Structural Aspects of IoT

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Traffic Characteristic:

Sensor networks consists of numerous objects and the objects named sensor nodes collect information in access networks of IoT. They are transmitted the information to a network server which is placed in Cloud.

- There are three kinds of traffic can be generated: event-driven, query-driven and periodic traffic. The traffic is classified and analyzed at the network server. The most of monitoring applications for IoT employs cluster-based network architecture. Each cluster gathers local sensing data and traffic characteristic of clusters is determined by the collected local data.
- Energy saving in the sensor networks is an important issue. Because objects named sensor nodes, which are battery-driven tiny devices, are composed of the network, low-power computing is necessary to maximize network lifetime. Although there are several methods to reduce consuming energy in the sensor nodes, most effective method is to control the network activation.

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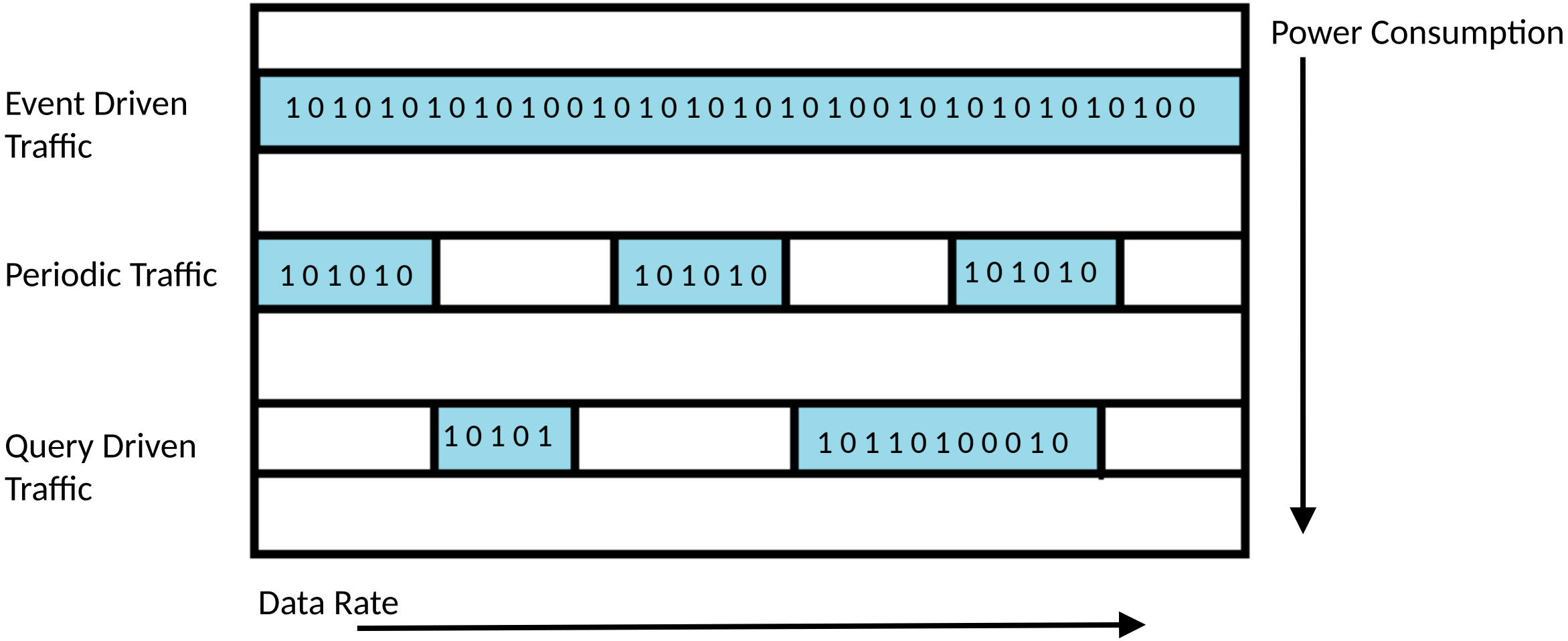
Types of Traffic in IoT



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Scalability and Interoperability:

For businesses that need to scale IoT they first need to find an IoT platform that offers independent scaling and growth. A standards-based horizontal device management solution allows enterprises reach most connected devices and networks to manage and update Internet of Things devices. IoT standards allow for devices to be designed independently and still work together. This is crucial as IoT devices may be manufactured by different companies and will need to standards to allow them to be interoperable.

With a large volume of devices that need to be secured and maintained through a long lifecycle, horizontal device management makes it easier to connect and manage all these diverse devices. This solution can be applied to all industries for all businesses to benefit from shared liability, centralized control and secure and data collection.

This scalable IoT platform not only makes it easy to roll out security updates but also makes it easy for companies to collect important analytics about their devices such as performance which allows them to quickly take action if new products or services need to be introduced to enhance performance.

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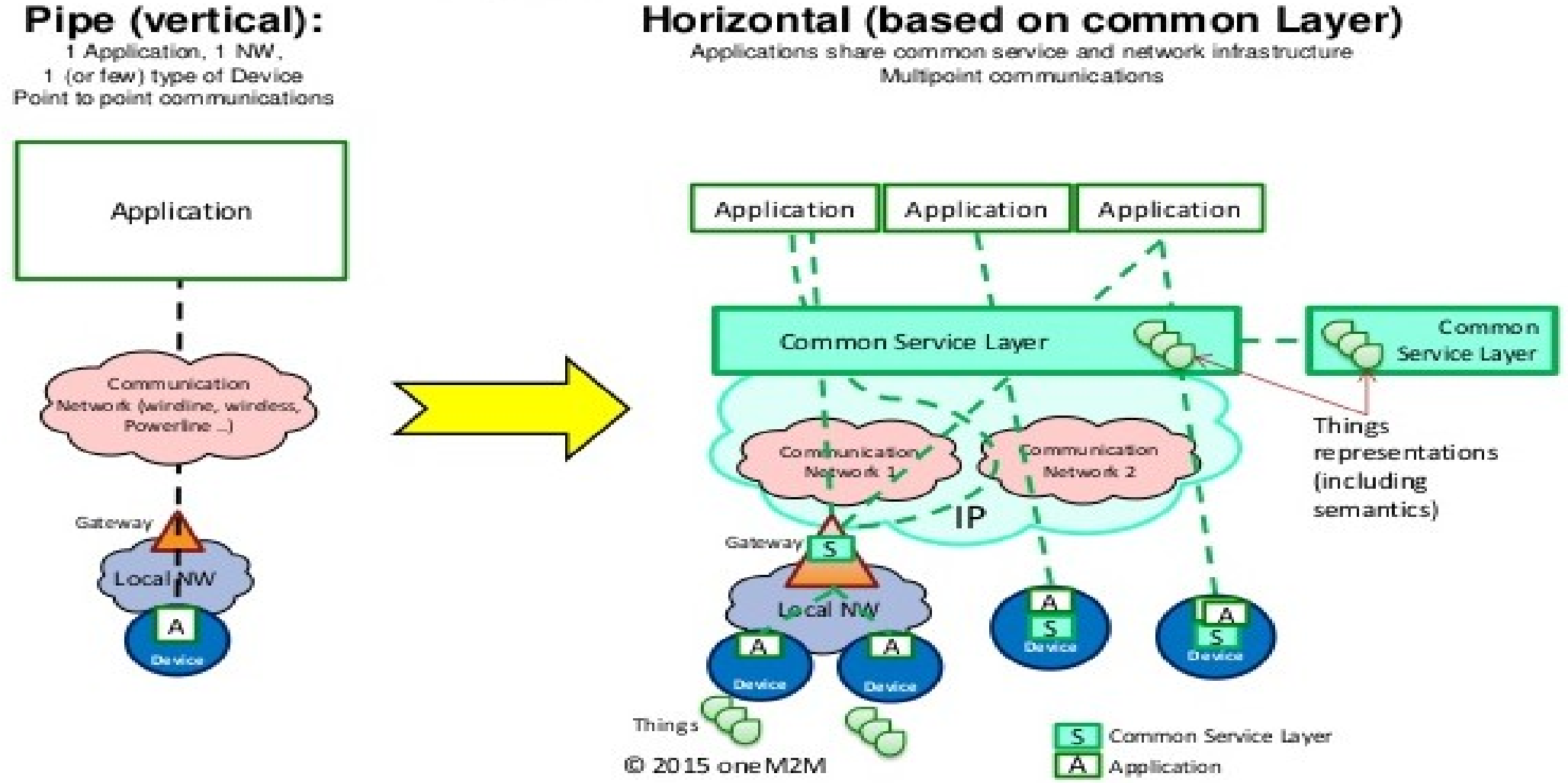
Frameworks for IoT Gateways. IoT Gateways help manage the interaction between sensors and actuators, and the enterprise and cloud services. Implementing these types of gateways requires specialized knowledge in communication protocols, device management, software update, and hardware configurations.



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A recent study by the International Standards Organization (ISO) revealed 400+ standards that were related to IoT. This plethora of standards intensifies the constant dilemma faced by a CIO working with IoT implementations. A vendor's view is usually biased toward their offerings. To facilitate the CIO, the section below provides a ready reckoner on the leading standards/ protocols available at various layers of the Open System Interconnection model, i.e., at the Link Layer, Network Layer, Transport Layer and Application Layer.

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Problem encounter by ISO:

- Device Abstractions
- Messaging
- Resource Management
- Power Management
- Remote Management
- Data/Eventing Management
- Identity Management
- Security Management
- Cloud
- Network Connectivity

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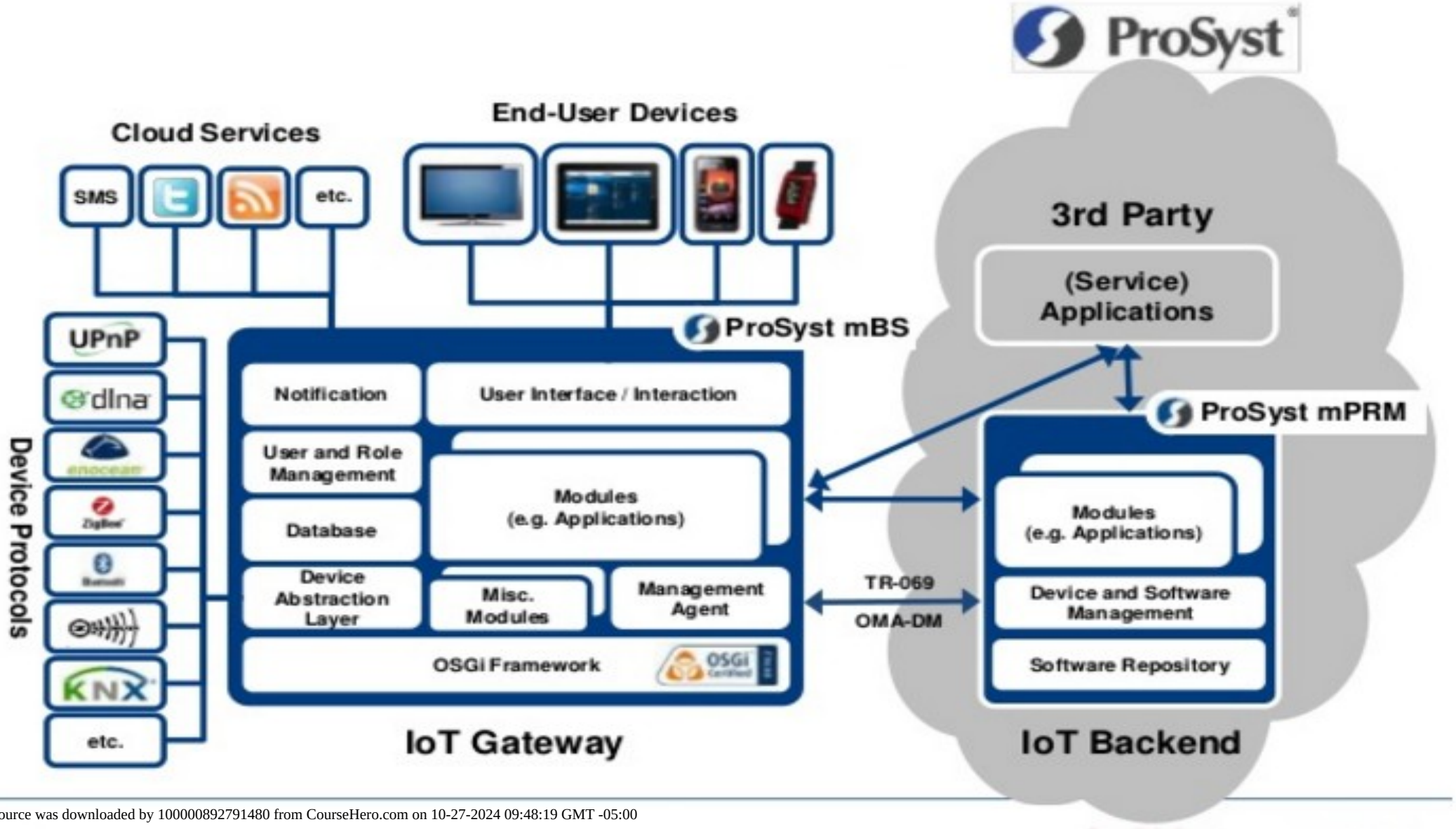
Some Proposed Framework :



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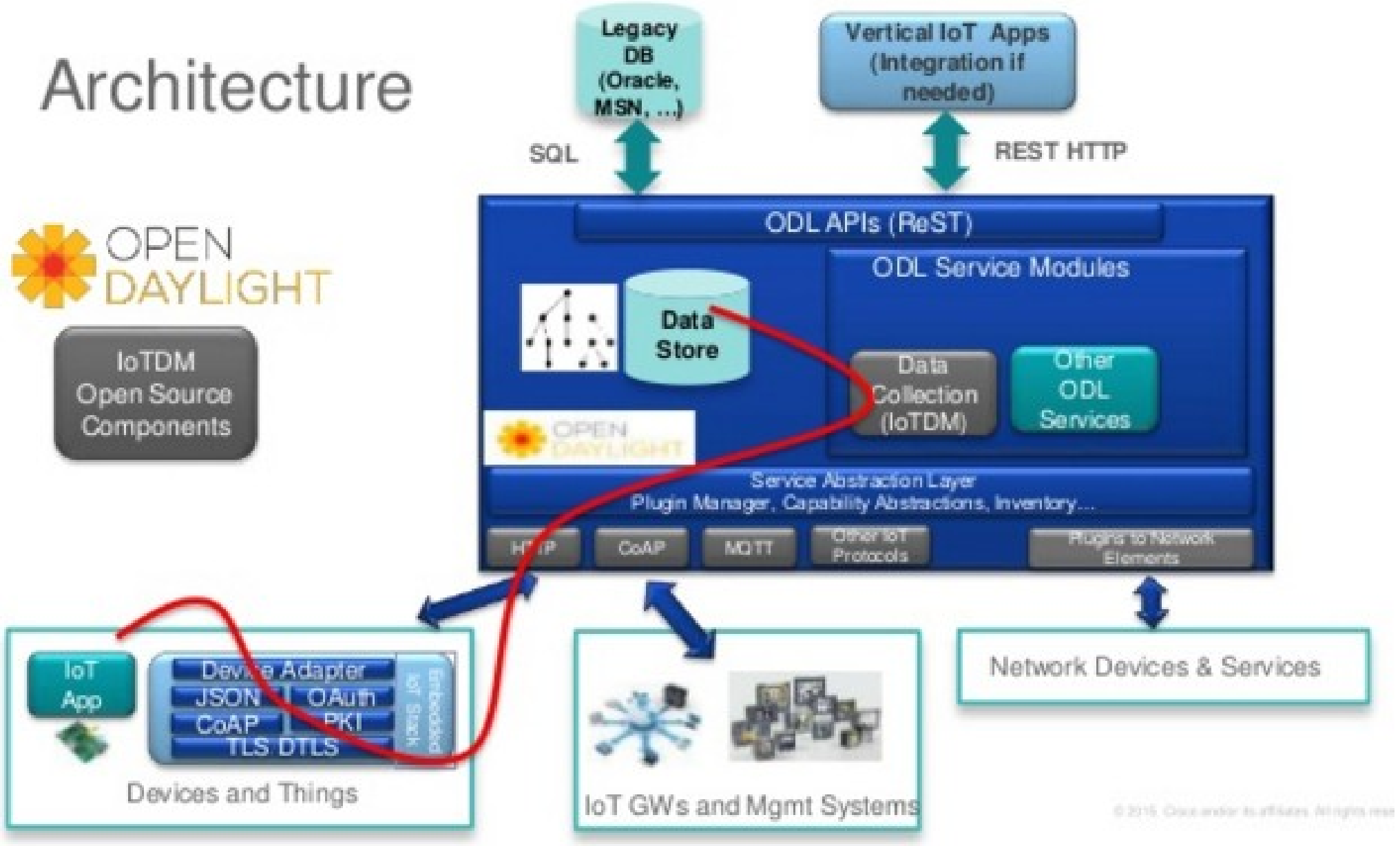
Architecture



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