Packet Switching遗留问题——2015.11.24

1. 发明packet switching的目的是为了更快地传输数据

XY: Packet switching是因为packet应运而生的，packet是为了把长短不一的信息变得一样，便于处理。而packet switching就是设计出的能很好地处理packet的switching。

XM:

1. packet是为了把长短不一的信息变得一样，便于处理——~~没有完全理解~~；

2. packet switching是如何更好处理packet 的switching?

2. what`s Message and Packets means?

Packets = part of Message.

XY: Message，segment，datagram，frame都是packet，只是不同层的packet的别名。

XM: So, What`s packets means?

3. what`s control function means?

《Computer Networking A Top-Down》: for example, the “Hi” messages in our handshaking example in Figure 1.2.

XY:没看懂control function是啥，暂时不想翻书。请将此问题移交到遗留问题单。

XM: …………………………..

In telecommunication, a control operation (control function) is an operation that affects the recording, processing, transmission, or interpretation of data.

Examples of control operations a font change, or a rewind; and transmitting an end-of-transmission (EOT) control character.

4. what`s communication links, and packet switches (router and link-layer switches) used for?

XY: Router有选路的作用，与交换机的区别我稍微有点懂了，这个问题你先把网络层看完再回顾

XM: so, I need keep going on.

**路由器作的是三层（网络层）转发，具有路由的功能，更加的智能；交换机作的是二层（链路层——Mac），效率更高。**

5. Packets are transmitted over each communication link at a rate equal to the full transmission rate of the link.

假设数据L从src(a)->dest(d)共有ab、bc、cd三条communication link，each communication link at a equal rate R. then:

Time(a->b) : t0 = L/R,

Time(b->c) : t1 = L/R,

Time(c->d) : t2 = L/R,

Time(a->d) = (t0+t1+t2)/3 = 3L/3R = L/R.

But, why R(rate of each communication link) = R(full transmission rate of the link)?

XY:请移交。

XM:

Time(a->b) : t0 = L/R,

Time(b->c) : t1 = L/R,

Time(c->d) : t2 = L/R,

Time(a->d) = (t0+t1+t2)/3 = 3L/3R = L/R.

上述计算过程存在问题，原本目的是求出packet在整个链路中的传输速度。

更正：

Time(a->b) : t0 = L/R,

Time(b->c) : t1 = L/R,

Time(c->d) : t2 = L/R,

Time(a->d) = (t0+t1+t2)= 3L/R = 3L/R.

**R(a->d) = 3L/Time(a->d) = R.**

**这里只考虑传输时延，不考虑其他时延（尤其是传播时延），即数据从A->B传播不消耗时间，所以当link传输数据的速率为R，而需传输的数据的总量为L时，**

**Time(A->B) = L/R**

**换言之，传输用时只有数据长度有关，与传播路径无关。**

6. A router will typically have many incident links?

XY:Incident这个单词作何解释，我并没有看懂你的问题是啥。

XM:What`s incident links means?

**流入流出的问题，incident links 指接入的连接，对应outbound links。**