

## Assignment 2 - V703

### Financial Modeling Valuation

26/01/2007

- 1.** On a day of your choice during the week ending on Feb 02, 2007, after the US markets close (4pm ET), collect the prices for all calls and puts traded on Dell Inc. with maturity on March 16, 2007, as well as the closing stock price. Use the Excel macro derived in class during Lecture 4 (posted on the course website) to estimate the implied volatility for these options as a function of the strike price. Use  $r = 0.06$  and  $\delta = 0$  (no dividends). Use the time to maturity  $T = n/365$ , where  $n$  is the actual number of days left until March 16, 2007, and a number of steps  $N$  of your choice (say  $N = 100$ ). Plot your results and observe the “volatility smile” effect.
- 2.** One day after, use the implied volatility obtained in the previous exercise to calculate option prices based on the newly observed stock price and the new time to maturity  $T = (n - 1)/365$  (one less day). Record how many option prices fall using a 5% error compared to the actually traded prices at the moment of your calculations.