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P 1&2
JAL

Business Studies 2002

2. Explain the differences between
   a. Credit and debit
   b. Cash-flow and profit & loss statements
   c. Equity and debt finance
   d. NPV and IRR
   e. Asset and DCF based valuation
   [2 marks each]

   A certain small software company has assets of about £100K(not including development work-in-progress), and an average cash-flow of about £15,000 per month, with a net profit of around £2000/month. They are developing, but have not yet completed, a new graphical search engine into which they have invested about £100K of design and programmer time. The founders have invested about £150K, mostly in equity, and there is a long term debenture of £100K.
   Provide a range of valuations for the company. Include notes explaining your assumptions and the basis for each valuation. [10 marks]

Answers:

a. Credit and debit
Credit is to receive, that is money which is owed to the company
Debit is to pay out, that is money which the company owes.
Credit is usually on the left hand side of a ledger page, debit on the right

b. Cash-flow and profit & loss statements
A profit and loss statement shows amounts when the credit or debit is actually occurred, that is at the invoice date.
A cash flow statement shows amounts when the cash is actually received or paid out.

c. Equity and debt finance
Equity finance is money invested in return for a share of the company, usually in the form of shares.
Debt finance is money lent to the company, for example as a bond or debenture.
Certain classes of finance, such as redeemable shares, may have the option of conversion from equity to dept or for debentures from debt to equity.

d. NPV and IRR
NPV stands for Net Present Value; the sum of a series of values each discounted to the present day value

If n is the number of cash flows in the list of values, the formula for NPV is:

$NPV = \sum_{i=1}^{n} \frac{Value_i}{(1+r)^i}$ where r is the discount rate

IRR stands for Internal Rate of Return, the discount rate that for a given initial investment (or series of investments) yields the values in the series.

From the above formula it can be seen that given a set of values and an discount rate the NPV can be calculated, Alternatively, by iteration, given an NPV and a set of values the discount rate, or IRR can be deduced.

e. Asset and DCF based valuation

Asset based valuation values the company based on the value of the company's assets, such as physical assets and intellectual property. Discounted Cash Flow (DCF) valuation is based on an assessment of future cash-flow, discounted back to present values. A multiple, based on industry experience is then applied to the DCF figure to obtain an overall value. This multiple is typically 1 for software companies. DCF is used for early stage and high growth companies, where eventual profitability has not yet been established, and so DCF is a more reliable measure. It makes the assumption that eventual profitability will be around the industry norms.

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Provide a range of valuations for the company. Include notes explaining your assumptions and the basis for each valuation. [10 marks]

Low end: Asset based valuation:
£100K assets, less £100K debenture: £0

Going concern basis, discounting future developments:
Based on cash flow:
£15K/month is £180K p.a.: Assume a multiplier of 1 gives £180K.
Based on profitability:
£2k/ month is £24K p.a.. Assume a P/e ratio of, say, 15 gives £320K

Valuing search engine development:
Valuing future development is difficult. At best it is educated guesswork
The problem is estimating future profitability from the development. Since the development is something new, it is not clear what if any market there will be for it. Thus at one end it has negative value – the cost it has taken to develop.

As a going concern one valuation is the cost of the work so far, as an asset, essentially the cost for a competitor to reproduce the work, that is £100k.
A new and better search engine has the potential to be very valuable, for example to attract millions of hits per day, with the potential for directed advertising. Thus optimistically there is potential for revenue of the order of millions of dollars per day, and so a valuation of hundreds of millions of dollars. To get to that position will be very hard work, and need significant investment and effort to overcome the existing players established in the market, such as Google. However, in view of the great uncertainties whether this can be achieved, and without better data on it's the liklehood of success, it would be unwise to value on this basis at this early stage.

Since the majority of this development and marketing effort is still to come, in the absence of any further information, a reasonable valuation is the cost to date, giving an overall valuation for the company of perhaps between £300K and £400K, depending on optimism, market conditions and whether one is buying or selling.