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Laws of Cloud

ELEVENTH ANNIVERSARY EDITION

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Introduction

When Salesforce.com first launched in 1998, most experts believed it was a crazy idea to build a business with significant development and sales costs upfront, and payment terms on the backend. Shortly after that, I was going up and down Sand Hill road pitching Trigo Technologies, the cloud business I had co-founded, and felt the skepticism first hand. Most investors tuned out quickly as we attempted to describe this revolutionary approach to software.

When we met the team at Bessemer Venture Partners in early 2000, they understood cloud computing immediately. A browser interface could free people from complex on-premise software deployments. Professional services would no longer drive deployments. Engineering teams wouldn't have to support legacy products, multiple infrastructure ports, and long QA cycles. Bessemer was wildly bullish on the future of the Cloud Computing markets.

After we successfully sold Trigo to IBM in 2004, I joined the Bessemer team and witnessed cloud theory turn into practice as thousands of cloud businesses launched. These early founders and CEOs helped us synthesize the industry's best thinking when Bessemer penned its original 10 Laws of Cloud Computing in 2008.

Since then so much has changed. Not only are there over 100 public and private cloud companies already valued over $1 billion, but also the cloud now drives three of the most valuable companies in the world— Amazon, Microsoft, and Alphabet (Google).

As for Bessemer, we're grateful to be working with over 200 cloud companies, already resulting in over two dozen cloud IPOs and over 50 sizable M&A events–and we're just getting started! Thank you to everyone who has played a role in bringing this special 11th anniversary edition to life.

Forge ahead,

Byron Deeter, *Partner*
Bessemer Venture Partners

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In the cloud economy, scale wins

Expand your company's TAM with a Second Act to dominate the market.

Market leaders generally command over 50% of the total market's enterprise value; second place captures less than 30%, and third place is lucky to get 20%. Scale creates a virtuous cycle with pricing power and talent that reinforces a company's lead, further expanding the distance between the market leader and the rest of the competitive set. Investors also give market-leading assets premium valuations, which lower their costs of capital.

Therefore, a methodology to expand your core TAM through a Second Act is powerful and necessary. Building and maintaining scale requires constant product innovation. This might involve launching an entirely new product, addressing functional adjacencies, or providing deeper capabilities for existing customers.

Layering on payment solutions, moving to mobile, or monetizing a data set are some of the most effective Second Acts we've seen from cloud companies. While a Second Act will be different from company to company, what remains consistent is the fact that a market leader is able to paint a compelling and broad picture of its product, and eventually, its platform.

"Reaching scale not only means you've captured a large slice of the market, but also that you've set the pace of innovation for the rest of the industry."

Tobias Lütke, *CEO & co-founder*

shopify

Shopify is an e-commerce platform for online stores and retail point-of-sale systems.

Partners
Jeremy Levine
Alex Ferrara

Series A
October 2010

IPO
May 2015

bvp.com/cloud

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Growth at optimal cost

When it comes to revenue growth in the early stages of a company, efficient growth is more important than profitability.

Efficient growth is when growth in topline revenue reflects the dollars invested in the business. Companies with large existing market opportunities can justify higher burn rates if they also have rapid customer and revenue growth rates. For market creators, businesses must keep burn low as buyers emerge and revenue grows.

Finding the right balance between growth rate and burn rate will evolve over time as leadership emerges, go-to-market strategies become more efficient, and cost of capital goes down.

For growth stage startups earning less than $30 million ARR, efficient growth is defined by net new ARR over net burn (optimal score being >1.5).

Longer term, cloud companies should focus on maximizing their efficiency scores, calculated as ARR growth plus FCF margin of ARR.

Across the BVP Nasdaq Emerging Cloud Index (^EMCLOUD)—the benchmark for public cloud companies—the average efficiency score is approximately 45%.

"When pioneering a new market, growth and budgets need to be long term. Growth at any cost can be reasonable early on, but a clear path towards growth with sustainable costs is a strategic imperative."

Dan Springer, *CEO*

DocuSign

DocuSign makes it easy and fast to get documents signed with the world's largest electronic signature platform.

Partner
Byron Deeter

First Investment
November 2010

IPO
April 2018

bvp.com/cloud

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Invest behind the cloud sales and marketing learning curve

Experiment with the sales and marketing model. Prove it's the right match for the business before scaling hiring efforts.

The first rule of running sales organizations is to ramp only what works. In traditional outbound sales, do not hire more salespeople until you have two or three account executives hitting their quotas without much support. For inbound sales, align hiring to match the company's lead velocity rate.

Companies that invest in sales and marketing too early will see headcount burn increase without the associated topline growth, and sales rep quality will drop as company targets and quotas are missed.

Experiment early and often on what *does* work, such as trying new lead and demand generation tactics, burst testing channels, and combining different functional experts on a sales team, including business development reps, sales development reps, account executives, support engineers, and more.

However, only invest behind the systems that have the best marginal productivity of the incremental dollar now, and only do so when you have a sales motion that is truly repeatable.

"Be cautious with investments as you test and iterate. Fail fast. Be aggressive and scale your go-to-market when something is really working."

Tooey Courtemanche, *CEO*

PROCORE®

Procore provides cloud-based construction management software.

Partners
Brian Feinstein
Byron Deeter

First Investment
June 2014

Product as a competitive advantage

Focus on building an outstanding proprietary product because it's the primary thing that wins (and keeps) customers.

The best product is (finally) winning. In the past, excellent sales execution could obfuscate product deficiencies, and compelling marketing campaigns could convince a non-user decision maker to select one software product over another on behalf of his or her team. But today, few people would ever buy or implement new software without reviewing online testimonials and case studies, talking to peers, and conducting UX and technical assessments of other competitors.

Today's product-first evaluations drive powerful bottoms up distribution models, and many of these companies build $1 billion businesses. Sales leaders don't determine market leadership, but product leaders do. If this doesn't describe your company, find the quickest path to improve your product to catalyze customer sales.

Generally, products that capture market share deliver consumer-like UX (including onboarding), offer both web and mobile solutions, integrate into all of the core applications necessary, and offer adjacent features that competitors already do or will soon offer. We also strongly recommend adopting an API-first development philosophy so development teams do not waste their time (and CapEx money) reinventing services that already exist as APIs. Engineering resources should only focus on building an outstanding proprietary product.

"Users make product selections, and they're not sold through canned presentations. Great products that truly address the needs of users first are the ones that win the hearts, minds, and ultimately the budgets of the Global 2000."

Dave McJannet, *CEO*

HashiCorp

HashiCorp enables organizations to provision, secure, and run any infrastructure for any application.

Partners
Byron Deeter
Ethan Kurzweil

First Investment
October 2018

Master the 5 C's of cloud finance

Top performing cloud companies track and report on these financial metrics because they are the clearest lenses into the vitality of the business.

1 COMMITTED ANNUAL RECURRING REVENUE (CARR)

This is the single most important metric for a cloud business to monitor, as the change in CARR growth provides the clearest visibility into the health of any cloud business. CARR is defined as contracted, but not yet live ARR, plus live ARR netted against known projected ARR churn.

2 CASH FLOW

Companies live or die based on their cash management, and it's necessary that cloud companies track burn rate closely. Comparing burn rate to topline growth allows companies to understand what growth initiatives are working (or not), where headcount can be added (or subtracted), and what financings are required. We often find that the most successful cloud companies will provide discounts and sweeteners for payment of cash up front.

3 CUSTOMER ACQUISITION COST (CAC) PAYBACK PERIOD

CAC payback is the time period needed to fully repay your sales and marketing expenses, on a gross margin adjusted basis. CAC payback periods for SMB customers should be approximately 6-18 months whereas enterprise customers can be as long as 24-36 months. It's often difficult to fund growth when CAC payback is more than 36 months unless CLTV is exceptionally high.

4 CUSTOMER LIFETIME VALUE (CLTV)

CLTV is the net present value of the recurring profit streams of a given customer minus the acquisition cost of that customer. CLTV is calculated by taking the contract value (adjusted based on a customer's expected duration or upsell rate), multiplied by gross margin, with CAC subtracted. Tracking CLTV based on customer segments will help identify the most efficient channels, so teams can segment sales and customer success efforts. As a rule of thumb, CLTV/CAC should be 3x or more.

5 CHURN

Long term profitability, and thus valuation, is impacted by the renewal rate of your customers. Top enterprise companies benefit from annual logo churn rates (gross churn) below 7% and CARR renewal rates above 100% (net negative churn). SMB-focused companies often have higher churn rates (often approximately 20% gross) and lower CLTV. However, the shorter sales cycles and lower CAC still make the CLTV/CAC equation compelling.

CARR, cash flow, and churn tend to be highly dynamic metrics and thus should be checked daily or weekly, whereas CAC and CLTV are longer term and typically checked quarterly.

"Driving rigor and maintaining cadence in the review of KPI's **increases collective learning for your team,** helps leaders spot issues and opportunities early and builds operational discipline that scales."

Jennifer Tejada, *CEO*

pagerduty

PagerDuty is a real-time operations platform that enables companies to deliver exceptional customer experiences and respond to issues when seconds matter.

Partner	Series B	IPO
Ethan Kurzweil	July 2014	April 2019

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Discover your secret KPI(s)

Great cloud companies have a bespoke metric (or multiple) that is a leading indicator of success.

While the five C's of cloud finance comprise the foundational financial dashboard for most successful and enduring cloud companies, every business benefits from discovering a unique KPI that provides more granularity into customer behavior and product performance. "North Stars" are highly variable and depend entirely on a company's unique value proposition.

Amazon is famous for having metrics specific to each of its product areas, and having detailed data oriented discussions around each. Twilio focused on "messages sent" in its early years. DocuSign tracked the number of signed envelopes, while Shopify tracked customer GMV as leading indicators of future business value. For other companies, North Stars may be related to product metrics or API calls.

Choose a metric that works for your business and remember that North Stars are generally leading indicators of product usage, and therefore revenue. Aligning your company to this "true north" is like providing a compass that guides roadmaps and prioritization so everyone is working in the same direction.

"Once the company objectives are set, align them to 2-3 metrics to see if the results trend in the right direction. This framework helps a team focus and align strategy with the effort so everyone drives, supports, or influences the most important goals."

Wade Foster, *CEO*

zapier

Zapier syncs data with web applications.

Partner
David Cowan

Seed
September 2012

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Customer success is company success

The best enterprise companies have less than 1% monthly gross churn and better than 100% net expansion.

Early on in a company's life cycle, new logo additions are paramount; however, long term, renewals and upsells become the biggest inputs into enterprise value and company success.

A one percent change in monthly renewal rates will result in more than a $100 million difference in your valuation at IPO, and even more over time. Similarly, a renewal dollar of ARR is cheaper to acquire than a new logo dollar of ARR since customer acquisition costs of upsell are lower than those of net new customers.

Even a mature sales organization cannot add new logo ARR fast enough to keep up with a "leaky bucket" company that isn't retaining existing ARR, and it certainly cannot sustain the average 30%+ growth rates that characterize the best public cloud software companies today. This becomes even harder at scale, as the base over which you are trying to grow approximately 30% or more becomes larger.

High performing customer success teams align people and processes tightly against the metrics that matter most to the executive team. Track user adoption, NPS, and engagement closely as leading indicators of retention. Customer Success gets ahead of issues and helps fine tune product roadmaps in order to improve customer loyalty over time.

"Enduring companies are built on customer love. Great customer success teams work across the entire company to blow customers' minds, providing customer feedback into the product roadmap, supporting product usage, renewals, and upsells, and so much more."

Aaron Levie, *CEO & co-founder*

box

Box is a content collaboration platform for people and businesses to share documents anywhere and on all devices.

Partners
Byron Deeter
Jeremy Levine

First Investment
October 2011

IPO
July 2015

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Impact through engagement or insights

Effective software can be either a system of results or a system of engagement; both models deliver compelling ROIs in very different ways.

Historically, software solutions proved their value through high engagement rates and "time in app" by their users. Many modern cloud businesses have achieved great success by following this model and becoming compelling systems of engagement. However, a second path to success emerges as some systems now deliver results and valuable insights to end users, often requiring very little "time in app."

A black box, quantitative hedge fund is the extreme example, but we see this increasingly in the case of AI and machine learning software. The highest value software product of the future might ingest and process data, and only spit out a key result once a day.

In contrast, many marketing products are often used several hours per day by their power users. There are different pathways to creating valuable software, but you need to have a model in mind and commit. Think closely about what your software does and how it will be used as you build it—who are your users, and what is their successful usage model?

"Time is one of the most precious commodities. If our customers get more value from ServiceTitan, but spend less time using the product, that's the ultimate win in our book."

Ara Mahdessian, *CEO & co-founder*

ServiceTitan

ServiceTitan is a mobile platform for home services business.

Partners
Byron Deeter
Kristina Shen
Talia Goldberg

Series A
March 2015

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Tone starts at the top

Great leaders set the moral compass
and define the corporate culture.

Great culture is not about ping pong tables and kombucha on tap. It is about creating a values system so that everyone can perform and can be the best versions of themselves at work. It is also about dedicating resources to support and operationalize systems of fairness, equality, and inclusion so everyone feels like they belong and can play a critical role in making a difference at a company. Every team member is accountable to uphold these values so that teams stay focused, positive, and know how they can impact the organization for the better.

Culture is also a driver in talent recruitment and retention. We increasingly see philanthropy becoming part of the corporate culture, including companies supporting efforts such as Pledge 1%, forming their own .org's, and running community-oriented team building events. We also suggest that leaders keep a finger on the pulse of employee engagement and do quarterly reports that measure Executive NPS by department, survey employees, and solicit online reviews.

We often see the results of these metrics and employee engagement surveys at the board level, and we suggest that the employees that are contributing positively to culture be acknowledged and rewarded.

"Culture and values provide the foundation upon which everything else is built. They are arguably our most important competitive advantage, and something that has grown to define us at LinkedIn."

Jeff Weiner, *CEO*

Linked in

LinkedIn operates the world's largest professional network.

Partners
Jeremy Levine
David Cowan

First Investment
December 2006

IPO
May 2011 (acquired by MSFT in 2016)

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Map your fuel stops

Having one to three years of runway in the bank
allows a company to stay on offense and provide enough buffer
to absorb risk and setbacks.

The most enduring companies raise capital well before they need it, and they plan strategically on when and why they go out for another round.

Executive teams take a lot of calculated risks when building a great business, and financing risk should not be one of them, especially in this mature cloud environment in which investors understand and enthusiastically support cloud businesses. If you truly have a business that can lead a massive market (Law 1) and a sales and marketing model that is starting to prove itself (Law 3), it would be irresponsible not to fully invest behind your company's potential. Otherwise another company in this highly competitive modern market will.

Develop a high-level but multi-year financial model early on, and have your financing milestones in mind from the beginning. As you scale up, refine the assumptions and become much more detailed in the model. The most successful cloud CEOs in Bessemer's portfolio generally raise a half round ahead of what their financial plans say are needed, so that they can always have one to three years of runway in the bank. This cushion allows companies to be aggressive with growth experiments and also provides a buffer in case some initiatives do not work as well or as quickly as planned. More cash allows cloud businesses to stay on the offense independent of market conditions.

"Committing to and successfully executing on product roadmaps will clarify when exactly to raise another round of funding."

Chris Comparato, *CEO*

toast

Toast is an all-in-one point of sale and restaurant management platform.

Partner
Kent Bennett

First Investment
December 2015

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Run the "Public Playbook"

In order to control your own destiny and have the option
of a very successful IPO, you should target $100 million+ in ARR
and 40% efficiency score.

Most ambitious cloud founders want to control their own long-term destiny, and ultimately to be a large public company. In the current market environment, crossing $100+ million of ARR, while growing over 40% at cash flow breakeven (or clear line of sight to cash flow breakeven within a year of IPO) generally allows cloud companies to successfully IPO. These businesses have efficiency scores greater than 40%.

Passing the $100 million ARR threshold is a good proxy for a company having demonstrated its ability to weather competitive pressures, secure product/market fit, and build an efficient sales engine. With current market multiples, it also often implies public valuations of $1+ billion, which is substantial enough that public institutional investors will care about owning a stake in the business.

Statistically, most cloud founders will choose to sell their businesses before reaching the milestone of an initial public offering, but setting your sights high and having a credible path towards achieving them will also dramatically increase your leverage in M&A discussions when they present themselves. Cloud executives create additional leverage in M&A discussions by forging personal relationships with CEOs of acquisitive companies; often the largest M&A outcomes stem from these relationships.

"Being systems oriented and metrics driven will inevitably help a company possess more control over revenue and growth outcomes. This discipline helps teams become resilient over time and prime the organization for a successful transition to life as a public company."

Avishai Abrahami, *CEO*

WiX.com

Wix empowers businesses, organizations, professionals, and individuals to take their businesses, brands, and workflow online.

Partner
Adam Fisher

Series B
November 2007

IPO
November 2013

We dedicate this book to the cloud pioneers

who allowed us to be your partners
on this journey as you took chances,
tested new frameworks, and defined
the benchmarks to "pay it forward"
to those reading this today.

2U · ACV AUCTIONS · Adaptive Insights · Auth0

Betterment · box · Clio · Cloudinary

Cornerstone · criteo. · dashlane · DISCO

DocuSign · eloqua · ENDGAME. · fiverr

fuze · Gainsight · GLINT · GUILD

HashiCorp · INSTRUCTURE · INTERCOM · LaunchDarkly

LifeLock · LinkedIn · MINDBODY · ncino

New Voice Media · pagerduty · pipedrive · PROCORE

Restaurant365 · reputation.com · Rev · sage Intacct

SCALEFACTOR · TWILIO SendGrid · ServiceTitan · shopify

SISENSE · toast · twilio · Vlocity

Welltok · WiX.com · YOTPO. · zapier

bvp.com/cloud