

## Valuation of Start-ups: Part II

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This issue deals with valuation of pre-revenue companies. We define a pre-revenue company as one, which has already completed prototype and obtained customer validation. The company may or may not have some revenue. The fact that the company has produced prototypes/proof of concept implies that ideation stage is over and customer validation further demonstrates that the product/service will have commercial acceptability. Investment in such an early stage is highly risky. Therefore, angel investors at this stage will only seek scalable investments- companies that can grow revenues very fast within five to eight years. The potential to scale up operations at a greater pace in early years depend solely on the quality of founders and the leadership team.

There are two popular methods to evaluate a pre-revenue company: *the scorecard method* and *the venture capital method*.

#### **The Scorecard Method**

This is a qualitative framework to evaluate fundability of a start-up that has no or a few small-ticket customers. At this stage of a start-up, it is impossible or futile to judge its viability on the basis of financial projections. The scorecard method, therefore, relies on broad factors that are essential for the success of a business plan. This method tries to raise relevant questions to evaluate size, scalability and sustainability of a business. The questions posed should be as objective as possible so that a score can be assigned to each question. Decision to fund a start-up at this stage depends on the overall score obtained. A prospective investor may have a threshold score to fund any early stage start-up. Start-ups securing a higher score would have greater probability of funding.

An early-stage investor evaluates a pre-revenue company on the basis of the following criteria: (a) strength of the management team; (b) size of the market opportunity; (c) level of competition; (d) implementation plan; and (e) funding required. Each criterion will have weights ranging from highest (25-30%) for the management team and lowest (5-10%) for funding requirements. An investor will design several questions for each factor (criterion) and assign marks/scores. For example, founder's experience and willingness to step aside for a new CEO, if necessary, could be important questions to evaluate strength of the management team. Often an inventor may be the bottleneck for scaling up of operations. The innovator may have great knowledge of the product but very little idea about how to run an organisation or even how to take the product to the market. In such a situation, any prospective investor may insist that the funding may be conditional on the founder's willingness to hand over the operational responsibility to a professional CEO. If the founder is unwilling, that may turn out to be a deal killer. On the other hand, if the founder voluntarily makes such a transition a key part of the business plan, the investor will be impressed and put a higher score. Similarly, size of the specific market and potential revenue in five years could be relevant questions for understanding the size of the market opportunity. If the market

opportunity is small, no investor may be interested in the business even if it has a great team and product.

Table 1: Illustrative Scorecard

Criteria/Factor	Weight (%)	Remarks
Management Team	25-35	Founder's experience, completeness of the team, possibility of hiring a CEO
Market Opportunity	15-30	Size of the market, expected revenue of the company in N years
Level of Competition	10-20	How many competitors, strength of competitors, barrier to entry, patent/copyright
Implementation Plan	5-15	Stage of business- prototype or proof of concept validated? How many users?, Sales channel
Funding required	5-10	How much funding is required?

If the product or service is patentable and the founders have obtained necessary patent, it increases the entry barrier. A higher entry barrier would reduce competition in early years of the venture and such a start-up should be able to attract funding. Implementation plan of the business should be unambiguous and actionable. An important factor at this stage is to identify sales channel that can support the projected growth. If product facilities are required, the founder should be able to clearly state whether production will be outsourced and vendors are identified. If production were to be done in-house, a related question would be whether land is available and how long will it take to build the production facilities. In the early stage, investors prefer that manufacturing is outsourced so that funding requirement is moderate. Finally, if the ask for fund is high at pre-revenue stage, chances of getting positive response from prospective investors are remote. Funding up to \$1 million may be available at this stage if the overall score is high. If the requirements for fund are higher, it is quite difficult for a start-up with no revenue to generate enough interest among early-stage funders.

### **The Venture Capital Method**

The venture capital (VC) method is an optimistic method, which only considers successful scenario of a business. It is used at a stage where the start-up has clocked some revenue to demonstrate that its product/service has market acceptability. The VC method assumes that the start-up, it is considering for funding, will be successful. It asks the entrepreneur to predict the revenue of the business at the end of five or seven years. It, therefore, assumes that the business will survive till such time and would generate the target turnover. Of course, the entrepreneur will have to justify the projected revenue and the investor would ensure that the number is not too optimistic. Typically, at pre-revenue stage, entrepreneurs show non-linear growth in revenue in early years on the assumption that necessary funding will be available and the management team would have the capacity to manage such significant growth rates.

Once the projected revenue is estimated, the VC method requires two more variables to arrive at the post-money valuation- the revenue multiple and an appropriate discount rate. Post-money value refers to the value of the firm assuming the enterprise receives the required funding. If one deducts the investment from post-money value, one gets pre-money value. The value of a firm in VC method with an exit after N years is given by :

$$\text{Enterprise Value} = \frac{[\text{Projected Revenue at the end of year N} * \text{P/S Multiple}]}{(1 + \text{IRR})^N}$$

The *revenue multiple* should be chosen in such a way that a fair value can be obtained. Here, the funder has to decide about an appropriate multiple. This would involve identifying comparable firms and their revenue multiple at present level. For example, if the start-up is an online food delivery service company like Swiggy, and Zomato, one needs to obtain the revenue multiple at which these start-ups have raised money recently. Swiggy's revenue in FY 2017 was reported at Rs. 133 crore versus Rs. 20 crore in FY 2016- registering a phenomenal growth in top line. Swiggy had raised \$80 million in May 2017 at a total valuation of \$400 for the company. If one uses the FY2017 turnover of Swiggy, this valuation implies a staggering Price-to-sales (P/S) multiple of 195! Swiggy has further raised \$100 million almost a year later (February 2018) at a valuation of \$600 million. So, the revenue multiple has gone up in anticipation of even a higher revenue growth in FY 2018. It is interesting to note that even when revenue grew by six times for Swiggy in FY 2017, losses too grew by 50% to Rs. 205 crore. It is clear that investors at early stage of a start-up fund growth and are not bothered about profitability. Swiggy's competitor, Zomato, raised \$200 million at the same time (February 2018) when it reported overall revenue for FY 2017 of Rs. 333 crores (81% more than last year) and revenue from online ordering of Rs. 58 crore (eight-folds higher than previous year). Zomato raised the latest round at a valuation of \$1.1 billion resulting in a sales multiple of 21. Later Morgan Stanley<sup>1</sup> raised the valuation of Zomato to a whopping \$2.5 billion on the basis of expected revenue of Zomato of \$65 million in FY 2018, implying a revenue multiple of 38. Another related start-up, Grofers (online grocery), has recently raised \$61.3 million at an enterprise value of \$300 million<sup>2</sup> and reported an annual turnover of Rs. 1000 crore (\$154 million). This implies a modest P/S of 2. Possible reason for such a low multiple could be the fact that Grofers was struggling for the past two years with its business model and witnessed more than 30% drop in its valuation. Two important lessons from the story of these three start-ups are: (a) there is a great deal of optimism with these start-ups in view of such high P/S multiples; and (b) the variation of the multiples is huge. Such wide variations make it difficult for an investor to use these numbers as benchmarks to value any pre-revenue start-up in the same sector. So, what should be an appropriate P/S multiple for a pre-revenue start-up given the two recent success stories of Swiggy and Zomato? Will the pre-revenue company be able to generate levels of revenue growth shown by

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<sup>1</sup> <https://entrackr.com/2018/01/zomato-valuation-morgan-stanley-2-5-bn/> (accessed on 17 May 2018)

<sup>2</sup> <https://tech.economictimes.indiatimes.com/news/startups/softbank-tiger-global-back-grofers-with-rs-400-crore/63341077> (accessed on 17 May 2018)

these two start-ups in five years? If the answer is affirmative, one can use a conservative P/S multiple, which is about 30 (closer to Zomato). One may note that Zomato has achieved the present multiple after ten years of struggle. If the answer is in the negative, one may use P/S multiple of listed comparable firms, if available.

The *preferred discount rate* (also known as internal rate of return) of the investor should take into account the following four factors: (a) time value of money (as the exit from early stage investment is prolonged, it is essential that one uses yield of long-term government bond for this purpose); (b) premium for market risk (as the valuation is sensitive to market factors); (c) premium for considering only successful scenario (since the VC method does not consider probability weighted scenarios); and (d) premium for possible dilution in equity (there could be possibility of subsequent rounds of funding before the exit of early-stage investor). Therefore, the preferred discount rate would be much higher than the traditional cost of capital measure that uses only the first two factors. It is not easy to estimate the last two factors. One way to measure the premium for successful scenario is to collect information on start-ups that are successful in raising multiple rounds of funding in first 7-10 years. The difference in the valuation of these start-ups between the first round and the latest round of funding can be explained by increase in earnings and earnings multiple as well as decrease in discount rate (Table 2).

Table 2: Example of Premium for Success (*revenue figs in Rs. Crore*)

Start-up	Vintage	Revenue (2018)	Revenue (2022)	Valuation	P/S	IRR
ABC	2017	1	50	135	10	30%
XYZ	2015	75	250	2500	22	17%

*ABC is a pre-revenue company by our definition and XYZ has seen some success. Both the start-ups raised money in 2018 at respective valuations. The IRR is derived from the enterprise value. The difference in IRR (13%) may be attributed as the premium for success of ABC.*

One may not include any premium for possible dilution in ownership in the discount rate and take care of such eventuality separately by way of warrant. The next issue of Artha will discuss this feature in details.

A higher rate of discount also compensates for any unsubstantiated optimism in revenue projections. Typically, any entrepreneur would have emotional bias for revenue projections and she would tend to overestimate future revenue. The early-stage investor will in such a case use a higher discount rate to offset such optimism. The discount rate that is prevalent to value such start-ups varies anywhere between 25% and 40% depending on nature and complexities of the business, patent on product/service, and scalability.

Thus, valuation of pre-revenue companies is an art and involves deep understanding of business models. It also requires one to have sufficient information about the private equity market and the valuations at which early-stage start-ups have recently raised money.