

A Case for CCN and the Internet's Way Forward:

Content-Centric Networking or CCN is a relatively new concept by technology standards, dating back to 2009. It comes out of the push towards a more secure and updated internet architecture as the holes in security, scalability and performance of the current architecture is growing more problematic in a rapidly evolving landscape.

One argument that will regularly come up regarding implementing a new architecture is the complexity and challenges faced to actually get momentum in adoption. This is understandable and undeniably challenging, but it's not a stop point and shouldn't be the sole reason to refrain from a transition. Think of our early internet infrastructure that sat atop our phone system. This eventually moved to a side by side relationship or in most cases totally removed from the phone backed system. The original internet architecture was capable of evolution and it still is and should move in a direction that is more secure, scalable and better performing.

CCN suits this transition by gearing the internet to a focus on what people actually need from it, **content**. We send and receive content constantly, so it makes sense that our architecture should reflect this demand. CCN allows the content to be the point of focus where security is concerned, resolving a major drawback of current systems that favor **traffic** security first. Security focus is built into the content itself as opposed to the channel the content moves through (Damodar Ahir, Kumbharkar and Prashant, 2012). If the content of individuals and organizations is already secured by design then the challenges and drawbacks of VPN and heavy handed firewall protocols can be mitigated.

Network performance can be greatly improved thanks to low latency and reduced congestion of traffic. CCN by design through smart caching principles, prevents redundant requests from

being made, increasing performance and minimizing bottlenecks (Damodar Ahir, Kumbharkar and Prashant, 2012).

There is work to be done; absolutely. This is not a cure all and there are challenges, and drawbacks to this platform, but measured against the current challenges experienced by current infrastructure, it is of Group One's belief that a movement to a CCN based internet architecture represents an internet designed around modern use and modern users who value the security and performance of the content they create, store, send and receive as opposed to what researchers "thought" we might need or want 40 years ago.

References:

Damodar Ahir, D., Kumbharkar, B. and Prashant, P. (2012). Content Centric Networking and Its Applications. *Journal of Global Research in Computer Science*, 3(12), pp.23–32. Available at:
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