Cross-Layer Design (CLD) is a new paradigm for network architecture that allows us to make better use of network resources by optimizing across the boundaries of traditional network layers. Previous work has shown that applying CLD to mobile multimedia communication systems may lead to significant performance improvements. In this paper we also consider the other side of the coin, i.e., the additional computation and communication overhead introduced by CLD. We evaluate the performance improvements and the cost of cross-layer optimization using a wireless multi-user video streaming example.