# An Adaptive Video Player: Reducing Power Consumption and Increasing Application Performance

*Das Babita, **Young-Jin Kim, *Seung-Jo Han
*Chosun Univ., **Dacom
*babitadas81@yahoo.com, **kyj2000@chol.net, *sjbhan@chosun.ac.kr

# An Adaptive Video Player: Reducing Power Consumption and Increasing Application Performance

*Das Babita, **Young-Jin Kim, *Seung-Jo Han
*Chosun Univ., **Dacom

## ABSTRACT

The prospect of anytime, anywhere network access presents both opportunity and challenge. Providing connectivity to those on the move enables entirely new services while expanding the reach of current applications. Mobile clients face many challenges in accessing data from servers. Networking connectivity, especially via wireless media over a large area, tends to vary considerably in bandwidth, latency, reliability and cost. The mechanism for mobile data access has to be adaptive in nature, dynamically conforming to the limitations of individual clients and their current environments. Thus we propose an approach for adaptive mobile applications based on mobile code in the context of application, Video player. The results show that both increased application performance and reductions in power consumption are possible under certain conditions by delivering the resource demanding decoding to the less restraint access network.

## 1. INTRODUCTION

Like any new technology, the Mobile Computing world has also generated a lot of excitement and hype. Mobile computing is spectacularly changing our day-to-day lives, this has been made possible in recent times due to the evolution of extremely powerful but small computing devices such as cell phones and PDAs, and subsequently, relevant software and communication infrastructures. Today, a lot of business happens while people are in the field; a lot of time is spent traveling and the customer constantly demands more focused services. Hence, it can be understood that wherever business needs to happen outside the corporate walls, there is an opportunity for Mobile Computing. It could also be effectively applied to other fields such as tele-medicine, safety engineering, disaster management, e-governance, etc. In other words, the term Mobile Computing can be defined as describing the use of computing devices which usually interact in some fashion with a central information system while away from the normal, fixed workplace. People are more mobile these days; there is a need to be in touch with coworkers, decision-makers, and consumers; moreover, smarter devices such as information appliances are entering the market and the customer is becoming more and more demanding. All these factors are promoting the use of mobile computing as a viable technology to serve these requirements of the market.

Although mobile computing has many advantages and is popular it has limitation in their capabilities, in particular when accessing multimedia information services. Mobile computing has been characterized by many constraints: mobile hosts tend to be resource poor because of size, weight, and power constraints; they are physically vulnerable to loss, theft and other hazards; and they have to cope with considerable variation in the performance and reliability of wireless communication. These constraints are not artifacts of current technology but are intrinsic to mobility. Together, they complicate the design of mobile information systems and require us to rethink traditional approached to information access. Mobility aggravates the strain between independence and interdependence that is characteristic of all distributed systems. The relative resource poverty of mobile elements as well as their lower trust and robustness argues for dependency on static servers. But the need to deal with unreliable and low-performance networks, as well as the need to be sensitive to power consumption argues for self-dependency.

Finding approaches to reduce power consumption and to improve application performance is an imperative and motivating problem to be investigated. Many approaches have been developed to deal with this problem.

One group of approaches concentrates on mobile applications that adapt to the scarce and varying wireless link bandwidth by filtering and compressing the data stream between a client application on a portable device and a server executing on a stationary host. Data compression in a client-server application is done at one of two places. One approach enhances the server to generate a data stream that is suited for the currently available bandwidth. Other proposals extend the client-server structure to a client-proxy-server structure, where a proxy executes in the wireless access network, close to the mobile unit. This proxy filters and compresses the data stream originating