving center that we launched two years ago at the headquarters of Veolia and Majid Al Futtaim Ventures' joint venture Enova collects and processes data from over 5,000 clients in real time. It has allowed us to lower the buildings' energy consumption by 30%! Proof that you can reduce greenhouse gas emissions without damaging economic development. In fact, efforts to improve energy efficiency must not be considered as a constraint, but as an opportunity allowing companies to become more competitive and sustainable.

May 25, Hong Kong. The sewage sludge treatment plant that we opened has established itself as a benchmark in the water sector. Through its capacity, which makes it the largest sludge incineration unit in the world. Through its environmental performance, because it is autonomous in terms of water and energy, does not discharge wastewater (which is entirely recycled), and transforms sewage sludge that was previously sent to landfill into electricity. Through its elegance, which shows that a refined esthetic can go hand in hand with high technical performance. Over and above being an industrial facility, this plant is a remarkable

environmental site, combining urban ecology and lifestyle amenities: it includes a vast ecological garden dedicated to biodiversity, three swimming pools and even a spa. It may seem surprising that a treatment plant for sludge – waste that concentrates a large proportion of the city's pollutants – has become a place of environmental excellence. But what better way to prove the exceptional performance level that we can now achieve? What's more, this building marks a breakthrough in the way we design urban pollution control infrastructure. We used to hide it on the outskirts of cities, now we make it into an iconic site, incorporating ecology and quality of life. With this plant that doesn't look like a plant, we are demonstrating that the "behind-the-scenes side" of a city can be clean and therefore fully accepted, a source of pride for its inhabitants. This is a completely different way of seeing things. We took the architectural risk of displaying this facility, creating a beautiful site, and making it a place devoted to walking, leisure and high environmental quality, and it has paid off!

June 14, Boston. In the United States, the acquisition of Chemours' sulfur products division strengthens Veolia's expertise in recycling and regeneration technologies in the oil and gas sector, which is subject to strict requirements in terms of environmental protection, safety and productivity. This company specializes in the treatment and regeneration of sulfuric acid and sulfur gases from refining activities, and in reusing them in the form of clean acid or steam in a variety of industrial applications. This acquisition expands the scope of our know-how in the clean fuel market, a key element in energy transition. It also allows us to take a further step toward a circular economy, one that systematically transforms waste into resources and restores value where it has been lost.

CONTRIBUTORS



Editor-in-chief Aude Joël

Communications & Sustainable Development Director
Veolia Latin America

An environment that is becoming increasingly complex with each passing day, the demand for operational and financial efficiency, and the explosion of the shared economy are shaking up organizations' everyday life. Markets are changing quickly and stakeholder relations are being transformed. Looking around you, interacting and searching for complementary expertise in a more creative environment has now become – if not the rule – a must. Working together in innovative partnerships opens models up to greater value creation in environmental, social and also economic terms. The only condition for long-lasting collaboration is that everyone finds their bearings. Co-creation has become a wonderful lever for growth.

This issue of Planet, which will be published in Spanish for the first time, contains a host of great co-creation stories: from using recycled plastic for household appliances to working with social entrepreneurs to come up with solutions to Mexico's water problem. Well done and a huge thank you to the entire editorial team for their inspired and socially engaged work.

Happy reading!

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Also in this issue

Megan Beck

Associate, OpenMatters

Chief Insights Officer, the author of numerous publications and educational project leader for the data science company OpenMatters, Megan is also a researcher at the Wharton SEI Center in Pennsylvania. After working as a consultant for Bain & Company, she wanted to directly advise clients in her areas of expertise: digital technology, entrepreneurship and management. An engineering and e-commerce project manager for National Instruments Corporation, she branched off to work for Austin Technology Incubator, offering guidance to member companies and student entrepreneurs.



Arnaud Mouroit

CEO Ashoka Europe

Deeply involved in the humanitarian sector since the end of his studies, in 1999 Arnaud co-founded the NGO Sport Sans Frontières (now P4y International), which he led for six years and now chairs. On his arrival at Ashoka in 2005, the largest network of social entrepreneurs worldwide, he launched Ashoka's operations in France, Belgium and Switzerland, contributing to the creation and recognition of the social entrepreneurship sector. He coordinates Ashoka's development in Europe, along with its social and business co-creation initiative, including the Making More Health program in partnership with Boehringer Ingelheim.



María Fernanda Ramírez Castillo

SenseCube's Director in Mexico

Before joining SenseCube, María Fernanda was in charge of promoting entrepreneurship at the capital risk firm Angel Ventures México. She then became involved in a project at Campus Party México – the major annual event for the Mexican geek community – where she acted as interface between investors and start-ups. This experience strengthened her conviction that technology is a key element driving entrepreneurial projects. Determined to help entrepreneurs solve social and environmental problems, she approached CO_Plataforma and came into contact with MakeSense there.



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CURRENT



Paris agreement: historic record and first ratifications

196 countries undertook to comply with the “Paris agreement” at COP21 last December. On April 22 at the UN headquarters in New York, 177 of them duly signed it. “Today is an historic day. This is by far the largest number of countries ever to sign an international agreement on a single day,” declared its Secretary-General, Ban Ki-moon. It still has to be ratified, the final step in making the agreement operational. France is setting the example: its Parliament gave the green light in early May. It is important to bear in mind that this treaty will only come into effect once it has been ratified by at least 55 countries representing at least 55% of global greenhouse gas (GHG) emissions. The Small Island States have already submitted their instruments of ratification, and some of the planet’s biggest GHG emitters – Canada, Australia and China – have committed to doing so within the year. This makes a total of 60 countries counting for almost 56% of emissions, above the required threshold. This bodes well for COP22, which is being hosted in Morocco in late November.

Climate mobilization: French investors in 4th place

Sweden, Norway and Australia take the top places in the latest index of institutional investors ranked according to their climate-risk management, drawn up by the NGO Asset Owners Disclosure Project. Worldwide, only 19% of investors have put in place concrete climate-risk management actions.

The cost of nuclear dismantling

In its report published last April, the European Commission drew up a ranking of States according to their preparedness in terms of nuclear waste management and dismantling. With respectively 100%, 94% and 83% of costs budgeted, Great Britain, the Netherlands and Germany are the best prepared. The European average is 56% and France has only reached 31%.

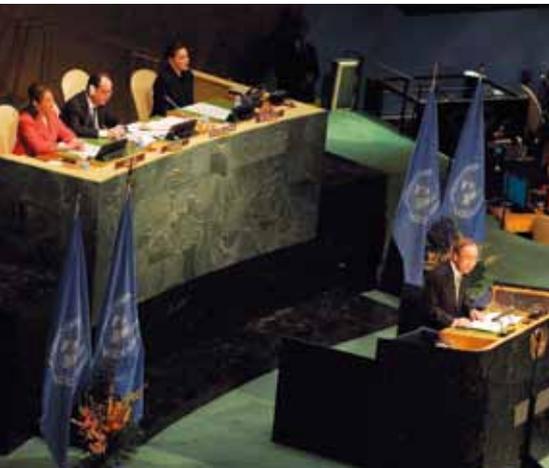
Urban growth of cities in the global South and essential services: Morocco mobilized

Some 21 recommendations arose from the debates at the 11th (Re) sources colloquium last February in Morocco. This international think tank, well known to water and energy professionals and public decision makers, brought Moroccan participants and experts together in Tangier. The program included four round tables, each on a theme relating to the construction of sustainable cities in developing countries: reinforcing governance, planning land use, funding essential services and managing climate risk. Among the observations, (Re)sources highlighted the absence of management in many cities in the South capable of applying directives and a major development decorrelation between cities’ extension, their morphology and their networks. Among the corresponding actions to be implemented, (Re)sources recommends increasing multilateral collaboration with regard to essential services, along with an urban land policy that benefits the poorest, in order to eliminate no-go areas, a real obstacle to developing access to services.



Sequana 2016, preparing for a once-a-century flood

Every year since the historic 1910 flood, the risk of the Seine overflowing has been estimated at 1%. The question is therefore not “if” but “when” the next one will occur. June’s high water levels may be seen as a warning. This explains the exceptional exercise organized last March in Paris and the surrounding region, which also complies with the 2013 Floods directive whereby the European Union encourages Member States to form risk management strategies. Under the watchful eye of observers from many different countries, the Sequana 2016 simulation exercise included all public and private players in the situation scenario. The aim was to simulate their action when the problem arises and above all manage the return to normal, as the expected impact is striking: 800,000 inhabitants would find themselves in a floodable area, 1.5 million people in the Paris region would be without electricity and 1.3 million without drinking water. According to the OECD (2014), “a disaster of this kind would lead to €3 to €30 billion worth of direct damage depending on the scenario, combined with a significant reduction in GDP of between €1.5 and €58.5 billion over five years, i.e. 0.1 to 3% in total. And up to 400,000 jobs could be affected in the worst-case scenario.”





4.2 trillion dollars

Doubling the share of renewable energies in the global energy mix to bring it to 36% by 2030 would allow the global economy to save up to 4.2 trillion dollars per year, according to the International Renewable Energy Agency (Irena).

Source: Roadmap for a Renewable Energy Future, March 2016

In New York, toxic household waste is a big hit

April 30, 2016 will go down in New York's history. This was the day when over 3,100 vehicles and some 1,730 pedestrians came to Cunningham Park in Queens for Safe Disposal Day. They dropped off over 122 metric tons of waste electrical and electronic equipment and other toxic household waste (pesticides, detergents, mercury, paints, waste oil, etc.), requiring 12 semi-trailers to transport it all to the recycling, fuel production or incineration facilities. This enthusiasm on the part of New Yorkers for hazardous household waste collection dates back to spring 2012, when the annual Safe Disposal Day operation was first implemented by city hall and Veolia, which is in charge of collecting and recycling this very special waste.

Telex

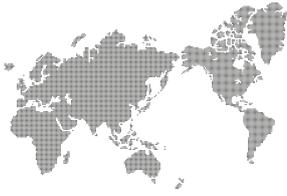
The city of Borås in Sweden has chosen Veolia, its partner for over ten years, to design and build a wastewater treatment plant. According to the terms of the €42-million contract, the plant's commissioning is set for November 2018.

Tarkett, the global leader in flooring and sports surface solutions, has chosen Veolia to collect and sort the supply, vinyl and linoleum flooring cuttings from its professional construction clients.

Be'ah, Oman Environmental Services Holding Company, has entrusted Veolia and its

Omanese partner Al Ramooz National with the collection, transport and burying of municipal waste for seven years in the Al Dhahirah and Al Buraimi governates, in the northwest of the Sultanate.

In Qatar, Veolia has won an engineering, supply and delivery contract for a wastewater treatment plant for Dolphin Energy's natural gas facilities in Ras Laffan. Start-up is set for September 2017.



100 cities

take up the challenge of resilience

The worldwide network of resilient cities “100 Resilient Cities” is growing. Last May, 37 members joined the 63 cities already affiliated with the platform dedicated to urban resilience. This global initiative was launched in 2013 by the Rockefeller Foundation to assist cities in meeting every challenge they face, whether climate risks, growing urbanization, aging infrastructure linked to essential services, or terrorist threats. Since then, chief resilience officers have been appointed virtually all around the world, from Paris to New York through Rotterdam. The method is the same everywhere: in each city chosen, the Foundation relies on a network of experts. In the respect, Veolia has joined forces with the reinsurer Swiss Re to consider how to get vital infrastructure back up and running, especially in New Orleans (see pp. 20).

Abundant water storage in African soils

For the first time, scientists have quantified the available water storage in the “basement rocks” that form the bedrock of continents and concern almost 40% of the surface area of Africa. Hydrogeologists at the IRD (Institut de Recherche pour le Développement) and their African partners – working together on the Griba (Groundwater Resources in Basement Rocks of Africa) program – evaluated Benin’s water storage at almost 500 liters/m² of ground surface. The turnover rate of these water reserves remains to be measured...

And methane becomes plastic...

Transforming one of the greenhouse gases with the highest global warming potential into a material as strong as and less expensive than oil-derived products. This is the feat accomplished by the company Newlight Technologies, which has developed AirCarbon. This thermoplastic material derived from methane is obtained using biocatalysis technology that increases the process’ performance ninefold compared to traditional polymer production methods. AirCarbon can be produced using emissions generated by farms, wastewater treatment sites, landfill sites or thermal power plants. Newlight’s next challenge is to transform carbon dioxide into plastic at commercially viable prices.

Insurance and adaptation: the ties are becoming stronger

An article published last April in the journal “Nature Climate Change” analyzes the benefits that can be expected in terms of protecting people particularly exposed to extreme climate events. It also points out certain traps to be avoided when implementing insurance policies among these populations. In May 2015, the G7 launched the “InsurResilience” initiative for developing countries. It now consists in offering 400 million people – among the planet’s most destitute – a personal insurance policy, following the example of the R4 Rural Resilience Initiative, a strategic partnership signed back in 2009 between the humanitarian organization Oxfam America and the World Food Programme (WFP). The “R4” now covers the risks of 40,000 people in five African countries, while providing concrete adaptation solutions suggested by the village communities that manage the funds collected. Since then, article 8 of the Paris agreement, which is in the process of ratification, has incorporated these initiatives into its action program.

Sources: “Nature Climate Change”, VOL. 6, April 2016; R4 Rural Resilience Initiative, Oxfam America



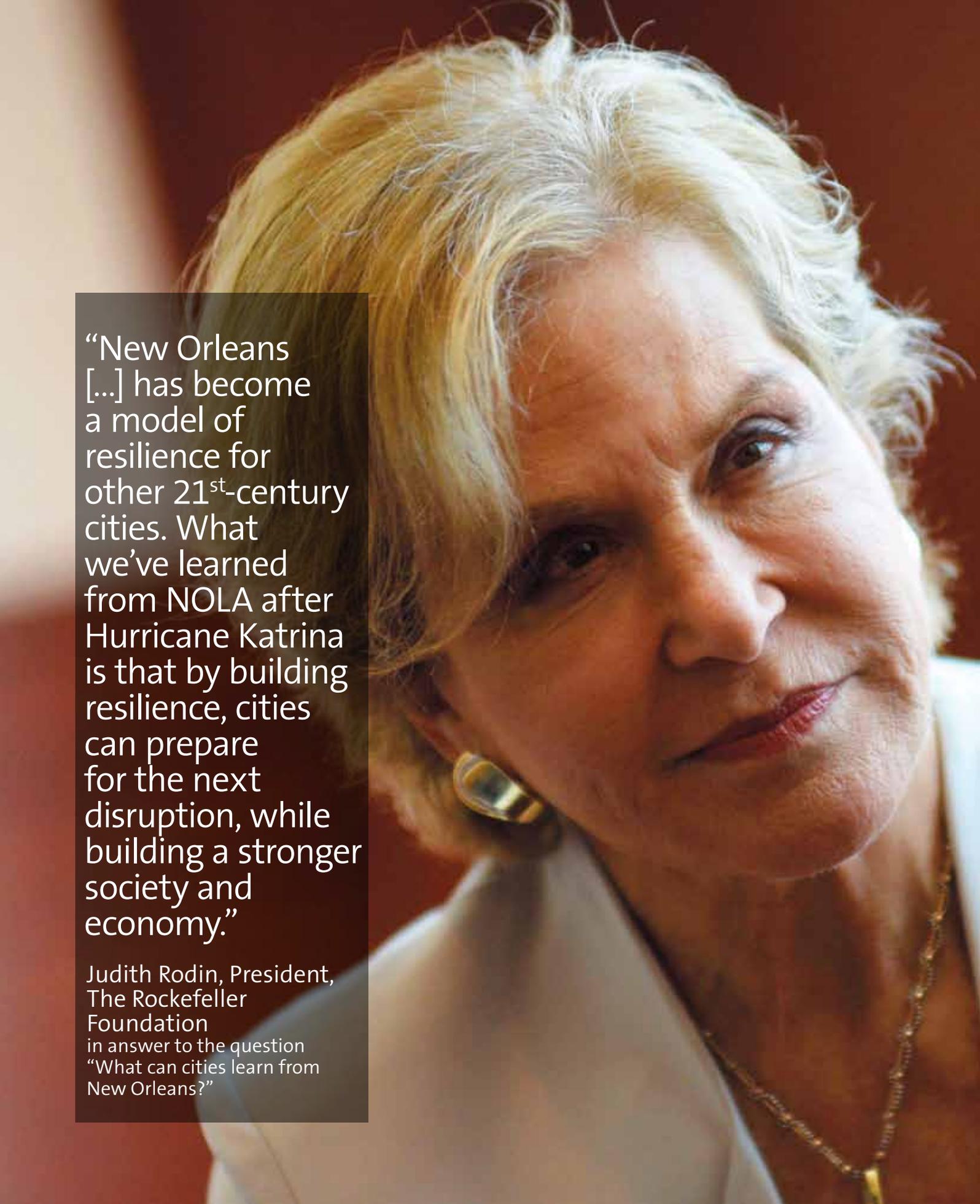
€24 million to be “Smarter Together”

How can you become a smart city on a European scale? A question that the cities of Lyon (France), Munich (Germany) and Vienna (Austria) are exploring over a five-year period. Transport, digital, energy, and more: they will review the different existing options to create smarter cities and improve quality of life in the urban environment. The project, christened “Smarter Together”, is funded by the European Commission to the tune of €24 million. It forms part of the largest research and innovation program ever carried out by the EU – Horizon 2020 – which looks to take great ideas from the lab to the market, and whose total budget amounts to €79 billion.

The heat is on for poor countries’ productivity

The rise in temperature due to climate change could result in a loss of productivity costing over \$2,000 billion by 2030, according to a recent report by the International Labour Organization. Emerging economies are already posting a loss equivalent to 10% of the volume of hours worked, primarily because of more frequent breaks on building sites in the blazing sun. And even if the limit of 1.5°C were maintained between now and 2100, the situation will become increasingly unbearable in the hottest regions of the globe, where temperatures of 35°C – above which there is a risk to health – are frequently exceeded. This marks a threat to achieving several of the 17 sustainable development goals that aim to eradicate poverty and famine worldwide.

“World Employment and Social Outlook 2016 – Transforming jobs to end poverty” ILO report, May 2016

A close-up portrait of Judith Rodin, President of The Rockefeller Foundation. She has short, wavy, light-colored hair and is wearing a light-colored blazer, a gold necklace, and a gold earring. The background is a warm, reddish-brown color.

“New Orleans [...] has become a model of resilience for other 21st-century cities. What we’ve learned from NOLA after Hurricane Katrina is that by building resilience, cities can prepare for the next disruption, while building a stronger society and economy.”

Judith Rodin, President,
The Rockefeller
Foundation
in answer to the question
“What can cities learn from
New Orleans?”



Cosmetics and recycling go hand in hand

Every year, 47.6 million perfume bottles and 440 million skincare and make-up product packaging items made of glass or plastic are sold in France. The Marionnaud chain has therefore decided to offer its customers the opportunity to return their used beauty products, regardless of whether they have been purchased in its network, to one of its 515 stores. To encourage this recycling step, in exchange customers will enjoy an instant 20% reduction on their favorite product and extra loyalty points. Marionnaud accepts all glass containers, as well as plastic jars, tubes and other containers and has committed to recycling or transforming them all. The aim as of 2016 is to recycle and recover almost 160 metric tons of used bottles and packaging, leading to major environmental benefits, through its partnership with Veolia. The glass bottles will be treated in a specialist plant while the plastic products will be sent to an energy recovery facility.

Tara will examine the corals of the Pacific

At the end of May, the marine research ship took to the seas, heading for the Pacific. The aim is to study genomic, genetic, viral and bacterial biodiversity linked to corals and the ability of these organisms to withstand stress due to human activity and climate change.

A quarter of the world's population in coastal cities by 2050

It's a matter of urgency! From New York to Bangkok, Vancouver to Tokyo, 136 coastal supercities are already facing the threat of flooding, while almost a quarter of the world's population will be living in a large coastal city by 2050.

The multiplier effect of access to water on employment

In its 2016 edition, the United Nations World Water Development Report puts forward the idea that access to water has a much greater multiplier effect on employment in developing countries: \$1 million invested in South America creates 100 jobs, i.e. five to ten times more than in the United States. Nonetheless, many obstacles need to be overcome before the economic and social benefits attributed to water are borne out.

Fragility and resilience of the ten largest cities in the world

Adaptation to climate change differs widely from one major city in the world to another. Urban areas are therefore not equal in the face of climate impacts and the cities in the global South clearly remain the most fragile. This may come as no surprise, but proof was still needed. A study conducted by University College London (UCL) demonstrates that expenditure linked to adaptation policies in the world's 20 largest cities ranges from £15 million for Addis Ababa, the Ethiopian capital, to some £1,600 million for the metropolis of New York. It also highlights that the funds used protect assets more than people, particularly in developing countries. The public expenditure dedicated to finding efficient solutions to climate disorders in the ten largest megalopolises has been examined with a fine-tooth comb, comparing key sectors such as health, water and transport infrastructure, environment and energy services. In addition, the study also cites the global statistic that funding adaptation measures only represents 0.38% of global GDP.

Women non-executive directors: a boost before 2017

Only one third of the 60 largest listed French companies complied with the quota of 40% women on their board of directors at the end of 2015. These women hold several degrees (83%) and are younger than their male counterparts (55 on average); 45% of them are foreigners and 75% of them hold a single active mandate in the SBF 120 French stock market index. However, female participation is increasing, as French law provides that as of January 1, 2017 listed companies and those with over 500 employees that do not meet this quota will be penalized.

Birth of the CNRS Increase network for green chemistry

Almost 200 researchers from eight French laboratories and chemical industry manufacturers are taking a step forward for green chemistry and banking on biomass. This fuel finds applications in a host of sectors, from cosmetics to materials through the pharmaceutical and food and drink industries. It

contains numerous molecules of interest (sugars, oils, aromatic compounds, amino acids, etc.) that today's chemists are able to separate and transform. However, the aim is not to produce molecules or materials similar to those found on the market, but to create renewable products offering superior performance.

Toxic combinations in endocrine disruptors

The reality of the cocktail effect of endocrine disruptors is no longer a matter for debate. Researchers from Montpellier's Centre de biochimie structurale (France) have demonstrated in vivo the synergy believed to increase the dangerousness of certain components.

On the test bench were 780 possible combinations of 40 known disruptors, such as bisphenol A, and one of the 48 hormone receptors in humans, PXR. It is worth bearing in mind that the minimum annual health cost of the European population's exposure to endocrine disruptors is calculated at €150 billion, i.e. between 1.2 and 2% of the European Union's GDP in the high-case scenario, according to the WHO.



Mexico at the head of the "Climate UN"

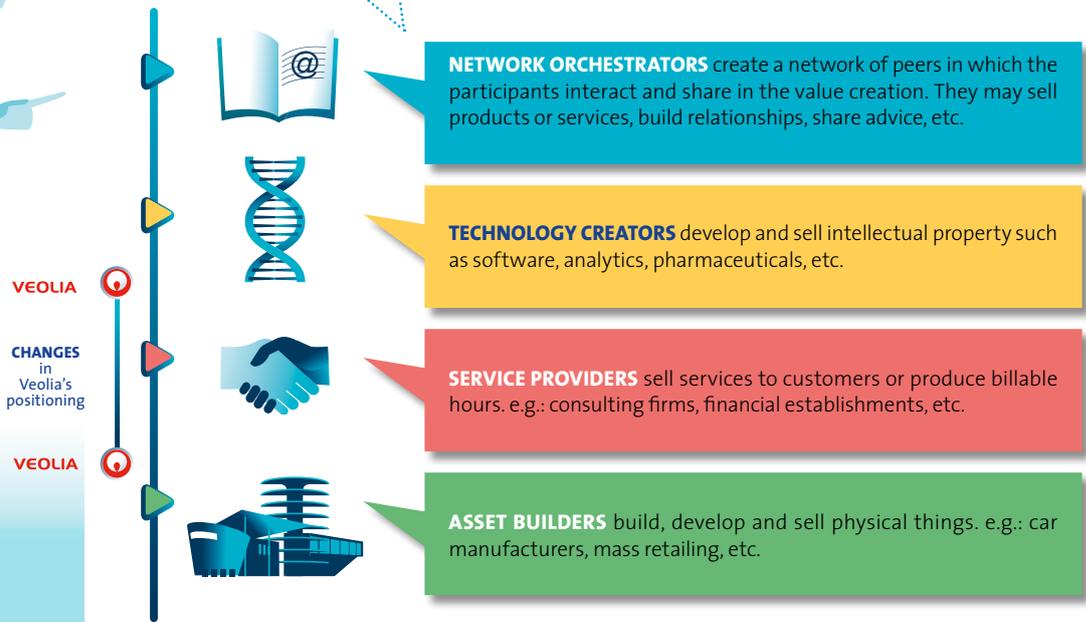
Patricia Espinosa, Mexico's ambassador to Germany, has been appointed to the post of Executive Secretary of the UN Framework Convention on Climate Change. In July, she will succeed Christiana Figueres, who has held this post since 2010.

FOUR VALUE-BOOSTING BUSINESS MODELS

The Internet economy has called into question the boundaries between traditional markets. While we are in a transition phase, new economic models are emerging with, in particular, the rise of "Network Orchestrator" companies.

A NEW FRAMEWORK: THE BUSINESS MODEL

In collaboration with the Wharton SEI Center, OpenMatters studied 40 years of financial data for the S&P 500 (500 top companies by market capitalization) from 1972 to 2013. The aim was to identify trends in market valuation and economic performance associated with business models and emerging technologies. The research was based on a framework of four foundational business models.

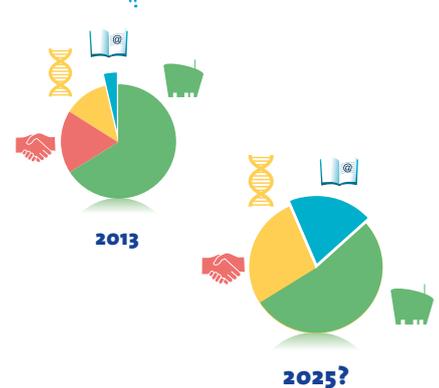


NETWORK ORCHESTRATOR COMPANIES OUTPERFORM THE OTHER BUSINESS MODELS



Network orchestrator companies outperform the other companies in several areas, notably revenue, growth and profit margins.

OUTLOOK



The trend toward Network Orchestration is accelerating as digital technology makes it easier to apply the business model to new markets and industries. While the world will always need the older business models, many companies will look to shake things up or will need to evolve their business model to take advantage of network economics and keep customers, employees, and investors.

Source: Megan Beck, OpenMatters - May 2016.
Upcoming book: The Network Imperative, <http://www.amazon.com/Network-Imperative-Survive-Digital-Business/dp/1633692051>

Why has co-construction become a must?

We meet Laurent Auguste / Megan Beck / Arnaud Mourot.

12/13



Laurent Auguste

Veolia Executive Vice President,
Innovation & Markets

The heightened levels of complexity in terms of economic development call for an unprecedented convergence and combination of skills, which lead to more comprehensive solutions.



Megan Beck

Associate, OpenMatters

Digital technology is the key driver of the shift to co-construction between organizations and their networks.



Arnaud Mourot

CEO Ashoka Europe

There is no longer a single societal problem that can be solved nowadays by just one group of players, public authorities, business or civil society.

In a globalized and more competitive economic environment, companies can no longer continue to operate in a closed loop. To stay competitive, they must open up to unprecedented, value-generating partnership dynamics. Three experts share their point of view.

Why is the logic of co-construction becoming increasingly essential? In your opinion, what are the social and economic trends that are pushing the emergence of this logic?

Laurent Auguste: The world has entered a new stage in terms of economic development, which reveals the systemic nature of our models and requires us to cope with heightened levels of complexity. These call for an unprecedented convergence and combination of skills, which lead to more comprehensive solutions. The tensions on resources reveal their interconnection. For example, the improved use of mining resources reduces water and energy consumption and also allows the materials extracted to be repurposed more effectively. Likewise, new interfaces are appearing between the players in the same area: in some instances, cities and industries find themselves competing for the use of resources, especially water. More positively, new opportunities are arising: one person's waste becomes another person's resources. These interconnections and conflicts of use imply greater collaboration in order to manage increasingly scarce shared resources — such as water and rare earths. Collaboration not only between companies, who will have to move beyond their usual scope of action, but also between companies, local regions and civil society. Efficient recycling implies taking product design and lifecycle into account. This enables, for example, interaction between the recycler, the designer, and possibly the local authority that organizes the waste collection. The sharing economy also makes it possible to invent new collaborations between different local players.

Arnaud Mourot: It's true; there is no longer a single societal problem that can be solved nowadays by just one group of players, public authorities, business or civil society. On the contrary, combining everyone's strengths — social entrepreneurs' innovation and agility, companies' clout and international networks, and public authorities' ability to coordinate and provide a framework — offers possibilities of action greater than the sum of the parts. However, beyond the macroeconomic level, co-construction also has its own benefits: it allows mutual learning and is a source of innovation through the meeting of different languages and cultures.

Megan Beck: I think in this discussion we should not forget the importance of digital technology, which is in my view the key driver of the shift to co-construction between organizations and their networks, although there are social and cultural developments that are happening in parallel, also driven by this shift. Digital technology has decreased the transaction costs of sourcing, communication and collaboration. With lower transaction costs, it is much easier to find the right resources, communicate with them, identify what they have to offer you, and work with them.

In concrete terms, what forms will this logic of co-construction take?

M. B.: When it comes to what is co-constructed between companies and external elements, we usually consider four different types of assets that ...

“One person's waste becomes another person's resources. These interconnections and conflicts of use imply greater collaboration in order to manage increasingly scarce shared resources.”

Laurent Auguste

... can be created or shared: things, services, ideas, and relationships. Co-construction around physical things could include a company inviting its suppliers or customers to collaborate on the design or manufacturing of a new product. Co-construction on services is similar, where the external network participants can provide input, or even offer the services themselves, such as Uber. Co-construction based on ideas often happens on forums and review websites, such as Yelp or TripAdvisor, but can also take a more technical or specialized form, where companies seek new intellectual property from external sources. Finally, co-construction on relationships is a construct where the company leverages the relationships of its network.

L. A.: When it comes to co-construction, a wide variety of possible partners exists, and several of them are very often needed on the same project. For example, we have a global partnership with Danone to help them meet their environmental targets. In addition to this alliance, we wanted to establish another partnership that brings together different players: the Livelihoods initiative, in which we are involved alongside Danone, Mars and Firmenich, to support sustainable farming, water management and soil preservation, in partnership with NGOs. Another example is our partnership with the insurer Swiss Re on the question of urban resilience, particularly flood management. Our expertise in managing rainwater harvesting infrastructure complements Swiss Re's expertise in calculating the economic impact of these events, as well as forecasting how it might evolve. Together, we have the possibility of serving as a bridge between the private sphere, which carries most of the economic risk, and cities that control the infrastructure, to optimize the search for solutions.

A. M.: I would add that while the legal status can vary endlessly, the important thing is to establish a sincere peer-to-peer exchange, putting the company, the social entrepreneur or the other partners on an equal footing, even if there are major differences in size. Co-creation is not the same as a joint venture, consulting or subcontracting; it's a really strategic way of innovating — especially in areas where conventional business models don't work. Veolia is more than capable of providing water to

people able to pay for it in developed countries, for example. But when it comes to extremely remote areas without traditional networks, with precarious populations who are unable to pay in the same way, social entrepreneurs' detailed knowledge of these populations is irreplaceable. Incidentally, this is also true of populations below the poverty line in France.

“Another good opportunity for co-creation occurs when the organization needs to be responsive to a rapidly adapting situation. For example, as vacation spots become more and less popular, Airbnb's host network will act in its own best interest and provide more or fewer properties.”

Megan Beck

Is there something that you would like to underline among the many and varied possible facets of co-construction?

M. B.: Obviously, I am particularly interested in the potential of networks. Companies can use co-creation to increase intimacy and affinity with key external networks, whether customers, suppliers or communities. In these cases, the content of the co-creation will depend on the interest and expertise of the network. Another good opportunity for co-creation occurs when the organization needs to be responsive to a rapidly adapting situation. For example, as vacation spots become more and less popular, Airbnb's host network will act in its own best interest and provide more or fewer properties. Network co-construction is a great way to deal with complex problems.

L. A.: From my point of view, I would highlight the responsibility of the private sector in initiating these new dynamics. An example of this private-private collaborative dynamic is the alliance formed between IBM and Veolia to come up with new solutions to make cities smarter. Companies must link up with local authorities and other local players, motivated by several driving factors, including competition. Innovative and proactive, they are able to transform themselves rapidly, share and connect experiences on a global level.

A. M.: I would like to stress the importance that we afford the local level at Ashoka. When we identify a problem to be solved, we try to create an ecosystem, a local coalition to come up with solutions together that none of the players would have been able to find on their own. And it's about finding the right balance, the right tension within this network of complementary players, so that they can get on well and work together despite partly divergent interests, which can especially be achieved on a local level.



Don't you think that the partnership rationales involved in co-construction may present risks for companies (loss of know-how, for instance)?

M. B.: There are certainly risks to co-construction for a company. Loss of control and brand risk are two factors that make many leaders wary of creating slightly more permeable boundaries around their organizations and allowing external players, whether contractors or customers, to play key roles. However, there are benefits that can only be achieved through co-construction. Given the enormous complexity of organizations today, with proliferating product lines, divisions, geographies and more, a top-down, command and control style of leadership simply will not work. With digital technology rapidly advancing and providing many ways for companies and individuals to interact and co-construct, there is an option for every company.

A. M.: In my opinion, the greatest risk is not being sincere about what you are doing. For if your fundamental aim is to enhance your image and

“Co-construction also has its own benefits: it allows mutual learning and is a source of innovation through the meeting of different languages and cultures.”

Arnaud Mourot

engage in social washing, you will inevitably be found out in the end and it will come back to hit you in the face. This is, of course, true for all partners, companies, local authorities, NGOs or social entrepreneurs. Whereas if you act authentically, in the worst-case scenario, if you fail you will have lost a little time and money, but even so you will have learned a lot from different people, unusual environments and unknown models.

L. A.: In the light of the major changes underway, the primary risk is... to stick with past models and be unable to evolve. Of course, you have to maintain a measured approach, protect your intellectual property and remember that perhaps you won't win every time. However, the world is now in movement, the ball is rolling, and we cannot continue to act as if resources were unlimited and we were in yesterday's world. To bring about a paradigm shift, we have to open up, invent new models, and ambitiously try things out with a view to creating value in a powerful new way. ■

One is discovering a sector, while the other works in a rising sector to be discovered... Each in their own way, Fleur, the energy engineer, and Jessie, the ergonomist, are championing a cross-sector approach to their profession.

Above and beyond

Meeting Veolia employees from all over the world.

Fleur Casassus

Energy project engineer
Valorec Services
Basel, Switzerland

Education

Fleur is a general engineer, specializing in innovation and environmental engineering. A German speaker, she studied renewable energy mechanical engineering in Berlin.

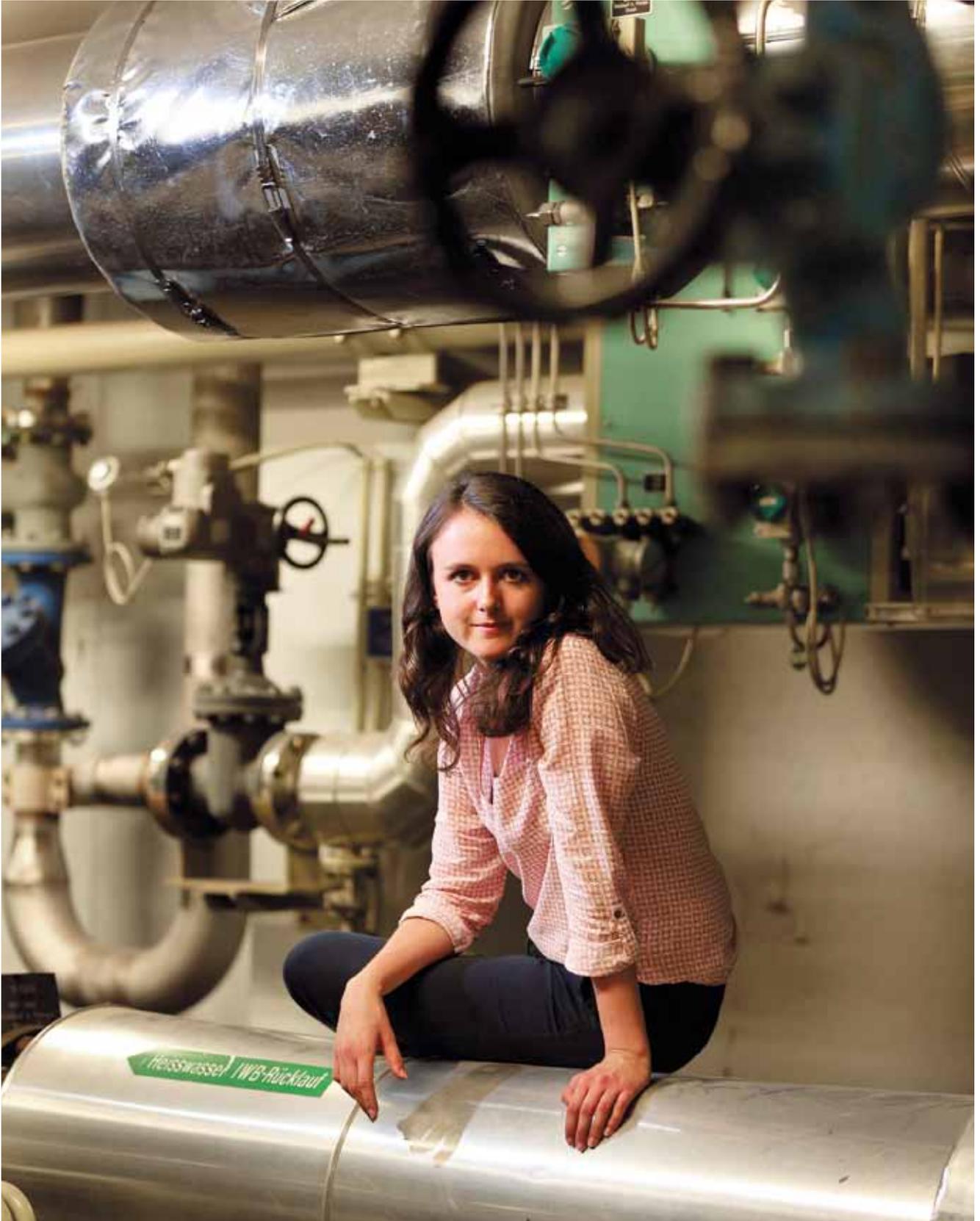


Fleur Casassus' interest in the environment is as much down to commitment as career choice: "It's a subject that has shaped my personal convictions and I chose my degree with the intention of taking action in this area," says this 26-year-old engineer. So it comes as no surprise that, after gaining initial experience in remote energy management for buildings, she chose an international business placement with Valorec Services, an energy service provider for industry. In this Swiss Veolia subsidiary, which she joined a year ago through the Pangeo program, Fleur has found a framework devoted to project engineering. "In Basel, we are service providers to an industrial hub made up of major names in the chemical and pharmaceutical industries, including Novartis, our most important client¹," she explains.

In a department that specializes in supplying industrial energies and fluids (hot and drinking water, process water, steam, confined air, etc.), Fleur is involved in maintaining and managing the site's energy systems. Between a system dismantling project and the installation of a steam condensate pump, she estimates costs and develops offers, coordinates subcontractors and supervises the running of operations. "In addition to her technical credentials, Fleur has successfully found her niche by brilliantly drawing on her interpersonal, organizational and communication skills," states Marco Jemmi, Energy Services General Manager.

At the same time, as correspondent to Veolia's headquarters, Fleur has been responsible for Valorec Services' environmental reporting. This has given her the opportunity to gain a broad view of the company, as well as turn an attentive eye to its management in this respect. A new focus has emerged over the past few months: Fleur has begun working with a Pfizer plant in Freiburg on utilities optimization and the issue of air renewal, a health and safety priority. She is taking an enthusiastic approach to this service supply contract and makes no secret of her ambition: "It's an opportunity to see a project through from A to Z, making use of my management experience," she says. ■

1- In 2014, Valorec Services reinforced its partnership with the global pharmaceutical leader with the signature of a major contract covering the supply of hard and soft services to some fifteen sites in Western Europe, in addition to utilities management at the Basel site.



SPOTLIGHT

18/19



Jessie Huynh,
Ergonomist
Veolia Research
& Innovation (VERI)
Paris and the surrounding
area, France

Jessie Huynh is well aware that the field she is passionate about – ergonomics – remains relatively unknown. It undoubtedly deserves a higher profile: “By studying the relationship between people and their tools, working methods and environments, we are looking to optimize people’s well-being and their performance at work,” explains this young researcher with a degree in cognitive psychology. Part of Veolia Research & Innovation’s Health & Environment department for six years, Jessie is therefore keen to promote this human sciences discipline, particularly in the area of man-machine interfaces. “By placing the user at the center of the design process, I ensure that the resulting application is useful, usable and acceptable for all of its beneficiaries.” From the moment Jessie joins a project team, she carries out important observation and analysis work to draw up recommendations at each step. Having worked in turn in the areas of transport, energy and now waste, she knows that being present on the ground is essential: “To grasp each issue, I’ve found myself following a household waste collection and observing the activity of a waste recovery facility or a thermal power plant.” Each time, she has to assess operators’ expectations, their constraints, the perception that they have of their environment, etc., in order to ensure that an innovation will ultimately deliver both increased comfort and performance. This was the logic behind the design of the I-Sort3R process, a remotely operated sorting application for the quality control of packaging waste. Now industrialized, this sorting method using a touch screen has been perfectly assimilated by its users, who have seen an extremely positive change in their job. Hence the importance that Jessie gives to providing support: “It’s a key concept in my job as an ergonomist,” she believes. “No matter how well designed and intuitive an innovation may be, it leads to change and should be accompanied by initial training and follow-up over time, to assess its effectiveness and any impacts.” Jessie Huynh is confident when it comes to her job’s profile within the Group: a growing number of research projects now incorporate an ergonomic approach from the outset. ■



New Orleans

Weathering the storm

In the early morning hours of Monday, August 29, 2005, Hurricane Katrina struck the Gulf of Mexico and the Gulf Coast of the U.S. with lethal force. More than one million people were forced from their homes and over 1,800 were killed. Since then, “The Big Easy” has taken an organized approach to resilience and become a model for 21st-century cities.

In the center

of the storm's rampaging path: the city of New Orleans. Storm surges as high as nine meters overwhelmed unstable levees and drainage canals, leaving four-fifths of the city submerged. As the world watched, thousands of residents were left stranded without water, food or shelter as local, state

and federal government agencies struggled to respond.

In addition to the immediate devastating effects on human life, Katrina wreaked havoc with the city's basic infrastructure, halting transportation, communications, healthcare, energy and water and wastewater. Even today, the city is continuing to address the ...



New Orleans, August 29, 2005: four-fifths of the city was flooded by Hurricane Katrina, forcing one million residents from their homes.

Issues at stake

› Enormous economic and social costs in cities from disasters or chronic stresses.

Objective

› Help cities to become more resilient to social, economic and physical challenges.

Veolia solution

› Partner with the 100 Resilient Cities initiative to help cities like New Orleans improve infrastructure resilience.

...

destruction, which contributed to the total \$150 billion in damage estimated to have been caused by the hurricane, the costliest in U.S. history.

Increasing urban resilience

The shocks experienced by New Orleans underline some of the many challenges facing cities around the world. The Rockefeller Foundation's 100 Resilient Cities initiative (100RC) describes two categories: chronic stresses that weaken the fabric of a city such as high unemployment, food and water shortages, violence or overtaxed, inefficient public transportation systems; and sudden, sharp events that threaten a city such as earthquakes, floods, disease outbreaks and terrorist attacks.

100RC was launched in 2013 to help cities around the world become more resilient to the social, economic and physical challenges characteristic of the 21st century. 100RC works with private and public sector entities, academia, NGOs and a global network of cities (Chicago and Boston, Montreal, Paris, London, Singapore, Sydney, Kigali, Santiago, Deyang, to name just a few) to improve "urban resilience," ...

Jeff Hebert,

New Orleans Chief Resilience Officer

Resilient partners

New Orleans was one of the first cities to become part of the Rockefeller Foundation's 100 Resilient Cities Network (100RC). Jeff Hebert, the city's Chief Resilience Officer, talks about New Orleans' efforts to ensure a more resilient future and the partnerships helping to build it.

Where is New Orleans overall in its efforts to improve resiliency?

Our Resilient New Orleans blueprint we released last year on the 10th anniversary of Katrina marks a shift from recovery to resilience. As the city approaches its 300th anniversary in 2018, we want to focus on preparing New Orleans for the stresses and challenges it will face in its next 300 years. Our risk transfer project with Veolia and Swiss Re is one of the plan's 41 actions, 75% of which are underway.

What are your expectations of this project?

We know from experience that the longer the downtime following a disaster, the more severe the impact on the city and on the ability of its people to recover. By understanding the risks to critical infrastructure assets like water systems, we're identifying the resources and the thinking needed ahead of time to shorten the downtime and avoid significantly greater social and economic impacts

after an event. The project's analysis will enable us to make improvements that yield day-to-day benefits as well as helping both us and other cities around the world better prepare for future disasters.

What is the private sector's role in this approach?

Private sector partners play a key role in delivering services and operating infrastructure in many cities. They help us think through how we can better provide services. We can't do everything alone. A city is a system in which people, businesses, institutions and government all play a role. As our mayor has noted, the best things that have been done since Katrina have been the work of the different levels of government working in partnership with NGOs and the private sector. This project is a great example of how we're working together to try to anticipate and solve problems in order to ensure a brighter, more resilient future.



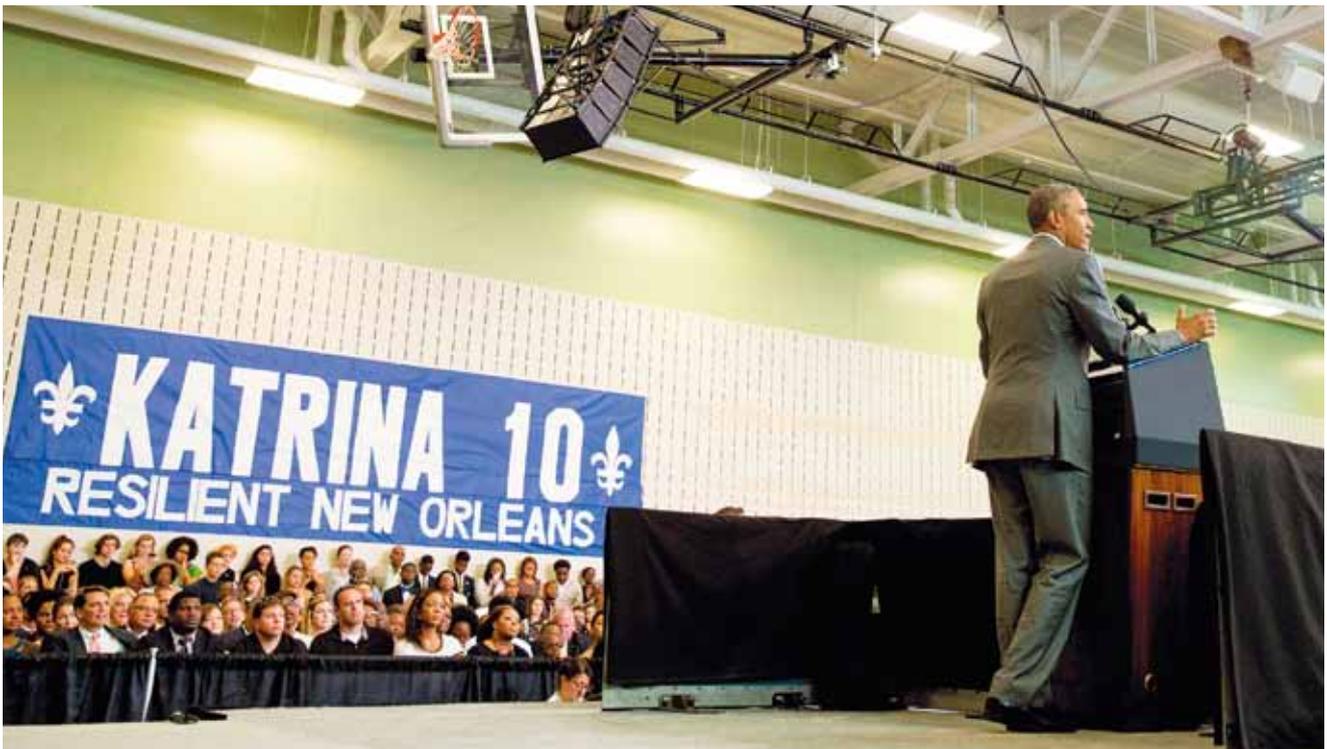
“For our city, being resilient means more than levees holding back water and wetlands protecting us from storms. It means striking a balance between human needs and the environment that surrounds us while also combating the chronic stresses of violence, poverty, and inequality.”

Mitchell J. Landrieu

Mayor of New Orleans

The 100RC initiative to build urban resilience

Following the havoc wreaked by Hurricane Katrina in New Orleans and Hurricane Sandy in New York, in 2013 the Rockefeller Foundation set up a global action and innovation platform to create greater urban resilience in 100 cities worldwide. The aim of this platform for exchange and mutual aid is to make these 100 cities, chosen by a jury of independent experts, better able to withstand natural disasters and cope with the social, economic and environmental pressures linked to overly rapid urbanization. In August 2015, New Orleans released Resilient New Orleans, one of the world's first comprehensive strategies for building city resilience. Based on more than ten years of planning and visioning for the city, the initiative proposes bold strategies with committed partnerships to move from recovery to resilience for the next 300 years.



President Barack Obama, visiting New Orleans on Thursday, August 27, 2015, made a speech at the recently opened Andrew P. Sanchez Community Center in the Lower 9th Ward neighborhood (AP Photo/Andrew Harnik)

- the capacity of a city's stakeholders to survive, adapt and grow no matter what kinds of chronic stresses and acute shocks they experience.

Infrastructure focus

A city authority partner, Veolia joined the 100RC network in 2014. More recently, the group teamed up with insurer Swiss Re and the Rockefeller Foundation earlier this year on an initiative to help cities understand the

Key figures

December 2013 – May 2016 The 100 cities in the Resilient Cities network brought together in record time

\$150 billion: estimated cost of Hurricane Katrina

41 actions incorporated into the Resilient New Orleans action plan, including the Veolia/Swiss Re project

over 14,000 new jobs created in water management since 2010 (source NOLA/Resilient Strategy)

risk exposure of critical assets under current and future climate scenarios. Assessments will be conducted to help cities develop resilience plans to prepare for major shocks and stresses, strengthen the resistance of vital infrastructure and speed economic recovery following catastrophic events. Among the cities in which infrastructure resilience is being piloted: New Orleans. As part of the city's Resilient New Orleans strategic road map, Veolia and Swiss Re have partnered with the city to help improve the •••

...

management of critical assets, including water and wastewater systems, to enable their repair after a disruptive event.

Partners for over twenty years

For Veolia, the initiative continues a more than 20-year partnership with New Orleans, where since 1992 it has been operating two wastewater treatment plants on behalf of the S&WB (Sewerage & Water Board). Local, Veolia teams experienced first-hand the impact of Katrina, having been on the ground delivering services before, during and after the hurricane. Working round the clock, they successfully got the wastewater management facilities up and running again within the 60-day timeframe set by the EPA (Environmental Protection Agency). Veolia also runs wastewater treatment facilities for other nearby communities as well as environmental services to support area businesses and manufacturers. Commenting on the company's relationship with the city, Sewerage and Water Board executive director Cedric S. Grant said, "We look forward to building



Christine Rodwell,
Veolia Vice President for Business Development,
Cities Innovation & Markets

What is the status of the partnership with the Rockefeller Foundation and Swiss Re? What are the plans for the future?

Veolia is among the most committed partners to the Rockefeller Foundation's 100 Resilient Cities initiative. We provide a range of solutions to cities to build their resilience to the shocks and stresses to which they are subjected. This includes improvement and development of multi-purpose infrastructure, access to essential services, urban planning and contributing to better public health and social cohesion.

Working with the Rockefeller Foundation, Veolia and Swiss Re have developed a common approach to assess risks and propose a strategic long-term plan to enable cities to enhance their attractiveness. The pilot underway in New Orleans is enabling us to finalize our methodology and has already confirmed the two companies' complementary expertise. We are in discussions with a number of other cities in the 100RC network about applying this methodology to address their resiliency challenges.

on our record of success with Veolia, which has done much to make us a strong environmental player for the residents of New Orleans and produce meaningful results for our community." The New Orleans-Veolia partnership also has won

recognition from outside groups, including an Infrastructure Award in 2011 from the National Council for Public-Private Partnerships, an independent not-for-profit body, for the work in protecting public health and the environment. ■



"For the first time, we're not only offering a financial solution to a city by handing over a check after something bad has happened. Instead, we're working with Veolia and actually offering a solution to bring infrastructure assets back on line after something has happened, as quickly as possible."

Ivo Menzinger

Global Partnerships Director, Swiss Re



Control room of the New Orleans wastewater treatment plant (Eastbank)

New Orleans wastewater treatment plant (Westbank).



In 2011, the New Orleans wastewater treatment plant (Eastbank) was under construction.



Joseph Becker

General Superintendent New Orleans Sewerage
& Water Board

“One of the resiliency strategy projects in which Veolia has played a large role is constructing a four-megawatt generator inside the Eastbank wastewater treatment plant. They are responsible for operating and maintaining it so that even if we have another Katrina that knocks out the power, the generator is available to provide the electrical power that we need to operate the facility.”



The Netherlands



Philips boosts its appliances with recycled plastic

To reduce its environmental footprint, the Dutch manufacturer Philips has decided to increase the amount of recycled materials in its household appliances. These products are entirely designed with Veolia's assistance.

In its new five-year

(2016-2020) sustainable development program entitled "Healthy people, sustainable planet," Philips is planning to recycle 90% of the waste from its operations, including supply chain waste. And it is exactly for this reason – to increase the proportion of recycled materials in its production – that the household appliance manufacturer has joined forces with Veolia. With the acquisition of the Dutch

firm AKG, Veolia has become the European leader in the recycling and manufacture of polypropylene (PP), one of the key plastics in this type of product.

Polypropylene in vacuum cleaners

The collaboration between Veolia and Philips began on this project back in 2010. The first ...



AKG provides high-quality polypropylene (PP) granules for manufacturing the plastic. These granules are produced using commercial, industrial and household waste (90% of the supply) and waste from plastic product manufacturers.

Issue at stake

› Make Philips household appliances more environmentally friendly, prioritizing a circular economy approach.

Objective

› Increase the amount of recycled polymers in household appliances as much as possible.

Veolia solution

› Get involved upstream at the product design stage. Provide Philips with recycled plastic that complies with demanding technical specifications. Guarantee a constant supply in terms of both quality and quantity.



Eelco Smit,

Philips' Senior Manager
Sustainability

“We involve Veolia at a very early stage in the innovation processes”

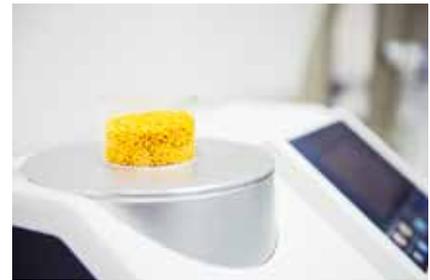
Sustainability is at the heart of everything we do. Our products are designed to improve people's quality of life, but also to leave the lowest possible environmental footprint. This is why we would like to increase the amount of recycled plastic; it's a key element in our sustainability program. We really appreciate the partnership with companies like Veolia. We involve them at a very early stage in the innovation processes, welcoming and working with them to be certain that our products are really designed to use as much recycled plastic as possible. All this will help us include even more recycled materials in the future.

...

item of equipment concerned: a vacuum cleaner. Veolia developed a material based on recycled battery casings for Philips. Initial tests have been a success. “We began slowly, incorporating small volumes of recycled plastic at first, and then gradually increasing the quantities,” states Frank Richters, Sales Manager at Veolia Polymers in The Netherlands. This vacuum cleaner currently contains 1.5 kg of recycled polypropylene, and this figure is set to reach 2 kg. Replacing virgin plastic with recycled plastic may seem a simple matter, but it is nothing of the sort. The engineers focused their efforts on two aspects: the materials' shock resistance (particularly important for a vacuum cleaner, which often receives rough handling), and questions of color. A recurrent process has been implemented to achieve the best possible result. “We listen to Philips' requests, to understand their needs and the specifications they require. We then develop a material and, through a back-and-forth process with our client, we improve its composition until it is tailored to the end use. This is how it works for each new product,” explains Hildagarde McCarville, CEO of Veolia in The Netherlands. “It's all based on mutual trust.”

Odors and colors

Even when the material's properties comply with Philips' specifications, the challenges do not end there: there is the manufacturing step to get through. Manufacturers are used



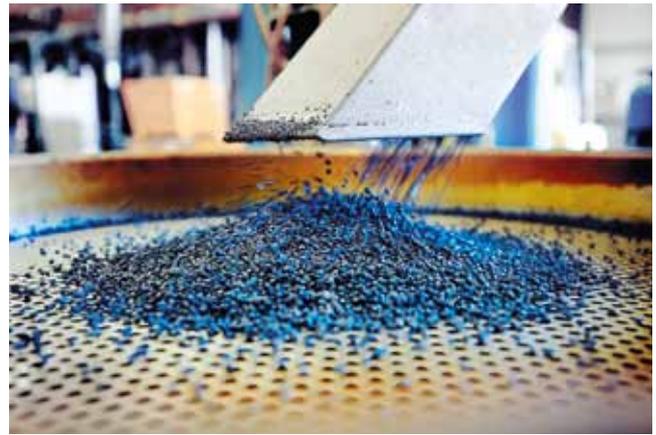
The Vroomshoop site has become a center of excellence for Veolia specializing in recycling, preparing and manufacturing polypropylene. Its laboratory equipped with state-of-the-art technologies is able to supply complete analyses at each step of the production process. It also boasts expert skills in terms of formulation and the most sophisticated separation technologies.

to virgin polymers, and using recycled plastic is sometimes not without its problems. In particular, the presence of a few residual impurities causes odors when the parts are being molded, which inconveniences the workers. Technical solutions must therefore

Providing a constant supply

When Philips approves the recycled plastic, two challenges remain for the recycled material supplier: keeping the quality of this plastic constant over time, and delivering a regular supply. Yet resources may vary: for example, people throw away more objects to be recycled at Christmas or during the summer, when they have time to sort them. During a sporting event, such as the last Euro soccer championship in 2012, the widespread purchase of state-of-the-art televisions created a sudden rush of old TV sets to be recycled.

Plastic from waste that has been recovered and sorted is cut into flakes and heated before it can be reused. However, these flakes are not all of equal value: their quality and properties must therefore first be determined, before they are mixed with different quality plastics and virgin polymers. “We measure the quality at the input and output,” states Frank Richters, Sales Manager at Veolia Polymers in The Netherlands. This means that Veolia's recycled plastic is renowned for its constant quality.



be found to reduce these odors and the associated potential risks. Another problem is that these impurities are sometimes visible on the material, which rules out certain shades such as black or white. It is therefore important to choose colors compatible with recycled polymers during the product design stage. This is why designing these appliances comprising recycled plastic is not solely a

matter for engineers: marketing specialists are involved from the outset. Despite these obstacles, three generations of vacuum cleaners containing recycled plastic have been produced and the fourth is arriving on the market. Tests are currently being carried out on a coffee machine, but only for materials that do not come into contact with water or coffee. It is difficult

for recycled plastic to obtain the specific authorization required for food contact materials. The same restrictions apply to medical devices and toys. The possibility of sourcing the waste used to produce the recycled plastic from household appliances manufactured by Philips or other companies is currently being explored: a great way of closing the loop. ■



Mex ico

Innovative ecosystem

To identify and accelerate innovative solutions to Mexico's pressing water issues, Veolia and young social entrepreneurs have developed a novel approach that is creating a stir.

In Mexico City, where water accessibility is becoming an increasingly critical issue, one might expect that an innovative idea for creating water out of the air would merit at least a second look. Yet, after nine years of effort, entrepreneurs Miguel Beltran and David Nunez felt they were no closer to making their idea a reality. They had no prototype to demonstrate feasibility, no funding or support and were starting to lose that most essential ingredient for success: belief in themselves.

One year later, their "Common Element" machine, capable of generating 5,000 liters of water per day from the humidity in the atmosphere, is almost ready for industrial-scale testing. Their low-cost, low-energy technology, which works even in arid, low-

humidity climates, has also attracted the attention of potential sponsors and partners. For Miguel and David, the turning point came after they responded to a call for proposals from SenseCube Mexico, an innovation incubator focusing on urban water access issues. The initiative was launched by Veolia through a partnership with social entrepreneur networks MakeSense, CO and Ashoka, and Mexico City's water authority (Sacmex) and Laboratory for the City. Launched in 2014, SenseCube Mexico taps into a broad community of experts, companies, interest groups and citizens willing

to help entrepreneurs accelerate the creation and development of business models with a strong social or environmental impact. The program is part of Veolia's global approach to innovation, entitled POP UP, which has also been rolled out in three cities in France.

Mentors and boot camps

Common Element was one of six projects chosen in 2015 as part of SenseCube's initial ...



In Mexico: The members of the second generation of #AguaUrbana projects in the middle of a brainstorming session: Peter Aronson (Biluu project), Jeremy Tormos (Jalshare project) and Paulina Zanela (Water4Happiness project). SenseCube Mexico acts like a program accelerator for social start-ups.

Issues at stake

› Water scarcity in parts of Mexico, with more than 10 million people lacking access to drinkable water in the country.

Objective

› Identify and promote innovative solutions for water access issues.

Veolia solution

› Partner with the City of Mexico – via Sacmex and its Laboratory for the City – and social players in creating a social entrepreneurship incubator to give a helping hand to innovative solutions proposed by early-stage entrepreneurs.

Tapping into competition

Among the second cohort of six SenseCube Mexico City winners is JalShare, the idea of Jeremy Tormos Espinoza to reduce household water consumption through gamification and group competitive challenges. Using a free app, consumers would be able to win prizes and compete with friends based on their success in reducing water consumption in their home. Both Veolia and Sacmex have expressed interest in testing the app's ability to raise awareness and inspire users to save "Jal," Shuhd Hindi for "water," and thus contribute to Jeremy's ambition of restoring equilibrium on the planet between water shortages and excessive use.

In Mexico: The members of the SenseCube Mexico team: María Fernanda Ramírez Castillo, director, Claire Perez Tejedor, consultant, and David Araiza, coordinator.



New perspectives

For Veolia, SenseCube Mexico opens a new window into a community of entrepreneurial innovation and potential new partners that can be tapped into for original, high-performance solutions that benefit both the group and the start-ups. "It also is changing public perceptions," says SenseCube Mexico Director, María Fernanda Ramírez Castillo. "Veolia is increasingly seen as a corporate citizen actively engaged in promoting innovations that can help resolve urban water issues."

The partnership has also brought Veolia's relationship with its 20-year client Sacmex to a new level. "Our customer now sees us as more than simply a service provider," says Sarita Mazuera, Water Director for Veolia in Mexico. "They also look to us for our expertise in social management and our ability to add value across a wide range of dimensions."

Castillo. "We stay in close contact with them, providing follow-up information on new opportunities and connecting them with potential leads. They also become part of the strong ecosystem that we are building here of people and entities committed to bringing ideas for resolving urban water issues to reality – a resource that also benefits our co-founders." As the next call for projects goes forward, SenseCube Mexico and its cofounders are looking for ways to further extend its scope and

visibility, broaden its impact and involve new entities -- including academics and also banks that could provide seed money and finance mentoring. A key priority for Veolia: increasing the interaction between its employees and the ecosystem of innovators and entrepreneurs to encourage the emergence of new concepts. As it does so, expect to see additional "co-creation" initiatives inspired by a new stream of innovative ideas that has only just begun to flow. ■

... cohort of entrepreneurs from more than 60 applications received. Visibility generated during the first round – which reached over 500,000 people via social media and generated more than 30 press reports – helped build momentum. A second batch of six new projects has since been selected and a third call for proposals is being issued this summer. SenseCube Mexico's six-month acceleration program is personalized to each entrepreneur based on an initial diagnosis of the project's status and challenges. After a first month defining their challenges and a work plan, the

Key figures

For SenseCube's first call for proposals:

60+ innovation applications received

32 events organized

500,000 people reached through social media

entrepreneurs are introduced by SenseCube Mexico to its community at a "SenseMorning" event.

The entrepreneurs then work with SenseCube's network of mentors and participate in intensive "boot camps" to develop prototypes of their ideas and refine their business development, marketing and digital communications plans. Conferences, panels, workshops and other events, sometimes combined with art exhibitions and concerts, keep the community humming, growing and visible.

Interaction accelerator

Graduation from the program comes in the sixth month at "Demo Day," featuring project simulations before audiences of investors, potential clients and other community members. Interaction with the entrepreneurs doesn't end there, however, says SenseCube Mexico Director, María Fernanda Ramírez

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Katrina, 10 years already

The devastation caused by Hurricane Katrina on August 29, 2005, will probably mark New Orleans forever. But despite the scale of the tragedy, "Nola" has gradually regained not only its identity as a city charged with history but also its energy, which is the result of its unique cultural

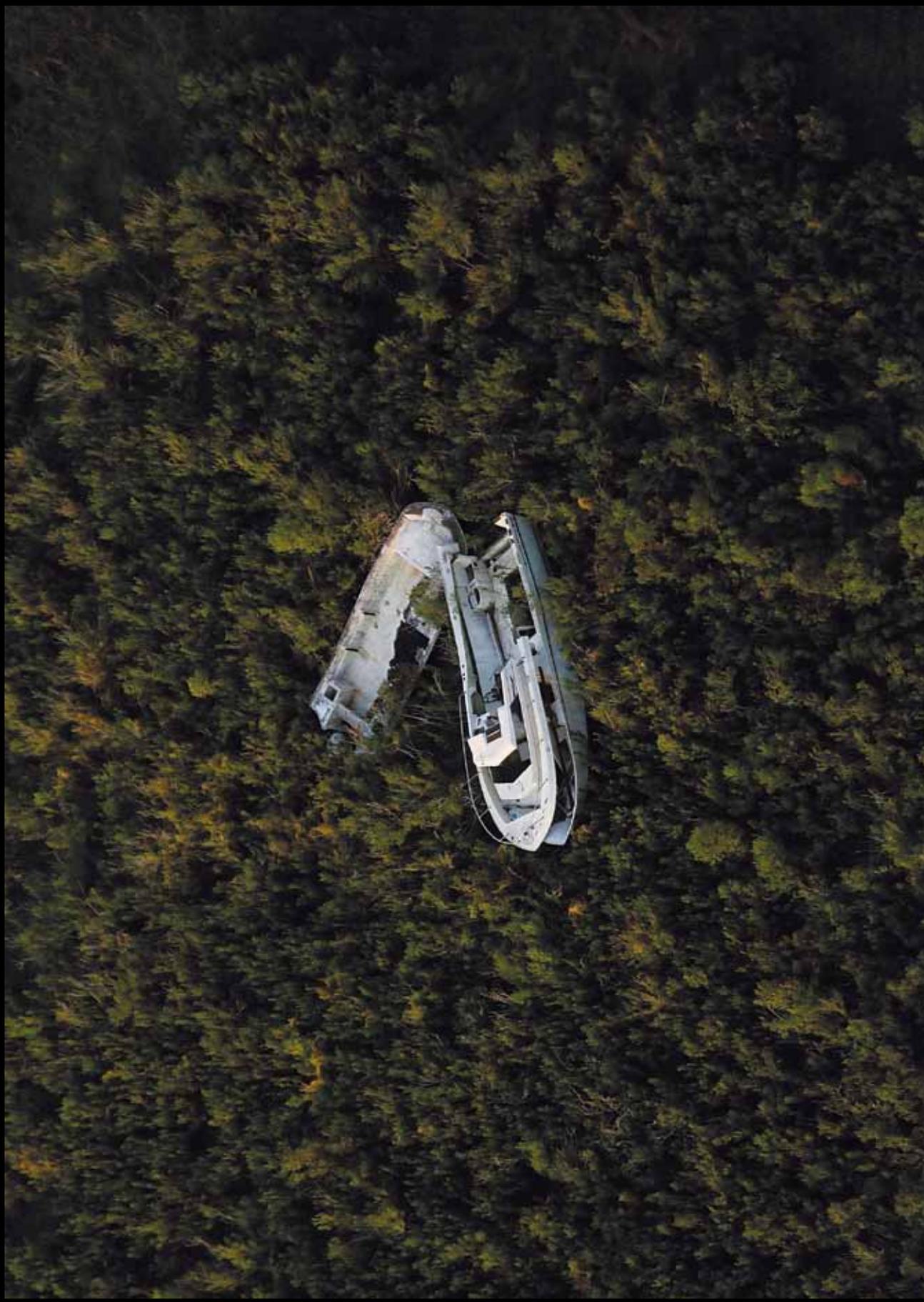
diversity. It needed an eye familiar with local life to report on this reconstruction - both human and urban. And that is what Mario Tama accomplished when, after having covered the disaster, he decided to record New Orleans' healing process. During his numerous visits, the New York photojournalist traveled

around its neighborhoods and visited its communities to illustrate the individual and collective pathways to resilience. Beyond its artistic and documentary value, his record is a tribute to the strong - and life-saving - attachment of the people of New Orleans to their environment.



The Lower 9th Ward neighborhood (August 29, 2015). To mark the 10th anniversary of the passage of Hurricane Katrina, Savannah Shange hugs a woman in front of the repaired Industrial Canal flood wall. After the hurricane, a breach in the levee caused massive floods that devastated the area, which is below sea level.

A vestige of the hurricane, for the last ten years this wrecked ship's new resting place has been in New Orleans' wetlands (marshes). With its 1,836 victims, Katrina is the most costly natural disaster in the history of the United States.





The brand new houses in the Lower 9th Ward neighborhood, one of the poorest in the city and among the most badly hit by the hurricane, have mostly been built using the eco-design criteria recommended by the Make it Right Foundation set up by the actor Brad Pitt. They stand side by side with older buildings and vacant lots.

The construction of a pumping station, anti-flood barriers and locks continues at the 17th Street Station (Bottom C). The 17th Street Canal flood wall was extensively damaged and the US Army Corps of Engineers, the agency responsible for these massive works, is very involved in reconstructing and fortifying the regional system of levees.





View of the storm surge barrier (August 24, 2015) Lake Borgne, which cost \$1.1 billion and is the most spectacular part of the nearly 400-km fortress erected around New Orleans after Katrina to defend the city against future hurricanes. Some people have dubbed it the "Great Wall."

Isabella Lander (left) and Arabella Christiansen (May 29, 2008) climbing the 17th Street Canal flood wall in Metairie, a New Orleans suburb. Although \$22 million has been spent on repairs, it is leaking again. As the hurricane season begins on June 1, experts fear it may not stand up to another big storm.





At dawn on August 29, 2015, people gather in a bar to mark the hurricane's 10th anniversary. Ten years ago, 80% of the city was under water.

Robert Fuselier (August 24, 2014) climbing a ladder to seal a house in the Musicians Village neighborhood in the Upper 9th Ward. The houses here were built hastily by volunteers to rehouse dozens of musicians and their families. Some buildings now need repairs.



Mario Tama, telling the story of hope

Mario Tama was 20 when he first fell in love with New Orleans. And although since then he has frequently stayed there and explored it, he denies being an expert because he wasn't born there. This confession reveals the uniqueness and complexity of the city: like no other, New Orleans is able to unite its people around a lifestyle combining living together and the pride of belonging to a community,

intermixing and celebrating the past. "The people of New Orleans," adds Mario, "have cultivated a very vivid memory of their family and cultural history, already battered by previous storms." These deep roots are, according to him, the key to their resilience. And a more than justified reason for recording, over a period of five years, the immense efforts they have made to rehabilitate their environment and their cultural heritage. "I had to show the dignity and endurance of these people who were left to themselves, many of whom were unable to escape Katrina," says

the photojournalist. Today, New Orleans has in part recovered from the hurricane. Of course, much remains to be done to support the poorest people, solve the thorny issue of housing and deal with possible future cataclysms. "The levee system has been considerably strengthened, but the preservation of the wetlands – providing natural flood protection – is still modest," notes Mario Tama. His images remind us that as long as the flame of its residents' passion for their city does not waver, New Orleans will resist.

Bio

Before joining the Getty Images agency in New York in 2001, Mario Tama began his career in the local press in Maryland, then was a freelancer for the Washington Post and AFP. Since then, his images of September 11, the conflicts in Iraq and Afghanistan and of the earthquake in Haiti, have traveled the world. His work on New Orleans post-Katrina was published in a book, *Coming Back: New Orleans Resurgent*, in 2010.



Globalization, digitalization, the acceleration of innovation: our economic environment is experiencing profound changes. In this context, co-construction has become a must for companies.

**CREATING
GROWTH
TOGETHER**

For Veolia, co-construction is a priority growth driver. In this regard, the group is creating unprecedented contractual or economic models with its clients and partners. It is seeking out complementary expertise that – combined with its own know-how – will open up new opportunities for the taking.

The time is long gone when manufacturers maintained only the traditional client-supplier relationship. Nowadays, new types of partnerships – and even co-creation – are developing. An alliance that benefits both partners, who can consequently create new offerings and conquer new markets. In 2014, Veolia thus joined forces with IBM to develop a smart water solution (smart management of water services for cities) that integrates different data, both external (weather, traffic, etc.) and internal (maintenance or customer data, sensors, etc.), cross-references, visualizes and analyzes it, and extracts information from it in order to deliver the most effective response. The ultimate goal, of course, being to improve service quality and operational performance. Veolia included this innovative technological solution in the service concession tenders it won in Greater Lyon and Lille in France, and Tidworth in England, and plans to develop it extensively with other clients worldwide. Initially rolled out in the water

sector, “our solution is set to be extended to district heating and different smart city issues,” highlights Pierre Brunet, Veolia’s IBM partnership manager.

A matter of trust

Partnerships between large companies are based just as much on technical as business, legal or organizational aspects. This is why building a relationship of trust is crucial. There must be a strong commitment, whether this involves training joint teams or drawing up legal frameworks, for example, that hold each party liable. Hence the collaboration between Veolia and the company EPM in Colombia consists in providing a joint team of employees capable of presenting a business plan and offering new services to clients. In the partnership between Veolia and IBM, both companies have each brought on board five people tasked with designing and improving the joint smart water solution. “We want to move from a responsive

...

Contd. page 46



Pierre Brunet,

Veolia’s IBM partnership manager

“By joining forces, we create solutions that neither partner could achieve on their own”

What sparked your cooperation with IBM?

We considered this collaboration back in 2011, because IBM has skills that we don’t. The Greater Lyon call for tender provided us with the opportunity to develop an innovative smart water offering with IBM. It marked the beginning of our partnership.

What do you bring to each other?

IBM has the capacity to integrate, contextualize, process and deliver data. As for us, we bring our knowledge of the water sectors, to offer a more effective and high-performance water service. We had already had the opportunity to implement smart water solutions at Veolia Water VEDIF (greater Paris area), in Shanghai and Prague, but these were one-off projects; we didn’t capitalize on the experience. With IBM, we are putting in place more industrial, replicable solutions. By joining forces, we create innovative solutions that neither partner could achieve on their own. IBM had already largely positioned itself in the smart water sphere, but they lacked the knowledge of the sector to really meet clients’ expectations.

What is the next step in this partnership?

We are strengthening our alliance with IBM to go even further in two directions. First of all, we are jointly enriching our solution to develop new features in response to our clients’ needs. Secondly, we are using this innovative solution to generate new business opportunities, as well as help improve our operational efficiency in France and further afield.



Veolia included the smart water technological solution in the service concession tenders it won in **Greater Lyon** (top photo), the **Metropolis of Lille** (middle photo) and **Tidworth** (bottom photo).



Ramón Rebuelta,

Veolia's Executive Vice President Latin America

“Teaming up with EPM saves us a lot of time”

Why did you set up a partnership with EPM?

We were already familiar with EPM, but as a competitor. It's an extremely large company based in Medellín, Colombia, which provides water, waste, energy, and telephone services, among others. At Veolia, we had been looking to expand in Latin America for a long time with regard to energy efficiency. All the more so because our teams in Spain and Portugal mean that we can collaborate without any language barriers. Only, until now, making savings on highly subsidized energy was not at all profitable. But the situation has recently changed in several countries and industry is realizing that it needs to take an interest in this question. So it was the right moment! At the same time, we learned that EPM wanted to branch into energy efficiency projects. Why not work together from now on?

What form does this collaboration take?

It falls within the framework of a wider cooperative agreement between the French and Colombian Ministries of Foreign Affairs. We signed this alliance with EPM a year ago, during French Prime Minister Manuel Valls' visit to Colombia. The priority is to foster a shared culture. To this end, we have created a team bringing together EPM and Veolia employees. The first phase of the collaboration is essentially commercial: going to meet as many clients as possible and devising a business plan for Colombia, and also Mexico, a country of great interest to EPM where energy is expensive.

Why is it necessary?

At Veolia, we know Colombia and Mexico well, but that's not enough. We need to gain access to clients and above all win their trust. Of course, after a few contracts, the trust is there. But starting from scratch in a country is always difficult. The alliance with EPM saves us a lot of time and it shouldn't be long before we are signing our first contracts.

“Partnerships between large companies are based just as much on technical as business, legal or organizational aspects. This is why building a relationship of trust is crucial.”

...
to a predictive mode, particularly through simulations," states Pierre Brunet. "So by combining our sectoral expertise with IBM's data expertise, we are going to create algorithms that will allow us to be proactive and optimize our operations." Neither partner would have been able to develop these solutions on their own. In Japan, Veolia and Takeei have set up reciprocal shareholding in both companies: Veolia is a majority shareholder in the company in charge of operations, while Takeei is a majority shareholder in the asset-holding company. "Takeei takes the financial risk and outsources operations to the company controlled by Veolia, which takes the operational risk," explains Christophe Maquet, Veolia's Energy Business Line Director in Japan. "Each party's roles are defined according to the added value that each brings." Both partners are willing to make a long-term investment, share the risks, and work completely transparently: "We have a virtually open-book approach to our work," states Christophe Maquet. "For example, we know their rate of return on investment, and Takeei knows our cost markon."

Commercial strength

Partnerships do not only concern engineering or investment, they are also commercial. "We are combining IBM's marketing and commercial strength with

our presence on the ground and understanding of clients' expectations," highlights Pierre Brunet. "We are merging our two commercial networks and canvassing clients together. We make a greater impact with our joint message."

In Latin America, the division of tasks is perfectly defined between Veolia and EPM: the former provides the expertise, while the latter is responsible for the commercial aspects. The collaboration thus began with EPM's clients. However, this was a particularly sensitive business approach, notes Ramon Rebuelta, Veolia's Executive Vice President Latin America: "Energy efficiency is a new concept in Latin America. We suggest that our clients replace equipment in working order with more high-performance equipment, leading to savings in the long term. But this is not common practice!" A local partner is therefore all the more welcome.

Customer satisfaction

These partnerships are highly thought of by clients. The Greater Lyon area complimented Veolia and IBM for providing them with this joint smart water solution that offers transparency regarding water management services. This achievement made an impression during the international smart cities conference in Barcelona in November 2015. And some one hundred visits over the past eighteen months have allowed



Christophe Maquet,

Veolia's Energy Business Line Director in Japan

"Our interests are closely linked with Takeei's"

Why have you joined forces with Takeei?

We have had a strong presence in Japan since 2002, especially in the area of water. In 2014, we were approached by Takeei, a powerful group in the industrial waste sector that wanted to diversify into biomass. We ourselves had just finalized the acquisition of Dalkia International and could therefore expand into the energy market in Japan via an integrated Veolia structure. It was therefore the perfect timing for this collaboration.

What projects have you worked on together?

Takeei had developed two projects, one in Hirakawa was already under construction, and the other in Hanamaki was in the pipeline. Dalkia's major credentials in biomass and heat networks brought real added value to Takeei. The Tsugaru biomass plant in Hirakawa started up six months ago and Takeei is extremely satisfied with its performance. The Hanamaki project, in which we have been more involved, especially in terms of the design, is set to begin in December 2016.

How does this collaboration differ from a regular client-operator relationship?

In the standard set-up, Veolia is either the operator for a client or the owner of the facilities. In this case, the two approaches have been combined. We are not only operators, because we hold a 30% share in the company that manages the assets. Likewise, Takeei owns 30% of the operations, so both parties' interests are closely linked. We also work in joint teams when we have to meet a manufacturer, city or biomass supplier. We go beyond our simple operator contract, for example by giving Takeei recommendations on how to manage the biomass channel. Our destinies are linked.

potential clients to gain a more precise understanding of what it involves. How are these long-term partnership projects monitored? In each case, a report is scheduled after two or three years to check their performance. The ambition is that these alliances will serve as the forerunner for lasting partnerships. In any event, this is

the view taken by Veolia. "These new ways of working are almost undoubtedly going to develop. They are low-investment arrangements in which we keep a tight rein over operations," underlines Christophe Maquet. "This allows us to save our funding capacities for other operations, and therefore ultimately carry out more projects." ■

Community



Ecuador was hit by an unusually violent earthquake on April 16 this year. The heavy human toll was compounded by serious damage to the drinking water infrastructure. In response to the emergency, Interagua (Veolia subsidiary in Ecuador) volunteers led by Ricardo Arias worked alongside Veoliaforce and its mobile water treatment units.



Non-stop solidarity in Ecuador

When water becomes scarce, it is time for solidarity to step into action. The disaster that ravaged the northwest of Ecuador created a need for emergency assistance and the involvement of professionals like Ricardo Arias (see inset picture). The manager of Interagua's wastewater treatment plants (the company is a concessionaire of the city of Guayaquil and a Veolia subsidiary) had no hesitation in offering his services: "In our country, which has an extremely high risk of earthquakes, mutual aid is incredibly important," he states. So the day after the earthquake he headed a team of four volunteers from the company. Hand in hand with the Veoliaforce volunteers sent by the Veolia Foundation, they worked in Calceta and Chone, two towns where the local communities were deprived of drinking water.

For a month and a half, Ricardo and his team provided continuous support, taking shifts operating

four Aquaforce 500 and 5000 units*. Trained in running these small water treatment plants, the Ecuadorean volunteers focused on coordinating the production of drinking water, while adapting to the constraints on the ground: "In Chone, we came up against limits in terms of catchment. The source, a traditional well, was inadequate and the quality of the water treated had to be strictly controlled." Until the production sites and networks are up and running again, the human and technical resources deployed have provided assistance to the population in a radius of several tens of kilometers, with the cooperation of the army, municipalities and the public authority responsible for water management. Ricardo Arias' mission finished in June, making way for work on the infrastructure. However, he remains just as committed: "I will continue to help whenever necessary," he confirms.

* Respectively capable of providing 15 l/d/person to 2,000 people and 20 l/d/person to 5,000 people.

- > An earthquake of a magnitude of 7.8, the most powerful for 40 years, caused over 650 fatalities in the north of the country and left 26,000 Ecuadorians homeless.
- > 7,000 buildings collapsed. The cost of reconstruction is estimated at \$3 billion.
- > In the province of Manabi, among those most affected, 90% of the drinking water network was put out of operation.

Veoliaforce

> Created in 1998, the Veolia Foundation's humanitarian action force can count on the skills of 500 members of staff for humanitarian aid missions worldwide. Following the earthquake on April 16, five engineers and 21 metric tons of material were deployed to accompany the military support sent by the French government.

Household appliances switch to recycled plastic

In collaboration with Veolia, the household appliance manufacturer SEB has designed a steam iron containing over 50% recycled plastic. A first in France for small household goods.

48/49

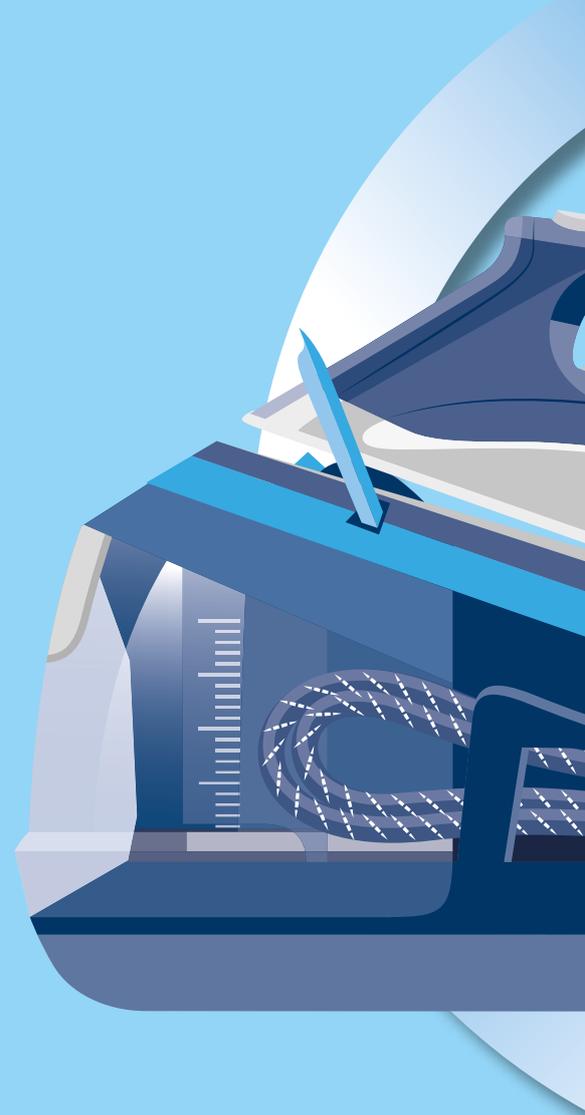
It all begins with waste collection. In France, the Extended Producer Responsibility (EPR) principle makes all manufacturers responsible for their products at the end of their lifecycle. It's difficult for each manufacturer to go and collect waste from the general public! So they have come together as part of an eco-friendly waste management body that they pay for this collection. "It is important that this waste management body collects large volumes of waste to supply the recycling facilities," states Françoise Weber, Extended Producer Responsibility officer, in Veolia's Waste Solutions business line. "Nowadays, the recycling sector is really becoming industrialized."

The plastic is sorted and then transformed so that it is compatible with manufacturers' recommendations. Depending on oil prices, this recycled plastic

is at times cheaper, and at times more expensive than its virgin counterpart. Nonetheless, "the economic model cannot collapse each time the price of oil falls," underlines Françoise Weber. "So we have to work on the entire value chain to ensure the system's longevity."

Last but not least, recycling can only work with a manufacturer who is motivated and aware of the importance of the matter. Even then, there is sometimes a culture shock. "We had never worked with the production specialists at SEB; it's a very different world than that of waste," admits Françoise Weber. "However, there is a real desire for mutual understanding on both sides. For example, SEB's teams came to audit us to help us understand their wishes and their logic." As for Veolia, it tailors the recycled raw materials to the production constraints of the household appliance manufacturer's plants. ■

First complete circular economy loop



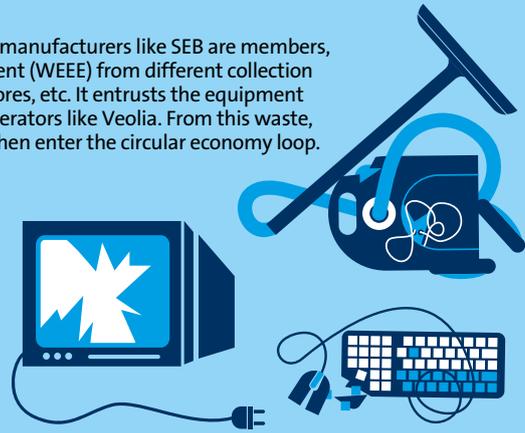
1 - Marketing



2 - Lobbying + Brussels norms

1 COLLECTION

An eco-friendly waste management body, of which manufacturers like SEB are members, recovers the waste electrical and electronic equipment (WEEE) from different collection points: drop-off centers, supermarkets, specialist stores, etc. It entrusts the equipment collection, treatment and recycling operations to operators like Veolia. From this waste, Veolia can extract and transform materials, which then enter the circular economy loop.



Manufacturing a steam iron with a high recycled plastic content is a simple aim, but a complex process involving many players: engineers and marketing specialists from the manufacturer, an eco-friendly waste management body, plastic sorting and transformation specialists, to name just a few.

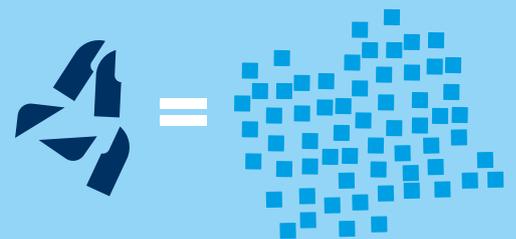
2 AUTOMATED SORTING

The WEEE is taken to Veolia's industrial recycling facilities, where it is dismantled and the materials automatically sorted. Over 90% of the materials are recovered in this way: plastic, along with metal, electronic components containing precious metals and rare earths, etc.



3 TRANSFORMATION

The plastics are then sorted per family and modified so that they can be used by manufacturers, just like virgin plastic. A plastics process gives them the color and resistance properties for their future use.



3 - Life-cycle analysis



4 - Customer acceptance

4 ECO-DESIGN

Manufacturers are specifically designing their household appliances in terms of both robustness and color so that they can incorporate an increasing amount of recycled plastic. They are also trying to make their objects easier to dismantle and thus recycle.

Futurist

50/51



> Bio-pedagogy
Inspired by the alternative uses of biomaterials, Terreform One is no rookie in this field. Its researchers and designers have even designed a literally edible seat with the aim of educating children about environmental issues. "We wanted to show them that if something is good for them, it is also good for the planet," explains Mitchell Joachim.

The Mushroom Chair - or how to grow your own furniture

Fungi-based bio-materials are now becoming serious competitors to plastic and polystyrene when manufacturing packaging, insulation boards, and even car parts.

Some applications are already taking things a step further: with its Mushroom Chair, the New York non-profit

organization, Terreform One, has introduced a chair that can be "grown" in just seven days! Developed using the Mycoform© process, which is owned by the company Ecovative, producing this amazing self-built piece of furniture requires very few resources and little energy. Specifically, it is the white of the mushroom,

the mycelium, which is used as the raw material. To build a Mushroom Chair, the mycelium is simply grown in a substrate made up of organic waste and nutrients that "fuse" around a bamboo support structure. Shortly afterward, an incredibly organic-looking ottoman takes shape. Durable and functional,

the Mushroom Chair is completely biodegradable, so much so that at the end of its life, it can be composted and safely reintroduced into the environment. "Our concept is already interesting some furniture vendors," says Mitchell Joachim, an architect and co-founder of Terreform One. "Distribution on the basis of an open

source model in a DIY version is also under consideration." Still, this radically innovative approach to furniture hints at the future influence of bio-design on our mass consumer behaviour: instead of depleting natural resources for our own comfort, it would be so much more sustainable if we were to grow the furniture we need.

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3RD UNITED NATIONS CONFERENCE ON HOUSING AND SUSTAINABLE URBAN DEVELOPMENT

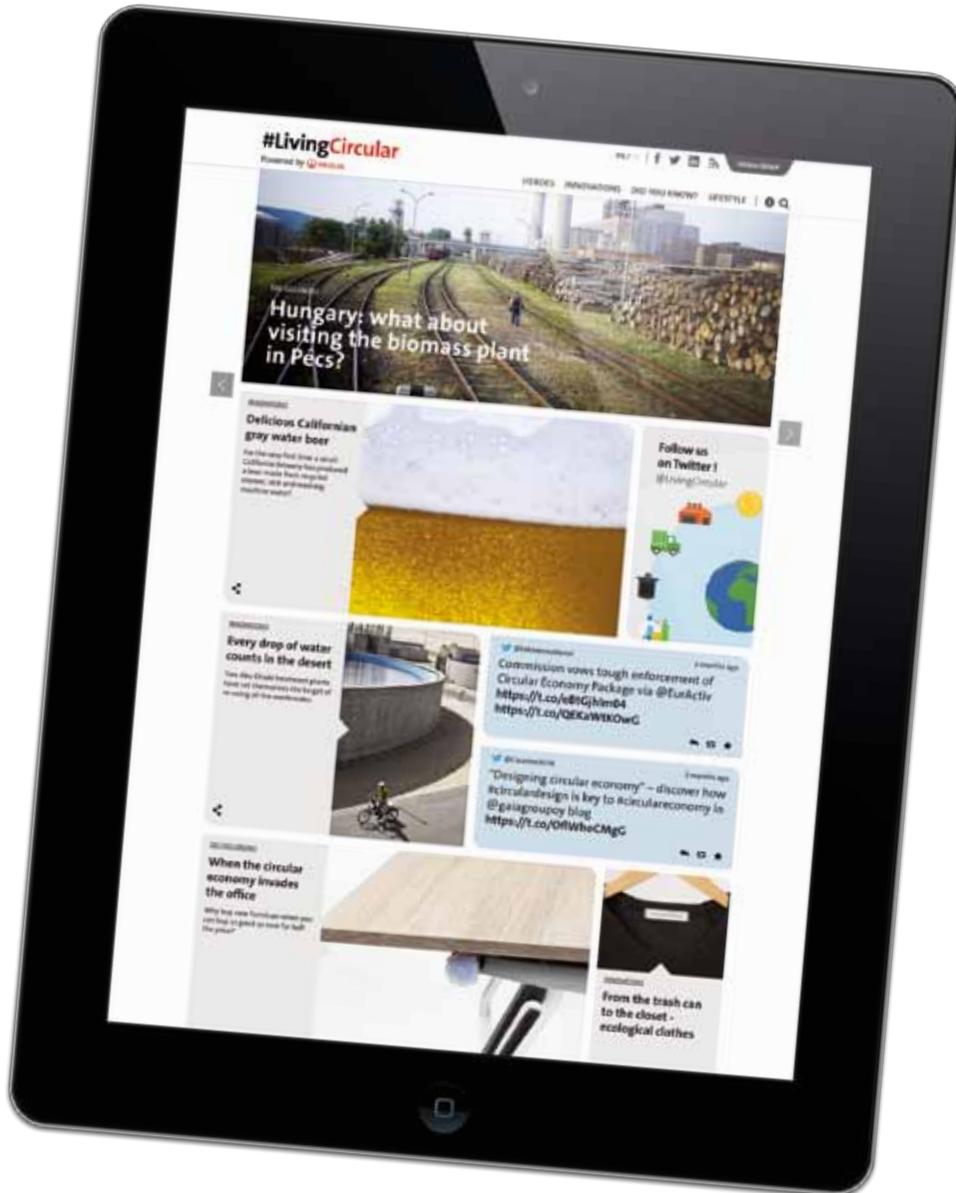
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