GOLDEN SECTION

WHITEPAPER

Investing in software? *You bet your assets.*

By Dougal Cameron, GP, Golden Section

Originally published 2020. Re-issued under the Golden Section brand; the analysis is unchanged.

A framework for valuing software companies in the innovation economy — why revenue is the right unit of comparison, and why the accounting habits of the industrial economy cannot price this asset class.

SUMMARY

Revenue multiples, churn rates, never-ending cash burn… the world of software value creation seems *esoteric at best.*

At worst, it seems like a fanciful concoction of unfounded exuberance and an irrational truth avoidance (much like the emperor with no clothes). But does this perspective come from a bias developed over one hundred years of societal normalization following the upheaval of the industrial revolution? Could our perspective be so molded by the exogenous shock the industrial revolution had on all facets of society?

In this paper we explore the impact the industrial revolution had on the world and how it so shaped reality that the emergence of a new revolution, the innovation revolution, slips past our industrial economy drenched mindset. We find ourselves having the same conversations with new investors about the logic of value creation in software and we get brief glimpses of the same irrationality that we once saw when looking at this industry. Over the years, we have lost this sense as we settled into the innovation economy. This paper is our attempt to walk the reader through investing in the innovation economy in general and the software vertical of the innovation economy in particular.

THROUGHOUT THE NEXT FEW PAGES WE CONCLUDE THE FOLLOWING

01	The innovation revolution will have as dramatic an impact on finance, education, social construction, and government as the industrial revolution had
02	Software is a key component of the innovation revolution
03	Valuing software companies is a new discipline and the structures of the industrial economy are wholly inadequate to the task

04 Software valuations from firms with negative net cash flow in excess of 10× revenue are not necessarily unreasonable

05 Software returns should approximate revenue growth rates in the long term

06 Software-as-a-service (SaaS) returns are outpacing most other asset classes

01

Industrialization to *innovation.*

The start of the industrial revolution is not a precise date. Scholars debate on where and when it occurred, but that it occurred is not debated. At the start of the 16th century, the proportion of the world engaged in subsistence agriculture had been unchanged for centuries at rates higher than fifty percent. In fact, the only civilizations that enjoyed more than sustenance standard of living did so through exploitation and slavery. In the seventeenth century, this began to change, albeit slowly. The industrial revolution started. By the twenty-first century, the share of the labor force of industrialized economies engaged in all agriculture (not just subsistence) is less than two percent.

In 1763, with the industrial revolution still in its infancy, James Watt noticed the inefficiency of the Newcomen engine. Watt was working at the University of Glasgow at the time as an instrument maker. And, like every entrepreneurial story, Watt saw a problem and could not rest until it was solved.

This fire burned in Watt for more than a decade until he brought into production what is known today as the Watt Steam Engine in 1776 (an important year for several other reasons too). This new device used 75% less fuel for the same output of previous engines. And upon this innovation, the industrial economy exploded.[1]

In preceding economic regimes, land formed the basis for wealth. Its productive capacity established its long-term cash flow potential. Investments were long term in structure and nature and the source of investment capital was similarly long term. Interestingly, nominal lending rates during this period fluctuated between a modest 10 to 20 percent despite the geopolitical instability.[2] Industrialization created a new form of wealth generation on a similar scale as that of agricultural or land based but divorced from land. Furthermore, the rapidity of the cash cycle in industrial production proved completely novel and incompatible with established capital sources.

The modern banking system established alongside the emergence of the industrial revolution had established lending sources for working capital. This working capital, short term in nature and relatively manageable in risk and return, needed short term feedstock capital. Several models were attempted but the current demand and time deposit-based banking emerged as the winning model. Gradually, and over decades, these banks innovated to provide longer term investments against hard assets.

The impact of the industrial revolution did not stop at the creation of the commercial banking system we know today. For instance, because the production so far outstripped sustenance requirements, the inelasticity of metal-based money supply became a bottleneck. Hence, these new capital sources resorted to paper-based notes that became de facto currency. Ultimately the volatility of on currency from failures in the banking industry resulted in central banks stepping in to provide the unit of measure for commercial transactions. Modern monetary policy finds its roots in the industrial revolution.

> **Note.** Fiat currency predated the industrial revolution. China and the far east have had forms of fiat currency as early as the 7th century. However, most forms of fiat currency in the west failed to take hold until coinciding with the industrial revolution. This is likely driven by the abundance created during and by the industrial revolution as well as the modern banking system that enabled securization of currency.

Compared to agricultural pursuits, industrial production concerns had different cash needs and return profiles. While agriculture returns ebbed and flowed based mostly on harvest yields, industrial production-based returns proved elastic to capital availability. Hence, modern accounting and its link to credit underwriting in the new banking system formed the basis for this calculation. The modern form of financial accounting emerged in this period and is linked to the value-creation mindset of the industrial economy. Cash flow and underlying asset stability became paramount to providing security to banks.

The societal benefits of the industrial revolution come from the increase in labor productivity. This increase enables improvements in living standards in an economy as the output of labor increases for the same hour of work. Total factor productivity gains reached the highest annual gains in the early 1900s peaking at 3% per year with the advent of electricity, telecommunications, chemicals and engines. Gains moderated to 1% per year up until 2000

when it has started increasing again.[4] It is too early to tell right now what the gains will be due to the digitization of the industrial economy, but it seems safe to expect at least the same level of increase experienced in the early 1900s.

TABLE 01 — TOTAL FACTOR PRODUCTIVITY GROWTH IN HISTORICAL PERSPECTIVE

PERIOD	TFP GROWTH (AVG. ANNUAL)	MAIN SOURCES OF GROWTH	CHANGE IN LIFE EXPECTANCY (YEARS PER DECADE)
1870 to 1900	~1.5% to 2%	Transportation, communications, trade, business organization	1.3
1900 to 1920	~1%		3.2
1920s	~2%	Electricity, internal combustion engines, chemicals, telecommunications	5.6
1930s	**~3%**		3.2
1940s	~2.5%		5.3
1950 to 1973	~2%	Widespread	1.4
1973 to 1990	<1%		2.4
1990s	>1%	Information technology	1.7
2000s	~1.5%		1.4
1870 to 2010	**~1.6% to 1.8%**		**2.3**
1950 to 2010	**~1.2% to 1.5%**		**1.8**

Source: Shackleton, Congressional Budget Office (2013).

The implications of the economy shifting from the industrial economy to the innovation economy are palpable. At the beginning of the 20th century, manufacturing employed 32.4% of the economy. Almost 100 years later in 2015, this figure shrank to 8.7%. Meanwhile, professional services (where most innovation work occurs) grew from 3% to nearly 30%.[5] The declines were pronounced in the early 2000s as the software industry accelerated.[6]

The innovation revolution is not new or emerging, *it is here.*

> **Note.** It is not a coincidence that the lowest period of productivity gains coincided with the economic period most characterized by hyper-inflation. This occurred because financial expectations assumed a level of gain that did not occur; hence, inflation. It is also worth noting that the dot-com bubble followed a period of hubris in software company valuations without the commiserate increase in total factor productivity. This productivity link to inflation follows through present. The historic stimulus during the '09 recession caused many prognostications of runaway inflation; this did not occur. The reason for this is the extremely high levels of productivity increase driven by tech adoption. More recently, it is interesting how the stimulus of the COVID-19 driven recession is also joined by a historic tech adoption cycle that is likely to mute the inflationary impact of the stimulus. This muting could easily become an overwhelming impact resulting in deflation; an outcome we would be wise to fear.

The paradigm shift in operating prerogatives, accounting norms, and banking requirements in the innovation economy is vast and similar in scope and size as the shift from the agrarian, hard specie economy to the commercial banking driven industrial economy. For example, a well-run manufacturing firm should produce 10 to 20% return on assets (net profit / total assets). This performance enables lending against assets and debt service coverage to enable much higher return on equity (net profit / total equity). However, a software company will likely have no profit and, because of the expensing of R&D costs, very limited assets. As a result, measures like ROA or ROE are wholly inadequate to characterize the asset class.

Where banking in the industrialized economy lends on assets and debt service coverage, banking for software firms needs to look to the size and stability of recurring revenue. This exercise is foreign to most lenders today, but a small contingent of lenders in this space are developing. Furthermore, where most investment success metrics in the industrial economy focused on operating profit size, stability and growth; innovation investors are looking to the size, stability and growth of high margin revenue as the primary value creation metric.

02

Shall I compare thee to a *software valuation?*

So how should current investors think about software valuations? Does paying 50× revenue for Zoom make sense? How can anything trade on a multiple of revenue? As we will go on to discuss, not only does revenue make the best unit for comparison for companies across stages and maturity, but it also provides an easy map to stability and size of underlying cash flows. However, to understand this the reader must first understand the value creation process for software companies.

Mapping revenue-multiple to cash flow for software companies

Assets have value because of an expectation of future cash flow. But software companies rarely have positive cash flow. How can software companies have positive enterprise value? The answer to this lies in the expectation of the size, scale and scope of future cash flows.

While industrial economy service and product firms can map revenue to cash flows by nature of modern P&L accounting, software firms follow a more circuitous process. For instance, to determine the efficiency of a manufacturing firm, one might evaluate the return on assets, leverage ratio, working capital cash cycle, and return on equity. The revenues turn into distributable cash on the P&L with some small balance sheet accrual impacts. For software companies, the enterprise value-building activities are growth expenses, and these are expensed on the P&L (very few firms capitalize R&D costs). Hence, net cash flows to equity are a theoretical concept until growth is no longer the highest and best use of retained earnings. Once the firm decides to focus on cash, the cash flows from a well-run software company should be a significant portion of revenue (45–50%).

> **Once a software company is shifted to cash flow generation from growth generation, the sustainable net cash flow potential should be *45 to 50% of revenues.***

Commercial office real estate provides a good basis for comparison to further understand the uniqueness of a software company's value creation process. Take a five-hundred thousand square foot commercial office building for example. After the initial capital investment ($125M), the building has to finance lease-up until stabilization. When stabilized the building should produce NOI margins of approximately 55% compared to its revenue (similar to software). Let's say the building can charge $35 per square foot and stabilizes at 90% occupancy. This means $15.75M in rental revenues and NOI of $8.66M (for a 6.93% cash return). Now let's say that these buildings trade for 5% cap rate when stabilized. This means the building would trade for $173M producing a profit of $48M (less the cost to get to stabilization of course). The $173M valuation represents a multiple on revenue of 11× (but no one thinks about commercial office values that way). Once levelized, these cash flows will increase at the rate of inflation with perhaps some increase or decrease due to local supply-demand imbalances.

COMMERCIAL OFFICE BUILDING	
Enterprise value	**$173M**
Cost value (appraisal)	**$125M**
Value created	**$48M**
Revenue multiple	**11×**
EBITDA multiple	**20×**

SOFTWARE COMPANY	
Enterprise value	**$175M**
Total investment	**$2.25M**
Value created	**$172.75M**
Revenue multiple	**9×**
Annual cash flow multiple	**18×**

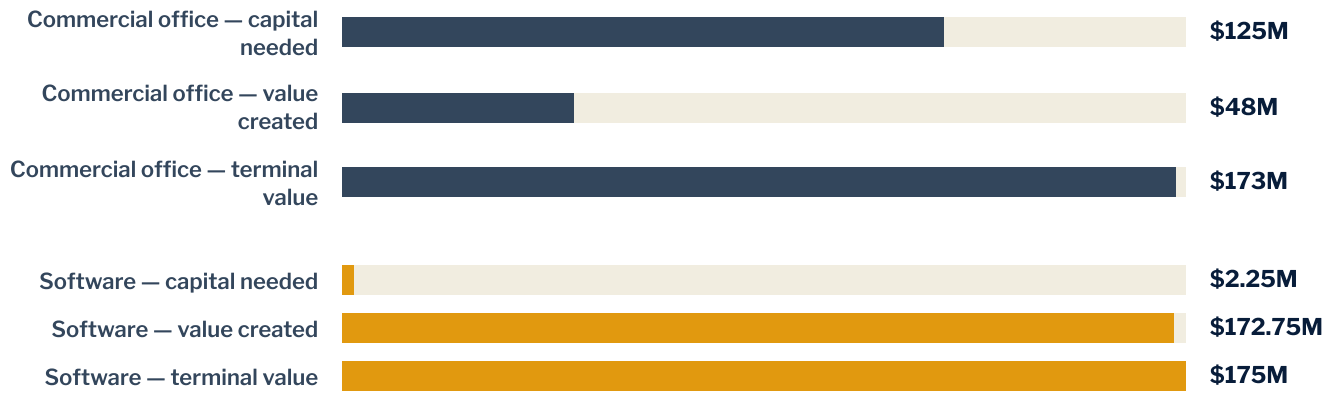
Now let's look at a software example to see the similarities and differences. For example, take a person who found a problem; something she knew had to change (much like James Watt from earlier). She worked hard and with $750K of funding got to $1M in revenue. She partnered with a firm that knows what they are doing (like Golden Section, obviously) and pulled in another $1.5M against revenue growth until she hit $5M in annual recurring revenue. This revenue has a 90% gross margin and could sustain a 50% net profit margin comfortably. At this revenue level, the firm should be able to grow 40%+ per year without any additional capital. Assume she continues growing for four more years at this rate resulting in $19.2M in revenue (run rate). Note that the total invested capital to this point is $2.25M. This business can

comfortably produce $9.6M in annual cash flows. Furthermore, the company's net churn is –5% meaning this annual cash flow is growing 5% per year (~2× inflation). This company could sell for a 18× multiple on annual cash flow or a 9× multiple on revenue (given the rule of 40 compliance[7]). This results in a $175M exit price on cash flow multiple and $175M on revenue multiple; resulting in an 77× return on the invested capital. Obviously, this is an incredible return. To achieve a similar return result in the real estate illustration above, the commercial office building would have to get financing 99.5%+ LTV. Obviously, this is not possible.

> **Rule of 40.** A heuristic in software metric management wherein the growth rate is compared to EBIT and the addition of the two should meet or exceed 40. Despite being described as a 'rule', the rule of 40 is only actually attained by 20% or fewer companies. Firms that do attain it benefit from higher valuations.

The comparison of value creation for a commercial office building and a software company is a good one. Both strategies of value creation find terminal value in the stability of the cash flow stream. In addition, both incur upfront expense to secure long term cash flows (similar to a bond). Furthermore, both have built in inflation protection by nature of rent (or contract) increases. However, as the chart below indicates based of the two examples shown earlier, the software strategy requires far less capital and, hence, less leverage is needed to produce a market return. As a result, software value creation is less prone to business cycle interruption and exogenous shocks. Software also enjoys an infinite scaling opportunity where commercial office is locked into its initial build footprint.

FIGURE 01 — VALUE CREATION COMPARISON



Bars scaled against the largest value ($175M). Derived from the two worked examples above.

Software supplies similarly stable and strong cash flows as commercial real estate *but without the debt-risk or asset coverage.*

The journey from revenue to cash on cash returns for the commercial office example is simpler and more straightforward than that of the software example. However, the software company example has a higher embedded growth rate and, by nature of the absence of debt, it is less prone to destruction from business cycle changes. The activities of promoting, securing, and keeping rental agreements in the commercial office building generate a 55% margin that can be distributable to the capital (debt and equity). The process from customer need to cash flow is extremely logical for the commercial office building.

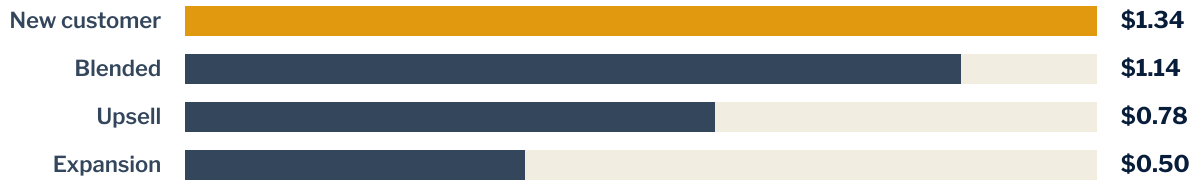
The software company, on the other hand, has a more indirect path to cash flow. In the journey from customer need to cash flow, there are three buckets of expense. The first bucket is cost of sales. Usually this amounts to 10–15% of revenues and is made up of some labor as well as infrastructure costs from servers and the like. The second bucket of costs are the maintenance related overhead costs. These include: development activity needed to maintain the product, sales activity needed to maintain and support the current customers, and administrative activity needed to support the organization. The maintenance related costs should be less than 40% of revenue for well-run organizations. The last bucket of costs are growth related costs. These include marketing, sales and product activities designed to find new customers, grow existing customers and build new products or features. This bucket of costs is growth-dependent; meaning the costs create growth above the current account expansions. The 'stabilized' cash flow potential for a software company is the revenue less cost of sales and maintenance costs.

The stabilized cash flow often finds it highest and best use as more growth. For fast growing software companies, growth related costs can easily be 60–80% of revenue. The math-inclined reader will note that this results in more than 100% (when including the other expenses above); hence, an operating loss of 10–35%. This loss should produce growth, if it doesn't then the firm would be better to distribute the cash. The question of whether the growth spend is value-accretive is whether the sales spend is efficient.

Sales spend efficiency

Let's assume that the software company mentioned above has access to debt capital for growth. This debt capital will likely cost between 6% and 15% on an APR basis (yes, it's that big of a spread right now as debt capital emerges in this space). Recall that the outcome of a sales investment is $1 of revenue that is likely to grow at 5% per year (the net churn mentioned earlier) and that this revenue can produce at least $0.45 of cash flow per year (the 45 to 50% stabilized cash flow figure). Also recall that this cash flow should trade for $9 or more at exit. Hence, for the revenue acquired through sales to pay for its own debt service at 10% APR, the maximum cost payable for $1 of revenue would be $4.5. A rational economic actor would happily spend up to $4.5 in sales costs to secure $1 of new revenue (all other metrics remaining the same). And, assuming liquid capital markets or a nearby expectation of a transaction, the same rational actor may be willing to spend up to $6–7 to secure $1 of new revenue given that it would possibly sell for $9. These are staggering numbers. The median response of the KeyBanc SaaS Survey for new customer acquisition is $1.34 to acquire $1 of new revenue. This suggests that as an industry, software companies are not spending enough on sales (i.e. not burning enough cash).

FIGURE 02 — MEDIAN CAC RATIOS, 2018



Dollars of cost to acquire $1 of new An. Rev. Excludes companies below $5M 2018 ending An. Rev. Median new customer CAC of $1.34 is almost double upsell CAC and nearly 3.0× expansion CAC. Source: 2019 Private Company Annual SaaS Survey, KeyBanc Capital Markets.[11]

For Golden Section, most of our companies achieve sales efficiency rates below $1. In some cases, our portfolio companies have achieved rates below $0.50. This number indicates how hard the incremental customer is to secure as a function of that customer's revenue to the firm (or in our case, how easy). And while usually a lower number is better, it also indicates that the company has not invested enough into a productive sales channel.

We believe that a component of exit to our expected buyer is the sales efficiency growth potential imbedded in the company. This potential can be a valuable option to sell for an exit to the right strategic partner whose cost of capital is lower and who can exploit this opportunity.

So how do we know whether the sales spend is efficient? When should a software company stop pursuing growth and revert to cash flow generation for investor distributions? The finance-prof answer is whenever the gains from pursuing that investment are equal to the marginal cost of capital. In practice, however, this answer is far harder to secure.

Cash flow stability

Software firms demand high cash flow multiples for two reasons. The first is the stability of the underlying cash flows and the second is the growth rate of the underlying cash flows. As mentioned earlier, a software firm can produce 45–50% distributable cash flow margins. Now we will discuss the concept of cash flow stability.

Commercial office cash flows are considered extremely stable. The cash flows are secured by lease contracts from a range of companies for extremely long time periods (5 to 10 years). In addition, the building owner can rely upon default bias to maintain tenants after the initial term into a renewal of the lease. This contractual relationship as well as the habitual relationship secures the stability of the cash flows and allows the assets to trade at a cash flow multiple of 20× (or a 5% cap rate).

B2B software is similar to commercial office in this regard. Not only is the revenue relationship expressed in a contract, but those contracts can be similarly long in term (usually 2 to 5 years). However, unlike a building, the habitual relationship and the underlying data asset can be far stickier (leading to more cash flow stability) than the workforce habit of working in a particular building.

The habitual relationship between the customer and the software company is a function of the degree of the customer problem and the efficiency of the software solution. The tighter this relationship, the more stable the cash flows. For instance, not many firms would willingly switch software solutions when the incumbent solution is performing as expected. This reluctance to switch gets more profound over time as the data produced inside the software accumulates and becomes an advantage for the incumbent.

Cash Flow Stability = $f(C_p, C_{vp}, C_d, SC, CS)$

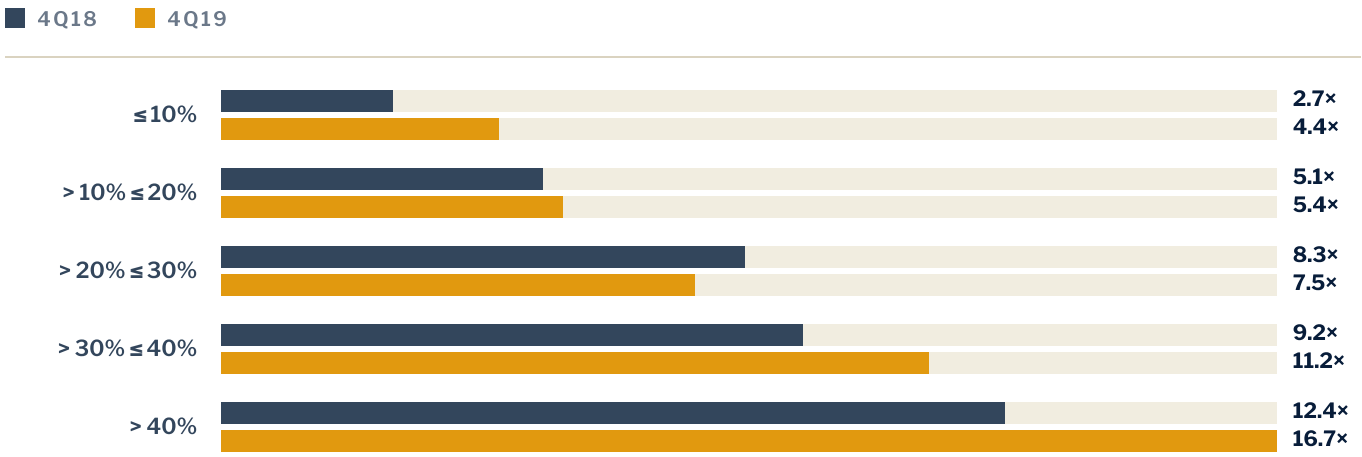
C_p	customer problem
C_{vp}	customer value prop value
C_d	customer data asset value
SC	switching costs
CS	contract strength

Ultimately cash flow stability for software companies is expressed through the churn rate. Hence, the churn rate is a function of cash flow stability linking it to the determinants of cash flow stability. The customer churn rate shows the degree to which the product is or is not performing against expectations. It is the percentage of customers who canceled the service over a given period. The net dollar churn rate is the percentage of revenue from accounts that churned compared to total revenue adjusted for the number of remaining customers that expanded accounts. This shows the degree to which the current customer base is expanding or contracting on a net basis. It suggests the power of the solution and the potency of C_p, C_{vp}, and C_d.

Impact of growth on multiples

Exit multiples are highly dependent on revenue growth. In fact, the relationship is linear, bordering on exponential. The reason for this is clear, a high growth company will have a higher amount of stable cash flows in the future than a slow growth revenue company (all other metrics equal of course). Take the example of two publicly traded firms with $5M in revenue each. The first is growing at 5% per year and the second at 45%. The SEG report graph below suggests that the first firm will trade for $22M and the second for $83.5M. And while that is a huge difference in entry valuation, by year 4 the effective amount paid for the then current revenue equalizes. This suggests that the $83.5M is worth the premium assuming the buyer believes it can maintain the growth rate for 4 years.

FIGURE 03 — EV / REVENUE VS. REVENUE GROWTH (TTM)



Median EV / revenue by TTM revenue growth band. Source: Software Equity Group, SEG 2020 Annual Report.[8]

The relationship between valuation and growth is extremely strong. It suggests that the market expects the historical revenue growth of a given firm to persist for at least four years. There is a slight premium paid, on a relative basis, for the lowest growing cohort which perhaps indicates some expectation of faster growth in future years. In all cases, this data suggests that investors expect growth to maintain or accelerate for these companies.

TABLE 02 — EFFECTIVE MULTIPLE PAID FOR THEN-CURRENT REVENUE, BY YEAR

GROWTH RATE	5%	15%	25%	35%	45%
ENTRY MULTIPLE	4.4	5.1	7.5	11.2	16
Year 1	4.19	4.43	6.00	8.30	11.52
Year 2	3.99	3.86	4.80	6.15	7.94
Year 3	3.80	3.35	3.84	4.55	5.48
Year 4	**3.62**	**2.92**	**3.07**	**3.37**	**3.78**
Year 5	3.45	2.54	2.46	2.50	2.61
Year 6	3.28	2.20	1.97	1.85	1.80
Year 7	3.13	1.92	1.57	1.37	1.24
Year 8	2.98	1.67	1.26	1.02	0.85
Year 9	2.84	1.45	1.01	0.75	0.59
Year 10	2.70	1.26	0.81	0.56	0.41

Entry multiples from the SEG report above, decayed by the stated growth rate.

The table above illustrates the chart from the SEG Report above as the effective valuation rates change across years at the given revenue growth rate. As you can see, the relative 'cheap' valuation of the low growth companies becomes a premium on a relative basis by year 2 for some cohorts and for all by year 5. This illustrates that the initial growth premium can be worth the expense assuming there is confidence in the future growth rate.

Deconstructing the discount rate and valuing the software cash flows

Now that we have explored the way that software firms create cash flow, the stability of the cash flow, and the premium for growth, we will next turn to the discount rate appropriate to use for valuing the cash flows from a software company. The discount rate provides the theoretical support for a 10× revenue multiple for a software company. It also expresses the way that risk is evaluated for software cash flows.

For all discount rate constructions, we start first with the risk-free rate. As it turns out, this is harder than simply using a treasury bill (essentially 0 at the time of this writing). The age of zero or negative real risk-free rates has arrived. Some scholars believe that negative real rates will be the condition for a long period of time as the world enters the negative rate portion of an eight-hundred-year super-cycle.[2] In any case, let's use 1% as the de-facto rate for the risk-free interest rate of a given small duration. To make this simple, lets also assume this is the nominal rate and the inflation premium is 1% meaning the real risk-free rate is 0%.

Normally we would then add a duration premium. The longer a cash flow takes to mature, the more risk there is simply from time. However, the current yield curve doesn't give much a premium to time (essentially 30 basis points for 10 years at the time of writing). Hence, we must theorize a figure. Let's use 2% premium for the investment period if 6 years (a good average holding period for a private equity firm).

Next we can add a risk premium to the rate to compensate for the default risk of the business that is distinct from the default free assumption of the underlying risk-free rate. A rough proxy for this rate is the spread between the 10-year treasury and the Moody's seasoned Baa corporate bond yield. This spread has fluctuated between 2% and 3.5% over the past 10 years. In the 2009 financial crisis, it reached a high of 6.1%. A safe, non-crisis number to pick here would be 2.5%.

Finally, we can add the private company discount which most people assume is about 20%. We will gross up the final rate by this discount by simply multiplying it by 1.25 (the inverse of a 20% discount). Hence the final rate is 6.87%.

Real risk-free rate	**1.0%**
Duration premium (6-year hold)	**2.0%**
Default risk premium	**2.5%**
Private company gross-up (× 1.25)	**1.37%**
DISCOUNT RATE	**6.87%**

(1 + 2 + 2.5) × 1.25 = 6.87%.

One problem with this approach however is that this discount rate ignores the growth of the underlying cash flows. In typical usage, revenue growth is modeled, and the resulting cash flows are discounted back by 6.87%. A more elegant way to fold growth into a valuation is to use the present value of a growing annuity formula, where *g* is the growth rate, *n* is the periods, and *r* is the discount rate. Using this method will get close to the SEG multiples stipulated above. However, there is one important distinction, a software company growing 45% per year is unlikely to be cash flowing at its stabilized level (45% cash flow margins). The popular heuristic of 'rule of 40' would dictate that such a growth rate would result in –5% cash flow burn. And a small coveted minority of firms achieve or beat the rule of 40 requirements.

> **Note.** A quick evaluation of the market multiples against our built up 6.87% discount rate suggests that the implied cash flow margins are lower in the market than we are expecting or the discount rate is higher than we expect. Obviously, it could be a little of both. It could also be the market continuing to adjust to the innovation economy by adding a built-in 'newness' premium to the discount rate (hence, a discount to the valuation).

Another way to solve this would be to evaluate a software company in the following way:

01	Understand the stability of the revenue and the centrality to the customer of the problem being solved (declare the revenue as R)
02	Evaluate the potential levelized cash flow margins through evaluating the cost activities of the firm (declare this as CF_m)
03	Determine the sales efficiency ratio of the firm (declare this as SE)
04	Determine the amount you are willing to invest in growth (declare this as Inv_g)
05	Determine the amount the company is spending at breakeven on growth (declare this as Inv_c)
06	Determine the number of years you are willing to hold the investment (declare this as n)
07	Use these variables to determine the future revenue after n years (declare this as R_n) — note this will require iterating both Inv_g and Inv_c back through CF_m to determine the amount of additional sales expense is available and then back into SE to increase the revenue. This process gets exponentially varied each year
08	Solve for value at year n: multiply R_n by CF_m and capitalize the result at your chosen rate
09	Last step, discount $Value_n$ back to present value using 6.87% (or whatever discount rate you choose)

03

If recessions be the bane of returns, *speak software.*

Software as an asset class has many unique distinctives. It is asset-light, needs a modest amount of upfront investment, and produces extraordinarily high margins. Another unique component is how the asset class performs during a recession. To understand this fully, we must return to the stability of the underlying revenue sources.

Software, at least in the contemporary construct, is purpose built to expand human potential. This means the ROI for the enterprise is in the productivity gains the solution brings. Those gains can be large and persistent. More importantly, those gains are difficult for a company to walk away from when times are good and, in most cases, impossible to walk away from when times are bad.

The stickiness of software for its customers is balanced with the difficulty of selling it into the customer at the outset. Selling software means selling change. And people want change like they want a hole in the head. Hence, software salespeople are selling long term gain through short term pain; it's not easy.

> **Selling software is equivalent to selling change and people want change like they want a hole in the head. *Selling software is hard.***

People resist change because we are habit driven creatures. Change draws attention and we value stability or modest gains over the possibility of a large loss (even if probabilistically it comes with a larger gain). This has been well documented.[9] In a recession, however, these natural tendencies shift slightly. The status quo will result in mid-level managers and department leaders posting losses (or extreme variances from the plan). Hence, the agent is thrown into 'large loss territory.' And, much like a gambler deep in the hole going back to the

roulette table for one more throw, the prospect of change and the hope for a big score becomes more enticing. This results in software companies growing faster during a recession despite general economic weakness.

In an earlier paper, we found that customer acquisition costs for publicly traded B2B software companies in 2008 and 2009 decreased by 40%.[10] This change is staggering. Reflect on our discussion above about the importance of the sales efficiency ratio. A 40% reduction in that measure means a dollar of investment goes 1.66× farther.

But sales growth isn't the only anti-cyclical nature of software. Most other costs in a software company improve during a downturn. The largest cost category for software companies is payroll. This gets relatively cheaper during a recession and more experienced talent relatively easier to attract. In addition, other fixed costs like rent, utilities, and the like are similarly negotiable and can be improved during a downturn.

As our research in 'The Golden Age of B2B SaaS' indicated, software companies experience continued growth and increased profitability during downturns. While the growth rate moderated from 50% on average to 10%, note that the rate is still above 0% during the worst recession in modern history. Likewise, profitability surged from –5% net loss to a 5% net gain from the peak to trough of the recession. More importantly though, the drop in growth followed a drop in sales and marketing costs driven by human decision-making. The sales efficiency ratio of nearly all public traded companies improved 40% during the downturn. This data and the logical framework indicating it suggests that software has strong counter cyclical dynamics in addition to a strong upcycle growth dynamic as well.

FIGURE 04 — B2B SOFTWARE THROUGH THE 2008–09 RECESSION, PEAK TO TROUGH

50% → 10%	**–5% → +5%**	**–40%**
Average revenue growth rate — moderated, but never negative	Net margin — losses turned to gains	Customer acquisition cost — a dollar of sales spend went 1.66× farther

Source: Cameron, 'The Golden Age of B2B SaaS?', April 2020.[10]

04

Speak software, *if you speak growth.*

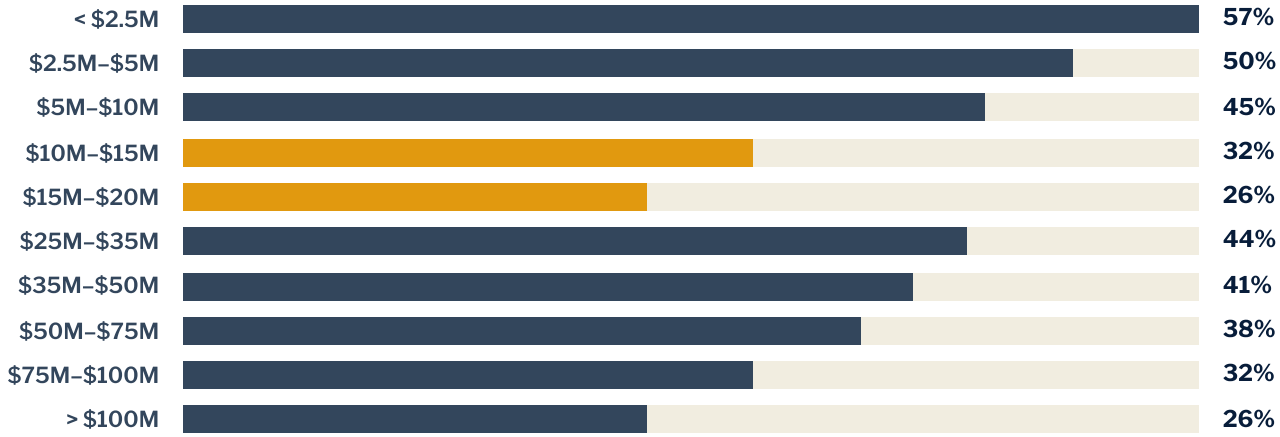
Revenue growth for software firms is clearly important. But what drives revenue growth? We explained the importance of the sales efficiency ratio before. And we highlighted the impact change-avoidance has on curtailing revenue growth (by pushing up the sales efficiency ratio). So, what are the key drivers to software growth?

The most important drivers are value prop and market size. Both must be strong and deep for growth to be persistent. Value prop (short for value proposition) is the reason why a customer goes through the short-term pain of change. For the value prop to be a growth driver, it must be meaningful. Usually a meaningful value prop provides a 10× return on the solution cost or better. Furthermore, the meaningful-ness of the value prop is always up to interpretation by the customer. Poor marketing, sales or account management threatens to upend a good solution. In many ways the descriptions of the value prop and the story told about it are more important than the process of delivering the value prop itself.

Market size is the second driver of software growth. Creating a strong value prop and targeting a small market means the total potential for revenue is muted. Most people assume $1B in revenue potential is a sufficiently large market for continued growth to an exit. However, market size is more important than just an indicator of how big a company can be.

The technology adoption curve comes into effect for all markets when selling software. As discussed earlier, software selling is synonymous to change selling. And as such, there are early adopters and innovators that form the core of a software company's growth potential. These customers are easier to get than later stage customers and more willing to change than the average. The early adopters and innovators are also usually a small component of the total market. This means a $1B total addressable market of 50,000 potential subscribers might only contain 500–1,500 early adopters and innovators. The company will experience a lag in growth as it transitions from the early stage of the adoption curve to later in the stage. This lag is demonstrated in the performance of software companies at different points along the revenue journey.

FIGURE 05 — ORGANIC AN. REV. GROWTH RATE BY COMPANY SIZE, 2018



2018 ending An. Rev. bands. Overall median 40.3%; median above $55M, 36.3%. The gold bars mark the chasm. Source: 2019 Private Company Annual SaaS Survey, KeyBanc Capital Markets.[11]

The Organic An. Rev. growth chart indicates a demonstrable slowdown in revenue growth for companies in the $10M to $25M revenue range. This is likely due to moving from innovators and early adopters to more mainstream customers. Usually in this range there is a higher reliance on upsells and expansions from current customers for the nascent total revenue growth. The median respondent gets 37% of new An. Rev. bookings from upsells and expansions; larger companies rely more heavily — roughly 1.4× more — on that source.[11] This again indicates the presence of the chasm that Geoffrey Moore talks about in his book *Crossing the Chasm*.

The presence of this innovator sales target means that small markets present a big problem to growth. If the chasm in a company's industry occurs at $3M in revenue run-rate, then it will be very difficult raising the money necessary to cross it. Hence, value prop and market size are both required and are growth drivers.

Given the presence of a strong value prop and a deep enough market, the growth throttle is sales and marketing spend. The sales efficiency ratio, mentioned earlier, dictates how clean the engine runs (i.e. how much revenue growth is purchased for a given dollar of spend). However, the larger a company becomes and the more money it spends, the more expensive the marginal customer is to secure. There is a clear relationship between sales spend and growth rate — but at the top end of the range the efficacy of the sales spend is not near what it is on the lower end of the range, and the variation between firm performance is exponentially larger. This demonstrates the laws of micro-economics at work in SaaS customer acquisition.

Software company valuations are driven by revenue growth. And revenue growth is driven by the underlying value prop, a sufficiently large market size, and a well-run sales organization. *Those three ingredients make for a potent growth machine.*

05

Capital sophistication coming soon to a *software company near you.*

Software companies have long been excluded from traditional forms of capital beyond direct investment. This is not unlike the early emergence of the industrial economy where traditional investment avenues provided only equity capital. In the 16th century, those traditional sources were accustomed to land investments and the rapidity of the cash cycle and the fit-for-one-purpose machinery posed a different challenge for the investment houses of the day. The answer emerged in the form of our current commercial banking system. Now the world is going through a new transition with the emergence of the innovation economy. One that will rearchitect capital sources and return flows to equip software companies with a capital stack that is right for the risk and return profile they represent.

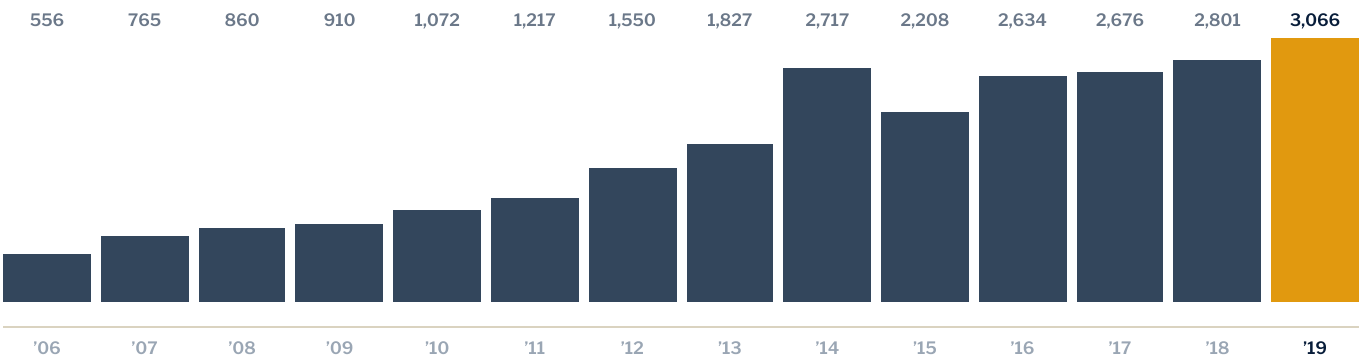
Venture capital or private direct investing has been the primary source of capital for software entrepreneurs. In addition, bootstrapping entrepreneurs usually rely upon some private investment as well as internally generated cash flows to grow which results in a slower growth profile and a slightly higher risk of competitive threat if the market is big enough. But all these forms of capital are equity capital. Furthermore, most of this equity capital views the risk of failure in their cost of capital as 40 to 90%. This means that this capital is not cheap.

The first areas of new capital that opened were venture debt. A new class of banks emerged that would look to the credit and track record of the venture fund and allow a proportion of the equity capital invested to unlock debt at relatively low rates. The performance of this debt proved instrumental in unlocking new forms of debt capital that are uniquely suited for this asset class.

The world of venture debt surged from less than $5B in 2006 to more than $25B in 2019. The COVID-19 initiated recession will likely result in more reliance on venture debt as firms seek to growth through debt to avoid soft valuations from equity providers. Charge offs and losses for

venture debt are low (under 2%)[12] and in the range of other commercial lending (1 to 2%).[13] This performance has driven other forms of lending that are not related to the presence of venture capital equity as de-facto risk mitigator.

FIGURE 06 — US VENTURE DEBT DEAL COUNT, 2006–2019



Deal count, US. Deal value rose from under $5B in 2006 to more than $25B in 2019. Source: PitchBook.[12]

Revenue based lending emerged in the early 2010s. Some of the venture banks spear-headed the development of the loan product. And while structures vary, most forms rely on revenue for underwriting, are covenant lite, and purport to grow with the company flexibly. An example would be that a firm would provide 40% of run-rate recurring revenue in the form of a five-year note. This note would be paid through a monthly payment equal to 2 to 5% of monthly revenue and would have an internal cost clock that would PIK the balance monthly. The rates for this type of financing rivaled factoring or PO financing in the early days (25 to 35% APRs). But competition and its support from traditional banking have driven actual rates down significantly. Golden Section knows of one firm that provides flexible facilities at a 6 to 7% APR against revenue.

These new forms of credit have already started to re-architect the banking world as payments companies have emerged to handle the cash flow process for software firms. For example, recent startup, Pipe (pipe.com), provides 12 months of customer cash for monthly paying customers to software companies. This acceleration is provided through a market of investors who bid on the strength of the underlying customer cash flows. Models like this will continue to emerge as the banking system morphs to incorporate the credit needs of negative EBITDA and asset-lite companies like software companies.

Returns, returns, *my portfolio for a return.*

The software industry is not new. It came to prominence in the 1980s as firms like Microsoft, Apple and the like dominated news cycles and grew revenues. The industry had an early zenith in the late 1990s which ended suddenly with the dot-com bubble burst. But the 1990s fervor for software companies was well-founded and proved foreshadowing of the expansion since 2010.

Public and private software companies see enterprise values increase alongside revenue growth. There is some fluctuation quarter to quarter on revenue multiples depending upon investor sentiment and other exogenous factors. But the most persistent driver of returns is revenue growth.

The Nasdaq 100's performance throughout its history steadily outperforms the S&P 500.[14] However, the Nasdaq 100 is comprised of more than just software. Nearly 22% of the index are consumer services and 6% are industrials. Hence, the question has to be asked, what about software?

The Software Equity Group has tracked the SEG SaaS Index for more than a decade. This index now has 91 publicly traded companies. In 2009, the number of publicly traded SaaS firms was less than 20, making tracking an index in this area difficult. However, with the recent boom in software IPOs, this task is slightly easier after 2010.

The SEG SaaS Index has steadily outperformed the Nasdaq 100 throughout its return profile (albeit still nascent). One notable exception was the beginning stages of the economic fallout from the COVID-19 pandemic. While the SEG SaaS Index outperformed the S&P 500 by falling only 25.7% (compared to 28.7% with the S&P), the Nasdaq fell only 23.3%. However, by September, the SEG SaaS Index had rallied to a year-to-date growth of 37.7% outperform the Nasdaq 100's 31.2% performance. Both these performances outperformed the S&P 500's 8.3% year-to-date 2020 returns.

TABLE 03 — PRICE CHANGE, YEAR TO DATE 2020

COHORT	MARCH 2020	AUGUST 2020
SEG SAAS COMPANIES BY SIZE		
Small	–32.7%	+21.9%
Large	–25.7%	+28.0%
Mid	–23.7%	+39.8%
Mega	–19.3%	+44.6%
INDICES		
Dow Jones	–32.8%	–0.4%
S&P 500	–28.7%	+8.3%
SEG SaaS Index	**–25.7%**	**+37.7%**
Nasdaq	–23.3%	+31.2%

Source: SEG SaaS Index Update, Software Equity Group.[15]

While the publicly traded history of subscription software companies is short, the performance of the sector and the returns from the sector are impressive. We contend that the sector is relatively protected from bubble dynamics that tend to bid up and blow up assets that come into favor due to the opaqueness of the value-creation process (which this paper goes into detail to clarify). This means that as long as software companies are characterized by high gross margins, high potential EBITDA margins, and stable underlying cash flows, then valuation growth commiserate with revenue growth is economically logical.

So by now we have established the instantiation of new economic change in the innovation revolution. And software is a leading component, and the most mature form, of this new economic era. How might a reader use this information to evaluate a software company for investment? This is what we will walk through next.

To hold with those who favor software — *the Golden Section framework.*

Valuing a software company, like most valuation disciplines, is more art than science. And the art of software valuations is obscured by myriad of heuristics that distract the artist. We will walk through a simple framework for valuation that includes the following elements:

1.0	Value proposition confirmation and definition
2.0	Existence of a market large enough to get to economic scale before shifting to mainstream users
3.0	Normative evaluation of software metrics (i.e. confirming that it is a software company)
4.0	Sales efficiency evaluation
5.0	Stabilized net cash flow analysis
6.0	Competitive analysis
7.0	Team analysis

1.0 Frailty, thy name is ‘no value prop’

The first area we evaluate of a new company is the existence, strength, and uniqueness of a value proposition. This order diverges significantly from the top down approach of industrial economy analyses. Instead, we need to know how critical of a task is the software performing, and, once performed, how much money is the customer willing to pay for that task to be performed. Evaluating this is straightforward, we suggest the following process:

01	Define the value prop of each product and service in terms of customer value, these are the hypotheses to test
02	Develop a null, the opposite of each hypothesis. For instance, 'NewCo's AP process product does not deliver $1,500 in cash value per AP clerk per month'
03	Inspect customer engagements, sales collateral, onboarding collateral, customer testimonials, churn notes, customer complaints etc to build a case to support the null
04	If the support of the null isn't compelling, then the value prop is likely strong

Other evaluations can be more ad hoc in nature with the same goal: defining and confirming the value proposition for customers. This is important. Reflect on the cash flow stability function theorized earlier. All the inputs to this function are or are derived from the value proposition.

For instance, the customer value prop could be strong but the underlying problem somewhat insignificant. This happens a lot on what we call insurance-like products whereby the solution is compelling but the likelihood of the problem occurring in the first place is extremely low. Perception distortion comes in here as well. For instance, no one assumes that they don't know how to hire people well, but the data on this is extremely deep. As a result, a product that eliminates the bias in hiring could be solving a problem that people don't know they have and, hence, suffers from problem weakness despite having reasonable solution value.

VALUE PROPOSITION FORM

Customer problem (described in cash form)	
Solution impact on problem (described in cash form)	
Solution cost to the customer (also cash)	
Network effects? (does the solution get more compelling as more people or companies use it)	
Data asset? (does the data asset grow over time?)	
Switching costs when in value? (what would the customer give up when switching the solution once they are getting value?)	

2.0 Market analysis

Once we know the problem and solution are important enough to drive enterprise value, we turn next to the market. In this section, we are interested in whether there are enough customers with this problem to build a business. This is more challenging than pulling some high-level numbers from Wikipedia.

As we discussed earlier, selling software is equivalent to selling change. And people don't like change. This is why Lotus Notes is still in use as an email client. We don't simply want to know that there are enough customers to get to an economic scale (we assume $10M in An. Rev. at Golden Section), we want to know that there are enough early adopter customers to get to economic scale. The proportion of early adopters in each industry is different and the degree to which competitive products have already penetrated these early adopters and taken their budget is also dynamic between industries.

We suggest the following process:

01 Through research, define the entire market (often called Total Addressable Market or TAM)

02 Next, define the portion of that market that hits the sweet spot for the problem identified above for which the value prop delivers compelling value (often called Serviceable Addressable Market or SAM)

03 Finally, stipulate an early adopter proportion and apply it to the SAM; let's call this the Rational Market or RM

The RM at the firm's average contract value needs to beat the economic scale number with sufficient margin for safety. This margin should grow substantially for the existence of every competitor attacking the same RM.

3.0 Normative evaluation — all that glitters isn't… software

The strong revenue multiples in the software world and the ease of getting service revenue over and above software contracts have driven a lot of shenanigans in the software industry. We have seen countless examples of opportunistic managers stuffing contracts with services alongside software to try and prop up software revenues and command a software multiple. These efforts are always revealed when inspecting the software metrics against norms. Here's a list we use often:

METRIC	NORM / WHAT TO CHECK
Gross margin	70 to 90%
COGS	Check that it includes labor (activity-based costing is best) and any 3rd party embedded products as well as hosting
Revenue	Check it for performance period to ensure it is true accrual-based revenue
Deferred revenue	Check that any deferred revenue is short term in nature and accurately accounted
% of R&D expense to growth activity	Usually 40 to 80% (if negative EBIT)
% sales & marketing expense to growth activity	Usually 70 to 90% (if negative EBIT)
G&A against revenue	G&A should be declining as % of revenue against growing revenues. If it is not, inspect which areas are linear with revenue and why.

4.0 Sales efficiency evaluation

As we discussed earlier, the sales efficiency of a software company shows how clean the engine of cash flow generation is running. Evaluating it is more than asking the management team to quote you their average annual revenue per account and customer acquisition cost. A discerning investor needs to dig into these figures to understand the repeatability and scalability of sales efficiency. We use the following areas of inspection to develop confidence on the sales efficiency number:

01 Chart sales efficiency against sales expense and revenue growth over company history and note the trends

02 Inspect efficiency of various strategies (i.e. inbound marketing, outbound prospecting, etc)

03 Add to this chart the change in sales strategies that come from interviewing management

> **Note.** Most company pro-formas suffer from too much optimism in the sales efficiency that too little. A nice little trick is to take the pro forma and compare pro forma efficiency with historical. More than 8 out of 10 times you will blow up the pro forma model.

At Golden Section, we have the benefit of our experience in scaling numerous sales organizations. As a result, we can easily discern when a team has not tried a strategy or when a strategy is not as effective as it should be. This advantage is hard for new investors in this space to replicate. Our advice is to find experts in B2B software sales and marketing to assist in this evaluation.

5.0 Stabilized cash flow analysis

Now we want to know what kind of net cash flow is possible from this company. For this exercise, inspect pro-forma model and go out to a year that you are comfortable with (call that year, year *n*). Then inspect the current G&A and the size of the organization at *n* and discern whether G&A ought to be higher and by what amount (i.e. should it scale against FTEs? by how much? Etc). Then take the portion of R&D and sales and marketing (S&M) expense that is maintenance oriented and confirm those numbers and do the same analysis for year *n*. Finally, combine the year *n* G&A, R&D and S&M for the total expense number. The net cash flow is the gross margin less the total expense number.

> **Note.** Many founders get wrapped up in product development and cannot moderate. Building a software product is a never-ending task that always demands more resources. Investors need to know what type of founder they are investing in (see 7.0). Additionally, it is good to know what other firms spend on R&D as a percentage of revenue (see the KeyBanc Private Company SaaS Survey for norms). And expect to hear from all software companies that they are too thinly staffed and need more resources in product execution (i.e. R&D). This is always the case, no matter how big the company becomes.

6.0 Competitive analysis

It is important to inspect the impact of competitors against the durability of the value prop and the sustainability of the sales efficiency number. We like to inspect the competitor's funding, team and revenue traction for this analysis. The presence of a lot of well-funded competitors means a lower valuation normally.

> **Note.** In some cases where the customers don't know they have a problem (see the example mentioned earlier in the value prop evaluation) more competitors mean more budget to convince the market. In these rare scenarios, the presence of competition grows the market for everyone and is a reason for an increase in valuation because the collective sales efficiency improves.

We use the following process to analyze competitors:

DISCOVERY	INVESTIGATION	POSITIONING
◆ Internet research first ◆ Inspect churned customers for competitor switches ◆ Interview the top 10 customers and ask what other solutions or firms they would consider ◆ Inspect the closed:lost opportunities for competitor names	◆ Evaluate the value proposition of the competitors and how they price their solution ◆ Evaluate the funding depth of the competitors ◆ Evaluate the team on sources like Glassdoor and our own network	◆ Decide how our solution is best positioned against the nearest competitor

The result of this process should inform how much effort will go into securing and retaining customers and whether the sales efficiency will go up or down over time. It will also establish the urgency, or lack thereof, of securing funding to scale up sales and marketing activities.

7.0 Team analysis

Software company success is linked to the quality of the leadership team. Growing a software company is about constraints and the largest tensions within the firm are not about budget or capital decisions, but between factions of people. Experienced leaders can navigate this well to strike the proper balance between growth and efficiency. This analysis is highly subjective and probably fraught with error, but it is still important to do.

We try to look to qualitative examples from a person's past rather than subjective feelings about the present. All personal-analysis suffers from bias and ours clearly suffers from historical bias. It is hard to apply our process to new leaders for instance. Despite this, however, we suggest the following approach:

01	Get the leadership team professionally assessed through a series of tests (we prefer the PXT Select assessment)
02	Test the leadership team for humility and confidence in decision-making (a tension for sure)
03	Review the leadership resume and interview references. You can often learn a lot about a person by who they add as a reference
04	For larger organizations, hire a consultant to do a professional evaluation of the leadership team and the organizational culture

Pulling it together

Condensing this framework into a precise valuation is where this ‘science’ becomes art. By this point, if you have completed the prior steps, you should know the following: size and stability of future cash flows, the likelihood of maintaining the growth of those cash flows, and the likelihood of the team executing on all the above. This means you are dealing with an investment opportunity that looks increasingly like a bond. What are you willing to pay for those stable cash flows and what do you think they will sell for at your exit horizon?

Here are how the items above inform different aspects of software valuation:

FRAMEWORK COMPONENT	IMPACT ON INVESTMENT DECISION	COMMERCIAL OFFICE EQUIVALENT
1.0 — Value proposition	Stability of cash flows	Contractual and habitual strength
2.0 — Market size	Growth potential	Building (or project) size in net rentable sq ft
3.0 — Metrics	Confirming it is a software company	Basic diligence on the building (environmental, title, etc)
4.0 — Sales efficiency	Capital needed to get to exit horizon	Investment to get to stabilization
5.0 — Stabilized net cash flow	“Bond” payments at exit horizon	NOI at stabilization
6.0 — Competitive analysis	Likelihood of pressure on sales efficiency	Competitive buildings
7.0 — Team analysis	Likelihood of execution	Likelihood of execution

To conclude, *perchance to reiterate.*

Software has emerged as an asset class. Software companies rose to prominence in the 1970s and have continued to proliferate into every nook and cranny of the corporate world. Software, and the surrounding innovation ecosystem, are an entirely new evolution of economic realization, not an offshoot of the industrial economy. This shift is reverberating in wealth creation, investment strategies, capital sources, education requirements, and more. This shift is as profound as the shift from agrarian economic structure to the industrial economy.

Investors today need to understand how software companies build value. Return on equity is a wholly incapable metric to track value creation as there is neither return (i.e. net income) nor retained earnings (i.e. equity) for growing software companies. Instead, assuming benchmark attaining metrics (e.g. churn rate, gross margin, levelized EBIT potential, etc), the best metric to track wealth creation for a software company is something we call the SaaS return on capital. This metric shows the amount of value compounding to the investor's capital each period. And, assuming the investment was at a 'market' rate, then this metric will approximate the realized rate of return on the investment.

In addition to investors, the rest of the industrial economy era banking system will need to adapt to the unique risk, return and credit requirements of software companies. These changes will need to allow safe lending at risk-appropriate rates. Fortunately, APRs in this area have bene coming down fast suggesting that this adaptation is starting to take effect.

Finally, as the world adjusts to the innovation economy work will further be reimagined. This reimagining of work will permeate through civilization and has ramifications in education, lifestyle, urban density and more. The changes we are seeing in digital transformation and workforce management during the COVID-19 pandemic are a foreshadowing of what is to come.

Notes

References

1 Watt steam engine. Wikipedia. en.wikipedia.org/wiki/Watt_steam_engine

2 Schmelzing, Paul. “Eight Centuries of Global Real Interest Rates, R–G, and the Suprasecular Decline, 1311–2018.” Staff Working Paper No. 845, Bank of England, January 2020.

4 Shackleton, Robert. “Total Factor Productivity Growth in Historical Perspective.” Congressional Budget Office, March 2013.

5 “Employment by Industry, 1910 and 2015.” Bureau of Labor Statistics.

6 Lee, Timothy. “The Productivity Paradox.” Vox, October 2016.

8 Software Equity Group. SEG 2020 Annual Software Industry Report.

9 The reader will no doubt be interested in books from Amos Tversky and Daniel Kahneman among others.

10 Cameron, Dougal. “The Golden Age of B2B SaaS?” Golden Section Ventures, LLC, April 2020.

11 2019 Private Company Annual SaaS Survey. KeyBanc Capital Markets.

12 Stanford, Kyle. “Venture Debt Set to Increase Role During Crisis.” PitchBook, April 2020.

13 FDIC. 2019 Annual Risk Review.

14 Nasdaq. “When Performance Matters: Nasdaq 100 vs. S&P 500, Second Quarter 2020.”

15 Software Equity Group. SEG SaaS Index Update, March and August 2020.

Charts sourced from third-party reports have been rebuilt from the figures cited in the original paper. Where the underlying data was not available in the text, the chart has been omitted and the finding is stated in prose.

GOLDEN SECTION

ABOUT US

We back founders who have *done the math.*

Golden Section is a Houston, Texas growth-equity firm and lender built for capital-efficient B2B vertical SaaS. Most SaaS founders are told to raise more, grow faster, and worry about profitability later. We work with the ones who have decided that is not the only path.

Two instruments sit on top of one framework: minority **Growth Equity Ventures** checks of $1M–$5M into companies at $1–8M An. Rev., and non-dilutive **Growth Capital Lending** of $500K–$5M against revenue.

$110M	50+	2
ASSETS UNDER MANAGEMENT	PORTFOLIO COMPANIES	FUNDS

The Balanced Path

One framework governs both instruments. It holds growth and efficiency in tension rather than trading one away for the other: revenue growth funded at a cost the business can carry, a burn multiple that stays under control, and an exit that does not depend on the next round clearing at a higher price. Value compounds. Valuations fluctuate.

The strategic platform

Looking Glass Venture intelligence	**A-line** Revenue growth
Whalesong Product excellence	**eSapiens** AI infrastructure

GET IN TOUCH

Dougal Cameron, CFA

General Partner

dougal@goldensection.com

Read more about how we invest at goldensection.com

Start the conversation at goldensection.com/#contact

We reply to every founder inquiry within two business days.