

## **A survey of information-centric networking**

### **Reading Summary**

Saige Liu, CSC 466

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The network that is using world-widely is the host-centric network. The communication is based on named hosts. To satisfy users today, a network infrastructure that has better content distribution, mobility and failure resiliency is necessary. More specifically, the network architecture should be suited for efficiently accessing better and handle flash crowd effects better.

This growing request has leaded researchers to work on Internet architectures that based on named data objects(NDOs). The NDOs based concept is generally called as information centric networking(ICN), which is completely different from the named hosts-based host centric network. In ICN, receivers possessed the communication and ask for NDOs, senders publish object to make it available in the network. ICN architectures affect the caching, multiparty communication by replication, its interaction models decouple sender and receiver.

Firstly, The ICN approach's main components are well-explained in this article. NDOs keeps its identity if its name is maintained. The naming is unique, different naming method affects routing and security variously. There are two types of APIs, one is published/request, and the other one is published/subscribe to approach. Sending request to name resolution service(NRS) and sending the request to multiple data sources are the two routing methods. For the caching, any node with the corresponding copy in a cache can accomplish the request. Secondly, the assets of ICN is interpreted. Better than P2P, ICN support scalable and efficient content distribution without the peer selecting and in-storage issue. ICN also keep persistence by unique naming and have a better security model, better mobility and disruption tolerance. Furthermore, in this paper, it explained and distinguished the four ICN approaches' design choices and features. 1)Data oriented network architecture find and send packets by name through routing. 2)The content centric network allows request aggregation by saving them in a pending interest table. 3)The publish subscribe internet matches subscriptions and publications by rendezvous system to forward data. 4)The network of information first checks the name resolution service to find NDOs, if not found, it uses name-based routing.

With all the strengths listed above, this paper has some weakness. The four approaches are just basically explained. The clarification is simplified and may not be the latest. Likewise, the whole paper is talking about the theory, none of the work is in practice. There are also privacy concerns that the request for NDOs is visible to the whole network, and Legal issues that content may be illegally spread. Last but not the least, on the deployment side, all participants must be told to advance the deployment.

Further improvement on this paper applies the ICN in the real world. As Cisco announced in 2017, they had achieved the CICN project, which allows researchers to do experiments to assess the ICN's performance and benefits. Therefore, deployed the ICN network for testing is achievable in nowadays.