Emergence of Information Centric Networking and Web Content Mining: A Future Efficient Internet Architecture

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Abstract : With the growth of the number of users, the Internet usage has evolved. Due to its key design principle, there is an incredible expansion in its size. This tremendous growth of the Internet has brought new applications (mobile video and cloud computing) as well as new user's requirements i.e. content distribution environment, mobility, ubiquity, security and trust etc. The users are more interested in contents rather than their communicating peer nodes. The current Internet architecture is a host-centric networking approach, which is not suitable for the specific type of applications. With the growing use of multiple interactive applications, the host centric approach is considered to be less efficient as it depends on the physical location, for this, Information Centric Networking (ICN) is considered as the potential future Internet architecture. It is an approach that introduces uniquely named data as a core Internet principle. It uses the receiver oriented approach rather than sender oriented. It introduces the naming base information system at the network layer. Although ICN is considered as future Internet architecture but there are lot of criticism on it which mainly concerns that how ICN will manage the most relevant content. For this Web Content Mining(WCM) approaches can help in appropriate data management of ICN. To address this issue, this paper contributes by (i) discussing multiple ICN approaches (ii) analyzing different Web Content Mining approaches (iii) creating a new Internet architecture by merging ICN and WCM to solve the data management issues of ICN. From ICN, Content-Centric Networking (CCN) is selected for the new architecture, whereas, Agent-based approach from Web Content Mining is selected to find most appropriate data.