DILUTION DODGEBALL

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The Situation

The last several years have seen a dramatic uptick in biotech innovation and founding of new companies. This escalation in company formation has led to a growing number of biotech companies successfully seeing their products go to market via partnerships and acquisitions or independent commercialization, relying primarily on initial public offerings (IPOs) to fund their commercialization and launch efforts.

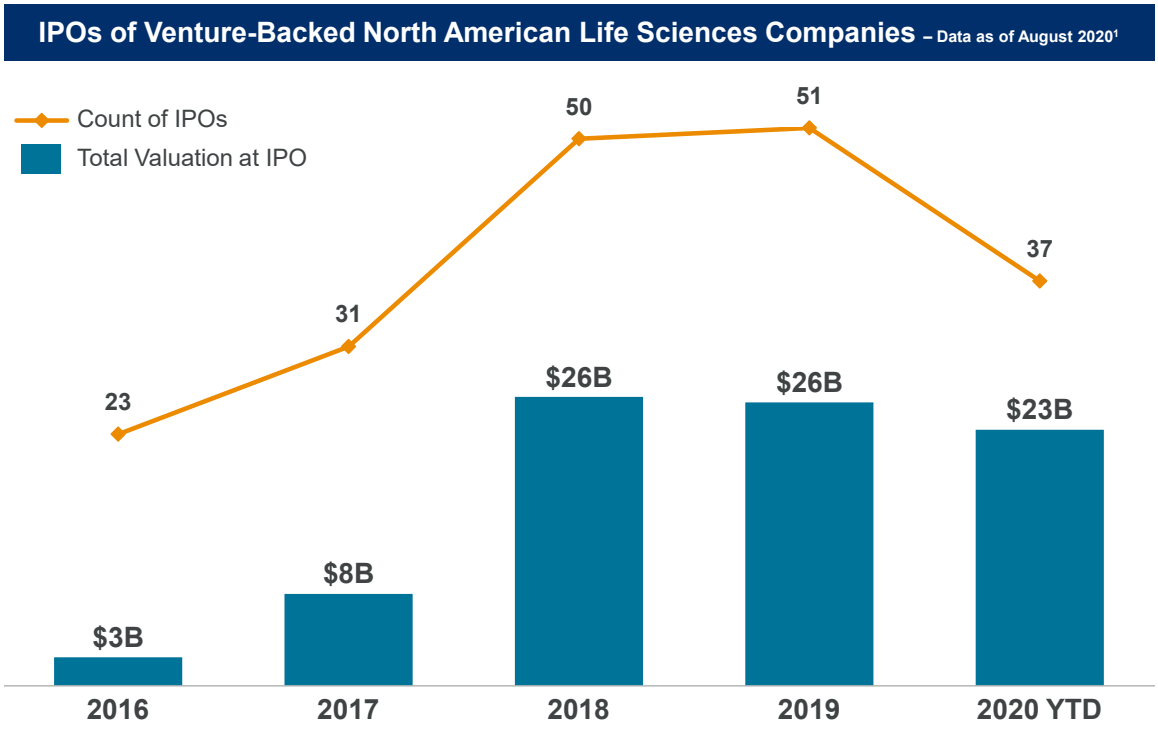


Exhibit 1: North American life sciences IPO activity[1]

As Exhibit 1 indicates, over the last four years the total IPO valuation of life sciences companies has increased by a factor of more than seven. This substantial increase in funding suggests that companies are securing more resources to chart their own path to independent commercialization.

Developing and successfully commercializing a biopharma product is no small undertaking. The multi-year journey is fraught with clinical, financial and operational uncertainties that many companies fail to overcome.

The companies that do overcome these challenges are able to realize the promise of their therapeutics as well as the financial rewards that come with starting and growing a successful biotech company.

Company	Product Launched	Launch Year	Market Cap (2005)	Market Cap (Launch year)	Market Cap (2021)	Growth in Market Cap 2005 – 2021
ALEXION	**Soliris**	2007	$0.7B	$1.42B	**$33.6B**	*48x*
ACADIA	**Nuplazia**	2016	$0.15B	$3.66B	**$7.6B**	*51x*
BIOMARIN	**Naglazyme**	2005	$0.34B	$0.52B	**$14.9B**	*44x*
Alnylam PHARMACEUTICALS	**Onpattro**	2016	$0.17B	$8.7B	**$17.4B**	*102x*

Exhibit 2: Example companies that successfully commercialized their pipelines[2]

Exhibit 2 details four exemplar companies that have demonstrated clinical and commercial success that has translated to substantial economic value creation.

However, the rewards of bringing a product to market come at a steep price. As Exhibit 3 indicates, the financing required to develop and commercialize a drug can exceed one billion dollars.

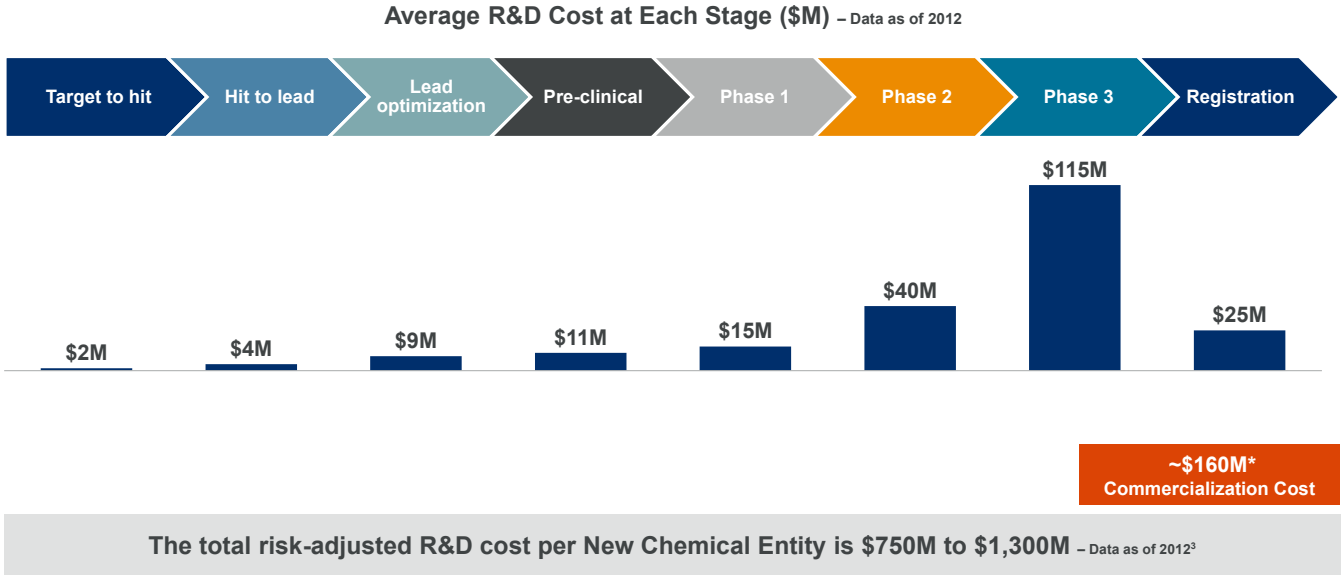


Exhibit 3: Average R&D costs by stage[3]

For companies that also have a significantly higher risk profile due to clinical and operational uncertainties, raising this magnitude of financing can lead to significant dilution events across the life cycle of the company. As founding teams lead their companies through this journey, they are willing to accept significant dilution over the various growth stages of their company. They accept this situation with the understanding that the overall size of the pie is growing so much that their shrinking share of the pie will be sufficient value to reward them for their efforts.

Section 2: Current State Example

So, what does this journey look like, and how much value are founding teams giving up to investors and other parties through their financing rounds? The hypothetical example below shows a simplified map of this journey:

Journey Step 1: The Founding

Two founders discover a molecule and have seen great results in an animal model. They decide to form a company, becoming equal shareholders with a 50% share each.

Journey Step 2: Early-Stage Funding

The co-founders realize they will need to set up operations for pre-clinical development as well as hire a small team to run studies. They secure early-stage funding from Venture Firm X for ~$5MM. Venture Firm X expects to have 55% of the company. Consequently, the co-founder equity goes from 50% for each co-founder to 22.5%.

Journey Step 3: Mid- to Late-Stage funding

The company successfully goes through pre-clinical development and transitions to clinical development phases 1 and 2. This requires a syndicate of investors placing $50M of additional funding into the company. After dilution, each founder's shares are 6% each.

Journey Step 4: Commercialization

The company is nearing phase 3 trials and wants to commercialize its asset independently. In order to finance commercialization, the company decides to do an IPO. This results in each co-founder receiving 2% of the post-IPO valuation of the company. This last step demonstrates a significant dilutive event, given the amount of financing required to transition the company to commercialization. Furthermore, the founders also must set aside a portion of the equity for future employees and management, further diluting their individual shares. There are times when the funding requirements to commercialize a product can exceed the current valuation of the company. This step can be filled with setbacks — such as funding unexpected additional trials to meet FDA requirements — which would lead to further dilution.

When you work out the math, assuming everything goes successfully and assuming a $630M market cap post-IPO, the company/founding team retains 4% of value/ownership, and each co-founder retains 2% of value, which translates to $12.6M each in value. As the value of the company increases, so does the value of equity to each of the co-founders. For years, this has been the status quo and has provided enough incentive to motivate leaders to endure the ups and downs and risks of biotech development.

Exhibit 4 (below) shows examples of what the cap table looks like along the four steps of the journey of a biotech company. The figure indicates that founders usually see more than 90% reduction in equity overall, with a significant reduction in equity happening in Step 4 of the journey.

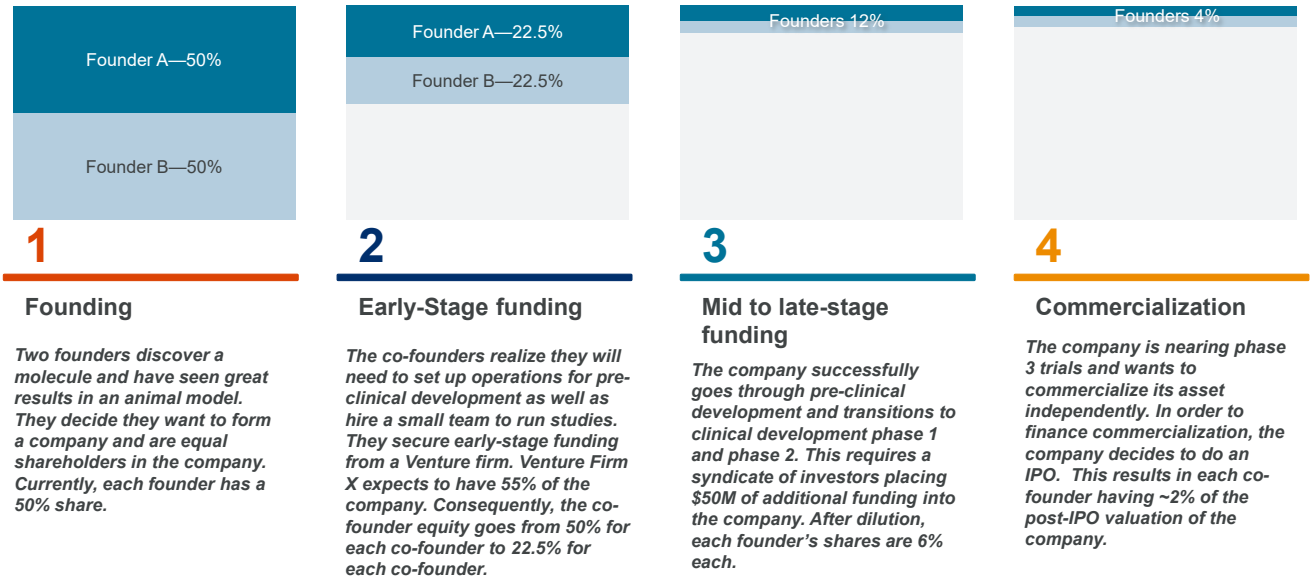
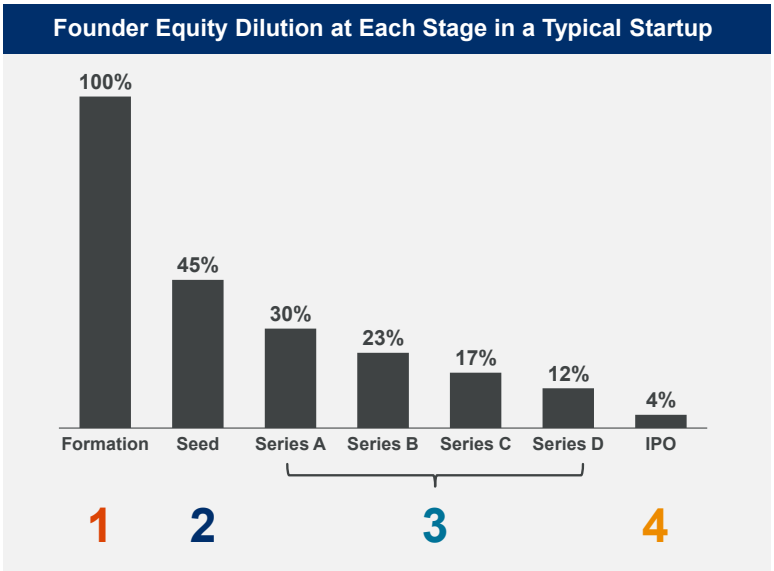


Exhibit 4: Founders' equity dilution by journey step of company development[4]

Exhibit 5 shows the same dilution pattern placed against the typical rounds of financing that a company experiences as it attempts to successfully bring its products to market and improve patient outcomes.



Assuming everything goes successfully and assuming an average post-IPO valuation of **~$630M**, the founding team retains **4%** of the value/ownership, and each co-founder retains 2% of value, which translates to ~$13M each in value.

Exhibit 5: Founders' equity dilution by round of funding[5]

Section 3: Future State Example

What if there was a low-risk alternative to circumvent Step 4, allowing founders to have the best of both worlds? They could successfully commercialize their product and avoid a significant dilutive event. They can also eliminate the need to set aside additional equity for hiring a senior management and leadership team; but two conditions need to be met for founders to realize this set of favored outcomes.

Condition 1:

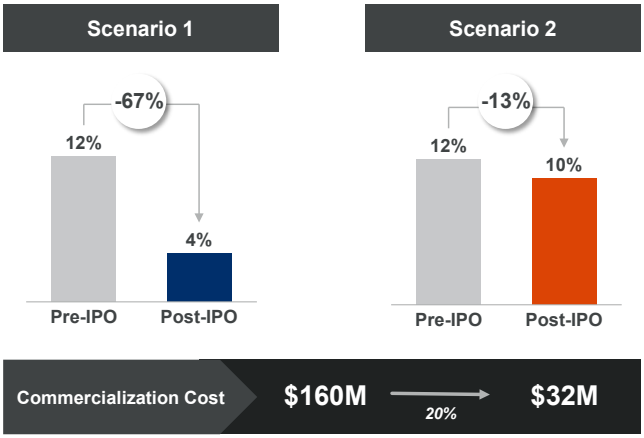
Pre-commercial companies will need the ability to execute not just a basic launch, but a best-in-class launch. They need to establish a set of commercialization capabilities in-house or via a network of third-party vendors to successfully commercialize their product. The orchestration of all these capabilities will be a critical success factor to maximize the commercial potential of the product.

Condition 2:

Pre-commercial companies need to establish these commercialization capabilities with a novel financial arrangement that minimizes the upfront cash outlay needed to set up the commercial infrastructure.

Until very recently, meeting both conditions was not possible for pre-commercial companies. However, commercialization platforms that allow the meeting of these conditions to be within the reach of these companies are now available.

As a result, founders can maintain far greater equity in their company, which can be allocated to senior leadership and other employees who have taken on the risk of propagating their products through the clinical development journey. Exhibit 6 shows how avoiding dilution while successfully launching a product can lead to a dramatic difference in equity retention for founding/leadership teams.



ILLUSTRATIVE	Scenario 1	Scenario 2
@ Founding		
Valuation	$4M	$4M
Founder Equity	100%	100%
Founder Value	$4M	$4M
@ Post-IPO		
Valuation	$630M	$630M
Founder Equity	4%	10.4%
Founder Value	$25M	$66M

Exhibit 6: Comparison of equity dilution in current state vs. best-of-both-worlds scenario[6]

Exhibit 7 further illustrates the point that in the best-of-both-worlds scenario, founders can experience a 160% increase in their equity in the final stage of financing, translating to a more than 300% increase in value that can be retained in the business.

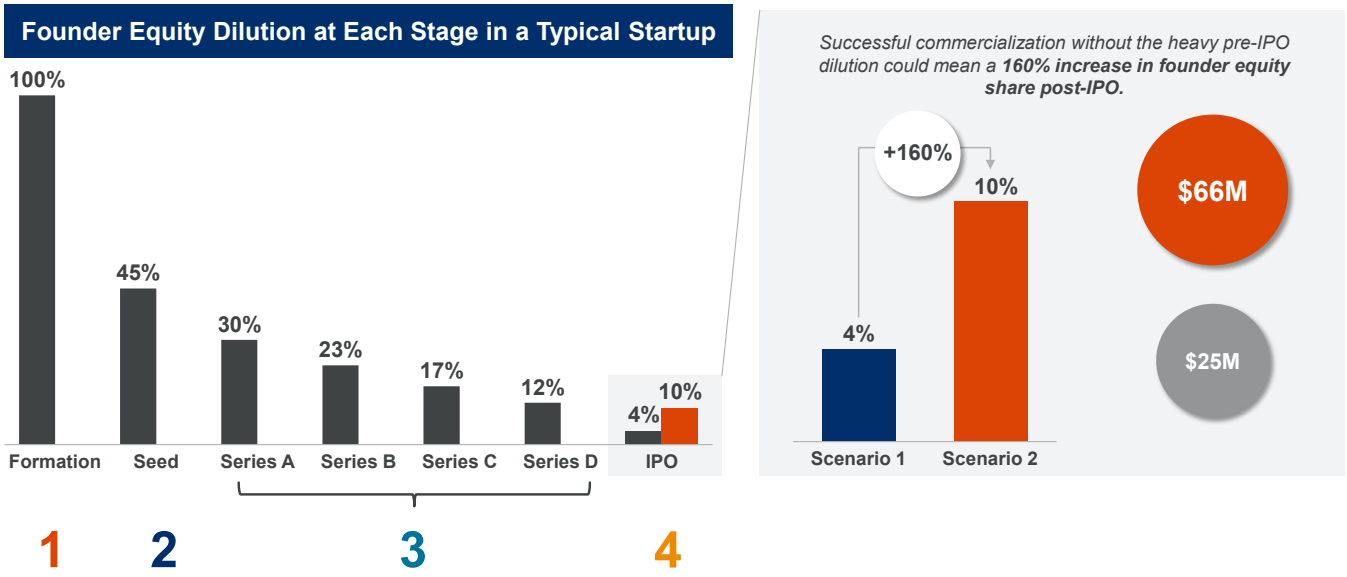


Exhibit 7: Comparison of equity and absolute dollar differential in retained equity value between current state and best-of-both-worlds scenario[7]

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Conclusion:

Biopharma entrepreneurs and executive teams have an opportunity to characterize a "new normal" of life sciences financing and dilution. The key to successfully reshaping expectations and equity allocation across the cap table will be to adeptly cross advanced commercialization capabilities with novel financing arrangements. This is certainly a nontrivial effort but one that, if realized, can yield the best of all worlds: improved patient outcomes and significant economic value with minimal equity dilution.

References:

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[4] Lewis Hower. (n.d.). How Equity Dilution Impacts Early Stage Startups. Silicon Valley Bank. https://www.svb.com/blogs/lewis-hower/startup-equity-dilution

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[6] EVERSANA Analysis