A Football Drafting Problem

A certain professional football team (for the sake of the team, let's just call them the New Jersey Planes) have recently locked up the first pick in this year's draft. The Planes desperately need a quarterback and have had a terrible recent history in drafting them. They have had a great history, though, of drafting defensive lineman. The Planes have identified their top quarterback prospect as well as their top defensive lineman prospect and are going to use the first pick on one of them. The top defensive lineman is a lock to perform well in professional football for a long time. The quarterback, however, is riskier. The Planes believe that the quarterback has a 75% chance of being a franchise quarterback and a 25% chance of being a bust. They further believe that drafting a franchise quarterback is worth $40 million dollars more than drafting a long-term defensive lineman while drafting a bust costs them $150 million dollars more than drafting the lineman. The franchise views drafting the lineman as a 'baseline' with a reward/cost of $0.

Given the Planes recent drafting history, the fans of the team are trying to pressure the team to hire an outside draft expert to run their own analysis on the quarterback prospect. The Planes are considering hiring this expert, who has a consulting fee of $15 million. The expert has had a 95% success rate in correctly classifying a quarterback prospect in the past.

We will examine this problem in a decision analysis framework. In particular, we will first address the question of whether it makes sense to consider hiring the draft expert to help make this decision. If it does make sense, we will create and analyze a decision tree for the problem that will determine whether or not to hire the expert and then which player should be drafted (the fans are going to boo at the draft either way, so we will focused on the costs).