Over the past few years, the city has implemented a large portfolio of technology-based improvements ranging from energy-efficient buildings to remote parking payments. For instance, Cascais has promoted participatory budget for more than 6 years, where more citizens have voted than in the general elections. The FixCascais app allows citizens to photograph and report incidents and problems, allowing direct connection to the municipality services. Cascais CityPoints, another app that awards citizens for good practices with points, which they can exchange for services and goods through inclusive partnerships with local businesses.

But the mobility domain in Cascais is where the city appears to have made some real strides. MobiCascais, the mobility as a service solution, launched in 2016, integrated different public and private players, into one single collaborative ecosystem. MobiCascais allows users to reserve, manage, and pay for the use of every mobility-connected service in Cascais by paying a yearly fee. Services such as bike sharing, moto sharing, smart parking, taxi rides, transport on request, carpooling, electric vehicle infrastructure, and information on transport (bus and train) routes and stations can be availed through a seamless card that users can connect to through an app and a web portal. The service is expected to save the citizens between 10 to 27 percent of their mobility costs.

MobiCascais is based on the mobi.me system, a solution for smart urban mobility management developed by the Portuguese Center for Excellence and Innovation in the Automobile Industry (CEiiA) and already in place in several cities around the globe. The system is an integrated platform that manages real-time information regarding all multimodal transportation systems, also allowing urban logistics and traffic management. By mid-2017 MobiCascais accounted for 2,000 shared bicycles, 70 kilometers of bicycle paths, 300 parking kiosks, 1,280 car parking spaces, 12 buses lines, train, EV chargers network, and is expected to evolve soon to shared cars, taxis, Uber services.

Cascais, located within the Lisbon metropolitan area of Portugal, boasts of a gorgeous coastline that attracts more than 1.2 million tourists every year. With a mid-sized population of around 206,000, Cascais is not your run-of-the-mill tourist destination—the city's aspirations go much beyond that. The city has made it its mission to "test innovative solutions capable of being scaled."
However, not all domains in Cascais are as advanced as mobility. The city continues to evolve its ecosystem of players and implement more initiatives, but lack a unified vision across domains seems to impede real progress on the ground. To address this issue, Cascais is developing a managed services command center. The plan entails redefining the city’s operational model by integrating data and processes from each of its 12 domains (for now) under a Control Coordination Center. Cascais is planning to integrate data from millions of objects across the city.

The C3 is projected to use an operational platform called the Digital Command Center (DCC) that would sit over the twelve disparate domain systems currently operating within the city offering integrated data visualization, near real-time collaboration and deep analytics to enhance the ongoing efficiency of city operations, plan for growth, coordinate, and manage responses effort.

The DCC is designed to be the “operational brain” that manages this complex city environment, delivering operational insights. The DCC will provide integrated maps with assets and dependencies, online dashboards, customizable reports, and much more to city administrators enabling improved decision-making capabilities. The data from each of these domains would be integrated on this platform through a comprehensive security and integration layer called CitySynergy that uses a series of APIs to connect different verticals, allowing the city to drive efficiencies within its operations.

The first step in the integration of these data visualizations, near real-time collaboration and deep analytics to enhance the ongoing efficiency of city operations, plan for growth, coordinate, and manage responses effort. The DCC is designed to be the “operational brain” that manages this complex city environment, delivering operational insights. The DCC will provide integrated maps with assets and dependencies, online dashboards, customizable reports, and much more to city administrators enabling improved decision-making capabilities. The data from each of these domains would be integrated on this platform through a comprehensive security and integration layer called CitySynergy that uses a series of APIs to connect different verticals, allowing the city to drive efficiencies within its operations.

How Deloitte helped

Deloitte leveraged numerous diverse relationships to help Cascais establish a collaborative and effective smart city ecosystem composed of more than 30 city partners. These relationships help Cascais select vendors who share a similar vision, with a goal of enabling it to achieve its smart city goals faster and more cost effectively.

To manage the complex smart city environment, Deloitte implemented its proprietary-managed services Digital Command Center (DCC) and CitySynergy solutions. The DCC essentially functions as an “operational brain” that manages the complex city environment, enabling the integration of legacy systems and centralizing all aspects of its smart city operations. Real-time data analytics help the city improve decision making and continuously prioritize and respond to events safely and efficiently. CitySynergy operates in tandem with the DCC and acts as the system’s nerve center, helping the city stay connected to its citizens and address their concerns through tools, such as mobile apps, where citizens can photograph and report incidents and problems or reserve, manage, and pay for mobility services.

Four domains—mobility, public infrastructure management, civic protection and emergency management, and waste management—have been selected as the first domains for this project.

Consider the city's smart waste management solution for instance. It uses sensors to track optimum fill level of more than 400 underground recycling bins, allowing the city to optimize routes for garbage collection trucks. Now with the C3 in action, the city should be able to integrate and juxtapose waste management data with mobility and public infrastructure data like road construction and repairs. Using these real-time traffic and road conditions data, the city can now identify not only the optimal routes for collection trucks, but also the best time for garbage collection with a reduction of operational costs of around up to 40 percent and energy savings up to 20 percent.

The waste management system alone is expected to save the city nearly €900,000 yearly, which could be further accentuated with the integration effort. But integrating the four verticals is just the first stage; Cascais is planning to integrate the remaining eight verticals—security and surveillance, energy (street lights and buildings), health, education, green spaces and environmental control, and water and sanitation—in the second stage.

It is not hard to imagine the efficiencies that such an integrated system could drive in city operations, allowing Cascais to focus the right resources at the right place and at the right time. More importantly, Cascais is developing a model that can be replicated by other European cities of similar size and inhabitants.

Endnotes
3. Interview with Deloitte Cascais project team, August 31, 2017.
4. Interview with Deloitte Cascais project team, August 31, 2017.
6. Interview with Deloitte Cascais project team, August 31, 2017.
7. Interview with Deloitte Cascais project team, August 31, 2017.
8. Interview with Deloitte Cascais project team, August 31, 2017.
9. DCC is a platform solution developed by Deloitte.
10. CitySynergy is a solution developed by Deloitte.
12. Interview with Deloitte Cascais project team, August 31, 2017.

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