Internet Acquisition Test Case

Story

A major internet services company (the Company) was considering the acquisition of a company (the Acquisition) owning key IP for Internet-based advertising. A new advertising network market (Ad Network) was beginning to take shape. There were two possibilities for the Company to serve the Ad Network. One, the Company could attempt to build its own capabilities in-house (the Build). Two, The Company could acquire the Acquisition, which would open up the possibility of making a second acquisition (the Target). The combination of the two acquisitions may or may not have the capability to serve the Ad Network but could be faster than the Build.

The Company is broken into several large divisions, two of which have gaps in their current offerings that could be filled by the Acquisition. One of the components is "Media Sales" and the other is "Content Match."

The price of the Acquisition was large enough to have the attention of the CEO. He asked for information from many parties, including the Vice President for the Media Sales component (the VP), who asked Provisdom to help value the Acquisition and determine which division should take control of the Acquisition if acquired. The Company was rife with politics and the VP and the Vice President of Content Match were jockeying for control of the acquisition. The political infighting combined with considerable uncertainty in future revenue and performance created a wide range of estimates for the value of the acquisition, from $200M to $2B.

Provisdom had a 45-minute initial information-gathering session with the VP, discussing the background of the acquisition strategy and the most relevant choices, uncertainties, and possible payoffs. With this information, Provisdom built a first-cut model which led to a few clarifying questions that were answered through email over the following day.

Model Information

The information available was complex and interrelated. For details on the logic and time line of the strategy, see the Time Line section in the Appendix. Examples include decisions to make the appropriate acquisitions or build starts and uncertainties surrounding the Ad Network size and the chance of each component filling their capability gap.

End-of-model Payoff

At the end of the model, the company has a payoff that is largely determined by estimates about the Ad Network's future behavior. The first-cut of the model used 8 times the Ad Network size as the shareholder value going forward (i.e., if the Company has the capability to serve the Ad Network), but this was determined to be too opaque and just a rough estimate. Since one of the goals of good modeling is to allow the decision maker and others to have a 'conversation' with the model, the rough estimate was replaced by valuing the uncertain future payoff stream explicitly as a function of the Ad Network size at that time using the following information about the Ad Network:

- Volatility is 20%.
- Growth rate begins at 30%
- After year 5, the growth rate begins smoothly declining at 5% per year until it hits its long-term steady growth rate of 5%.
- Market Correlation is 10% (see below)
- Completely disappears after a total of 20 years.

The Company's revenues will depend on when they obtained their capability to serve the Ad Network -- if at Year 2, they will capture 100%; at Year 3, 75%; and if, through a build completed by the end of the model, 50%. Note that, as with all payoffs including the Media Sales Gap Cost and Content Match Gap Cost, we modeled the end-of-model payoff as mapping directly to shareholder value.

Ad Network Size – Market Relationship

The VP had never considered the relationship between the uncertainties in his decisions and the Market. The VP wrote, "Not sure how to think about this [the Market relationship]. There will probably be some positive correlation. Better cases for Ad Network value are more likely if overall market for online ads is growing rapidly and vice-versa."

The VP finally ended with the following thoughts. If the Market rises 100% over the year the Ad Network size is discovered, then the initial chance that the Ad Network size will be $0 drops to 15% while the chance of being $250M rises to 25%. (To keep things simple on the first-cut model, The VP decided to ignore any effect the Market's rise or fall during the first year might have on future estimates.) He also chose to use a 10% correlation between the Ad Network size and the Market for the end-of-model payoff.

Results

Shareholder Value

The modeled shareholder value:

- Place The Acquisition into the Media Sales component: $5.37B
- Place The Acquisition into the Content Match component: $5.08B
- Don't acquire: $4.62B
- Don't acquire, don't build: -$.08B

These values mean that The Company should not spend more than $750M for the Acquisition, that the Acquisition is worth $290M more in the hands of Media Sales than Content Match, and that the total shareholder value of this Ad Network opportunity is $5.37B minus whatever it costs to purchase the Acquisition. If they aren't able to negotiate the purchase, the NPV is $4.62B, which still represents a large single-digit increase in the Company's market capitalization.

Optimal Strategy

Based on the above results, the Acquisition should be made for no more than $750M and be placed in the Media Sales component. If the acquisition is made, the Target should always be purchased and the

Build begun unless the Ad Network size is discovered to be $0. If the acquisition is not made, the Build should begin unless the Ad Network size is discovered to be $0.

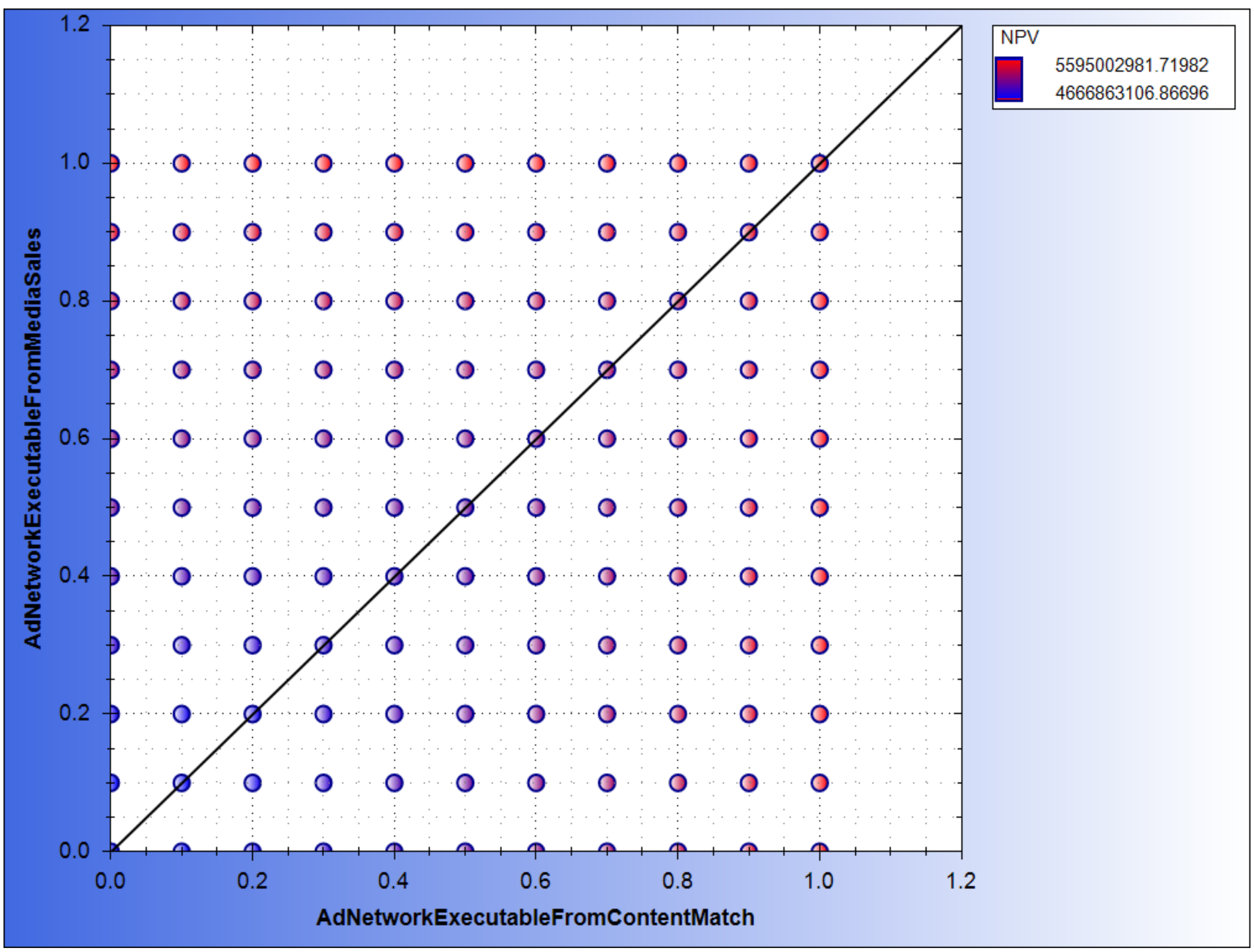
Feedback Q&A

After learning of the results of the first-cut model, the VP asked the following questions:

- At what yearly cost of building does the cost start being material to the decision?
- What does the NPV space look like for different combinations of values for the chance that Content Match and Media Sales would be able to get capability to serve the Ad Network from the acquisitions? I.e., how quickly does the Media Sales vs. Content Match choice flip as these inputs change?

The answer to the first question is that the cost of building didn't change the strategy until it had increased from $3M per year all the way to $510M per year.

The "NPV space" is shown below along with the line at which the strategy for Media Sales and Content Match will "flip":



Appendix

Sample Effects of the Market Relationship

When the Ad Network size was found to be $250M, the calculated discount rate over that one year was 16.9%. When the Ad Network size was found to be $0, the calculated discount rate over that one year was -2.86%. For $125M and $50M, the discount rate was 5.83%. The risk-free rate of 6.011% was used when the Ad Network size wasn't discovered since there was no Market relationship.

Time Line

The following timeline represented the VP's relevant information

Current Decisions:

- Acquire and place the Acquisition into Media Sales or into Content Match?

Over Year 1:

- The initial market size of the Ad Network is unknown. There is a 60% chance the market size of the Ad Network will be known at the end of year 1.
- If the initial market size of the Ad Network is discovered,
  - There is a 20% chance it is $250M, 30% chance it is $125M, 30% chance it is $50M, and 20% chance it is $0.
- The acquisition price of the Target is unknown. If the acquisition is made,
  - There is a 5% chance that the price will be below $100M and a 5% chance that the price will be above $200M.
- If the Acquisition is placed into the Content Match component,
  - The Media Sales component would have a 50% chance of filling their gap over the year.
  - The Content Match component would have a 30% chance of filling their gap completely, a 50% of halfway filling their gap, and a 20% of not filling their gap at all.
- If the Acquisition was placed into the Media Sales component,
  - The Media Sales gap is filled completely.
  - The Content Match component is not filled at all.
- If the Media Sales gap was not filled, take $20M loss.
- If Content Match gap not filled, take $50M loss.
- If Content Match gap half filled, take $25M loss.

Year 1 Decisions:

- If the Company acquired the Acquisition,
  - Purchase the Target at price found over Year 1?
- Begin the Build for $3M per year?

Over Year 2:

- If the Content Match component still has a full gap,

    - There is a 75% chance the Content Match gap will be completely filled.
- If the Content Match component still has a halfway gap,
    - The Content Match gap is filled.
- If the Ad Network size is still unknown,
    - Learn size.
- If the Company purchased the Target,
    - If the Acquisition was placed into the Media Sales component,
        - There is an 80% chance of having capability to serve Ad Network
    - If the Acquisition was placed into the Content Match component
        - There is a 50% chance of having capability to serve Ad Network.
- If the Company is building,
    - Pay $3M.
    - There is a 50% chance that build is complete.
- Media Sales gap is filled.
- Ad Network size grows by 30%.
- If Content Match gap not filled, take $50M loss.
- If the Company has capability to serve Ad Network,
    - The Company has revenue equal to Ad Network size at end of year 2.
    - Stop Building

Over Year 3:

- Content Match gap is filled.
- If the Company is building,
    - There is a 60% chance the build is complete.
    - Pay $3M.
- Market size grows by another 30%.
- If the Company just got the capability to serve Ad Network, the Company will serve 75%
- If the Company has had capability to serve Ad Network,
    - If the Company began serving Ad Network at Year 2,
        - The Company has revenue equal to Ad Network size at end of year 3
    - If the Company began serving Ad Network at Year 3,
        - The Company has revenue equal to only 75% of the Ad Network size.

Year 3 -- End Of Model:

- If the Company began the Build,
    - The Build is complete.
- If the Company has capability to serve Ad Network,
    - The Company has end-of-model payoff.