

Reflections on Dr John Waclawsky's CMSC818G Lecture

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Dr. John Waclawsky presented a fascinating view of the battle being waged in technology and standards development in networking and networked applications. In this paper we respond to several of Dr. Waclawsky's ideas that we found informative and thought provoking. These include the following:

1. The role of standards in promoting or stifling innovation (esp. in how they are used by established commercial equipment and service providers)
2. The scalability (and, hence, viability) of centralized versus distributed services
3. The current devaluation of media content and associated rights management
4. The impact on users quality-of-life and market capitalization made in the telephony/video/data carrier environment versus the open Internet application development domain

Dr. Waclawsky's commercial experience at IBM, Cisco, and Motorola has given him a rich experience in the standards development process and how it affects businesses and customers. This experience allowed him to make the observation that standards development is often used as a tool by entrenched market leaders to create a technological barrier to entry of their market space. Dr. Waclawsky revealed the fact that standards development is often not based on a clean slate, but rather on the political might of a company that merely documented how their current solution works. Examples of this approach include the H.248 (MEGACO) protocol from Lucent and MGCP from Cisco, both used in VoIP. When standards development goes beyond that approach, seeking consensus, the process can get so bogged down that technological innovation is stifled and the standard may become an irrelevant behemoth. This is the case with the IMS, currently being relegated to a marketing term used to help sell control plane software for carrier switching systems, which in the end will not interoperate between vendors anyway.

Dr. Waclawsky's supposition that the lack of scalability in centralized services will limit their market impact as well as his view that media content ownership is overvalued lead to an interesting question regarding the market for IPTV from centralized carriers like Comcast, Verizon, and the like. Will the saturation of broadband Internet access in some countries and its rapid build-out in others combined with the availability of set-top-boxes such as Popcorn Hour's BitTorrent empowered A-110 media center eliminate the need for paid TV services from the carriers? Is broadband access sufficient as a centralized service, providing up to the TCP/IP network layer of connectivity? Will the market find it's own more distributed, innovative, feature rich, and perhaps economical means to acquire and view media? Time will tell. However, the relegation of telephone/cable providers to only the market of broadband services is the inevitable conclusion of Dr. Waclawsky's claims.

If the relegation of these companies to a more restrictive market of broadband service is the future, then, by Dr. Waclawsky, these companies sowed the seeds of their own demise. This was done through the emergence of standards through the first four layers of the OSI model, thus allowing the Internet to bloom. This was referred to as the "Area of Common Benefit." The "Area of Common Benefit" has allowed the open Internet community to grow de-factor standards in the area of applications. Thus, beyond layer 4 of the OSI model, de facto standards rule the day.

The "Area of Common Benefit" also has implications for content. According to Dr. Waclawsky, content is currently over-valued. The spread of peer-to-peer file sharing, the spread of MP3's, and the advance of the Internet into countries where copyright is not respected all contribute to a devaluation of content. One obvious example of this devaluation is the reduction in the role of "online services" that were in vogue during the late 1980's and early 1990's. Of the three largest providers of this era, CompuServe, Prodigy, and America Online, America Online has emerged victorious (Prodigy is defunct and CompuServe was purchased by America Online). However, are America Online keywords displayed with the prominence of web addresses? Today, a content provider would experience a significant loss of revenue and viewership if it were to restrict itself to America Online. It is easy to see that AOL can be viewed as just one of many ISP's. Dr. Waclawsky argues that, due to the scale of the Internet, content will be seriously devalued. However, applications that encourage social contact, by contrast, are the wave of the future. This is because oftentimes when humans use content, the real value of this action is the connections and relations we form with other humans as a consequence/side-effect of our (perhaps mutual) use of the content in question.

To this end, we look to adjust our idea for LAIR. Initially, we viewed the user *context* at a given time to refer primarily to geographic location and previously accessed information. We look to add an element of social connectivity to our notion of context. Further, our notion of *anticipated* information is changed as well. *Anticipated* information not only includes information in the normal sense (i.e. information from web pages, books, email, video, etc.) but also meta-information about a social network (i.e. location of friends, activities of children, affiliations of a business partner, etc.)

The observations of an industry veteran and well trained researcher such as Dr. Waclawsky are not only very interesting, but are also valuable in helping students such as ourselves identify the problems on which we choose to focus our research. We seek to solve problems that really exist and through which we can improve the quality of life.