



SNS COLLEGE OF TECHNOLOGY
(An Autonomous Institution)
Coimbatore-35



DEPARTMENT OF BIOMEDICAL ENGINEERING

19BMT205 IoT in Healthcare

Unit-2 -IoT & M2M

II Year/IV Sem

Dr. K. Manoharan,
ASP / BME / SNSCT



Unit-II -IoT & M2M



- M2M Communication
- Difference between IoT and M2M
- Software define Network



Difference between IoT and M2M



Communication Protocols

- M2M and IoT can differ in how the communication between the machines or devices happens.
- M2M uses either proprietary or non-IP based communication protocols for communication within the M2M area networks.

Machines in M2M vs Things in IoT

- The "Things" in IoT refers to physical objects that have unique identifiers and can sense and communicate with their external environment (and user applications) or their internal physical states.
- M2M systems, in contrast to IoT, typically have homogeneous machine types within an M2M area network.



Difference between IoT and M2M



Hardware vs Software Emphasis

- While the emphasis of M2M is **more on hardware** with embedded modules, the emphasis of **IoT is more on software**.

Data Collection & Analysis

- M2M data is collected **in point solutions** and often in **on-premises storage infrastructure**.
- In contrast to M2M, the data in **IoT is collected in the cloud** (can be public, private or hybrid cloud).

Applications

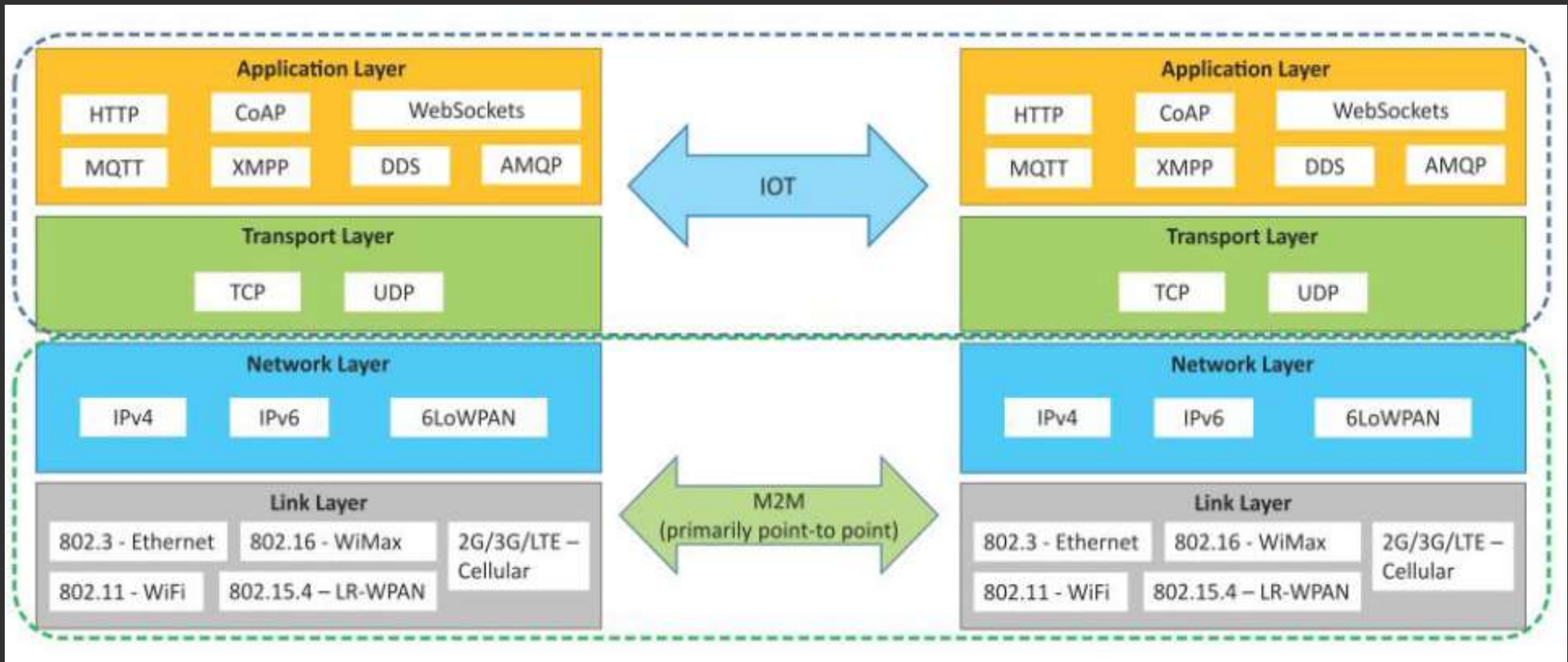
- M2M data is collected in point solutions and can be accessed by **on-premises applications** such as **diagnosis applications, service management** applications, and on-premises enterprise applications.
- IoT data is collected in the cloud and can be accessed by cloud applications such **as analytics applications, enterprise applications, remote diagnosis** and management applications, etc.



M2M	IoT
It is Machine to Machine communication and completely hardware based.	It's Machine to Machine, Machine to sensors, or Humans to Machines. And software based
M2M is a point to point communication and uses non –IP protocols.	Its uses IP networks and protocols as the communication is multipoint.
These devices don't rely on internet.	Devices required internet connections.
Data can be stored locally	Data can be stored locally and also in cloud
Limited integration option devices must have corresponding communication standards	Unlimited integration option, but requires a solutions that can manage all the communication



Communication in IoT vs M2M





Limitations of Conventional Networking



The Conventional Networking Technologies has lot of Limitations with increases in number of distributed protocols these limitations are as:

Complex Network Devices:-

To meet business and technical needs over the last few decades, the industry has evolved networking protocols to deliver higher performance, high speeds and reliability which increases more number of protocols making the device complex. Due to complexity networks are made relatively static to minimize the risk of service disruption.

Management Overhead:-

Network managers find it difficult to manage multiple network devices and interfaces from multiple vendors. Upgradation of network requires configuration changes in multiple devices such as switches, routers, firewalls, etc.

Limited Scalability:-

The virtualization technologies (creation of several virtual machine using software called as hypervisors) used in cloud computing environments has increased the number of virtual host in the cloud. The analytics components of IoT applications exchange huge amount of data in virtual machines which require highly scalable which becomes difficult with conventional networks.