From Aloha to Dynamic Spectrum Access Networks

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Abstract: It may seem a long time ago but Aloha has only been around less than half a century. X25 seemed for a long time to be the solution for corporations to move data around. Then it was frame relay, ATM and more. The advances in hardware allowed individuals to own their own PCs, and then it was time to connect them. The advent of fiber optics gave incredible bandwidth but one needed the fast switches to route the data effectively. Then came the time when the individuals wanted to connect to their networks while they were on the move. Once the customers got the taste, the corporations were there to provide a multitude of devices and connection alternatives. Wireless technologies started becoming more and more effective with Cooper's Law predicting the use of radio spectrum doubling every 30 months. Currently, mobile industry is experiencing over 260% growth per year. Availability of bandwidth is becoming a major problem for this industry. Fortunately, advances in processing are providing the backbone. This talk will compare the parallel development and advances in communication and computation with a reference to the current use of adaptable strategies in sharing scarce networking resources, similar to the virtualization and cloud computing in the ever changing computation world.