Reaching for the Stars

Finding the Right Balance of Risk and Reward in Agreements

CHALLENGE

No business lives in a vacuum, yet an ongoing difficult challenge for organizations is finding the right balance of risk and upside in agreements with business partners. Agreements can be kept simple such as a supply agreement where the supplier is paid for cost plus a markup; or made more complex where a supplier takes on a greater share of the cost and risk and, in return, shares in the profit margin of the final product.

Surprisingly, even though the way partnership agreements are structured can greatly influence a business' risk/reward profile, often businesses only quantify the expected rewards (e.g. NPV, IRR, sales), not the risk. Even though businesses may describe risks in words or risk-registers, often they have no way to transparently and consistently quantify the risk/reward trade-off. To help provide insight into this, companies have frequently engaged EpiX Analytics to develop risk assessment tools and models to help them analyze both the risks and potential rewards of pursuing a variety of different partnership agreements and business models.

WHAT EPIX ANALYTICS HAS DONE

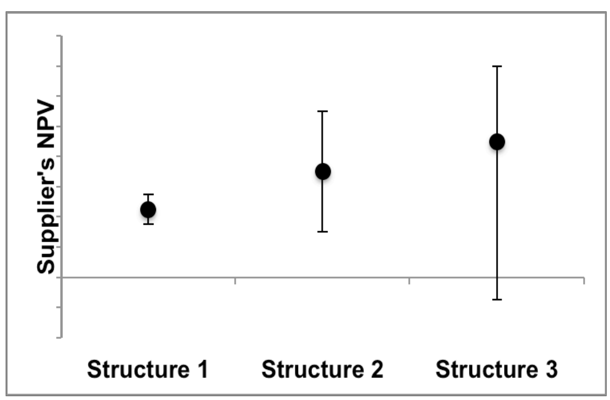
The first step EpiX takes in analyzing these questions is to work with our client to gain a good understanding of the main risks and uncertainties that impact the financials of the opportunity in question. This is important since it guides us in how we design and build the decision model, typically but not always, a financial profit and loss (P&L) model.

The next step we take is to build a stochastic or 'risked' P&L model that incorporates all identified risks and uncertainties and - *critically important* - all relationships between the risks. Risks can be wide-ranging but often include R&D uncertainties, market size, competition and market share, legal landscape, costs, and timelines. Once the financial returns and risks are incorporated in the P&L model, we then "overlay" the various relevant partnership agreement structures or business models, resulting in a full stochastic risk analysis of each alternative structure. A great strength of this approach is that the results include risk and decision insights on both the individual strategic opportunity as well as various agreement structures.

Going back to the example above, let's say you're a supplier of a specialized machine component and you are discussing a new supply contract with a potential partner. What partnership agreement should you negotiate: a simple cost plus markup or an agreement in which you share the cost of development but in return you get a share of the machine's profit margin?

The figure below shows just one example of results of the analysis for this supplier under three different agreement structures. In this figure, the dots represent the 'risked NPV' and the error bars show the amount of risk under each structure.

Which would you choose? Any one of these could be appealing depending on how risk averse you and your potential partner are, what the individual risks are and how they are shared with your partner, and how much risk the rest of your product portfolio has.



BENEFITS TO OUR CLIENTS

The case study above is but one example of agreements that share in risks and rewards. They are found in many other places such as:

- Product development agreements
- Marketing and distribution agreements
- Private equity and venture capital investments
- Joint ventures
- Heavy investment projects like pharmaceutical R&D and energy infrastructure

Getting the right partnership agreements in place with the right risk/reward tradeoff is crucial. A poor agreement can result in leaving money on the table, poor performance, or worse. Using quantitative risk analysis to analyze alternative agreement structures and business models can provide the right insight for decision makers. It has helped our clients not only understand how much risk they have but also has helped them negotiate to get the right level of sharing of risk and rewards with their business partners.

TECHNIQUES & METHODS USED

- Monte Carlo simulation
- Various distributions, including the Bernoulli, Pert and Discrete
- Modeling relationships
- Assessing confidence levels
- Communication of risks and opportunities

MORE INFORMATION

⇒ Pharmaceuticals and Medical Products white paper

⇒ ModelAssist® for @Risk®

⇒ ModelAssist® for Crystal Ball®

⇒ Testimonials

ABOUT EPIX ANALYTICS

EpiX Analytics, LLC is a leading firm specialized in probabilistic and optimization modeling. Using our analytical expertise, we help private and public institutions worldwide to make decisions in the presence of uncertainty.

EPIX ANALYTICS
Sound answers for complex decisions

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