④. Proposed Solution:
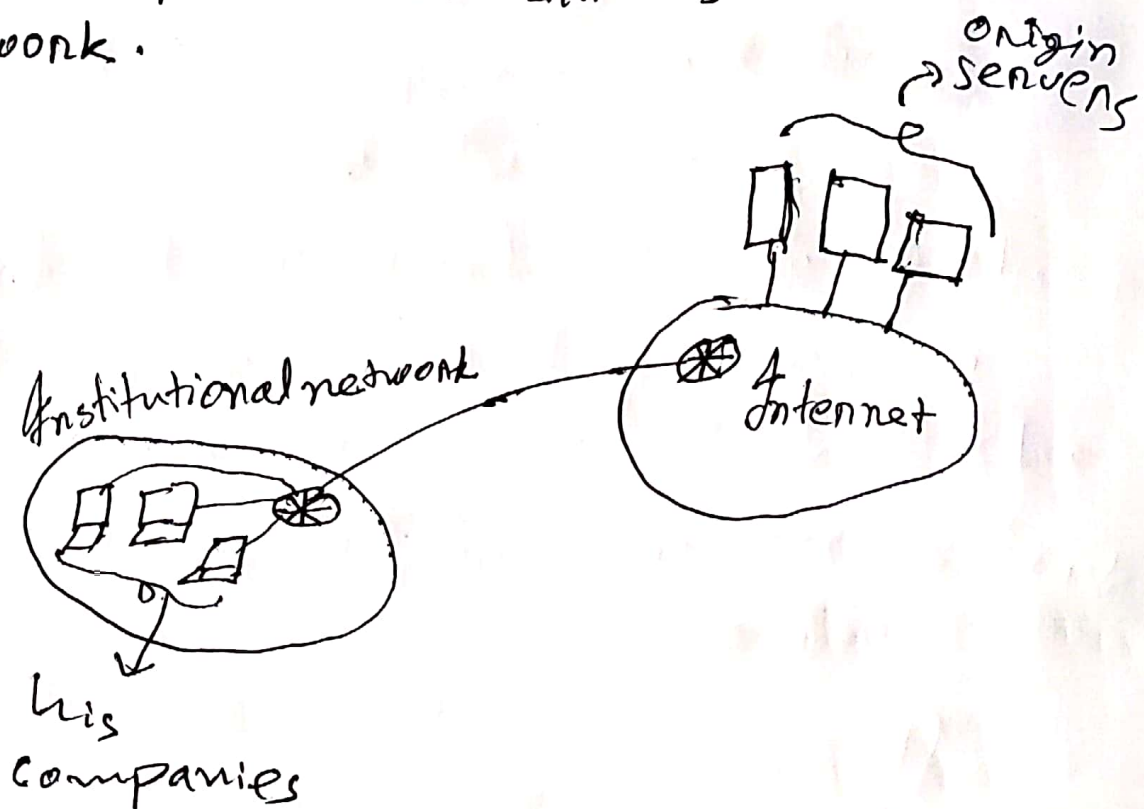
Mr. Faruk owns ~~uu~~ couple of companies and ~~need to have a fast connection~~ his companies requires massive amount of data bandwidth. We can connect his companies ~~as~~ ~~int~~ institutional network.

Ex:

his companies

Now let's consider ~~be two~~

average object size 100 bits, ~~Ot~~ average request rate from browser to server is 15/sec, average data rate ~~1.5Mbps~~ $100 \times 15 = 1500$ kbps = 1.5 Mbps

RTT from istitutional router to any origin server is 2 sec and access link rate is 1.54 Mbps.

So, in this scenario access link utilization would be $(1.5/1.54) \times 100\% = 99\%$. This is a problem. Cause the link is almost fully utilized and overloaded with traffice.

So the delay would be = Internet delay + access delay + LAN delay = 2sec + minutes + micro seconds. ~~Just thinking~~ So if we increase the bandwielth of the access ~~lik~~ link to 154 Mbps we can get 9.9% of utilization on the access ~~lik~~ link which will decrease the delay to less than a minute.

But from a business view this will be ~~a less cost~~ very costly. So maintaining it isn't a good choice.

So my advice will be to establishe a local web cache in the institutional network.

local

If ~~D~~ we install web cache the delay will be reduced to ~~b~~ less than 2 sec, considering a 1Gbps LAN. So this, this more usable and profitable approach as the access link is still 1.54Mbps and the company can use high data bandwidth of ~~local~~ the in institutional network and internet will be faster ~~due~~ due to local web cache and less traffic on access link.