

SMART CITIES



Stephen Burns, Whitehelm Capital's Head of Europe and Americas, explains how the "Smart Concession" model works and what it offers, both to cities and investors.

In December 2015, Whitehelm Capital and Cisco announced a joint venture to provide the funding and technology cities need to become "smart cities", equipped with things like sensor-based street lights that turn on and off depending on activity, apps citizens can use to find available parking spaces and waste bins that signal to the collection depot when they need to be emptied. Although the benefits smart cities can offer are very attractive to many cities, most cities can't afford the upfront costs of implementation, which is why Whitehelm and Cisco have developed a new financing mechanism to fund these projects.

What is a smart city?

A Smart City is one that overlays digital infrastructure across the traditional, mechanical and physical infrastructure. The digital overlay, or wireless mesh (Wi-Fi etc), uses ubiquitous digital sensing devices to provide real-time actionable intelligence that connects everything to everything else, and is commonly referred to as the 'Internet of Things' or 'Internet of Everything'.

Consider for example:

- Street lighting that adapts to activity and notifies when maintenance is required
- Real time information about the location of available on street car parking spaces
- Waste bins that signal to the collection depot when they need to be emptied
- Traffic systems that can dynamically adjust to divert traffic away from congested areas or allow priority access to emergency vehicles
- Automatic collection of tolls, parking payments or infringements through the use of sensors

These sorts of Smart City solutions generate large cost savings and more energy and operationally efficient cities that adapt to the needs of the citizens, businesses and visitors. Critically to connect these solutions a wireless mesh across the city is required.

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Will Smart Cities become the exception or the norm?

It's difficult to say categorically how prevalent Smart Cities will become. That said, globally cities face similar challenges including managing the effects of population growth and increasing urbanization, concerns and constraints on the suitability and environmental impact of their activities, and competition for people, businesses and new opportunities. Given these challenges, it would seem that the benefits of becoming a Smart City would be relevant and attractive to most developed cities.

Further, the Whitehelm Cisco Smart City initiative aligns with the innovation agenda of most cities in that the smart infrastructure will promote entrepreneurs, develop solutions to local problems within cities and thus creating new jobs, opportunities and capital inflow into the city.

Recent technology advances in digitization, connected devices and sensor development mean that there is a huge opportunity for cities to address these challenges in a holistic way by becoming Smart Cities. All the cities we have spoken with are actively considering how best to introduce smart technology into their cities.

What makes this fall into the infrastructure asset class? Isn't this more a private equity play?

Smart City investments constitute an investment in communications infrastructure, which has long been accepted as a core infrastructure investment (typically concession based arrangements). For a Smart City investment we are taking this well-established structure and amending it to suit the requirements of Smart Cities.

In the case of Smart City infrastructure, we build flexibility into the concession agreement to allow for technology upgrades and new smart cities solutions to be rolled out as technology allows and the city's needs evolve. Investors are compensated predominantly by an availability concession payment. And as is the case in other concession arrangements, risks such as technology, construction and O&M are passed to partners that are best placed to manage those risks.

The characteristics of the resulting investment opportunity is consistent with other infrastructure assets, including:

- Essential service characteristics
- Long term contracted and stable cashflows
- High barriers to entry
- Creditworthy counterparty
- Inflation protection

What do you see as the principal risks to the investment thesis?

There are a number of challenges facing the deployment of Smart City infrastructure investments. Some of the common road blocks include:

Silos within City Government: The costs and benefits of deploying Smart City infrastructure will likely span a number of the departments within city governments (lighting, parking, water, traffic etc.) so it requires close cooperation across these departments to establish and validate an opportunity. That cooperation becomes more challenging in larger cities where those departments are very considerable organizations in their own right. Ultimately, larger cities will adopt Smart City technology but we expect they will lag behind the smaller to medium-sized cities which are able to be perhaps more agile.

Long-term commitment: There are many cities that have had less than satisfactory experiences with concession models, in particular their lack of flexibility to adapt as circumstances change. This is magnified when considering the rate at which technology changes. We have addressed these concerns by embedding flexibility at the core of the concession to allow for the funding of upgrades and the rollout of new applications and services as they become available or are required. This ensures that cities see the original investment as not the end of the Smart City journey but the beginning of a partnership.



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Ownership of the infrastructure and data: Some cities are adverse to third parties owning their infrastructure or data, borne out of dissatisfaction with the value received through prior privatizations and genuine privacy concerns. In relation to ownership, the concession will cover the design, build, operation and maintenance of the lighting and smart city infrastructure, with ownership remaining with the city. The concession will also include a revenue sharing mechanism to ensure that both parties continue to benefit from new savings and revenues that accrue as technology and solutions evolve. Further, the data generated by the smart infrastructure belongs to the city such that it can enable the benefits of Smart Cities to continue to accrue to its citizens. We are not looking to monetize the data in any way.

What makes the Cisco/Whitehelm tie-up special?

Whitehelm and Cisco are collaborating globally with the joint ambition of delivering funded Smart City solutions to cities. This includes the objective of developing a multi-billion dollar pipeline of investment opportunities globally. The global collaboration is a completely new approach to scaling Smart Cities around the world leveraging best in class technological capabilities from Cisco and extensive experience in financing global infrastructure projects from Whitehelm Capital.

From cities' perspective, they are attracted to the benefits that Smart City technology offers and our solution offers the ability for them to achieve those benefits without upfront investment and in a broadly cost neutral way. For infrastructure investors, Smart Cities infrastructure will be a significant new sub-sector of infrastructure which has huge investment potential given the capital required globally and the attractive characteristics it involves.

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What does the pipeline look like? Is this a global play for you or targeted at certain key countries?

As discussed, many of the challenges faced by cities are common across the globe and indeed Cisco and Whitehelm have had interest from all corners of the globe. This interest has been funnelled into a highly qualified city engagement process that has produced a strong pipeline of prospective investment opportunities, some of which we expect to reach financial close within 12 months. We have targeted our initial efforts on cities within the OECD in which our investor base has experience. Also, we expect to focus on cities that have less than one million people given the challenges of larger cities as described earlier.

