**CCNA Study Guide**

**Tingwei Adeck**

**Chapter 1-Internet-working (OSI Reference Model and Layered Communications)**

**Learning Outcomes**

Understand why study and understand Cisco internetworking?

Define OSI?

How many layers are in the OSI model?

What is the use of the OSI model?

How does CISCO see the OSI model?

What devices belong to each layer of the OSI model?

How to perform cabling of cisco devices as well as other network devices?

What cables and connectors are used for connection of devices to the network?

How to connect Ethernet LANs, WANs and other network types?

What is Cisco’s 3-layer hierarchical model?

**Start point-Internetworking Basics**

What is network segmentation? Fragmentation of a larger network into smaller networks accomplished by using routers, switches and bridges (hubs seem to be a thing of the past).

Why network segmentation? *User response issues* due to a rapidly expanding network plagued by LAN traffic congestion.

What are the sources of LAN congestion?

* Too many hosts in a broadcast domain. What is a broadcast domain?
* Broadcast storms. What are broadcast storms?
* Multicasting. What is multicasting?
* Low bandwidth? What is low bandwidth?

What is a router? Routers connect networks together by routing packets of data from one network to another.

What is the use of a router?

Used to connect networks to one another

As the name suggests routes information from one network to another