SNS COLLEGE OF TECHNOLOGY

Coimbatore-35.

An Autonomous Institution

COURSE NAME : 19ITT302 INTERNET OF THINGS

III YEAR/ V SEMESTER

UNIT – I IoT INTRODUCTION AND APPLICATIONS

TOPIC - IoT Frameworks

UNIT I IOT INTRODUCTION AND APPLICATIONS

Overview and Motivations - IPv6 Role - IoT Definitions - Observations - ITU-T Views – Working Definition - IoT Frameworks - Basic Nodal Capabilities – Physical Design of IoT - Logical Design of IoT – Applications: - City Automation Automotive Applications - Home Automation - IoT Levels & Deployment Templates - IoT and M2M

IoT FRAMEWORKS

The HLSA (high level M2M system architecture) comprises of

- the device and gateway domain
- the network domain
- the applications domain.

IoT FRAMEWORKS

The **device and gateway domain** is composed of the following elements:

1. M2M device: A device that runs M2M application(s) using M2M service capabilities. M2M devices connect to network domain in the following manners:

- **Case 1 "Direct Connectivity":**M2Mdevices connect to the network domain via the access network.
- **Case 2 "Gateway as a Network Proxy":** The M2M device connects to the network domain via an M2M gateway.

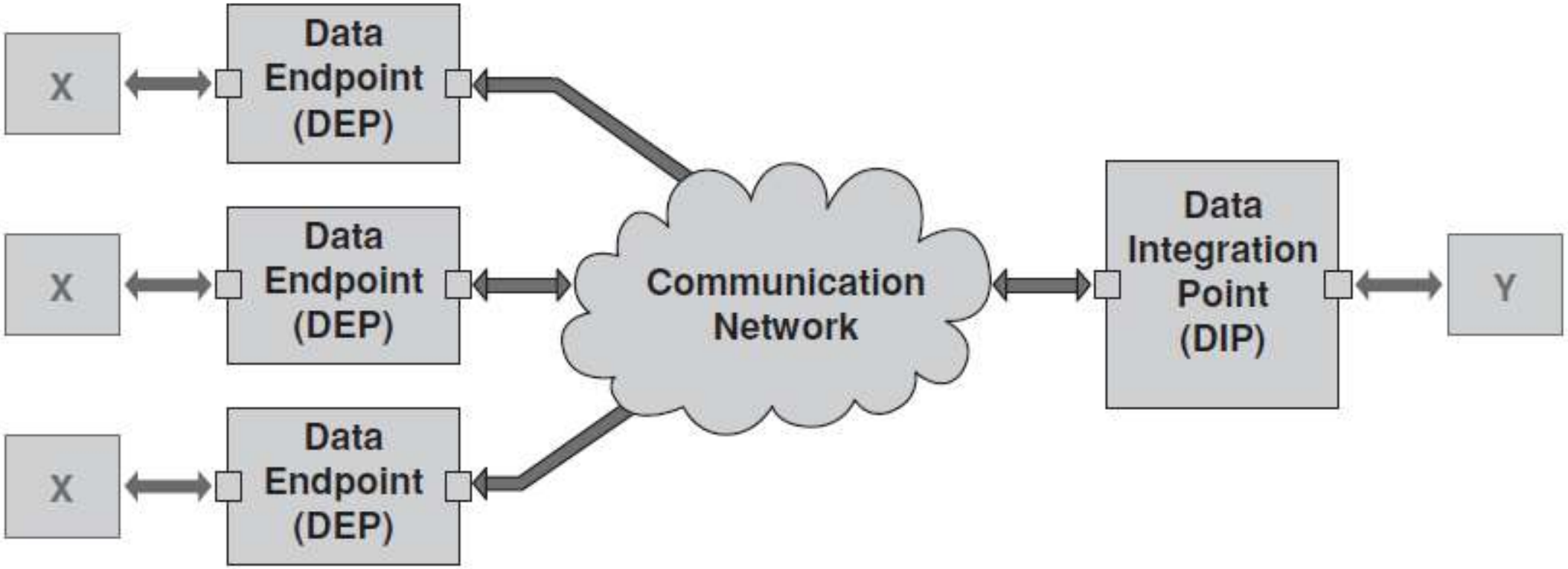
IoT FRAMEWORKS

The **device and gateway domain** is composed of the following elements:

2. **M2M area network:** It provides connectivity between M2M devices and M2M gateways.

3. **M2M gateway:** A gateway that runs M2M application(s) using M2M service capabilities.

IoT FRAMEWORKS



Basic elements of an M2M application.

M2M Domain

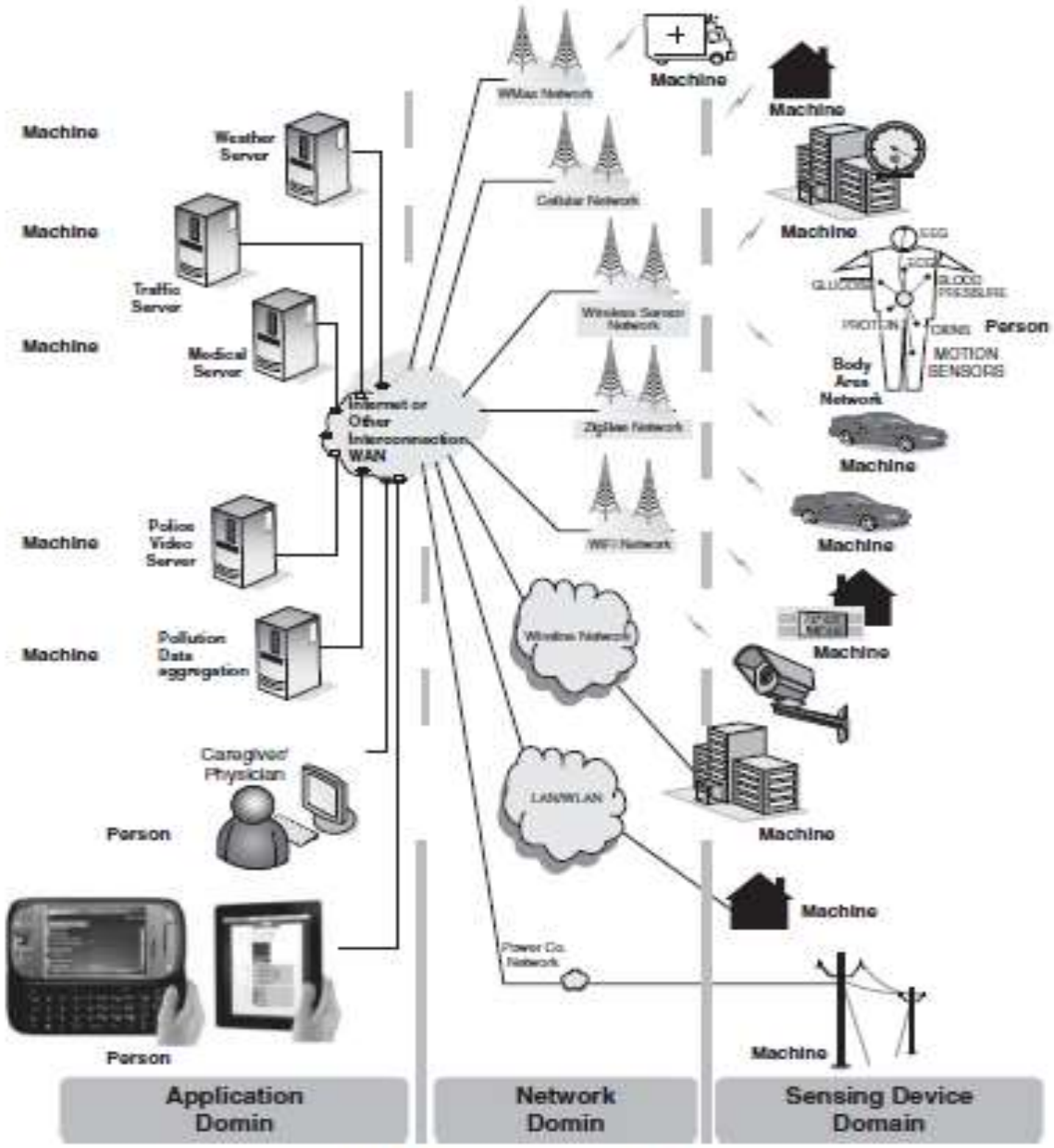


FIGURE 2.6 M2M domains.

IoT FRAMEWORKS

The **network domain** is composed of the following elements:

1. **Access network:** A network that allows the M2M device and gateway domain to communicate with the core network.

2. **Core network:** A network that provides the following :

– IP connectivity - minimum and possibly other connectivity means
– Service and network control functions
– Interconnection (with other networks)
– Roaming

IoT FRAMEWORKS

The **network domain** is composed of the following elements:

3. **M2M service capabilities:**

– Provide M2M functions - to be shared by different applications
– Expose functions through a set of open interfaces
– Use Core Network functionalities
– Simplify and optimize application development and deployment through hiding of network specificities

IoT FRAMEWORKS

The **applications domain** is composed of the following elements:

- **M2M applications:** Applications that run the service logic and use M2M service capabilities accessible via an open interface.

- Other management functions within an overall M2M service provider domain, as follows:
  - **Network management functions -** functions required to manage the access and core networks
  - **M2M management functions -** required to manage M2M service capabilities in the network domain


Thank You!