MaRS | ENTREPRENEUR WORKBOOKS

Sales & Revenue Forecasting Series

Top-down sales forecasting for pre-revenue startups

Introduction

What to expect

This workbook guide was produced by MaRS Education and is designed specifically for entrepreneurs in the high-tech space who are in the beginning stages of commercializing their technology. Specifically, *top-down revenue forecasting* is a useful approach for entrepreneurs who are looking for a quick way of establishing an idea of the revenue potential for their technology or product. If you are in the process of raising money, we recommend that you use a *bottom-up approach* as the primary means to establish your revenue forecast, and then apply the top-down approach as a control mechanism to validate your results. The top-down and the bottom-up approach are likely to yield different results but the comparison will give you a chance to reflect on the reasons why they differ—something that will prepare you for discussing your revenue forecast with investors and business partners.

Pre-revenue forecasting models

Pre-revenue forecasting is important for financial planning purposes, such as creating a budget for your start-up and pitching to investors. The two forecasting models covered in this series of workbooks are the *top-down approach* and the *[bottom-up approach](#)*. There are many other forecasting models, such as those involving statistical methods, the Delphi method and panel forecasting, that might be more appropriate for your company at a later stage.

The top-down approach uses aggregated numbers (such as market size, growth rate, penetration rate and market share) to arrive at a revenue estimate. The top-down approach enables you to link your revenue estimates directly to the overall market trend in a relatively quick and uncomplicated way. For your venture to succeed, it is important to be helped by the growth created by market trends; the top-down approach enables you to demonstrate to investors how overall market growth fuels your growth. As the significance of the market trend increases, the attractiveness of your company as an investment opportunity will also increase.

Nevertheless, many entrepreneurs do not know how to create a realistic top-down forecast. As a result, their estimates lack credibility not only with investors but also in terms of their own business planning.

Example: How NOT to do a top-down forecast

When creating a top-down forecast, many people are tempted to do the following:

1. Estimate the size of the market in units and value. Industry analyst firms can often provide easily accessible market size numbers for large markets.

2. Estimate the share of the market size you will be able to capture.

3. Estimate your revenue by applying your pricing strategy to the units provided by your market share.

Other than illustrating high-level market dynamics, the above method is too crude to yield valid results. The market intelligence is not granular enough to use without moderating factors, and there is too little information about your company, product, customers and competition to follow that approach.

Forecasting for start-ups

Forecasting is a process that has both inputs and outputs. Many advanced forecasting methods rely on statistical methods that have little relevance for small companies that might not have started their revenue-generating activities (as they will not have any of the historical data that those methods require).

The absence of historical data will mean that your forecasts must rely on more assumptions and metadata, many of which are based on industry standards or your experience (and the experience of those around you). Initially, your forecasts must yield a result that is "in the ballpark," which will enable you to make the necessary arrangements with regards to liquidity and capacity planning.

Most start-ups in the B2B environment begin with some form of personal and direct sales activities before determining whether to enter into agreements with a marketing intermediary. For this workbook, we will assume a direct sales model when exploring various forecasting models that are currently in use.

How to use this workbook

1. Get your team together!
We recommend that you make the creation of your revenue forecast a team effort and work through the exercises thoroughly, but as efficiently as possible. Developing your revenue forecast can be very time-consuming, especially if neither you nor anyone on your team has any experience related to revenue forecasting. Furthermore, revenue forecasting is a process that requires you to closely examine your market assumptions—something that is of great benefit when your key team members are involved. The goal of this workbook is to help you focus your efforts on the parts that are essential to start-ups and thus make the time spent developing your revenue forecast as productive as possible.

2. Use the icons for help
The workbook guides are structured under the assumption that this is the first time you, the reader, has undertaken a forecasting exercise. To help provide context for some of the ideas in these workbooks, we have clarified the ideas by defining key terms and offering real-world examples. In addition, we have provided links to articles on the MaRS website. For this reason, you may find it easiest to use the workbook guides on a computer with an Internet connection.

Look for these icons:

denotes a key term that will recur in these workbook guides

indicates an example drawn from the marketplace in order to illustrate an important idea

denotes a link to a more in-depth article, video or template on the MaRS website

WORKBOOK:
Top-down Forecasting for Pre-revenue Start-ups

1. Creating a top-down forecast

Use the following steps to create a top-down forecast. Each step is described in detail below.

a) Estimate market potential.

b) Determine adoption rate.

c) Predict your market share.

d) Develop revenue scenarios.

a) Estimate market potential

Estimating the size of the market is critical for any start-up. You can estimate the market potential by following these steps:

1. Know the problem you are solving.

2. Define for whom you are solving the problem (i.e., your target customer).

3. Estimate the number of target customers who share that problem.

4. Determine penetration rate (i.e., how many customers are available to you).

5. Calculate potential market size.

For more details on this process, read the article entitled Estimating the market size.

b) Determine adoption rate

The next step is to determine the rate of adoption, which describes the speed at which your product is assimilated in the marketplace.

The purpose of calculating the adoption rate is to develop an understanding of market volume on a yearly basis. Looking at a typical technology adoption lifecycle, the expectation is that your first customers would be "technology enthusiasts" and "visionaries." They might comprise 5% to 10% of the overall market and would be the first to enter the market—sometimes even before your official launch.

The next customers are "pragmatists" in specific market niches. How quickly they enter the market depends on your product's disruptive or innovative nature. In the beginning, a very disruptive product often has a slower adoption rate than a less

disruptive product. The slow adoption rate is often due to the lack of an efficient value chain and business models to bring the new technology to market.

For more details on how customers adopt new technology, read the article entitled [Technology adoption lifecycle (TALC)](#).

Market data from industry research companies (e.g., Gartner, IDC, Thompson, Frost & Sullivan) might give you an idea of how quickly markets that consist of your target customers develop.

Examples: **Adoption rates—Mobile phones, solar power**

Mobile phones: Mobile phones came into the marketplace in the early 1980s as the successor to radio phones and were a very disruptive technology. For the first decade, the price of mobile phones was very high by today's standards, despite the fact that both the handsets and the network were relatively unreliable and much less sophisticated than today. Only visionaries and technology enthusiasts were using the product at that point. In the mid-1990s, much-improved handsets and networks were available. These, combined with a new business model where telcos subsidized the handsets in exchange for long-term user contracts, triggered a much faster adoption rate. Less than 10 years later, mobile phones had been adopted by large segments of the general population as the phones went from being a technology product to a lifestyle support tool and fashion item.

Solar power: Photovoltaic panels have been around since World War II and have been used to reliably generate electricity in off-grid locations, including space installations, telecom base stations and remote weather stations. The relatively high capital cost associated with solar panels meant that it was uneconomical for the general population to replace electricity from the grid with solar power. In 2004, Germany introduced new legislation to encourage people to invest in different kinds of renewable energy, including solar power. The central piece of this legislation is an electricity production incentive (a.k.a. feed-in tariff) that reflects the capital cost of various renewable technologies, which makes it possible for homeowners, farmers and commercial real-estate owners to make a reasonable return by investing in solar panels for their property and delivering electricity into the grid. Since then, other jurisdictions across the world have implemented similar incentives to help drive the adoption of solar panels; the resulting economies of scale have driven down the cost of the technology. Despite the reduced cost base, the solar industry is still years away from reaching mass-market adoption comparable to mobile phones, due to supply-chain constraints. Solar energy as a mainstream source of power only makes financial sense in those areas that have incentives to support the adoption of the technology.

c) Predict market share

Combining market size with adoption rates will provide data on the yearly market potential. Now the question remains: How much of that market will you be able to capture?

In a mature market, you can calculate your market share by dividing your revenue by the expected market size. However, that approach does not work in an emerging market with your revenue unknown.

Apply the approach below to identify the relative share of the market you hope to acquire. In essence, there are three factors that determine the market share you will achieve:

- the strength of your value proposition

- the amount of capital you have

- the effectiveness of your marketing

The following paragraphs explain how to use these factors to predict your market share. Before you proceed, be forewarned that it is possible to spend a lot of time collecting the suggested market intelligence. Bear in mind that most start-ups would be better served spending time on marketing and selling their product instead of striving for accuracy and completeness in the process below.

i. Determine your peer group
List your most likely competitors (i.e., those companies that are attempting to solve the same customer problem). You can find this information through search engines, trade shows and/or industry analysts. Use this list of peers to compare and rate your efforts based on the criteria in sections ii) and iii).

ii. Determine the capital at hand
Capital can be spent on both product development and marketing, which makes it a significant factor in predicting your market share. Most companies announce publicly that they have secured funding through a venture capital firm. You can easily determine the amount of capital raised by visiting the company's website, checking a third-party website (e.g., VentureBeat) or using a search engine.

Follow these steps to estimate market share using capital at hand:

1. Tally all the capital raised by the peer group.

2. Divide your capital by the total capital.

The outcome equals your expected market share. If information about capital is not available, then use the next metric: marketing effectiveness.

iii. Determine your marketing effectiveness
When considering your marketing power, the best metric to use is called "share of voice." Share of voice (SOV) is a metric that indicates the relative amount of media

coverage you receive. Positive coverage will eventually translate into sales. The specific metrics are the number of times your company/brand name appears in editorial coverage (e.g., news articles, features, guest editorials, reviews, blogs, analyst reviews/buyer guides) compared to the number of times your competitors' companies/brand names appear.

Ideally, you should be able to determine the SOV metric for your company and your closest competitors. There are a couple of ways to determine these numbers:

- Subscribe to a media monitoring service or clipping service. These services are not free of charge, however, which may rule them out for many start-ups.

- Make use of an online search service such as Google News, which will allow you to set up your own searches of online news sources based on keywords. While not as comprehensive as a traditional clipping service, its advantages to start-ups include the low cost (i.e., free) and simple, quick access to information. Be aware that putting together the right search terms is the critical element for a Google News search. Sift through the results for the number of times a company is mentioned, as well as its key executives and associated brand names.

Each media hit should be rated "positive," "neutral" or "negative," depending on the tone and context of the mention. To achieve a net score or end result, add the positives to the neutrals, and then subtract the negatives.

> *SOV net score = (Positive mentions + Neutral mentions) – (Negative mentions)*

Example: **SOV measurement**

	Competitor 1	Competitor 2	Competitor 3	You
Editorial coverage	100	500	400	300
Share of voice	8%	38%	31%	23%

Note: Estimating market share in a start-up context is difficult and the above methods are not guaranteed to provide an accurate answer. Nevertheless, if you meet with potential investors, you will need to justify the data you present; the two metrics presented here will enable you to do so.

d) Develop your top-down revenue scenarios

Calculate your expected revenue for a specific year by multiplying the following factors:

(Market potential [Value]) × (Adoption rate, Year X) × (Market share, Year X)

Apply the following methods to refine your top-down revenue forecast:

- If you are preparing a business or financing plan, develop forecasts for additional years to produce a five-year outlook of how you expect your revenue to progress.

- Present your forecast for a given year using three different scenarios—best case, most likely case and worst case—to better understand the consequences of key assumptions not developing as expected. Address what assumptions separate the three scenarios.

- The credibility of your forecast depends on the quality of your assumptions when estimating market size, adoption rate and market share. Documenting each assumption will allow you to revisit and test your forecast regularly. If you present your revenue forecast to investors, expect them to scrutinize your assumptions.

2. Benefits of top-down forecasting

One advantage of preparing a top-down forecast using the steps in section 1 is that it proves relatively fast and straightforward. The accuracy of the top-down forecast depends on the assumptions you make to create the estimates. You can improve the accuracy of your forecast by grounding your assumptions in fact. Use market research from a recognized firm or employ standard industry metrics as proxies to develop your own estimates.

When to use top-down forecasting

The top-down approach works best when you need an indication of the market size and market share for your venture. It should be used solely for the purpose of determining the size of the opportunity for you, your business partners and the investors.

Once you create a top-down forecast, do a bottom-up forecast and compare the results. The results of the two approaches will likely differ, but it is a useful learning exercise to determine the reasons why the projections differ.

When not to use top-down forecasting

The top-down approach is very inaccurate with respect to timing. Therefore, it offers little value for revenue and cash-flow planning for shorter periods of time and for sales-management, staffing and supply-chain decisions.