

Strategy@Risk Ltd

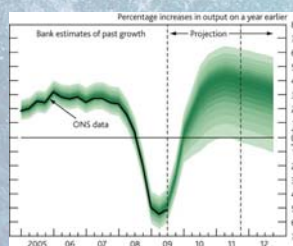
*Risk-Opportunity Based Management achieves a sustainable increase in enterprise value over time.
It represents an important tool for planning as well as for performance measurement and for controlling purposes .*

"S@R has set out to create models that save our clients time and money. Our models can give answers to both deterministic and stochastic questions, by linking dedicated ebitda models to holistic balance simulation taking into account all important factors describing the company. The basis is a real balance simulation model – not a simple cash flow forecast model."

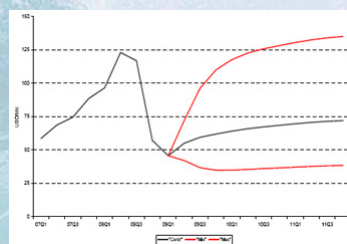
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The many sources of uncertainty and risk

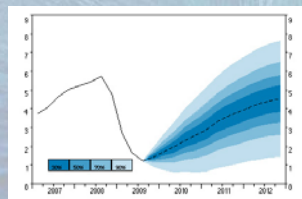
GDP



Oil prices



Interest rates



Expected oil price



etc.

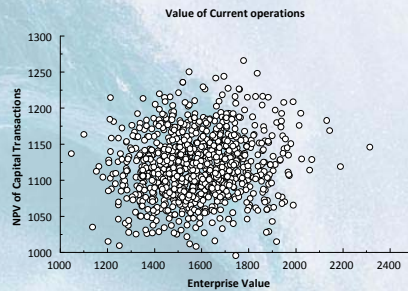
The Face of Uncertainty and Risk

Investments or M&A always carries risk of further not anticipated capital outlays – incurring more debt or equity or both.

The inherent uncertainty in the project, operation or field of business will determine the risk of having to put up more money.

The NPV of all future gross capital transactions gives a picture of this risk having to infuse further capital without increasing the company's value.

Every circle on the next graph is a possible situation where the company needs more money and that is not only for the initial investment



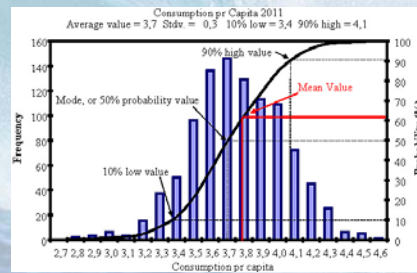
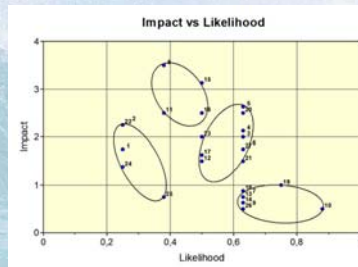
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From Risk Mapping to Risk Calculation

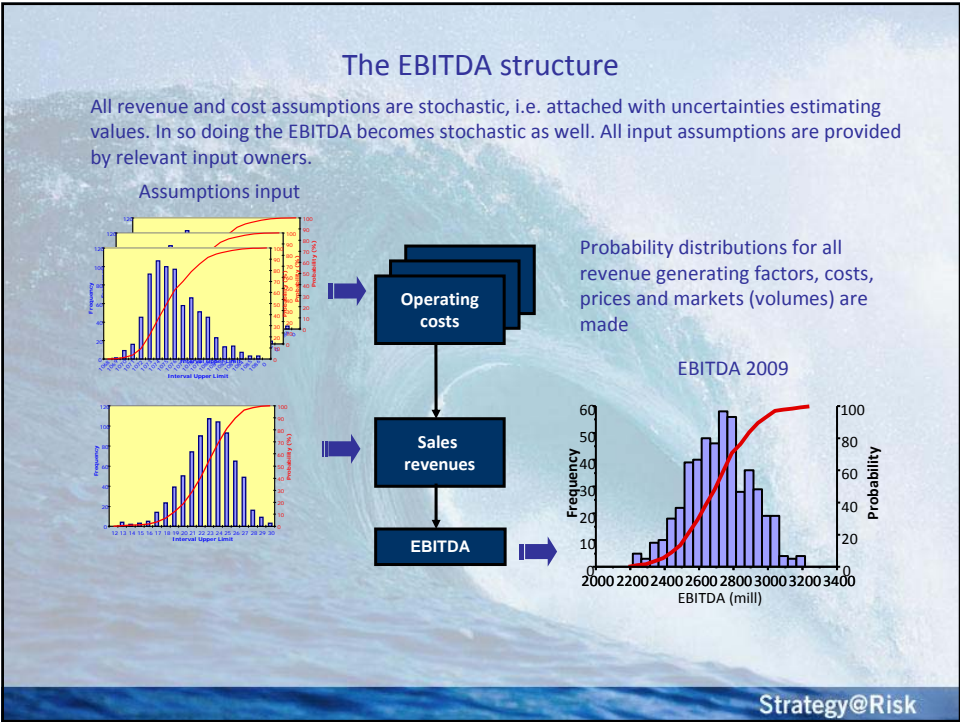
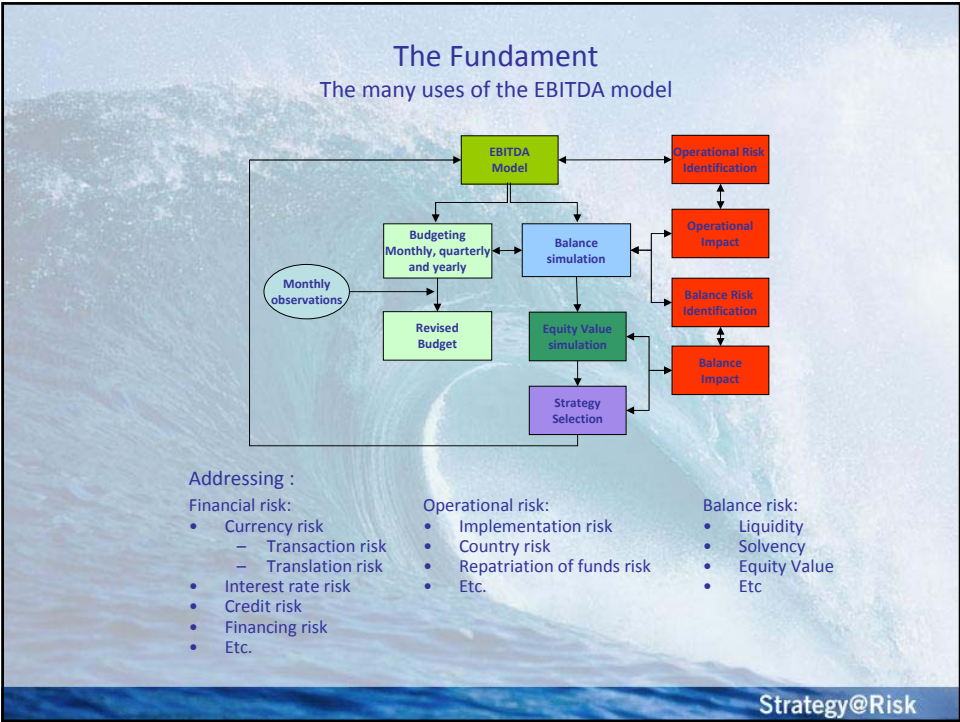
Risk mapping will give you an partial ordering of single risks:

<http://www.strategy-at-risk.com/2009/10/19/where-do-you-go-from-risk-mapping/>

Risk simulation will give you a quantification of the joint risks impact on critical variables like profit, equity value etc.



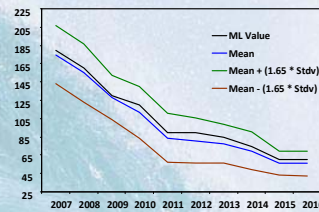
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Tweaking the EBITDA Distribution

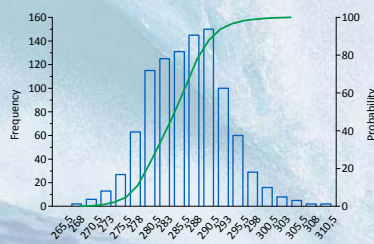
There is an expectation that Error Rate will decrease thru more operator training in the next years. Average Errors per 1000 units produced is 174 in 2007. With an 80% probability Error Rate will be between 149 errors (10% low case) and 197 errors (90% high case). The value distribution curve is skewed, and the curve has a left tail indicating an expectation towards an upside (lower Error Rate)

Error rate (errors/1000 units)



Using energy contracts to change the shape of the cost distribution

Mill Gate Cash Cost (USD/t)

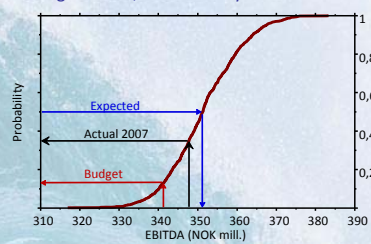


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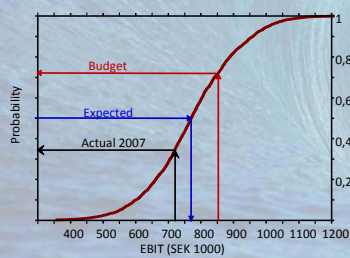
The EBITDA model used for Budgeting

Budget and simulation forecast are they close or far off the actual result?

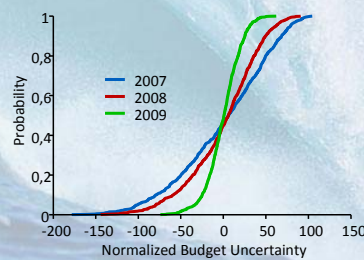
Budget to low, but relatively small deviation



Budget to high and large absolute deviation



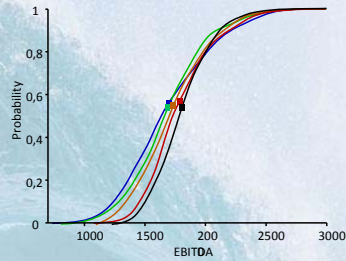
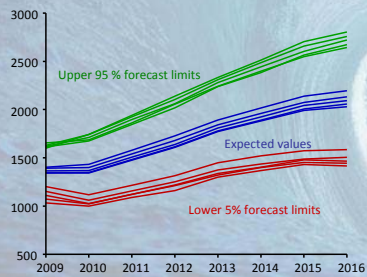
The learning effect – Steeper curve: decrease in uncertainty



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Following the monthly development Probability distribution for EBITDA 2009

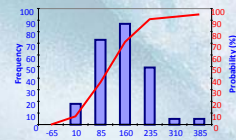
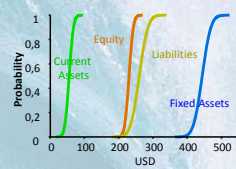
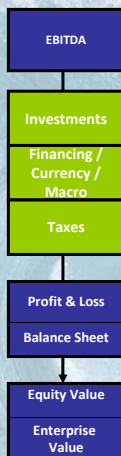
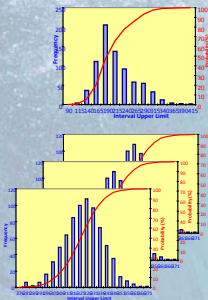
After being updated successively with new monthly data pr. 1/01, 1/02, 1/03, 1/04, 1/05 etc.



Taking into account the last months actual results we can upgrade the long term forecasts

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P&L and Balance Simulation



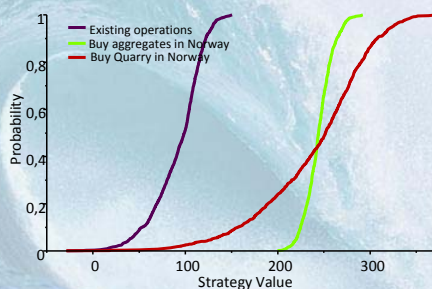
In the S&R framework all items, whether from the profit and loss Account or from the balance sheet, will have individual probability distributions (pdf). These pdf's are generated by the combination of pdf's for the factors of production.

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How to take advantage of the model? Analyze and compare strategic decisions!

If you are looking at investing alternatives or contemplating possible M&A, the Equity Value distribution's:

1. Location will give an absolute ranking of alternatives
2. Shape will give important information on risk and opportunities
3. Together they give all necessary information for selecting the dominant alternative.



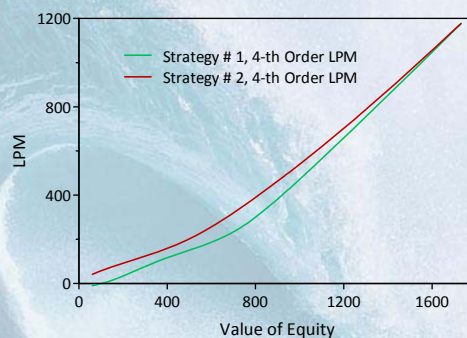
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Which is the Best Strategy?

Selecting between strategies is best done looking for the strategy that is stochastic dominant.

This will give the best strategy regardless of type of distributions: EBITDA, Equity value etc.

Here lower partial moments is used to prove that strategy #2 always is best for the share owners.

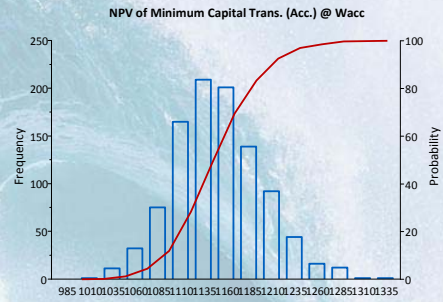


¹<http://www.strategy-at-risk.com/2009/07/22/selecting-strategy/>

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Capital Requirements

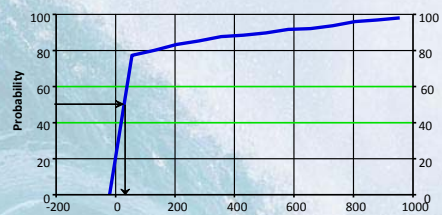
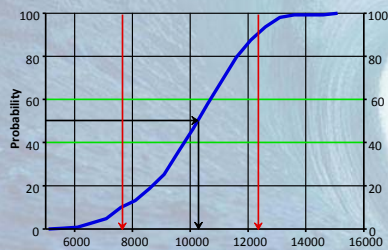
- The cumulative Debt and Equity transactions and their yearly probability distributions over the simulated time period forms the foundation for financial planning
- They will give confidence intervals for future capital requirements for both Debt and Equity
- They will also form the basis for contingency planning – if series of probable but not likely events should manifest capital requirements in the right tail of the distributions



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The uncertainty of necessary Debt and Equity

NPV distribution of Equity Transactions (mill. \$)



NPV distribution of Debt Transactions (mill. \$)

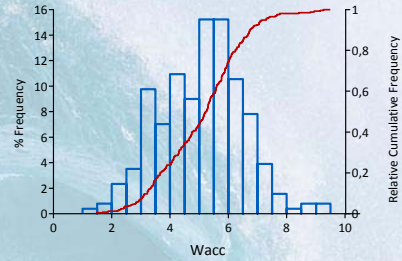
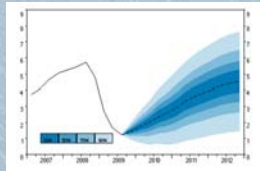
Do you need a contingency plan?

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Correct estimation of WACC is important for pricing of capital

Wacc is a stochastic variable thru volatility in earnings, interest rates, exchange rates, expected return to equity etc:

Mean 5,08
 S.D. 1,43
 Minimum 1,44
 Maximum 9,26
 Lower Confidence Limit of Mean 4,90
 Upper Confidence Limit of Mean 5,25



This is a by product from the S&R simulation model

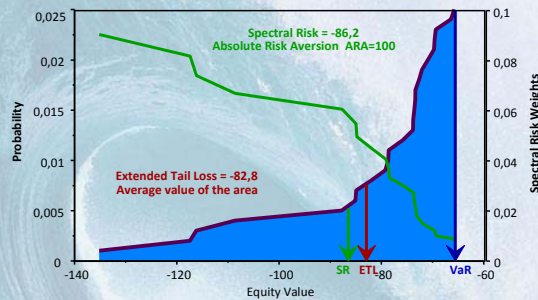
Most WACC calculations uses book values for debt and equity and fixed WACC for the next 3-5 years. Correct WACC can only be found thru simulation, solving for market value weights differing from period to period.

<http://www.strategy-at-risk.com/2008/09/08/the-weighted-average-cost-of-capital/>

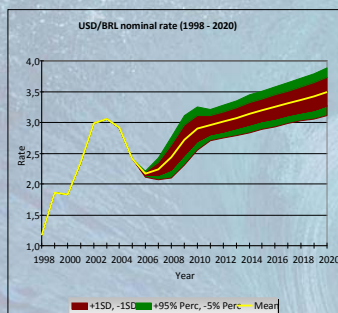
Measures of Risk – The Downside risk

Risk can be measured:

Having the risk profiles (value distributions) a number of risk measures can be calculated ... giving both Board and Management background for decisions



Currency and Translation Risk



Currency Effects

Agio /Disagio from Operations:

Currency effects on cost
Agio /Disagio on cost
Currency effects on sales
Agio /Disagio on sales

Financial Agio /Disagio:

On Debt balance
On Debt interest payments
On Debt repayment
Tax Effects of Agio /Disagio
on Interest payments

Balance Sheet Effects:

Domestic or Functional
Currency
Translation Effects
Valuation Variation on
Debt and Assets
Translation Hedges

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What results can you expect?

- Strong fundament for forecasting and improving income, cost and results
- Reveal, understand and better control uncertainties in operations and financing.
- Better fundament for choosing the right investment. Understanding the effect of investments on entity.
- Strong decision making tool for analysing alternative strategies pre- and post.
- Increasing income through optimizing cross-border financial/hedging opportunities and tax regimes.
- Our tailor made models provides a tool that makes you capable of estimating and comparing results of investments, operations as well as alternative strategies at the planning stage - taking into account the third dimension - uncertainty/risk..
- As you get more information about your risk and uncertainties, as you face new strategies/investments/operations that needs to be analysed, compared, and assessed - we can further develop the model according to your needs.

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Deliverables

- State of the art analysis incorporating all risk and uncertainty factors
- Complete and correct simulation models based on full accounts, financial and strategic regime, full cost and income structures
- Analyzing full effect of strategies on project level as well as consequences for entity/group
- More than 60 different financial reports
- Recommendations and conclusions on designated topics
- Full visualization of findings and results
- Tailor made simulation model for client use – or standard industry models
- Complete data sets for simulations

For an initial, no obligation discussion, please contact:

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