How valuation has evolved

Recently, I had to give a workshop on valuation to a group of very eager-to-learn professionals and students. However, due to the financial situation of the participants I was told that I have to do it without the use of computers. This shattered me. "Without a computer? How should that work?" But after the first gasps for air it dawned on me that somehow people managed to value projects and companies already before the rise of spreadsheets.

Have you ever wondered how people have performed valuations back then? It is worthwhile to spend some thoughts on that, as most textbooks, professors, and bosses still date back to those times.

Back in the stone age

Even a simple valuation takes easily 6 lines (say 1. Probability, 2. R&D costs, 3. Market size, 4. Deduced sales, 5. COGS and M&S costs, 6. Risk-adjusted and discounted cash flows) and 20 columns (years). These alone are 120 numbers to handle. Moreover, the discount factor can involve some rather arduous calculation; e.g. 1/(1+17%)^6 is not obvious to calculate in your head. Calculators certainly made the job a lot easier. Most of us remember the bulky calculators everybody had and which are easily outperformed by even the simplest smartphone nowadays. Out of the 120 numbers of the valuation some might be hard inputs and do not need to be calculated. But we might still be left with 60 numbers that actually require calculation. Of course, also in an Excel sheet we first have to set up the calculation. And for the purpose of assuring that the lines are correctly calculated we also need to do some work in our head. But it must have been enormously cumbersome to do the calculations. And given the work involved, there were three major consequences:

1. **Errors:** undoubtedly there are more possibilities for errors. Even though in a program or an Excel sheet we have to do the same calculations and can input a wrong formula, we can control it in our heads and then expand it. And the next time we do not have to recalculate again.
2. **Laziness:** it is not hard to imagine that when a recalculation takes another 30-60 minutes we are more opposed to do it than if it only takes a second. Therefore people tended to content themselves with one scenario instead of checking several scenarios and doing some sensitivity analysis. Of course, even today we often still base our decisions on one average scenario. But often the understanding and the way to this scenario depends quite a bit on scenarios that we run. And often we also get aware of hidden errors in the calculations by doing so (cf. point 1). Finally, if the value doesn't correspond to what we have expected, we can easily find out what the assumptions should be in order to come up with our expected value, and if that is realistic; by trial and error or goal seek. If you had to recalculate everything over again you might become much less fond of valuation. Sometimes discount rates, success rates, or sales estimates can have quite a range, and the values can differ quite a bit. If you don't end up in the right place the first two times you might quickly tend to say that

valuation is bogus and that you don't want to lose time with this sort of charlatanry.

3. **Short-Cuts:** Since recalculating and even calculating only once was so cumbersome, people have come up with a number of ways to make life easier. Quite a frequent one is dismissing valuation in general as a good thing, coming up with all sorts of arguments like it is error-prone, based on vague assumptions, and wrong anyway (cf. point 2). Another way was inventing some short-cut methods. These can take various forms. The most common is doubtlessly the several ratios, like price-earnings-ratio, or price-revenues-ratio. They indicate a value simply by knowing an industry-typical ratio and the earnings (or revenues) of a company. Another famous short-cut method is the terminal value, which prevents going too far into the future, but concatenates the whole future from one point in one value.

Businesses that really relied on heavy calculations like insurances needed to hire whole armies of people operating calculators. Almost all other companies based their decisions on valuations that don't comply with today's standards.

Out of the stone age?

Luckily, today we have better tools at hands. We do not have to roll over pages and pages of cumbersome calculations. Valuations actually have become more or less a commodity. Nowadays, we can program even spreadsheets in such a way that they can cope with very complex structures.

Unfortunately, not everybody is aware of the consequences. Analysts still forecast cash flows for 5 or 10 years and then apply a terminal value. This practice was maybe excusable as long as they had to calculate everything by hand, but nowadays we can easily include different sales curves, generic competition etc., which influences the cash flow profile further in the future than the valuation horizon of the analysts. The terminal value concept is good for back-of-the-envelope calculations, but otherwise out-dated. The same applies for price-earning and price-revenue ratios. One cannot seriously base his decision on such a rough figure without running the whole valuation for an M&A deal. Ratios might at best be used for benchmarking, but the reasons why our company is a bit different lies in the cash flows forecast. And the impact of these differences are measured by a detailed valuation.

Imagine a business professional in your position 20 years ago, being told to run a valuation. He would have wished to use the tools we have at hand today. He could have spent much more time on understanding the valuation, running sensitivity analysis, trying different scenarios, maybe even comparing licensing now and later, or considering a later trade sale. Now we only need to get aware that today we actually have all the tools we need to run a perfect valuation. But of course, we need to make use of these tools. Just like we don't use cruising liners anymore to go to a business trip overseas, we should also say farewell to those short-cut methods and out-dated prejudices.

Of course, there will always be people saying that valuations can be

tweaked and they do not contribute any insight in the business case of a company. But there are also people who still claim that the world is flat. Yes, valuations can be tweaked to some degree. But they can also be challenged. Valuation allows you to judge under which conditions a business case makes sense. Whether these conditions are realistic is something everybody has to decide on his own, this is not the valuation's fault.

Science and Opinion

Today the data is the largest problem, and sometimes information and assumptions are so vague that the valuation still allows for a wide range of values. But this is no excuse. It's as if a tennis match or a ski downhill race is not held because it's a little windy. It is the nature of valuation that the result is not scientific. The value is closely linked to what you – or the so-called "market" – expect the future to be. This is by definition subjective. Finally, there is no such thing like an "opinion of the market", there are only various opinions of individuals (who sometimes try to give their own statements more weight by adding phrases like "the market believes…" or "investors think…"). The assumptions and the result of a valuation, i.e. the value, are always an opinion and therefore discussable. But the method how to get from the assumptions to the result – yes – is scientific! And today we are able to very precisely translate assumptions into values. Just like we are able to measure pharmacokinetics and pharmacodynamics much better than 50 years ago. This, of course, means that no valuation can do without risk-adjustment; we need to use the information we have.

The New Age

Stand up against the ones that say valuation is too fuzzy or of no use. Actually, it is the best tool there is. Decisions must lead to profits. How else can you measure this than by valuation? If it doesn't make sense in the valuation, how else do you want it to make sense? Do not content yourself with flappy statements such as "there are profitable and strategic investments". Even strategic investments must make sense, and you must be able to explain why they make sense. Maybe the assumptions are more vague, fine. But if you cannot make it work in a valuation model, then don't do it. Next to those profitable and strategic investments (where the strategic investments should be a subgroup of the profitable ones), there is a much larger group of investments: the ones that you have never triggered; because you couldn't see how to make them work.

And how can you justify that in a high-tech industry like biotechnology the business side is still allowed to remain in the stone-age? Why should management be the last group that is allowed to rely on unproven intuition rather than analysis, arguments, and discussions? Applying valuation – and this means state-of-the-art valuation – is just good business practice.

By having read this manifesto you are on the right track to enter the new age of management. And by agreeing with it you are already almost there!