Smart Cities Readiness Guide

The planning manual for building tomorrow's cities today

This document was assembled with input from many of the world's leading smart city practitioners – the members and advisors of the Smart Cities Council. It will help you create a vision for the future of your own city. Equally important, it will help you build an action plan to get to that better future.

The first goal of the Readiness Guide is to give you a "vision" of a smart city, to help you understand how technology will transform the cities of tomorrow.

The second goal is to help you construct your own roadmap to that future. It suggests the goals to which you should aspire, the features and functions you should specify, the best practices that will gain you the maximum benefits for the minimum cost, at reduced risk.

The Readiness Guide is intended for mayors, city managers, city planners and their staffs. It helps cities help themselves by providing objective, vendor-neutral information to make confident, educated choices about the technologies that can transform a city.

This Readiness Guide is the first collaborative and comprehensive framework for a smart city, against which cities can assess their readiness to innovate – identifying a path, taking next steps and measuring progress. It was prepared with input from best-in-class companies across many industries. In addition, more than 50 of the world's foremost independent experts on smart city development from academia, research and advocacy have reviewed and contributed to the Guide. Version 1.0 was released at the Smart City Expo World Congress in Barcelona, Spain on Nov. 19, 2013

Cities around the world are already making tremendous progress in achieving economic, environmental and social sustainability, in export-based initiatives and in the creation of 21st century jobs. All of these are excellent ways to improve city living standards and econo- ●..

mies. The concept of smart cities doesn't compete with these efforts. Instead, smart city technologies can support and enhance work already underway.

Contents of the Readiness Guide

INTRODUCTION TO SMART CITIES

Welcome to the Readiness Guide. This document was assembled with input from many of the world's leading smart city practitioners – the members and advisors of the Smart Cities Council. It will help you create a vision for the future of your own city. Equally important, it will help you build an action plan to get to that better future.

HOW TO USE THE READINESS GUIDE

The role of the Readiness Guide is to help you transition to a smart city, at your own pace and on your own terms. This chapter explains the Smart Cities Framework that supports that mission. We think you will find it a useful mechanism to understand the totality of a smart city and how the pieces work together. This chapter gives you what you need to construct a "target list" or "wish list" for your city. When you are ready to turn that list into an actual plan, you'll find guidance in the, "Ideas to Action" chapter.

SMART PEOPLE

A city isn't smart because it uses technology. A city is smart because it uses technology to make its citizens' lives better. This chapter focuses on the "secret sauce" that turns the idea of a smart city into reality – the people who live in the city, who work in the city and the people who have hopes and dreams for the kind of city they will leave for future generations.

UNIVERSAL

Some of today's greatest cities benefitted from visionaries who – centuries ago – saw possibilities for civic betterment and made it happen. A compelling example comes from leaders back in the 1800s. Way before the phrase "urban sprawl" had entered our psyche, they committed to preserving vast amounts of open spaces for public use. Think of Hyde Park in London, Central Park jutting through Manhattan or Ueno Park in Tokyo. They are all testaments to leaders "thinking outside the box" a very long time ago.

BUILT ENVIRONMENT

The built environment is an essential piece of the smart city puzzle. Buildings are the biggest single source of carbon emissions, accounting for about 40% of the world's carbon footprint, according to the World Business Council for Sustainable Development. Buildings are energy hogs too, eating up nearly half of all energy consumed in the United States. Any city serious about livability, workability and sustainability must raise the "intelligence quotient" of its built environment.

ENERGY

Cities can't function without energy. It fuels our cars, subways and trains. It cools, heats and lights our homes and businesses. It pumps our water and processes the food we eat. And it powers the technologies that are the foundation of a smart city. To ensure a smart energy future, cities and utilities must work together – regardless of whether the utility is part of local government or a private investor-owned utility that supplies the city's energy.

TELECOMMUNICATIONS

Ubiquitous broadband telecommunication is a prerequisite for a smart city. This chapter explains how to achieve a telecommunications architecture that can serve as the foundation of a smart city and the foundation for major improvements in livability, workability and sustainability. We begin by defining telecommunications, both as it exists today and as it will evolve tomorrow. After we discuss the "what," we'll talk about the "why" – why telecommunications is so vital to smart city success. We'll finish by discussing the targets for telecommunications – the end states at which you should aim your efforts. Along the way, we will pay brief visits to telecommunications success stories from around the world.

TRANSPORTATION

In this chapter we refer to transportation as any and every system that moves people around a city. Think of a city's streets, vehicles, railways, subways, buses, bicycles, streetcars, ferries and so on. All play an essential role in the hustle and bustle of today's cities – in commuting to work, running errands, attending classes, enjoying a night out, shipping and receiving products, delivering pizzas. We rely on the vast web of transportation networks in our cities. We trust that they will get us where we need to be in an efficient, safe manner for a reasonable price.

WATER AND WASTEWATER

Few people need to be reminded of water's importance. Along with energy, it is essential for everyday life. Water provides sustenance, supports industry and irrigates fields. But city administrations are struggling to meet rising demand from growing populations while contending with issues such as water quality, flooding, drought and aging infrastructure.

WASTE MANAGEMENT

Surging population growth in cities is not only challenging city leaders to find better ways to deliver transportation, energy, public safety and other municipal services, it's also forcing them to deal with more garbage. The good news is that smart solutions are emerging in the solid waste management arena. Technologies are coming to market that can help cities collect and process waste more efficiently and recover valuable materials from the waste steam. In this chapter we examine how smart technologies are enabling cities to manage municipal solid waste (MSW) in an efficient and sustainable manner. As in other city responsibility areas, information and communications technologies (ICT) are driving many of these new solutions, particularly in the area of garbage collection. But scaled-up applications in the realm of biological and industrial engineering are also involved.

HEALTH AND HUMAN SERVICES

Advances in information and communications technologies (ICT) will transform the delivery of essential health, education and other human services in powerful ways – and smart cities will ride the wave to ensure a better life for their residents.

PUBLIC SAFETY

From the standpoint of the average citizen, public safety is one of the most visible and perhaps most understood of city responsibilities. We see aid vehicles, lights flashing as they race to the scene of an accident. We watch firefighters on the nightly news risking life and limb to save people from burning buildings. And we pass police officers on bikes and on foot as they patrol city streets. Today's advanced technologies are keeping them – and their communities – safer.

SMART PAYMENTS AND FINANCE

"More with less" is one of the promises of smart city technology -- and nowhere is this more true than in payments and finance. By leveraging the techniques explained in this chapter, city governments can spend less while offering citizens more benefits, more convenience and more inclusion. Today cities are the hub of world economic growth, generating an estimated 80% of global GDP, according to the World Bank. Yet many cities are severely challenged by rising (or slowing) population growth, by aging or inadequate infrastructure, by increasing operational costs and by "do more with less" austerity pressures.

IDEAS TO ACTION

In this chapter, you'll learn how a simple roadmapping process can put you on the path to a smart city. We've hinted at this next point before, but now we're just going to say it: Technology is the easy part. The hard part is turning ideas into action. Fortunately, help is at hand from those who have gone before. In reviewing hundreds of successful pilots and interviewing dozens of experts, several themes have emerged, which we have shared on the pages that follow.

About the Smart Cities Council

There is no other organization like the Smart Cities Council. We act as a market accelerator and advisor to cities – advocating for the transformation of urban areas into more livable, workable and sustainable communities. The Council is a coalition of leading technology companies with deep expertise in areas such as energy, water, communications and transportation. We have come together to provide a collaborative, vendor-neutral framework to guide cities through their smart city planning and implementation. We envision a world where technology and intelligent design are harnessed to create smart, sustainable and prosperous cities. We work to create cities that exemplify our three core values: livability, workability and sustainability. Visit www.smartcitiescouncil.com to learn more.

Smart Cities Council® and Smart Cities Readiness Guide® are registered trademarks owned by Smart Cities Council LLC.

http://smartcitiescouncil.com/