Abstract

The problem of pricing in the finance industry is growing in computational complexity due to demands for self-managing (autonomic), high-speed and real-time solutions for complex mathematical problems such as option pricing. In current option trading scenarios, determining a fair price for options “any time” and “any-where” has become a vital yet difficult computational problem. In this study, we have designed, implemented, and developed an architecture for pricing options on-line using a hand-held device that is J2ME-based, mobile computing-enabled, and is assisted by web mining tools. In our architecture, the client is a MIDP user interface, and the back end servlet runs on a stand-alone server bound to a known port address. In addition, the server uses table-mining techniques to mine real-time data from reliable web sources at the mobile investor’s directive. The server performs all computations required for pricing options since mobile devices have limited battery power, low bandwidth, and low memory.

This architecture aims at providing the investor with various computational techniques to provide results, with a range of accuracy, while on-the-go. In addition, our architecture provides value-added services such as healthy bids, risk free zone, and favored stocks in the form of tables and graphs. We claim that our architecture autonomically computes the option prices, except for some user intervention at the start and at the end of the pricing process. However, by setting the user preferences \textit{a priori} on a variety of options, our architecture can self-
manage in computing the price of options and inform the user continuously and can even make decisions for the user.

We provide sample results from case studies for options written on technology (blue chip) stocks.