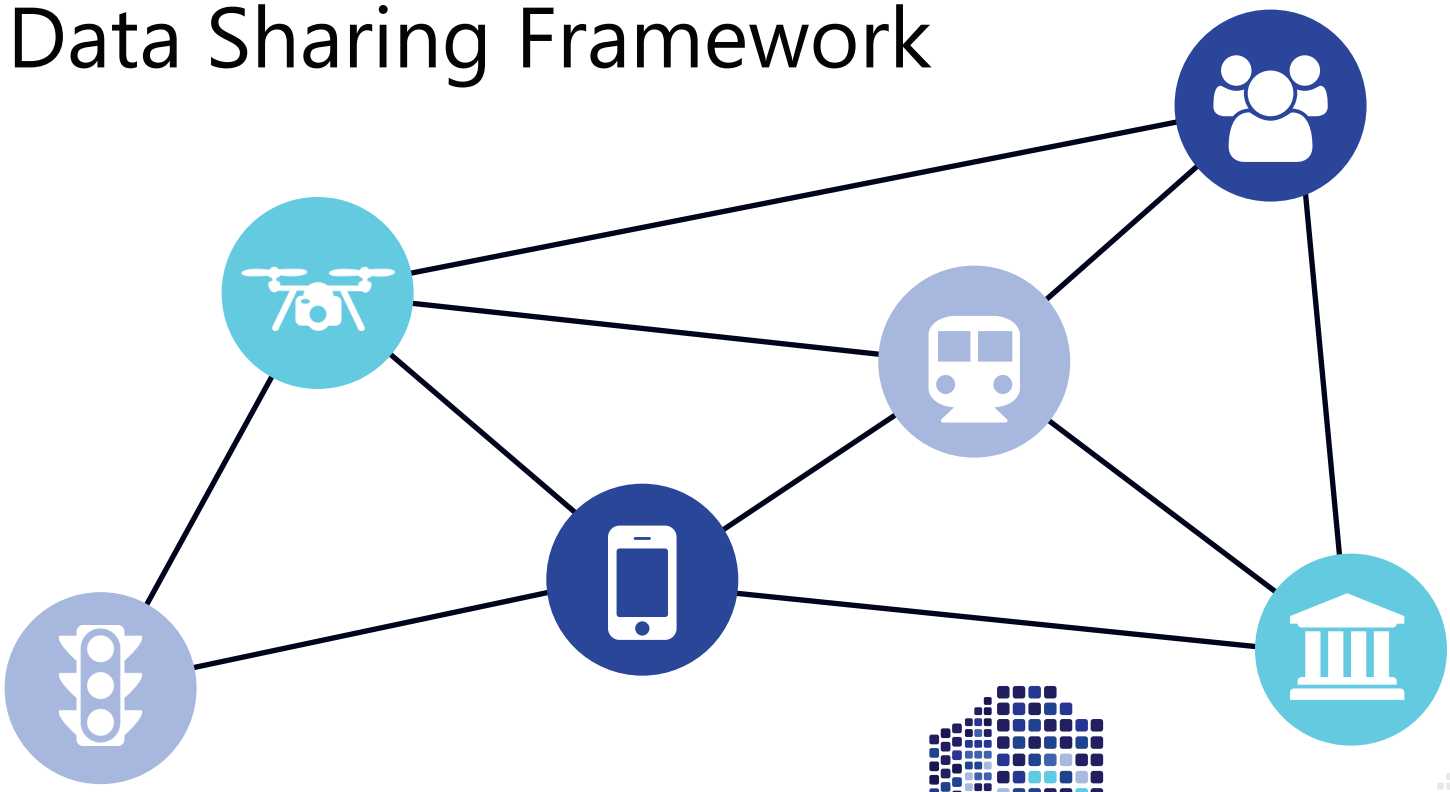
March 2018

Smart Cities

Data Sharing Framework



Abstract

As Smart City projects continue to expand and evolve, data sharing sits at the intersection of business opportunities and technology developments. Cities can certainly benefit from data sharing across Smart City applications and sectors, but sharing among cities, as well as the development of data exchanges and marketplaces, will signal that Smart Cities are moving to the next level of value creation for citizens and local governments.

This report assesses data sharing alternatives for Smart Cities and proposes a blueprint for a common framework, a set of critical components and an evolutionary path from data collection to data monetization.

Foreword

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1. Introduction

As a growing number of cities begin to create new Smart Cities applications — and in some cases, leverage existing investments — data will play a key role in realizing success. While Smart Cities infrastructure will serve as the engine, data sharing platforms will act as the fuel for building new applications across city resources and citizen needs.

The *ATIS Data Sharing Framework for Smart Cities* Report builds upon the recently published *ATIS Technology Roadmap,* providing an in-depth assessment of data sharing approaches, standards, applications, and monetization opportunities. The *ATIS Technology Roadmap* had previously identified advanced analytics, data integration, and data exchanges as key platform enablers. As described in that report, platform enablers support the distribution, management, exchange, and integration of data and services within a Smart Cities ecosystem.

Data sharing platforms are at an early but critical stage for many emerging Smart Cities. Data collection from IoT sensors and connected devices is creating a valuable city asset and serving as a catalyst for data to be integrated across many city resources. At the same time, applications that could leverage this data with citizens, adjoining industries and specialized agencies, are being constrained by the significant business, technology, and policy challenges associated with the sharing of data. Similarly, many cities are beginning to look at opportunities to share data on a city-to-city, regional, and national basis, with a different set of challenges and opportunities.

This report takes a holistic view of data sharing across the many facets of a city's operations and examines the different ways in which data resources can be leveraged. Creating better operating efficiencies and achieving citizen value are important catalysts for promoting investments in data sharing platforms, but new business opportunities and data monetization are key to achieving sustainability and expansion of applications and services into the future. Eventually, it is expected that data marketplaces can act as the citizen- and business-facing dimensions of a Smart City, encouraging application developers to apply data resources to the ever-expanding set of new applications they will create.

The subsequent sections of this document will provide a generic view of data sharing, which can be customized and applied to each city's unique needs. It will begin with the role of data sharing in the future and provide an assessment of the business challenges

and opportunities associated with the exchange of data. A review of current approaches and trials across North America and global cities will provide a baseline of knowledge in this area. A proposed data sharing framework, and an analysis of the critical components that define this framework will help cities further visualize future opportunities. Replication and interworking can be advanced through better knowledge standards and collaborative activities that are already underway across the industry. The evolution from data exchanges to data marketplaces will help to define a future business model that applies this framework to an application-centric Smart Cities ecosystem. This report concludes with key findings and next steps in advancing this vision.