Risk Factor Summation Method

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1 Introduction

Early-stage valuations are challenging. How do we assess the Startup's future performance? Are the projections realistic? Is the valuation on par with market comparables? Have we assessed all risk factors? These are key concerns at the outset of any investment journey.

The **Risk Factor Summation** method addresses these concerns. It considers various factors that may impact a Startup's success. Its end goal is to provide the **possible pre-money valuation** for early-stage startups.

The **RFS or Risk Factor Summation** method was created by Ohio TechAngels (Bill Payne, 2011) and is utilized by angel investors and venture capitalists to assess the value of pre-revenue companies. This method is usually applied during the pre-seed or pre-Series A stages of funding. It expands on the principles of other techniques like the Venture Capital Valuation method and the Dave Berkus Valuation Method by taking into account a wider array of risk factors that can impact startups as they progress towards becoming established enterprises.

As reportedly described by Ohio Tech Angels *"Reflecting the premise that the higher the number of risk factors, then the higher the overall risk, this method forces investors to think about the various types of risks which a particular venture must manage in order to achieve a lucrative exit. Of course, the largest is always 'Management Risk' which demands the most consideration and investors feel is the most overarching risk in any venture. While this method certainly considers the level of management risk it also prompts the user to assess other risk types"*.

The risk factor summation method cannot be applied in a mechanical manner. It demands the **user's exercise of judgement**. It enables the user to think by providing

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S. Derindere Köseoğlu (ed.), *A Practical Guide for Startup Valuation*, Contributions to Finance and Accounting, https://doi.org/10.1007/978-3-031-35291-1_11

various parameters. The user would be able to judge across these various parameters. The valuation would then be driven by what is beneficial and what is detrimental to the startup's ability to create a reasonable exit within a scheduled time frame (Reinfeld, 2018).

The risk factor summation method uses the value of comparable startups. Such value is the base value. It is then modified to account for 12 common risk factors. This comparison provides a framework. It assesses whether a startup carries a higher or lower level of risk in relation to other startups.

Following are the steps involved in applying the Risk Factor Summation Method:

1. Find the average Industry Pre-Money Valuation. The average serves as the base pre-money valuation.
2. Consider 12 Risk Factors that are correlated with the startup's industry.
3. Risk rating ranges between +2 Extremely positive with −2 being Extremely negative, which are as follows:

   (a) +2 = Very Positive/Very Low Risk
   (b) +1 = Positive/Low Risk
   (c) = Neutral/Medium Risk
   (d) −1 = Negative/High Risk
   (e) −2 = Very Negative/Very High Risk

4. Rate each of the 12 risk factors. Each rating carries a potential adjustment to the base pre-money value by $250 k for each point move either way (E.g.: +1 would add $250 k to the base valuation while −2 would reduce $500 k from the base valuation, 0 would not create any impact on the pre-money valuation adjustment).

   Find the total of the ratings castigated against adjustment to pre-money valuations.
5. Add the total of adjustments with the pre-money valuation arrived.

   Table 1 represents the result of application of steps to Risk Factor Summation Method of Pre-Money Valuation

2 Inputs of Risk Factor Summation Method

Now that a broad overview has been understood, we shall deliberate upon each ingredient that go into the valuation computation. Broadly, the following are the major inputs (Fig. 1)

Table 1 Risk factors

Base value (Average of comparables)		$25,00,000
Risk factors	Ratings	Addition/Subtraction ($)
Management risk	2	$5,00,000
Stage of the business	1	$2,50,000
Legislation/Political risk	1	$2,50,000
Manufacturing risk (or supply chain risk)	0	$0
Sales or marketing risk	2	$5,00,000
Funding/Capital raising risk	−1	−$2,50,000
Competition risk	−1	−$2,50,000
Technology risk	−1	−$2,50,000
Litigation risk	−1	−$2,50,000
International risk	0	$0
Reputation risk	0	$0
Exit value risk	−1	−$2,50,000
Net adjustment		$2,50,000
Total pre-money valuation		$27,50,000

Source: Author's creation

Fig. 1 Inputs of Risk Factor Summation Method

2.1 Base Pre-Money Valuation

The aim of this exercise is to determine the most common value of similar-stage companies.

The current valuation subtracted from the money raised provides us the pre-money valuation. We carry this exercise out for all companies in the industry. The average of pre-money valuations provides us with the base value.

It is important that we consider the valuation of similar-stage companies belonging to the same region. We must also be wary of outliers in our selected population.

Research reports on valuations may also be considered as a substitute.

Usage of research reports would allow us to adopt data from similar-stage companies. It will also ensure sanity of our computations while enabling removing of outliers.

Let us consider an example:

Say, we are assessing a seed round investment in a Fintech Company based out of the US. The median pre-money valuations of Seed Stage Companies for Fintech

Companies in the Americas is $12.6 Millions (Pulse of Fintech 2023) (KPMG, 2023). We can consider such valuation as the base for our exercise.

2.2 Risk Factors

The Risk Factor Summation Method directs the investor's focus towards the different types of risks associated with a particular Startup. By doing so, it compels the investor to consider all the potential risks to devise a viable exit strategy within a particular timeframe.

The risk factors that are listed down as by the Risk Factor Summation Method are listed in Table 2 (Payne, 2011).

Table 3 provides summary one liner questions to assess the risk factors.

Now we shall dwell into each of the Risk Factors with the intent of understanding its practical application.

2.2.1 Management Risk

As discussed earlier, Ohio Tech Angels consider Evaluation of the management/founder/promoter risk as a high priority among other risks which are part of the method.

Following are some of the ways Angel investors generally assess management risk:

- First-time founders are riskier in comparison to founders who have run Startups before.
- Solo Founders are riskier compared to team of founders/co-founders.
- Founders who have business interests outside the company are riskier than founders who have their 'skin in the game'.

Table 2 Risk factors

Risks
Management Risk
Stage of Business Risk
Legislation/Political Risk
Manufacturing or Service Delivery Risk
Sales and Marketing Risk or "Go to Market" Risk
Competition Risk
Technology Risk
Litigation Risk
Funding and Capital Raising Risk
Exit Risk
Reputation Risk
International Risk

Table 3 Assessing questions for risk factors

Sl. No.	Risk factor	Assessment question
1	Management Risk	Does the founding team pose a significant threat to the future of the business?
2	Stage of Business	Is the business in its initial stage of the maturity cycle, which entails a high risk of failure?
3	Legislation/Political Risk	Can regulations, legislation, and political conditions result in the collapse of the business?
4	Manufacturing or Service Delivery Risk	Can the business fail due to inability of suppliers and service providers?
5	Sales and Marketing Risk	Will the business be affected by sales and marketing problems?
6	Funding/Capital Raising Risk	Is it probable that the business will fail to raise funds in the future?
7	Competition Risk	Will the business fail due to the competitive environment?
8	Technology Risk	How much of a threat do you think the future emergence of new technologies poses to the survival of the business?
9	Litigation Risk	Do the circumstances indicate that the business may undergo litigation and fail?
10	International Risk	Will adverse international conditions lead to failure of business?
11	Reputation Risk	Will the business likely fail if it is exposed to brand reputation related crisis?
12	Potential Lucrative Exit	How probable is it for the future profitability of the business to be at risk such that the company may struggle to achieve a favourable profit margin for its products and services?

Source: Retiba, Online Valuation Tool

Apart from the above, the following are some practical insights on Founder assessment collated across few publications on Angel investing:

1. **Assess the founder's passion and commitment:** Founders who are passionate about their business idea are more likely to stay committed and work tirelessly to achieve their goals. Look for founders who are willing to make personal sacrifices to build their business, and who have a deep understanding of the problem they're trying to solve. The Gust Guide to Angel Investing (David.S.Rose) suggests that investors should ask themselves: ***"Does the founder have a vision that is inspiring and meaningful to them? Do they have the drive and tenacity to execute on that vision?"***
2. **Evaluate the founder's ability to handle uncertainty and adversity:** Starting a business is a challenging and unpredictable journey, and founders who can navigate through uncertainty and adversity are more likely to succeed. Look for founders who are resilient, adaptable, and have a history of overcoming challenges. The Angel Investor's Handbook (David S Rose) suggests that investors should ask themselves: ***"Has the founder demonstrated the ability to handle setbacks, learn from mistakes, and persevere in the face of adversity?"***

3. **Assess the founder's integrity and character:** Founders who have a strong sense of integrity and ethics are more likely to build a successful and sustainable business. Look for founders who are honest, transparent, and ethical in their dealings with others. The Due Diligence for the Entrepreneurial Investor (Howard Stevenson and Michael Roberts) book suggests that investors should ask themselves: ***"Do the founder's actions match their words? Are they transparent about the risks and challenges facing the business?"***
4. **Evaluate the founder's skills and experience:** Founders who have relevant skills and experience are more likely to build a successful business. Look for founders who have a deep understanding of the industry and market they're operating in, as well as relevant technical, operational, and leadership skills. The Angel Investment: Valuation and Diligence (Dr. Robert Wiltbank, Dave Berkus, and Andrew Romans) book suggests that investors should ask themselves: "***Does the founder have the skills and experience necessary to execute on their business plan? Are they able to assemble and manage a talented team?"***

2.2.2 Stage of Business Risk

For pre-seed and seed-stage startups, early traction reduces risks associated with Early stage Startups. Some of the examples of Early traction include:

1. Creation of a Beta or a Minimally Viable Product
2. Initial or Pilot Customers. Brand name customers are even better
3. Strategic Partnerships that enable any key area of business, be it Marketing, Sales, Procurement, Distribution
4. Customer Testimonials

Startups that are able to acquire early customers and generate revenue in their early stages are more likely to have found product-market fit. This means that their product or service meets a real need in the market and that there is demand for it. The Lean Startup by Eric Ries emphasizes the importance of finding product-market fit early in a startup's life cycle and using customer feedback to iterate and improve the product.

The founding team must have taken credible steps to achieve these low-fund but high-value milestones. Early-stage companies with evidence of customer traction, such as sales and/or users, and a plan to scale, can be more attractive to investors as it reduces stage of business risk to a large extent.

2.2.3 Legislation/Political Risk

Legislation and political risks can be a significant challenge for early-stage startups, particularly those operating in highly regulated industries or in countries with

volatile political climates. Here are some insights and examples of legislation and political risks faced by early-stage startups:

1. **Regulations can create barriers to entry:** Startups operating in industries such as healthcare, finance, or transportation may face significant regulatory hurdles that can make it difficult to launch and scale their businesses. For example, startups in the healthcare industry may need to comply with strict regulations around data privacy and patient safety, while those in the transportation industry may need to navigate complex regulations around licensing and insurance. According to a report by CB Insights, "More than half of healthcare startups fail due to regulatory hurdles."
2. **Political instability can create uncertainty**: Startups operating in countries with unstable political climates may face uncertainty around issues such as taxation, trade policies, and labour laws. For example, a startup operating in a country that experiences frequent changes in government may find it difficult to plan for the long term or attract investment. A report by the World Economic Forum notes that "Political instability and regulatory risk are among the top three risks that companies face when investing in emerging markets."
3. **Legislation can change quickly:** Startups may also face the risk of sudden changes in legislation or policy that can impact their business models or revenue streams. For example, a startup that relies on a specific tax credit or subsidy may see its revenue decline if that policy is changed or eliminated. A report by Deloitte notes that "Startups need to be nimble enough to adapt to a rapidly changing regulatory landscape."

One example of legislation and political risks faced by early-stage startups is the sharing economy. Companies such as Airbnb and Uber faced significant regulatory hurdles and political opposition in their early days, as they disrupted traditional industries and challenged existing regulations. Airbnb, for example, faced legal challenges around issues such as zoning laws, hotel taxes, and safety regulations. Similarly, Uber faced regulatory challenges around issues such as licensing and insurance requirements for drivers. However, both companies were ultimately able to navigate these challenges and build successful businesses but the following startups failed mainly due to regulatory challenges:

1. Sidecar: Sidecar was a ride-hailing startup that launched in 2012, before Uber and Lyft became popular (CB Insights, 2019). However, the company faced significant regulatory hurdles, including fines from local transportation authorities and legal battles with taxi companies. In 2015, Sidecar announced that it would shut down its ride-hailing service and pivot to focus on a delivery platform.
2. Homejoy: Homejoy was an online platform that connected homeowners with cleaning services (WEF, 2018). However, the company faced legal challenges around whether its cleaners were employees or independent contractors, which impacted its ability to raise funding and operate in certain markets. In 2015, Homejoy announced that it would shut down its operations due to "unresolved challenges in the home services space."

3. Zenefits: Zenefits was a software company that provided cloud-based HR and benefits management software for small businesses (Deloitte, 2018). However, the company faced regulatory challenges around compliance with insurance laws and broker licensing requirements. In 2016, Zenefits announced that it would lay off 45% of its workforce and pay $seven million in fines to settle regulatory charges.

2.2.4 Manufacturing or Service Delivery Risk

According to a poll by CB Insights—a tech market intelligence platform, 42% of the startups believed that inability of a startup to deliver a great product according to the market needs is an important reason behind the failure of many startups.

While it may seem obvious that a poor product will not succeed, many entrepreneurs and investors believe that latent customer needs can be uncovered, and they will eventually buy the product. Investors often focus on other business parameters like market fit, valuation, and sales, overlooking the entrepreneur's ability to deliver the product.

However, not every market is as forgiving as the mobile phone market, where "average" products can succeed with some marketing and at the right price point. Product delivery is crucial for a startup's success, and underestimating its importance can have disastrous consequences.

Product delivery is the result of a great idea executed well for the right customer at the right time. This requires several elements to be done right, including building a winning team and having a strong and sustainable business model (Kunal Nandwani, 2022).

Investors sometimes commit startup investments without thoroughly evaluating the product delivery capabilities. But the difference between a successful startup and a failed one is the combination of several elements done right.

One example of poor product delivery is Juicero, which aimed to deliver perfect juice to customers with its $699 Wi-Fi-connected juicer that required proprietary juice packs. However, Bloomberg released a video that showed the juice packs could be squeezed by hand faster than the machine could squeeze them. The public was convinced that the product was useless, and investors realized that the machine was bulkier than the original plan. The company shut down sixteen months after launch.

One example of an early-stage startup that failed due to poor product delivery is Zano, a British drone startup. Zano aimed to produce a pocket-sized drone that could be controlled by a smartphone and could be used for aerial photography.

Zano raised over £2 million on Kickstarter and was able to attract additional investment. However, the company was unable to deliver on its promised product. The drone suffered from technical issues, had a short battery life, and lacked key features promised in the original campaign.

Despite efforts to rectify the issues, the company was unable to deliver a working product to its backers. Zano eventually went bankrupt, leaving its investors and backers empty-handed.

The failure of Zano is a clear example of the importance of good product delivery for startup success. No matter how innovative or promising an idea may seem, it ultimately depends on the ability of the startup to deliver a working product that meets the needs of the market.

2.2.5 Sales and Marketing Risk

Startups often face sales and marketing risks that can negatively impact their performance and ability to succeed. Sales and marketing is the process of bringing a product or service to market, including creating awareness, encouraging potential customers to buy, and managing customer relationships.

Two of the most common sales and marketing risks for startups are customer acquisition risk and customer retention risk. Customer acquisition risk relates to a startup's ability to convince potential customers to purchase their product or service, while customer retention risk relates to a startup's ability to keep customers engaged with their product or service (Foster Capital, 2022).

Aside from these two risks, there are several other sales and marketing risks that startups should also consider. Pricing risk is the risk of setting prices too low or too high, which can affect profits or deter potential customers. Distribution risk is the risk of not effectively reaching the target market, resulting in lost revenue. Branding risk is the risk of failing to create a strong connection with the target market, leading to a lack of interest in the product or service.

Examples of early-stage startups that failed due to poor sales and marketing include:

1. Pets.com: Pets.com was an online pet store that sold pet supplies and accessories. While the idea was great, the company failed to establish effective distribution channels, which made it difficult to get products to customers quickly and affordably. As a result, the company went bankrupt in 2000.
2. Quibi: A mobile video streaming platform that invested heavily in advertising but failed to generate enough interest from consumers, resulting in low subscriber numbers and ultimately, shutting down.

(Forbes, 2015)

Go-to-Market Strategies also play an important role in ensuring a success of Sales and Marketing. A well-crafted GTM strategy takes into account factors such as the target audience, distribution channels, pricing, and promotion methods. It helps a company to effectively launch its products or services, maximize customer reach, and ultimately achieve revenue and growth goals. (Williams, 2015)

Go-to-Market Strategies can fail for a variety of reasons, including inadequate market research, poor timing, ineffective messaging, and competition. Here are some examples:

1. Inadequate market research: Google Wave, a real-time collaboration tool, failed because it was too complex for most users and didn't meet their needs. Google

Wave was launched in 2009 with great fanfare but was discontinued a year later due to lack of adoption.
2. Poor timing: Apple's Newton, a personal digital assistant, was ahead of its time and failed to gain widespread adoption when it was released in 1993. However, when Apple released the iPhone in 2007, it was a huge success because the market was ready for a smartphone with advanced features.
3. Ineffective messaging: McDonald's launched a healthy menu option called the McWrap in 2013, but the messaging focused on its affordability rather than its health benefits. The McWrap failed to attract health-conscious customers and was eventually removed from the menu.

(HBR—Schneider & Hall, 2011)

2.2.6 Funding/Capital Raising Risk

Funding risk is a common challenge faced by startups, which refers to the possibility of not being able to secure the necessary capital to grow and scale their business operations. This risk is particularly significant in the early stages of a startup's development, when access to capital can determine its survival.

There are several macroeconomic factors that can affect a startup's ability to secure funding. These include fluctuations in the global economy, changes in interest rates, and shifts in investor sentiment. Additionally, changes in government regulations and policies can also impact funding opportunities for startups.

One example of a startup that failed due to a lack of funding is the social networking site Friendster (TechCrunch, 2015). Despite being one of the first social media platforms to gain widespread popularity, Friendster was unable to secure additional funding after its initial round of investment, leading to its eventual decline and sale in 2009.

Another example is Admazely. Admazely offered retargeting tools for businesses (Failory, 2022a). They shut down in 2013 when they ran short on financing and didn't figure out how to secure more cash.

2.2.7 Competition Risk

Competition risk is a common challenge faced by startups, particularly in industries that are crowded with numerous players. This risk refers to the possibility of a startup losing market share or failing to establish a strong foothold in the market due to intense competition. The intense competition may result in price wars, lower profit margins, and difficulties in differentiating the product or service.

To assess whether a startup is facing intense competition, investors can examine various factors, including the number and size of competitors, market share, pricing strategy, customer loyalty, and product differentiation. An intense level of competition in the industry can negatively impact the startup's growth prospects and increase the likelihood of failure.

One example of a startup that failed due to intense competition is the mobile phone maker Essential (Verge, 2020). Despite being founded by Android co-creator Andy Rubin and raising $330 million in funding, the company struggled to compete against established players like Apple and Samsung, eventually shutting down in 2020.

Bitpass was a startup that offered a platform for making micropayments online (Failory, 2022b). However, the company eventually shut down due to intense competition, particularly from the free-to-use Google Checkout payment system. In an email to its users, Bitpass cited the emergence of Google Checkout as the main reason for its closure, stating that the new payment system made its business model redundant. The CEO of Bitpass had originally hoped to integrate its micropayment features into Google Checkout, but this never materialized. Despite raising around $12 million in funding and acquiring one of its competitors, Bitpass ultimately failed to sustain its operations and closed down in 2007.

2.2.8 Technology Risk

The emergence of new technologies in the future can pose a significant risk to the existence of businesses. This risk, known as technology risk, refers to the potential of a business becoming obsolete or losing its competitive edge due to new technologies that disrupt the market or render the company's products or services irrelevant.

Technology risk can manifest in various ways, such as the inability to adapt to new technologies, failure to innovate or keep up with the latest trends, or overreliance on outdated or obsolete technology. Companies that fail to keep up with technological changes risk losing market share, customer loyalty, and ultimately, their business.

One example of a Startup that failed was Jawbone (TechCrunch, 2017). Jawbone was a wearable technology company that produced fitness trackers and Bluetooth speakers. Despite raising over $900 million in funding and being valued at $3 billion, Jawbone failed to keep up with competitors like Fitbit and Apple. Jawbone faced several legal challenges and struggled to release new products, which ultimately led to its shutdown in 2017.

2.2.9 Litigation Risk

Assessing litigation risk is an important consideration for angel investors when evaluating startups. Some factors that may increase the likelihood of litigation risk include the nature of the industry, the presence of intellectual property issues, and the quality of the startup's legal counsel.

To assess litigation risk, investors should conduct due diligence on the startup's legal history, including any past lawsuits or legal disputes. They should also evaluate the startup's risk management strategies and assess whether the company has adequate insurance coverage in place. Additionally, investors should consider the

potential impact of litigation on the company's reputation, financial stability, and future growth prospects.

One example of a Company that failed due to litigation is LimeWire (TechCrunch, 2017). LimeWire was a file-sharing startup that faced multiple lawsuits from record labels and music publishers over copyright infringement (NPR, 2011). The company was ultimately shut down and its founder was ordered to pay millions of dollars in damages.

2.2.10 International Risk

International risk can pose a significant threat to startups, particularly those that operate globally or rely on international markets for growth. Some factors that may contribute to international risk include political instability, trade barriers, cultural differences, and currency fluctuations.

One example of a company that limited its growth due to International Risk was TransferWise. TransferWise was a startup that offered international money transfer services at a lower cost than traditional banks (TechCrunch, 2016). The company faced challenges in some markets due to regulatory issues and restrictions on foreign exchange transactions. For example, TransferWise was unable to operate in India for several years due to restrictions on foreign investment in the country's payment industry. This limited the company's growth potential and forced it to focus on other markets.

37Coins, a BitCoin Technologies company failed due to International Risk. 37Coins, a California-based Bitcoin wallet provider, focused on developing new Bitcoin technologies for markets such as the Philippines and Singapore. The company developed SMS gateway systems, known as SMSGateways, which allowed users in specific regions to send and receive Bitcoins using their SMSWallets.

The company's effort to provide Bitcoin transfer technologies across different regions has proved to be nearly impossible for the company. 37Coins stated that delivering monetary funds across different carriers outside of the USA was "Unreliable."

2.2.11 Reputation Risk

Reputation risk is the potential loss that a company may face due to negative public perception of its products, services, or overall brand image. Reputation risk can have a significant impact on a startup's ability to attract customers, investors, and employees. In today's hyperconnected world, negative news or reviews can spread quickly, making it challenging for startups to recover from reputational damage.

An example of this is Teforia. Teforia was a startup that created a high-end tea brewing machine. The company marketed itself as a luxury brand, with machines costing up to $1000. However, the company faced significant reputational damage

when a video by a customer went viral, showing that the machine was no better than a $20 tea kettle. Teforia eventually shut down in 2018.

2.2.12 Potential Lucrative Exit

An understanding of all the risk factors that were discussed above would equip an investor assessing investment in the Startup to come to an understanding whether a lucrative exit is possible.

Even if a startup has a great idea, if the team is not able to execute it properly or manage the company well, it can lead to failure and the investor losing their investment. According to a report by CB Insights, the top reason startups fail is due to "no market need," followed by "ran out of cash" and "not the right team."

Further, if a startup's business model is not scalable, it may not be able to generate significant revenue or attract a large enough customer base to be profitable. This can lead to a lack of interest from potential acquirers or investors, and ultimately, a low exit value for the angel investor.

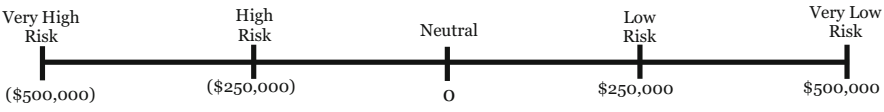
2.3 Rating of Risk Factors

Each of the risk factors that were discussed above is rated, as part of the valuation exercise under Risk Factor Summation Method.

Each risk is assessed with regard to how it may impact the ability of the company to grow and execute a lucrative exit, and is assigned a score as follows:

- +2 = Very Positive/Very Low Risk
- +1 = Positive/Low Risk
- = Neutral/Medium Risk
- −1 = Negative/High Risk
- −2 = Very Negative/Very High Risk

The average industry valuation derived in step one is adjusted up or down depending on the score for each risk factor. The adjustment amount typically shifts around $250 k for each point move either way (e.g. +2 would add +$500 k to the valuation; −1 would subtract $250 k).



3 Case Study for Risk Facto Summation Method

3.1 Evaluation of Angel Investment in Pre-Revenue B2B SAAS Supply Chain Management Startup 'ProcuLink'

Problem Statement:

Small and medium-sized businesses often struggle with inventory management, demand forecasting, and order fulfilment due to the lack of efficient supply chain management systems. Manual processes are often time-consuming, error-prone, and lead to inefficient utilization of resources. Businesses need a solution that streamlines their supply chain management processes and provides insights for better decision-making.

Solution Provided by the Startup:

ProcuLink is a pre-revenue startup based out of Palo Alto, California that has developed a supply chain management software solution that streamlines inventory management, demand forecasting, and order fulfilment for small and medium-sized businesses. The software leverages artificial intelligence and machine learning algorithms to provide real-time insights and predictions for efficient utilization of resources. The solution is a B2B SAAS product that can be used on a subscription basis and is designed to be scalable and customizable to meet the specific needs of businesses.

Promoter Background:

The Startup was founded by Anuja, Rahul, and Priya, each bringing diverse backgrounds and skill sets to the table. Anuja has a background in data science and has previously founded and exited a healthcare technology startup. Rahul has experience in product management and has worked with leading B2B software companies, while Priya is a seasoned marketer with experience in B2B and B2C domains.

Strategic Business Relationships:

ProcuLink has established strategic partnerships with large corporations in the retail and logistics industries, providing access to a large customer base and helping the company validate its solution. The company's primary focus is on B2B relationships.

International Expansion:

ProcuLink's software solution intends to spend extensive time and investments in expanding their solutions and homogenizing software to shipping and logistics industries across the globe.

Dependence on Other Suppliers:

ProcuLink's software solution is not dependent on other suppliers. However, the company relies on cloud-based infrastructure and third-party APIs to provide some of its functionalities.

General Startup Funding Atmosphere:

The startup funding atmosphere for pre-revenue software development companies has been positive in recent years, and many venture capital firms and angel investors have shown interest in investing in startups with innovative solutions and strong growth potential.

Competition:

ProcuLink faces competition from several established large players like Oracle, IBM, Infosys, and Mindtree who have developed similar products and solutions along with their other activities. ProcuLink is the only company focusing on this particular solution.

Risk of Emergence of New and Competing Technology:

The risk of new and competing technology emerging in the supply chain management software industry is not that high. ProcuLink's focus on artificial intelligence and machine learning algorithms provides a strong defence against any risks of new technologies.

Potential Litigation Areas: There are no potential litigation areas for ProcuLink at the moment. However, the company will need to ensure that its software solution complies with data privacy and security regulations.

Likelihood of Scaling the Business: ProcuLink has a scalable business model that can be easily replicated in different industries and regions. The company's strategic partnerships with large corporations and logistics providers provide a strong foundation for scaling the business. Anuja's experience in running multiple startups, some of which were partly successful and one of them had a good exit, provides valuable experience in navigating the challenges of scaling a new venture. With the diverse skillset and backgrounds of all three promoters, ProcuLink is well positioned for growth and success in the highly competitive supply chain management software industry.

Go-to-Market: The company is yet to fully formulate its Go-to Market Strategy.

Solution

Step 1: **Base Pre-money Valuations**

Let us consider an average Angel Round Pre-Money Valuations for Startups at US$3.8 Millions (Venture Pulse Q2, 2022)

Step 2: Risk Rating

Sl. No.	Risk Factor	Rating	Reasoning
1	Management Risk	+2	Experienced and diverse founder group
2	Stage of Business	+1	Good Strategic Relationships, Prototype Solution in place. However no paying customers
3	Legislation/Political Risk	0	Appears that there is no Regulation related Risk
4	Manufacturing or Service Delivery Risk	0	Strategic matters not dependent on an any external provider. Not entirely self-dependent either.
5	Sales and Marketing Risk	−2	The company is yet to fully formulate its Go-to-Market strategy

(continued)

Sl. No.	Risk Factor	Rating	Reasoning
6	Funding/Capital Raising Risk	+1	Good market exists to raise funds in the future
7	Competition Risk	−1	Existence of large players, even though not specialized poses a threat to the company.
8	Technology Risk	+2	Given that it is an AI and ML-driven model, technology risk is minimum.
9	Litigation Risk	0	No litigation risk is foreseen as the IP is internally developed.
10	International Risk	−2	Given the focus segment is supply chain and shipping across the globe, unfavourable international conditions would have a large impact.
11	Reputation Risk	0	No reputation-related risks foreseen given the nature of industry
12	Potential Lucrative Exit	+1	Scalable model would enable a good exit. Since marketing strategy is not in place, competition is high and international expansion is required, the exit may be delayed.
	Total	+2	

Step 2: Adjustment to pre-money valuation

Net Total of Risk Rating	+2
Adjust per risk rating	$0.25 M
Total Adjustment	$0.5 M

Step-3 Pre-money Valuation

Base pre-money Valuation	US$3.8 M
Adjustment	US$0.5 M
Maximum Pre-Money Valuation	US$4.3 M

Case Study Source: Author's creation

4 Advantages and Disadvantages of the Method

The risk factor summation method offers several advantages, which include:

1. Simplified usability.
2. It is a good method to assess pre-revenue early-stage companies.
3. Easy assessment and control of risks without complex calculations.
4. Time and effort efficiency.
5. No requirement for specialized software or technical knowledge, making it suitable for inexperienced investors.
6. Minimal resource requirements.

However, there are also several to this method, which include:

1. Establishing the base pre-money valuation may be difficult.
2. Inability to function as a standalone valuation method. The analyst will require to corroborate this method with further assessments and other methods like multiples approach, Score Card or DCF.
3. The method may not be completely be scientific as the risks associated with a Startup may be much more diverse than the 12 common risks listed.
4. Risk rating and its impact on the valuation is purely judgemental as against being driven by an objective factor.
5. Positives could offset the Negatives and vice versa. Since the range of rating is limited to 0,1 and 2, a very large positive may be impacted offset by a small negative or conversely a very large negative may be offset by a small positive.
6. The base year is used as a benchmark for calculating the expected loss from each risk factor. This **could result in a bias** if the assumptions made about future changes in the base year are not valid.

5 Conclusion

The Risk Factor Summation Method (RFSM) is a technique for valuation of Startups by understanding the associated risks. It provides a very good framework to understand the risks associated with a Startup and getting a good exit.

The method is particularly useful for pre-revenue, early-stage startups where cash flows are unpredictable.

An analyst may corroborate the outcome of this method with other methods like the Venture Capital Method, Berkus Method and the Score Card Method.

References

Bill Payne, Gust. Valuations 101: The Risk Factor Summation Method, Bill Payne Angel Investor, Frontier Angel Fund (15 Nov 2011). https://gust.com/blog/valuations-101-the-risk-factor-summation-method/

Case Study Source: Author's creation.

CB Insights. *Why do startups fail? Top 20 reasons*. 2019.

CB Insights 2023. https://www.cbinsights.com/research/startup-failure-post-mortem/

Deloitte. (2018). *Navigating regulatory risk: The role of the board*.

Failory. (2022a). 63 Failed start ups with a lack of funds. https://www.failory.com/startups/lack-of-funds-failures

Failory. (2022b) What waa BitPass. https://www.failory.com/cemetery/bitpass

Faster Capital 2022.

Forbes - Why 90% of Startups Fail 2015.

Kunal Nandwani, Chandigarh Angels Network 2022. https://chandigarhangelsnetwork.com/product-delivery-capabilities-startup/

NPR. (2011). *LimeWire settles copyright lawsuits for $105 million*. https://www.npr.org/2011/05/13/136263292/limewire-settles-copyright-lawsuits-for-105-million

Pulse of Fintech H2'22 Global analysis of fintech Investment (February 2023). https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2023/03/pulse-of-fintech-h2-2022-v14-web.pdf

Start-Up Valuation, Solving the valuation puzzle of new business ventures. Master Thesis HEC Paris Patrick Reinfeld (June 2018). https://www.vernimmen.net/ftp/Start_up_Valuation_Reinfeld_vF.pdf, Page 54, Semenchuck, 2017

Joan Schneider and Julie Hall Harvard Business Review - Why most product launches fail, April 2011.

Source: Retiba. Online Valuation Tools. https://retiba.com/risk-factors-summation/

TechCrunch. (2015). *The rise and fall of Friendster*. https://techcrunch.com/2015/08/30/the-rise-and-fall-of-friendster/

TechCrunch. (2016). *TransferWise hits profitability, plans expansion in Asia*. https://techcrunch.com/2016/05/19/transferwise-hits-profitability-plans-expansion-in-asia/

TechCrunch. (2017). *Jawbone is being liquidated as its CEO launches a related health startup*. https://techcrunch.com/2017/07/06/jawbone-is-being-liquidated-as-its-ceo-launches-a-related-health-startup/

The Verge. (2020). *Andy Rubin's essential is shutting down*. https://www.theverge.com/2020/2/12/21135405/andy-rubin-essential-products-shutting-down-new-mobile-os-email

Valuations 101: The Risk Factor Summation Method, Bill Payne Angel Investor, Frontier Angel Fund (15 Nov 2011). https://gust.com/blog/valuations-101-the-risk-factor-summation-method/

Venture Pulse Q2 2022. https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2022/07/venture-pulse-q2-2022.pdf

David K. Williams. *According To Inc. Magazine*, October 28, 2015.

World Economic Forum. (2018). *Emerging market risk outlook 2018*.