Tactics for dealing with awkward capital markets

If you conclude that markets are over or undervaluing a business there are various tactics available:

- Make hedging transactions in equity, debt or other tradeable commodity markets to counter-balance the risk of over paying or being paid too little.
- Close the gap between NPV and market price:
  - Educate, Communicate and Signal
  - Change the number of buyers and sellers
  - Re-structure the deal
  - Change the deal process
  - Improve performance by changing the business or corporate strategy
- Ultimately, if you cannot close the gap you may need to follow capital markets logic, even if means going against business and value added logic

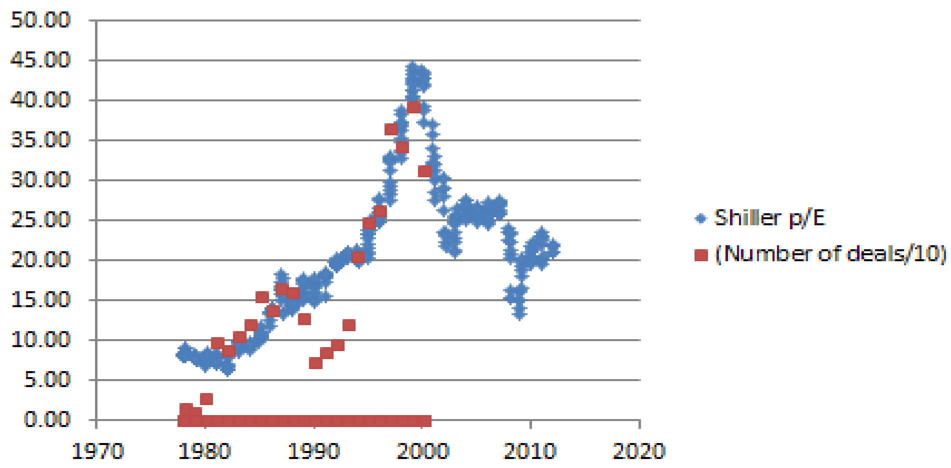
The following does not provide an exhaustive description of all tactics, but is intended to indicate the range of possibilities and the benefit of careful and creative thought.

Make Hedging transactions in equity, debt or asset markets

The first thing to say is that it is extremely difficult to spot when overall capital markets are over or under priced (although research suggests that managers think they can). Therefore, the tactics here are not so much to take advantage of mis-pricing in capital markets by "buying low" or "selling high", but to make it easier to buy businesses in markets with high multiples, or sell in markets with low multiples by hedging the transaction in an appropriate fashion.

When capital markets are priced at high multiples

A common strategy is to issue stock and use the proceeds to buy companies – or buy with stock. Even if you do not believe you can out-guess the market, this approach can be used to reduce the risk of overpaying. This tactic appears to be common. Peaks in equity market prices correspond to periods of intense M&A activity e.g.,[i]



That managers use over-priced paper to make acquisitions is borne out by further research that suggests that bidders have higher valuations than targets. This is particularly the case when the bidders offer shares rather than cash.[ii] Overall, when equity markets are expensive, the companies with the highest valuations issue cheap paper to buy less highly valued companies.

For example, in early 1987 one of the authors, was working as a consultant for a major UK strategy consulting company. His assignment was to create a valuation model for a UK retailer seeking to buy a US company. The UK company concluded that the opportunity was attractive strategically. Business logic suggested that the opportunity was attractive, as the industry growth rates were between 20 to 30% a year and the target was the third largest competitor in the US. The UK company was able to add some unique value to the acquisition as it was much bigger than any US player, and had significant purchasing power with suppliers in the Far East. It also thought it could transfer some of its merchandising and marketing skills to the US.

After several weeks of hard analysis a range of values was created – with the highest NPV requiring the client's plans to work out perfectly and without any negative events. However, the way the bidding was developing it was clear that the winning price would be even higher than this NPV.

The problem was partly due to stock markets being at a high multiple. The Schiller P/E was at a relatively high level and was continuing to climb (unknown to the participants, it was just before "Black Monday" in 1987 when global stock markets crashed 30% after an effervescent few months). The UK company's management believed their stock to be at a very high level with a lot of expectations about future growth already baked in.

The UK company, faced with these issues, wanted to enter the US market but recognised the high price they would have to pay – a price that could not readily be justified. So, they paid for the acquisition by issuing more of their over-priced stock, in the form of convertible warrants. Upon announcement of the deal their stock price rose despite the very high price they had to pay. Even when the deal failed to deliver the NPV suggested by the acquisition price, the losses did not create any cash losses for the company (although, of course they did impact the shareholders who saw a decline in their shareprice).

A variant of this, used by "corporate raiders" and restructuring firms such as the old Hanson Trust or more some modern Private Equity companies, is to <u>sell off some businesses at high multiples to partly balance off the cost of an expensive acquisition</u>.

Another strategy for buying in high-multiple markets is to <u>target sectors that are consistently under-valued</u>. For example, UBM is a company that organises tradeshows and provides marketing services, information and media products and services. It has grown through acquisition and chosen to serve specialist communities such as the jewellery or footwear industries, avoiding more high profile sectors such as IT – which have a lot of competition for acquisitions. Another example is Coors, which targeted struggling breweries partly because they could be acquired very cheaply. In such segments, acquisitions are more moderately priced, allowing greater potential for value creation.

High and low multiples in debt and other markets

<u>Sometimes it is debt rather than equity markets that offer arbitrage opportunities</u>. For example, private equity companies were able to outbid many corporate bidders prior to the 2007 financial crash partly because they financed deals with high levels of cheap debt, increasing the NPV and IRR for the equity holders.[1] For example, when Unilever decided to sell off Bird's Eye, a frozen foods company, the winner was Permira, a private equity company. One of Permira's main rivals in bidding for Bird's Eye was Kerry Foods. However, Kerry Foods is a traditional PLC and does not usually use high levels of leverage to finance deals.

It is not only equity and debt markets that fluctuate. <u>Other markets for tradeable commodities have price cycles</u> – offering opportunities or challenges. For example, property companies have to deal with high and low property prices at different stages in their price cycle, mining companies have to deal with high and low prices for mines. The tactics described above can be adapted.

For example, a property company may want to acquire another property company at a time when prices for such companies are very high. One option is to acquire the company and fund its purchase by selling off some of the companies land bank (assuming that this is trading at a high price also). Similarly, a property company could sell a business unit at a low point in the

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[1] (assuming that the cost of capital was not adjusted upwards, as perhaps it should have been in hindsight).

property market cycle, but use the money gained to acquire land, as it will also presumably be available at a low price.

Similarly, a power company might want to acquire a power station but find that it is trading at a high price because electricity prices are trading at a high price. A common practice is to contract out the output from the power station at fixed prices for up to 20 years to hedge its risk.

What happens when markets are not generally at historically high or low multiples, but the price of the particular business you are considering is particularly high or low? In such cases, a number of other tactics are available.

Tactics when selling businesses in low multiple markets

The flip side of issuing equity in high multiple markets is, when selling in a low multiple market, to use the proceeds to buy up (low multiple) stock, or to sell for (low-multiple) stock rather than cash. Similarly, the other tactics that can be used in a high priced market can generally be used when wanting to sell in a low priced market (see chart summarising hedging strategies).

Some of these tactics may be difficult to pull off. For example, at the time of the internet book many traditional companies tried to increase the market price of their businesses by bolting an internet business onto their traditional business. For example, Whirlpool tried to sell domestic appliances over the internet and make smart appliances that used the internet in some way. But, it was a hard sell for investors![iii]

Hedging tactics

Note: the "market" could be for equity but may be for debt or even another tradeable commodity associated with the business e.g., land for a property company, electricity for a power company or minerals for a mining company

If you want to buy or hold a business when market prices are high	If you want to sell a business when market prices are low
Issue equity or debt or sell other tradeable commodity e.g., property	Buy equity or debt or other tradeable commodity
Buy business with stock or debt, or in exchange for tradeable commodity Variant: Buy business and issue sell-side contracts for tradeable commodity e.g., contracts to sell	Accept equity/debt/tradeable commodity as payment
Sell off pieces of the business at high prices, keeping the core business that you value	Buy other businesses at low prices
Target lower price segments of the market	Try and re-position your business into a more hot sector

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Closing the gap between NPV and Price

So far we have discussed situations when the market as a whole is priced at a high or low level, and a set of tactics that can be used to hedge your position if you think there is a significant probability that the market may re-correct at some time. (The tactics can also be used to make a profit out of a situation in which you think the market has got the price wrong – but this is a risky assumption to make!).

In other cases, there may be particular reasons, unique to the situation, driving a mis-pricing. These are covered in chapter 5 of the book under "Investment logic" and include:

- Differences in the information available to buyers and sellers
- The number of buyers and sellers
- The characteristics of buyers and sellers
- The nature of the deal and the deal process

In such situations there are a set of tactics worth considering. In general, as the seller controls the deal process these tactics are most available to sellers – but sometimes a buyer can have some influence.

These may seem somewhat "dark arts" to some managers. However, they are regularly employed to deal with specific situations. For example, UBS (a global bank) has a dedicated unit that specialises in selling businesses - the 'Exclusive Sales and Divestments Group'. From experience in carrying out over 270 deals, it has learnt how to get the best price for a client's business, even when there is a lack of 'competitive tension'. Internal analysis shows that in 30% of the deals, the winner paid more than 10% above the offer of the second bidder. In another 25% of their deals, the final winner raised its offer even though it was the only bidder.

Educate, Communicate and Signal to influence market prices

One tactic is to try and influence market prices by education, communication or signalling. This can be about how pricing works in markets where there is a pricing issue, or about individual businesses when there is a problem with a particular business.

An example related to pricing in markets comes from the oil companies who faced a problem in bidding for oil leases. In the 1970s a group of managers at ARCO (a US oil company) published a seminal article on why particular assets or businesses can be overvalued. Observing that even sophisticated oil companies appeared to consistently overbid for the rights to drill for offshore oil, they suggested that the problem arose because there was a high level of uncertainty about how much oil was under the ground. A bidder with perfect information knows how much to bid. However, bidders do not have perfect information and so the winning bid was typically made by the oil company who had the most optimistic view of the amount of oil available. The result was lower returns than expected. This phenomenon, in which the market value of assets in some markets tends to be higher than their NPV, they termed the "winners curse".[iv]

The authors of the paper were not interested just in establishing their academic credentials. Educating and communicating the effects of the winner's curse (even by providing seminars for investors) reduced the chance of the irrational behaviour underlying the problem. Studies reveal that the problem has reduced since the problem was made public – companies bidding for oil leases now appear to bid below what they think the value is worth, reducing the risk of suffering from the curse[v].

Sometimes the problem is not in the market and pricing mechanism, but asymmetric information – where the buyer and seller have different information they may well up with different estimates of the value. For example, companies may own attractive businesses and believe that the stockmarket does not recognise the full value of that business. One option is to <u>provide more information to increase prices</u>. Companies who want to sell a business often go on a roadshow to market their businesses – a simple way to communicate more information.

Information may not be compelling enough to change the minds of buyers or sellers, but it may be possible to <u>make the information more credible</u>. Take the example of a rapidly growing airline that wanted to divest its internal catering company. It needed to restructure this company to provide an improved catering service, but decided that it needed to focus on running the airline. Unfortunately, when it sought initial offers for the catering business the price it could get was lower than the NPV of continuing to own it. The reason was that buyers saw the deal as particularly risky. Although the airline intended spending more on catering per head, and with an increased number of passengers, potential bidders were not convinced that this would materialise. This was addressed by the provision of a three year contract as part of the deal, guaranteeing the purchaser a steady stream of business. This change to the deal was complemented by sharing the airline's strategic plans with potential buyers.

A more extreme solution, for use when the mis-valuation is likely to be permanent, is to <u>sell off or float a portion of the business</u>. For example, when Tesco wanted to divest its Japanese operation to Aeon it was in a very weak position to negotiate a good price and the future value of the business was unclear. So, instead of selling off at a low price, it divided the deal process into two stages. In the first stage it sold 50% of the business, with the intention of selling the rest at a later date. This allowed the buyer and seller, who had different views about the value of the business, to reach an agreement. If the business performs well, Tesco will be able to get a better price for the remaining 50% share.

In more extreme examples, the business can be set up with a separate stock market quotation, yet still be majority owned by the existing parent company. This was the solution for many mining companies that owned gold mining businesses. Gold mining companies traditionally had market capitalisations higher than their NPVs. A company, like Anglo American, that for many years owned a gold mining business, maintained a separate stock market quotation for this business. In another industry, the oil company ARCO floated its petrochemicals business. One of the goals was to make information about the separate business more transparent.

The same can be done for private deals – selling off a portion of the business to a buyer who can then buy the rest later, when differences about valuation are resolved. Similarly, a buyer may want to buy only a portion of an expensive business so that they can buy the rest at a time when the real prospects for the business are clearer.

Change the number of buyers and sellers

For sellers it is helpful to increase the number of buyers. For example, a mining company wanted to dispose of a combined smelter and cast house (a facility in which the metal from the smelter is cast into semi-finished products). Unfortunately there were very few interested buyers. Relatively few companies wanted to purchase the combined smelter and cast house. The problem was made worse because the smelter had committed to buying electricity from the local power utility at a high price.

To deal with the situation, the mining company re-structured the deal into three separate businesses. The cast house could now be sold to a company who wanted to use their own metal as an input. The power contract for the smelter (a commitment to buy electricity at a fixed price for a 20 year period) was sold back to the utility. The smelter was left as an independent asset that could be sold or, if the reserve price was not reached, shut down. Un-bundling the business into separate parts turned it into a more saleable proposition, by opening the deal up to more buyers.

Private equity companies, who often "buy to sell" actively seek to increase the number of buyers who might be interested in their disposals. To do this they employ a number of tactics, including:

- Roadshows to advertise their businesses to potential acquirers who might not otherwise be interested – for example, promoting European businesses to American buyers who might otherwise have overlooked them
- Playing up the threat of selling to a competitor who could use this entry point to attack the targeted purchaser
- Seeking out "strategic" buyers who, unlike "financial" buyers may value the business on more than its projected cashflows as a standalone entity
- Ensuring that investments in the business to be sold will make the business attractive to a wide number of potential future buyers, even if this means not fully optimising the business as a standalone entity. For example, they might avoid investing in a global distribution system if that would be duplicated by some potential buyers. They might increase investment in products which are unique to the business and which several acquirers might value particularly highly. In other words, they may shape the business strategy to maximise the number of buyers, even if this does not optimise the standalone value of the business
- Timing their disposals to ensure that there are the maximum number of buyers looking to buy

For buyers it is helpful to have fewer buyers as competition. For example, companies can form consortia to make large acquisitions. As well as allowing each party to acquire the pieces it is interested in, it can reduce the number of buyers (if legal). Warning other buyers off (again, if legal) is an extreme version of this. An extreme example comes from the US airlines industry. Following deregulation in the 1980s US Airways, the number three in the industry, went into bankruptcy and became a target for acquisition.

American Airlines and United Airlines were co-leaders of the industry. If either of them had made a bid for US Airways, the other would have been forced to have responded because allowing the other competitor to build that much extra share would have been very detrimental to the losing competitor. The market price for US Airways could have been bid up to a point where it was highly over-valued, even after accounting for synergies. Bob Crandall of American Airlines issued a statement saying that "American Airlines will not bid for US Airways, although if a competitor seeks to acquire it then we be forced to reconsider our options." By doing so he signalled that United had best steer clear of making a bid for US Airways. His initiative was successful, not only reducing the risk of an over-valuation of US Airways, but leading to there being no buyers (the ideal solution for American and United).

Restructure the deal

Sometimes it is necessary to restructure the deal to get a better price. Some examples have already been mentioned above – because they are aimed at improving communication or changing the number of buyers and sellers. Tesco sold a portion of its Japanese business so that the buyer could get more information about the true value before agreeing a price for the full company. A mining company divided a business into three parts to increase the number of buyers. So, restructuring the deal is often part of communicating information or increasing the number of buyers.

Restructuring a deal might also be used to change the nature of the buyers and sellers – or at least their behaviour. For example, suppose you wish to sell a business but it will not generate a high enough price. If you can acquire or partner with another business, you may make the acquisition big and interesting enough that it creates more pressure on potential buyers to bid.

More generally, restructuring a deal should be considered as a way of addressing the root causes of the mis-valuation.

For example, suppose that you are acquiring a business where the current owner has a higher expectation of future performance and price than you do. The minimum price they expect is higher than your NPV. A common approach is to use an "earn-out formula" to structure the deal. This is sometimes used when buying a business off its founder. The seller will value the deal at a higher NPV than the cost to you as a buyer, because they have more optimistic assumptions.

Another example is how oil companies developed strategies to deal with the winners curse. Researchers have shown that firms employ a variety of tactics to deal with this, some of which involve structuring the deal, by including a royalty payment, so that the cost of bidding too much is reduced. The seller can be willing to do this because it reduces the risk of over-paying, encouraging the bidders to bid higher.[vi]

Another example of structuring a deal is when a large company wants to dispose of a business through a private sale, but worries that this will result in them achieving too low a price for the business. They may choose to sell only a portion of the business initially, and sell the rest when the new private equity owner sells the business on at a later date.

Redesign the deal process

Another approach is to change the deal process whereby buyers and sellers interact to generate a price for a deal. A well-researched market in which modifications to the deal process can influence price is that of auctioning mobile spectrum[2]. For example, the UK government had a challenging task when seeking to auction off 3G telecom licenses to maximise revenue, promote competition and encourage efficient usage. Existing 2G spectrum owners faced much lower risks in bidding and thus it was unlikely that new entrants would bid if there was a traditional auction. Just five licences were up for sale – and there were four incumbents.

The potential for the incumbents getting a great deal, at the expense of the government, was very high. For example, in a disastrous spectrum auction in November 2000 in Switzerland, in which exactly four strong bidders were bidding for four licenses in an open English auction (i.e., where there is a starting price, and bidders can bid anything above the starting price until all but one bidder drops out), the bidders got the licenses for a steal, paying less than one-thirtieth the price companies had paid for similar licenses in Britain just months earlier.

How did the British design differ? Economists proposed an auction approach based on the successful model used by the FCC in America. The auction had multiple rounds. In each, bidders were able to bid on any of the 5 licenses available, although, if they were the top bidder on one license in the previous round they could only bid on that license. Bidders would be dropped out of future rounds out if they were not either the top bidder on one license or had raised the bid on another license by a minimum amount. When an auction finally had only one bidder, that bidder would acquire that license and withdraw from any other activity in the auction.

This gave bidders an incentive to be active and keep bidding (or to be the highest bidder) in order to make it to the final stages. Furthermore, they always had an incentive to bid on the license where they saw the biggest gap between the value

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[2] Although this is not a business, the auctioning approach described could be used to auction a divestment. The example of spectrum auctions is particularly interesting because of the very high amounts of money at stake and the public nature of the auctions.

to them and the current price. This resulted in an optimal distribution of licenses (to the best owner) and thus a high expected value. In the end, after 150 rounds, the auctions raised £22.5 Billion versus initial estimates in the media of £2-5 Billion.[vii]

For companies, the design of the sale process is important. There are potential conflicts between offering a business for sale very publicly (risking embarrassment if no buyer emerges) and negotiating a private sale (risking not getting a good price). This leaves plenty of room for being creative about approaches that seek the benefits of both approaches.

Overall, this review of examples should illustrate that there are many tactics – largely aimed at influencing market price. They are summarised in the exhibit below.

Tactics for closing the gap between NPV and price

Most of these tactics are easier to employ if you are the seller rather than the buyer. Some examples are included to refer back to the text

If you want to buy or hold a business but the NPV of owning is less than the price	If you want to sell a business but the NPV of holding is more than the price
Educate sellers or other buyers about the true value of what you want to buy • By explaining how prices may be too high e.g., Oil leases • By talking down the value of the target business • By buying only a share of the business, allowing different perceptions about future performance to be resolved	Educate the buyers about the true value of what you want to sell • By talking up the value of the deal e.g., road shows • By making that information more credible e.g., fixing future revenues by obtaining contracts • By floating a part of the business • By selling only a share of the business initially
Signal to other potential buyers to warn them off bidding e.g., AA warning United about the consequences of bidding for US Airways	Warn off other sellers of similar businesses
Reduce the number of buyers e.g., forming a consortium	Cultivate more buyers e.g., break the deal into more attractive packages, seek out "strategic" rather than "financial" buyers
Offer a particular deal structure that helps lower the price e.g., buy a segment of the business	Structure the deal to optimise the number of buyers, information flow, buyer behaviour, etc.
Try and influence the deal process e.g., by pushing for a private sale, offering to buy with an earn out	Redesign the deal process e.g., design the auction
Increase the NPV under your ownership by changing the business or corporate strategy	Increase the price others will pay by changing the business or corporate strategy

Improve the value generated by the business or corporate strategy

If you are having problems justifying owning a business, because its price is to high, a simple option to consider is increasing the NPV of owning the business by changing the business or corporate strategy. All companies will create a plan for how they can add value to an acquisition. Perhaps less common is to actively consider how to increase the value of a business you already own but which could be sold for a profit.

For an example, consider the case of a UK utility. It was a poor owner of its distribution business because it owned only one, offering little potential for economies of scale. It considered divesting the business, but the market for such assets was not very attractive at the time. Instead it acquired another distribution business that allowed it to generate more economies of scale and thus comparable value to other parents.

Another example: When a private equity firm approached the shareholders of WH Smith, a UK newsagent multiple, to buy out the existing business, it helped focus the minds of the board and management on creating a business plan that delivered more value to shareholders than the proposed bid.

The mirror image of this situation is when you are looking to sell a business but you cannot get a high enough price. There are tactics to increase the price others will pay by increasing the NPV they will get from the business. Again, a common tactic is to dress up a business for disposal by pushing for an improvement in profitability. But, some companies take more sophisticated steps. For example, as already described, some private equity companies pick investments not on the basis of the NPV to the business, but the NPV to buyers. So, for example, they may not invest in a roll out of global distribution if the most likely buyers already have global distribution. While the investment might add value to the business, it will not add value from the perspective of the new owner

Go against Business and Added Value logic

Ultimately, it may be that even if the strategic logic is strong, you need to bow to Market Value Logic. For example, this could mean selling heartland businesses, avoiding bidding for businesses you believe you can add a lot of value to, or acquiring a business that you do not think you are the best parent for, because it is significantly undervalued.

For example, consider the case of E.ON, the electricity utility. For many years it owned a significant power distribution business in the UK, along with other businesses in retail and power generation. It owned similar businesses in other countries. It considered itself to be a good parent of such assets.

But, in 2011 it elected to sell its UK distribution business, partly due to the high price it was able to obtain. Share prices were at a very healthy level (the Schiller P/E was at 22, not far below the level before Lehman went bust. Regulated UK assets were a "hot" sector. There were a variety of investors interested in the sector and E.ON's business – including Chinese investors, Warren Buffett, pension funds and its eventual owner, PPL – a US energy company[viii]. E.ON may have been encouraged to this because the previous year, EdF (Electricite de France) had sold its UK distribution business for £5.6 Billion, although initial expectations had been for something closer to £4 Billion[ix]. Arguably, E.ON was no longer the best owner – but the sale was partly driven by distribution being a hot sector.

In the case of the oil companies, facing the problem of the winner's curse, this choice might mean bidding less than what you believe to be the value of an oil property, to reduce the risk of suffering losses from the winner's curse. Of course, in the process, you will win less contracts.

Some private investors make capital markets logic a core part of their corporate strategy. For example, some investors buy assets such as refineries or power plants at the bottom of the cycle, trading on the fact that some large organisations will want to get rid of such assets if they are loss making, even at a price that does not reflect their long term value. Other companies try and buy and sell in the property markets including Grand Metropolitan in its early days (buying hotels because they were undervalued), and a current property company, where the state of the markets is regularly reviewed, to see if there are opportunities to buy under-valued (or sell over-valued) assets.

How to pick the right tactic

The previous discussion shows that there is a wide range of tactics possible for dealing with situations in which the decision about whether to buy, sell or hold based on the Business and Value added logics is in conflict with that suggested by Capital markets logic.

Picking the right tactic depends on the answers to three questions:

1. Are you trying to buy or hold onto an expensive business, or sell a cheap one?
2. What is the root cause of the high or low price i.e.,
    - General peaks or troughs in market prices,
    - Differences in the information available to buyers and sellers
    - The number of buyers and sellers
    - The characteristics of buyers and sellers
    - The nature of the deal and the deal process
3. Which of the various tactics, or combination of tactics, are suitable for the particular situation? The tactics (captured in the tables above) include:
    - Hedge equity, debt or commodities in relevant tradeable markets
    - Close the gap between NPV and Price e.g.,
        - Educate, Communicate and Signal to influence the market
        - Change the number of buyers and sellers
        - Re-structure the deal
        - Change the deal process
        - Improve corporate or business strategy
    - Follow capital markets logic

The combination of root causes and best tactics are wide and varied and probably only limited by human imagination. Therefore, we do not provide a highly prescriptive approach. However, some overall guidelines include:

- First, consider if the problem is an overall market pricing issue or specific to the business being considered
- If it is an overall market issue, then consider the various hedging options
- If it is a more specific issue then the "close the gap between price and NPV" tactics are more likely to be useful
- The root cause analysis will help focus the search. For example, if the primary problem is too few buyers then that will be highly suggestive of what tactics make sense
- A useful, if somewhat time consuming, discipline is to first diagnose the root causes, and then go through all the various tactics to see if they stimulate any different ideas. While only a few may be relevant, the exercise will ensure you have pushed your thinking as hard as possible

[i] Schiller p/E from http://www.irrationalexuberance.com/. Number of transactions (US takeover bids) from Does Investor Misvaluation Drive the Takeover Marke.

[ii] Does Investor Misvaluation Drive the Takeover Market? Working paper.

[iii] http://www.nytimes.com/2000/10/28/your-money/28iht-mocci.t.html Appliance Makers Angle for Net Profit, New York Times, October 28, 2000

[iv] Capen, E.C., R.V. Clapp, and W.M. Campbell (1971) 'Competitive Bidding in High-Risk Situations', *Journal of Petroleum Technology*, 23: 641-53.

[v] Empirical Implications of Equilibrium Bidding in First-Price, Symmetric, Common Value Auctions, Kenneth Hendricks, Joris Pinkse and Robert H. Porter

[vi] Strategic Analysis of Auctions, Working Paper, Robert Wilson, May 1990

[vii] The Biggest Auction Ever: The Sale of the British 3G Telecom Licenses, Ken Binmore and Paul Klemperer, The Economic Journal, 112 (March), C74-C96.

[viii] "PPL buys Eon's UK electricity network for $5.6bn", Financial Times, March 2nd, 2011

[ix] "Li Ka-shing buys EDF arm for £5.8bn", Financial Times, July 30, 2010