Let's have a look at a small module called 'Standards, Protocols and Standard Oraganizations'.

Objectives

- At the end of this session, you will be able to:
  - Understand the need of standardization and protocols
  - Understand the difference between standard, recommendation and protocol
  - Understand different national/international standard organization in the field of communication and their achievements
  - Understand ITU and internet standards

Agenda

- Standard v/s Recommendation v/s Protocol
- Standard Organizations: ISO, ANSI, EIA, IEEE, ITU
- Internet standards
- Factors affecting communication evolution

Syntax refers to structure or format of the data, meaning order in which they are presented. Example in a protocol the Address /Control/Data/FCs is the sequence.

Semantics: Semantics refers to meaning of each section of bits.

Timing: Refers to when data to be sent & how fast they can be sent for proper reception.

Standard Organizations

- ISO
  - **I**nternational **S**tandard **O**rganization
  - Birth: 1947, Voluntary, Worldwide scope
  - Achievement: Invented OSI model
- ANSI
  - **A**merican **N**ational **S**tandard **I**nstitute
  - Private non-profit organization not affiliated to US govt.
  - Achievement: ANSI C, ASCII and lot other
- EIA
  - **E**lectronics **I**ndustries **A**ssociation
  - Manufacturers association in US
  - Achievement: EIA-232 D and EIA -530 standards

Standard Organizations

- IEEE
  - **I**nstitute of **E**lectrical and **E**lectronics **E**ngineers
  - Research and Development in almost of all area of engineering – lot of research papers
  - Largest professional group in development of standards for computing, communication etc.
  - It sponsored LAN project
  - Achievement: 802.X protocols

- Regulatory Authorities
  - Review of technical specifications, allocate spectrum, charging control
  - FCC – **F**ederal **C**ommunication **C**ommission [US]
  - TRAI – **T**elephone **R**egulatory **A**uthority of **I**ndia

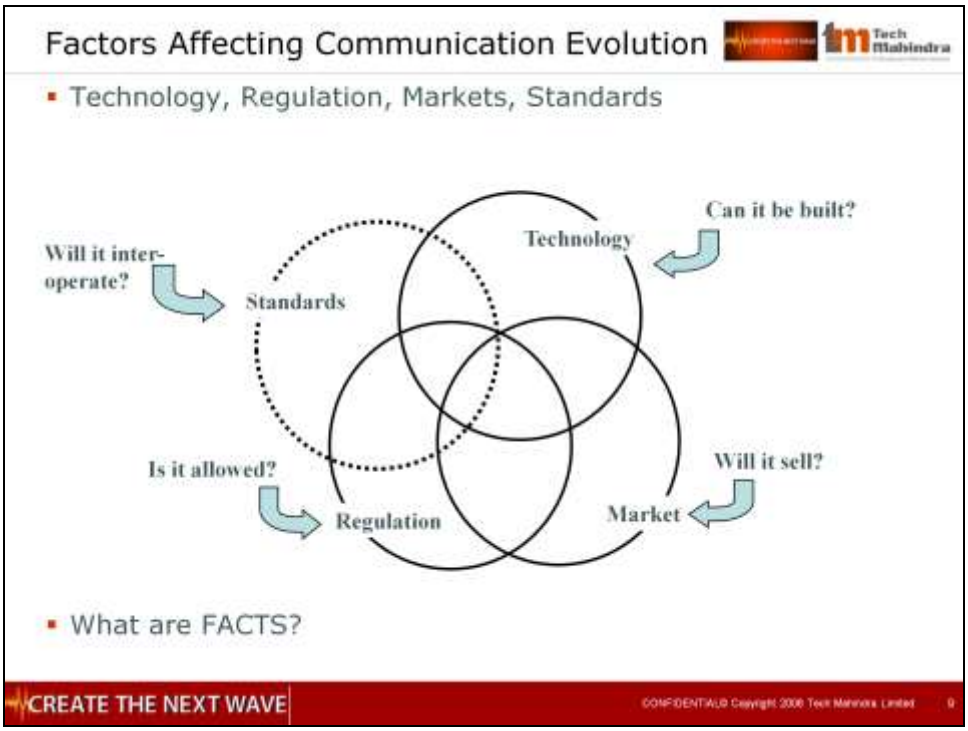
ITU …The **I**nternational **T**elecommunication **U**nion (ITU) ..which formerly was knows as CCITT…

It is an International organization with word wide presence. It is the oldest UN organization …founded in 1865 having headquarter in Geneva. Each UN member country has the right to become a member of it.

Under ITU there are various sub divisions called ITU-T …ITU for telephony, ITU-R ..ITU for radio and ITU-D …for development…Beneath every of this there are study and research groups who constantly endeavor for research activities in a particular domain.

Internet Standards

- Internet standard is a Specification thoroughly tested to be followed by those who work with internet
- Internet Society is a professional Membership Society that spans more than 100 countries & many organizations
- Internet Engineering Task Force(IETF) & Internet Architecture Board (IAB) is part of Internet Society
- All Request for comments (RFC) and Internet Standards are developed through these organizations
- The MAC address & IP addresses are also issued under internet society



So let's end this small modules with the Factors affecting communication evolution.

There are basically four major factors that can impact communication evolution …Technology, Regulation, Markets and the Standards…

Technology basically talks about …can it be built.. Regulation talks about …it is allowed ? Any operator working any where emitting frequencies in any range of any power …Is this allowed ? Market basically talks about …will it sell ? You have got a technology which technically very powerful but it is not commercially that much successful…A good examples of this is a Satellite phone. Satellite phone is technical success but it is not commercially as attractive to end customer …. And the standard will talk about …will it interoperate ? Because now a days we have got N number of communication technolgoies, technical infrastructures as well as protocols existing…So unless and until they marry with each other …interoperate with each other..communication will very limited and restrictive….It is quite important to note in today's and future context that 'Single standalone technology may not survive in a long run …however nice it may be'…. It needs to create a bond with others…

So …Let's understand some facts !!!

1) Availability of a technology does not mean it will sell. I have

already talked about an example called Satellite

phones.

2) It is never very clear beforehand whether a market exists for a product or service…so again a very important thing from a marketting perspective.

3) Regulation authorities and the standards will talk about monopoly…i.e. they would talk about moving away from monopoly in this globalized world…and making that standards essential so that interoperability would be easy …

With this we come towards and end of topic called ‘Standard Protocols and standard organizations’.

Summary

- In this session, we have learned:
  - The need of standardization and protocols
  - Difference between standard, recommendation and protocol
  - Different national/international standard organization in the field of communication such as ISO, ANSI, IEEE, etc.
  - ITU and internet standards
  - Factors affecting communication evolution

Thank You