Predicting Tomorrow's Price and Efficient Market Theory

Various people have inquired as to predicting tomorrow's price action such as OHLC, midpoint, range, etc in the context of trending vs. non-trending markets. This is a black hole. Here's why:

1. **Timeframe and Trends:** Trends are all relative to the timeframe selected. If you asked 100 analysts are we in an uptrend, downtrend or consolidation at this exact moment?, only a fool would answer without first asking what timeframe is being considered. Then they would give a **backward looking** opinion/observation and half of the others would disagree with the analysis.
2. **Trends End** and you Don't Know When: It would be foolish to think that a trend could not end beginning tomorrow. Trends lead to either reversals or consolidations and one cannot know which one it will be until it has been confirmed which is why Elliot Wave is so nebulous and can accommodate any scenario AFTER it has unfolded.
3. **Forgetful Markets**: The market DOES NOT HAVE A SHORT TERM MEMORY, BUT HISTORY DOES REPEAT. It is much like with human aging: Clarity about the distant past can be quite good, but our aging parents can't remember something from yesterday or an hour ago. If you are interested in the probabilities of market moves lasting ***multiple days in a row*** refer to Tastytrade Episode "The Skinny on Options Data Science" May 27th, 2015. This episode illustrates 1-6 days Up/Dn and the effect on the next day's outcome. It is a compelling presentation of just how little memory the market has. It also shows that since 1950 there have been 54% Up Days compared to 46% Down days. In Timing Solution using the Percentage Up Bars Tool 

you get 52.81%. This is the so called, "upward drift" of the stock market so it has not quite been a coin toss over 65 years. It has a negligible effect on tomorrow's price action.
4. **Prediction**: Gaps, large range moves, dramatic reversals, VIX action may give some hints as to the overall market condition, but they don't predict tomorrow. If you buy during one millisecond, there is no way of predicting whether the next tick will be higher or lower or equal. This is true even if for an algorithmic trading mechanism (high speed trading). The same goes for one day, one week, one month or one year later. With respect to the U.S. stock market over the course of many decades the upward drift that will eventually kick in to the analysis, but for shorter durations, it is close to a coin toss. *Footnote #1*
5. **Efficient Market Theory: Random Walk/Geometric, Brownian Motion** explains price behavior. The key word is "random." Hence, no prediction of tomorrow. See references below for resources regarding this topic.
6. **Statistics** are the only Predictor of Tomorrow: Rather than think about tomorrow's price range, tomorrow's midpoint, tomorrow's close, one should be thinking in terms of bell shaped curves/probabilities. Statistical analysis of price makes sense as it examines the probable "slosh" of the market. The market will slosh within a 1 Std Dev range 66% of the time. It will be contained within a 2 standard deviation range 95% of the time. 3 Std Dev = 99% containment.
7. **Probability of Touch** is twice that of Probability of Close which was a concept invented by the statistical oriented developers of Thinkorswim (now TD Ameritrade). It means that intraday "slosh" will likely be greater, but the open and close will normally fall within a tighter range. For candle enthusiasts, think of the bodies vs. the wicks.
8. **Predicting a OHLC or Midpoint**: The peak of the bell shaped curve is the 50-50 point which means that tomorrow's open has the highest chance of opening near where it closed. Therefore, the midpoint has the highest chance of being near yesterday's close. That is not to say it WILL be where it closed for OHLC, but this is more likely compared to any other outcome. Any other conclusion is a statistical crap shoot especially if it predicts a large deviation from the previous close. Throw in a large gap or two like we saw during the first week of 2016 (SP500) and it all goes out the window. Tomorrow's range cannot be inferred from today's action although it is not uncommon for a trend day to lead to a balancing day (think inside bar following a large range bar). Look no further than Friday Jan 9th , 2015 to see where this *should have happened* and did NOT.
9. **Black Scholes**: The standard deviations of tomorrow's expected move are functions of option pricing or implied volatility which is forward looking and not backward looking (i.e. such as historical volatility, and most every indicator known to man). Black Sholes considers time and implied volatility along with a few other minor factors. This model yields the theoretical pricing of options and can be used to project future range(s).

10. **"Implied" Move**: According to 9. Above: The implied volatility of a given stock, ETF or index handicaps the forward looking price movement. The expected move tomorrow (implied by option pricing) is the **Current IV/19.1 = Expected Range Percent** based on concepts that have been well documented by Tastytrade.com. Footnote #2 This formula will actually OVERSTATE the actual move about 84% of the time but it does yield an implied move. I know many who trade opposite based solely on a market move that exceeds the implied move. This is how I trade, but usually over a 30-45 day time horizon.
11. For what it's worth: IMO--The only technical analysis I have seen that has some credibility with respect to day-to-day analysis is **Market Profile**. Market Profile displays where price has been balancing vs. trending. As such it shows where traders are trading with the crowd vs. against the crowd. The heavily traded areas (over a given lookback) look like bell shaped curves. The peaks of these areas is where price will likely be attracted as price sloshes around. Why because the market is an ongoing auction and these areas are considered areas of balance between buying and selling.

    Bottom Line: Sergey has arrived at the conclusion that price cannot be predicted for tomorrow and I believe he is correct. Most actual traders would agree completely. Predicting tomorrow's price action with 80% accuracy IS the Holy Grail and there is no Holy Grail. I would add that any system being sold that claims predictability of the stock market, commodities, and most everything else is praying upon the weak. If there is such product, why in heck would it be made available to the public?

*If you need more than this or want to know where I got most of the above, then go to Tastytrade.com. Register with an email and password. It is free (as in-no charge and aside from being a devoted "Tastytrader," I don't make a dime from anyone checking this out). Search "Brownian." After searching on Brownian you will find 16 videos (about fifteen minutes each). At the very least watch these three: 2013 05-16 "Brownian Motion" | 2013 06 11 "Trend Trading Equities" | 2015 07 03 "What is Efficient Market Hypothesis?" These are all done by a University of Chicago math professor. If this is not enough, how about the opinion of a **data scientist** who traded in the Chicago pits? Watch "The Skinny on Options Data Science" May 27th, 2015.*

If after this, you still believe that tomorrow's price is predictable then I suggest something other than trading for you. Sorry, but this is the plain truth.

Footnotes:

#1 Refer to Tastytrade.com-"The Skinny on Options Data Science" May 27, 2015
#2 Refer to Tastytrade.com-"Trade Hacks" Oct 5th, 2015