

## SYSC5801 Assignment 1

Traffic Engineering (TE) has been a topic of interest in computer networks. Many TE algorithms have been proposed and studied. Each TE method has its assumption(s) and objective(s). The main objectives of TE based on IETF document include:

TE objectives include (view of IETF):

- performance optimization of operational networks
- minimize packet loss, delay, delay variation
- maximize throughput
- enforce Service Level Agreements (SLAs)
- minimize maximum resource utilisation

On the other hand, techniques for Content Delivery Networks (CDNs) are relatively newer compared to TE techniques. ISPs CDN providers can compete or cooperate with each other. Increasingly, ISPs are also looking into the area of CDNs.

The main objective of this assignment is to review recent papers that address traditional TE supported by ISPs and CDNs at the same time. These papers are:

- J. Wijekoon, et al., “Effectiveness of a Service-Oriented Router in Future Content Delivery Networks”, *Proc. of the 7<sup>th</sup> International Conf. on Ubiquitous and Future Networks*, July 2015, pp. 444–449.
- Q. Li, et al., “Content Delivery Mechanism for ISP”, *International Journal of Future Generation Communication and Networking*, vol. 6, no. 4, Aug. 2013, pp. 111–126.
- K. Chao, et al., “How Can an ISP Merge with a CDN?”, *IEEE Communications Magazine*, Oct. 2011, pp. 156–162.
- I. Poese, et al., “Enabling Content-aware Traffic Engineering”, *ACM SIGCOMM Computer Communications Review*, vol. 42, no. 5, Oct. 2012, pp. 22–28.

The requirements for this assignment are to summarize and compare those **four** papers. Some points to consider, as we mentioned in class, include, but not limited to, objective, method/model and control, assumptions, evaluation, and results.

- What is the problem area and scope? What is (are) the main objective(s) of the paper? What are the constraints considered in the paper?
- What is (are) the objective function(s) used in the analysis?
- Describe if the objective function(s) address(es) the proposed objective(s)?
- What is the main approach, architecture, or mechanism of the paper?
- How the evaluation is performed for each approach?
- What are the main achievements of the paper?
- What are the strong and weak points of the approach?