Introduction

Active Network: The Base for Content Distribution and Network Security in d-Commerce Environment

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Speeding up of mobile internet bit-rate, rapid deploying of fiber accesses, and digitalization of terrestrial TV Broadcasting, by those, broadband-ubiquitous communication environment for d-Commerce (digital commerce) is coming mature very quickly. With this and advanced network function make everyone a broadcaster, namely, "Personal Broadcast". Moreover, metadata is now playing a key role in every social and business activities, thus metadata themselves are now becoming content, namely "Metadata Content". Environment above mentioned forces everyone to make content, thus we foresee that content creation and distribution would be a next carrier for industries in 21st century. Because of this ambient environment for content, particularly moving pictures, new business models of content distribution are appearing now besides conventional "On Demand Model" for entertainment content. They are "Private Distribution Model" and "Commercial Distribution Model". "Private Distribution Model" corresponds to "Personal Broadcast" and "Commercial Distribution Model" corresponds to "Metadata Content" respectively.

Most important technologies for both models are Intelligentflexible Multicast and DRM: Digital Rights Management which includes Network Security Technology as its basic infrastructure. In order to achieve above mentioned IntelligentFlexible Multicast and DRM on Secure Network, followings are the points to be considered;

1. Utilization of more collaborative Networking functions among FTTH, Mobile and Broadcast :
   By this intelligent collaboration, Metadata will become more useful and attractive. Integrated Network should support intelligent numerous multicast of metadata, so that user would be able to get any metadata on demand/push style. Active network is the best scheme to equip such functions to network easily.
2. Plug and Play of any terminal to the network :
   By this easy human-machine interface, everyone would crate and distribute their own metadata freely and efficiently through networks. Active network is again the great scheme to give such a human friendly intelligent interface.
3. Easy high speed Access to any Archive:
   Easy Networking and Plug & Play access to the network seems to give everyone the power to be a broadcaster. However, to make motion picture content from every element is impossible for non professional creator. They want to reuse elements in the archive to save time and effort to avoid struggles of making sophisticated CG elements. In this case, there should be intelligent network which understands creators' desire and connects the suitable archive where they would get the best fitted elements. Active network will give such intelligence to the network.

4. Synchronization among ID and DRM-DB:

   To assign world unique ID to every content is said to be a big key to activate content distribution businesses. This world unique ID would point the Data Base which contains Digital Rights Information of the content of that ID. When content created and assigned the ID, the ID of this content would not change forever. On the other hand addresses of Data Bases would change because of the business activities. So how to keep the resolution (synchronization among IDs and DB addresses) is the key for world unique IDs. Active network would easily include this resolution functionality.

5. Authentication using Network Resources:

   In the mobile ubiquitous environment, authentication through the mobile terminal will become the most important matter. Circumstances for authentication through mobile terminal is not always perfect, like noise against voice authentication, humidity against finger print authentication. In such a case, position identifying function of mobile terminal would add further accuracy to authentication. Active network would help to get position, time and action information of the person to be authenticated, thus add new functionality on person authentication area.

As mentioned above, to enjoy content business century, Active network will play a key role as the infrastructure of the social life and industrial activities. We owe many on Active Network.