## Tell HN: How to run a startup for $6 a year

143 points by shrutigarg06 on Feb 18, 2020 | 30 comments

Use this stack.

1. DynamoDB for database 2. AWS Lambda for backend

3. Netlify / Now / Surge for frontend 4. S3 for file/image hosting

5. Cloudinary for image hosting 6. IFTTT to webhook for cron

7. RedisLabs for queues, cache 8. Figma for designing and prototyping

9. Porkbun for $6 .com domains 10. Cloudflare for DNS

This setup is enough to handle ~1M/requests month, more or less, depending on the application.

If you are getting more traffic than that, your startup will be making money so you won’t mind upgrading. :)

***mooreds*** Does this count network egress costs (for s3, lambda)? Those are hard to calculate but can add up. Also, you can uses sqs for queues, that has a pretty big free tier.

Finally, I think that bending the architecture of your app around what's free is not the best idea, especially if you are trying to get something out there to see if there is customer demand. (And doubly of you haven't built a cloud native app like is outlined here.)

In my mind the best way to build software for a startup is to build it using what you know as fast as you can. Avoid technical risk, because you have a boatload of business risk.

For me, that'd be using rails on heroku, which is still under $200/year for a fully functional dyno and database. For others it might be some varient of a mvc framework on a hosting provider. For others it might be WordPress (gasp!). For others it might be a cloud native app, as this post describes.

As long as you aren't spending extravagantly, time is more important than money when figuring out what your customers need.

This is true both in companies that have raised money and bootstrapped companies, for different reasons. For the first, you took money and need to figure out your product market for or scaling strategy ASAP. For the second, your time is super valuable because it is tied to your motivation. Doing work directly tied to customer value is a great motivator. (Doing other fun technical things that don't deliver customer value is a good way to learn things, but a bad way to run a bootstrapped business.)

***mark\_l\_watson*** I agree, for web apps with modest user requirements, Heroku is great. I am just running static web sites right now but if I start a new project I would probably start with Heroku. Their always on hobbyists dyno is $7/month and adequate.

If you ever grow your customer base it is not that difficult to move to directly using AWS, GCP, Azure, DO, etc.

***JanAcai*** In most cases it doesn't make a difference if you have costs of $6 or $60 annually, it's still marginal. I'd say speed it's way important - use the tools you know.

It's better to create a startup in 6 days than for $6/yr.

***petercooper*** The vibe I'm getting in this thread is people are recommending services that are free for developers.. in which case, I recently discovered https://free-for.dev/ which is a mammoth list of such things.

***ArtWomb*** Wow mammoth indeed ;)

Section I was most interested in "STUN, WebRTC, Web Socket Servers and Other Routers". I like the services like ngrok where you can just create a public ip for locally running web servers from the ide.

***andrewvieyra*** Some possible alternatives/improvements:

The AWS S3 free tier is 5GB for 12 months, with 20,000 GET requests and 2,000 PUT requests. [1]

Backblaze B2 (AWS S3 alternative) provides 10GB of free storage (no expiry date), and is part of the 'Bandwidth Alliance' [2] with CloudFlare. So aside from some pretty generous daily transaction fees (of which 2,500 of each type are free per day) [3], you could have your own free almost-cdn.

Porkbun currently have a 1st year (new domain registration) discount bringing the $6 .com domain cost down to $3,90. [4]

[1] https://aws.amazon.com/free/

[2] https://www.cloudflare.com/bandwidth-alliance/

[3] https://www.backblaze.com/b2/b2-transactions-price.html

[4] https://porkbun.com/tld/com

***pkalinowski*** You can use Netlify DNS to simplify your stack. Cloudflare is not needed.

Also, Netlify provides Functions, which is Lambda abstraction. Faster to develop.

***utf\_8x*** This is cool for simple ideas but really doesn't scale with complexity, not mentioning the 100% reliance on 3rd party services that could shut down at any time and bleeding potentially sensitive data at every step of the way...

***thiago\_fm*** I'd just use heroku and pay a bit more(or nothing if no users?), use plugins for what you've mentioned etc.

The cost of running is marginal and if I'm lucky enough to get a lot of users, I can easily switch to anything.

There is a lot of dev cost to wire up everything you've mentioned. Serverless is very devtime-wise consuming, it's state of art tooling is still slow as fuck if you compare writing an app using Rails/Django/etc.

IMHO dev time is what hurts more running a startup, this is what I would try to reduce

***pier25*** > 1. DynamoDB for database 2. AWS Lambda for backend 3. Netlify / Now / Surge for frontend

I'm evaluating FaunaDB with Zeit Now and so far it looks like a winning combo.

Zeit Now makes your dev much easier as all your application (front(s) + backend) can be in a single repo.

I don't have much experience with Dynamo but Fauna includes authentication + authorization out of the box and I think a more powerful query language. It also has first class support for GraphQL.

***quickthrower2*** For marketing emails, Mailerlite has a generous and featureful free tier.

Zoho mail is damn good on the free tier.

Google forms / surveys.

GitHub of course!

Netlify is also a free CD / CI perhaps? You can run a script in a container on every deploy.

For seo, semrush has a good free tier for keyword research. There are other nice free tools like screamingfrog and keyword shitter.

Azure has some free forever tiers for functions and web apps but they are very basic.

***the\_resistence*** Thanks for this reminder. My new mantra when currently developing an idea is "cheap MVP".

***jacke127*** You will spend more while supporting such a stack. If you have enough experience just start with a production-ready stack, otherwise, youse cheap labor force (PHP, Python) to build initial prototype.

***federicosan*** Do you own any startup that uses this setup? Could you please tell me?

***bdcravens*** Worth noting that the AWS services are typically free for only the first year. (though assuming you don't exceed those limits, would only be in the low dozens of dollars per year)

***k\_\_*** Lambda is free as long as you stay under the (I think monthly?) quota.

Fudgel > IFTTT to webhook for cron

Could you explain this one a bit for me

craftoman I got the cheapest one, raspberry pi on my 100 mbps vdsl connection. Unlimited bandwidth/storage for less than 2.88 dollars per year.

d--b Yes and then AWS free plan rolls off and you’re going to be paying quite a lot more!

terrycody Wait, how you can be free to use Cloudflare if you get 1M requests per month?

duxup Are there time limits on these like free for a given time?

reaperducer That's not a startup. That's a hobby.

It's not a business until you register with various levels of government and pay all of their fees, which instantly makes the $6 figure false.

segmondy awesome, but startups are not measured by requests per month but number of users.

polyterative i remember buying a domain on namecheap for 1$

justaguyhere As always, the devil is in the details. Was it a .com domain? I'm guessing $1 for the first year, is that correct? What is the cost from second year onwards?

Many companies use deceptive marketing selling stuff for such a low cost that it is too good to believe and it often is - you gotta read the fine print. I got my internet connection for $75 and two years later, I am paying 108$ for the exact same thing, with no additional benefit.

***kakwa*** you can pick very cheap domains with some tlds.

For example, my .ovh is costing me around 4$ per year and there are probably even cheaper tlds.

***yesusalgusti*** what about sending and receiving email?

utf\_8x With Mailgun[0] you can send 5000 emails for 3 months for free.

The Amazon Simple Mail Service (SES)[1] lets you send 2000 emails per day with the Free Tier...

Sendgrid[2] gives you 40k emails for 30 days and then 100 per day for free forever...

[0] https://www.mailgun.com/

[1] https://aws.amazon.com/ses/

[2] https://sendgrid.com/

***hbcondo714*** I still get 25K emails / month for free with SendGrid using Azure:

https://docs.microsoft.com/en-us/azure/sendgrid-dotnet-how-t...

***inkeddeveloper*** +1 for sendgrid

## Taking it up again

lrb Mar 91 *Margaret Anne Doody, an emeritus professor of literature at the University of Notre Dame in Indiana, is the author of studies of Richardson and Frances Burney as well as The Daring Muse: Augustan Poetry Reconsidered and The True Story of the Novel. She has also published a number of detective novels set in Ancient Greece, in which Aristotle does the sleuthing. A long essay in the LRB, ‘Women Beware Men’, discussed the antifeminist backlash of the 1980s.*

*Henry James and Revision* by Philip Horne Oxford, 373 pp., £40, December 1990

Why do they do it? Why would they ever want to? Why do novelists revise novels? The very thought of revising one is daunting. Yet of course novelists do revise their printed works, on occasion, for various reasons. No novelist has made such a job of it as Henry James.

In July 1905 he began the task of revising his life’s work, in order to create a final statement, a complete collection of his works, called from its inception the New York Edition. James actually believed that this gigantic labour would be financially rewarding, would provide financial security for his old age. The New York Edition in 24 volumes, completed in 1909, was not a success, and by the autumn of 1908 he had to realise that his task was thankless, his art unappreciated. As Philip Horne convincingly shows us, however, James’s most powerful motives were far from mercenary. He was driven by the desire to perfect his work. The idea of the complete edition, the final perfected statement, was really his own, not his publisher’s. When Scribners agreed to undertake the work, the editors may indeed have had very little notion of what James had in mind. What they expected, one presumes, was the removal of little errors, the replacement of an awkward phrase or two, the excision of a few redundant words. The author’s only writing task would be the completion of a brief preface for each work. James did of course write his famous Prefaces. But he was not intending to dabble at revision.

The Master had each page of the novel under treatment pasted on a larger page, supplying a wide margin in which revision could take place. The tempting blank of these margins was his downfall: invited to fill the space, he more than filled it. Horne gives a vivid picture of the new work-in-progress: ‘The new wordings often appear at some distance from their place on the original page; James puts them in balloons and leads the eye back to their context with long wavy lines attached to the scratched-out words ... or squeezing between words left intact. Sometimes these revisions entirely fill a sheet or spill over to the next; sometimes, to regain a clear presentation of sequence, typed or handwritten transcriptions of revised portions of text replace the pasted-down pages.’ One can imagine the consternation, the exclamations, of the editors and copy-editors at Scribners as this multitudinous work of correction started to arrive. Neither author nor publisher was spared expense. When revision overwhelmed the original pages altogether, James had to get the novel typed out again – as he did with the new version of The American. No publisher can ever have desired such a monstrous labour, nor can any publisher ever have dreamed, in his worst nightmares, of an author who was so indefatigable a perfectionist.

Philip Horne has gone through the material very carefully – the versions of each novel and story and all of James’s correspondence and Notebooks pertaining to novel-writing. Horne is very clear as to what happened in each case, and supplies an invaluable chronology at the end which connects James’s new writing with his rewriting, and with his reactions to publication. Horne is a good recorder of James’s variations. He is, I think, less happy in the more difficult task of defending not only the undertaking but the result. He believes that James achieved a finer, more nuanced and more subtle work with every revision, and with almost every instance of revision. Horne takes some pleasure in seeing James’s late style overtaking and defeating James’s earlier style. Not every reader, even having followed this painstaking book, will agree. I certainly can’t.

The accumulation of examples convinces me that James’s later style was often self-indulgent, and that he himself as a reader did not appreciate the virtues of his own earlier works – particularly when they were much earlier. There was often a distance of some thirty years between James the Reviser and James the First Author. One of the effects of this age gap was that James the Reviser, as new reader, took unaccountable dislikes to some of the early work. He didn’t like Daisy Miller, for instance. (The rejection of The Bostonians, however, he could blame on the publishers, who did not want it included in the Edition.) How one misses the clean New England lines and high definition of the first published version of The American (1877), or even Portrait of a Lady (1881), compared to the anxious blurs and redundancies of the revisions. In The American the new Henry James changes the clause ‘it was like a page torn out of a romance’ to ‘it was like a page torn out of some superannuated unreadable book.’ To Horne, this exemplifies the prevailing tendency of the entire revision, which is to centre the point of view within his central character, pursuing Newman’s own responses – a process which Horne believes offers ‘an increase in ironic consciousness of relation’. But the reader may object that these niceties slow the narrative to little purpose, that Newman is not and need not be Lambert Strether, and that the Master is too adjectival. That is a simple example of elaboration, but we get some more tremendous ones. In The American again, the first version of a simple declarative sentence is ‘The day seemed terribly long.’ That would seem to do its job, and to get in the point of view with an elegant simplicity. But the New York Edition James makes a costume drama of it: ‘The day had, in its regulated gloom, the length of some interminable classic tragedy.’ Interminable.

If Horne is unlikely to convince a great many readers about the value of the revisions, he has done a very good and sober job in marshalling evidence. His strength lies in an imaginative sympathy with James’s drive to undertake the work. James felt that in rereading one of his novels he could recapture the novel’s ur-state, could recover his first perceptions (as he explains in the Preface to the new Portrait of a Lady). The novel existed for him always as an idea, an idea which now seemed imperfectly realised in the actual published work. But he still felt confident that he understood the idea, was master of ‘the intimate history of the business’, as he says in his preface to the revised novel.

The Brobdingnagian labour of rewriting all (or almost all) of his oeuvre sprang, as Horne sees, from a desire for ‘a continuity, a personal tradition’. The implications of Horne’s insight here are very interesting. James felt that there was always, as it were, a real Henry James, always present in the works, always continuous and essentially the same. The New York Edition is a triumph of personal essentialism. He could not allow himself to be scared off by his younger self – could not admit that the younger James had a property in the thing that the Old Man could not have repossessed. The Old James, in order to feel at one with himself, had to believe, at some level, that Young James had merely slipped in technique but had really meant what the Old James meant.

Horne does not pay much attention to works outside James’s own oeuvre as they might have had an influence on this undertaking, and on James’s writing: there is a reference to Stevenson, and one to Gissing. Curiously, there is no reference to the author’s unsuccessful plays. His time as a failed dramatist may have convinced James of the need for passionate authorial control, of constant adverbial direction as to how sentences were said and heard. The dramatist loses so much control that he may have been glad to get back from the stage to the novelistic page, which will (apparently) accept authority.

Horne also does not consider how the reputations of some of the elder novelists after their death had affected James in his vision of how posterity would see him if he didn’t take care – and not just posterity but his younger contemporaries right after his death. The views of George Eliot’s life and work after her death in 1880, and of Trollope’s after his death in 1882, may have given James cause for brooding. The world of 1905 was a long distance from the world of the 1870s when he started, and his own works may have seemed uncomfortably the fusty coevals of the works of Eliot and Trollope – almost, indeed, of Dickens. Stevenson, Kipling and Hardy were now to the fore. We may note that James Joyce had published his first volume (of verse) before the New York Edition was completed, and that Virginia Woolf was already in her mid-twenties, and writing reviews. Most of these writers meant little to James, but to us they are significant of changes in the times. James must have started from day to day at many a sign of a changing culture. Perhaps part of his enterprise, leading to the flux of new words, was a simple desire to explain himself (that is, his work) more fully to readers who would inevitably be distanced from his beginnings.

Yet I think Horne is right in the main about James’s desire to make of himself one entire and perfect chrysolite. And this was no light wish or whim. The work was so arduous that it may have shortened James’s life as Dickens’s readings shortened his, if not nearly as dramatically. I would rather he had written new works in his new manner, and had not tried to put new wine into the good old bottles. This is, however, an awkward position for someone who has elsewhere vigorously defended reading the revised version (or versions) of a novel. Samuel Richardson’s Clarissa seems to me infinitely improved in its third edition. Am I inconsistent?

First, why do novelists revise? Is it a common practice? Well, of course it is: any novelist will revise and revise a book before publication. To the novelist, as to any other writer of books, a completed work is likely to seem a manifestation of strata: one remembers different layers, sees which parts got rewritten time and again, which stand almost as they first emerged. The novelist has private unshareable recollections of this process (‘Oh, yes, when I first wrote it Edward was reciting Paradise Lost as he buried Janet’s body in the bog,’ or ‘I intended at first to make an important character of the lawyer’s Welsh wife, but nothing came of her’). Sometimes the novelist will just murmur inwardly: ‘That scene didn’t come off,’ or ‘The ending is weaker than I thought.’ We remember the original process of work, and perhaps the finer ideas of which this is just a gross and even unbecoming symptom. To achieve the finer conception, novelists will endure great revision before the book appears. Nonetheless, strong revision after that point of completion is exceptional.

Novelists other than James have certainly revived and revised books after first publication. Usually there is a specific reason. Often the reason is part of the negotiation the novelist has to undertake with the readership, or with the publisher who represents the public before the public can be reached. Henry Fielding evidently revised the first version of Jonathan Wild for his collected Works, taking out the Lucianic chapter of Mrs Heartfree’s adventures, in which she and her shipwrecked party capture the Phoenix and attempt to eat it. I admire that chapter, and think it should be reinstated in current editions, but it is probable that Andrew Millar the bookseller persuaded Fielding that the episode interfered too much with the desirable ‘probability’ and ‘truth to nature’ that had become the new realism. D.H. Lawrence’s works went through different versions depending on the state of the law – but with Lawrence we can always imagine a paradisal first essential version of Lady Chatterley’s Lover, for instance. Jane Austen revised Sense and Sensibility slightly after its publication, taking out a mildly risqué remark. Such revisions all fall under the form of censorship.

Publishers sometimes encourage revision for other reasons. When I published Aristotle Detective, I discovered that publishers prefer some substantial and not merely accidental difference between American and English editions. I was urged to make a real change from the English text for the American version, which I happily did, reinstating two sentences that had been cut from the other version, which is why the American edition will remain my favourite. I had no notion of this practice before I commenced as an author, and can foresee a lively job ahead for bibliographers and textual critics, tracking down variants in even the humblest detective stories. It is, however, otherwise very rare for a publisher to want changes in a published work.

Publication itself, indeed, has contributed to our idea of a changeless, stable, unvarying text. When Horne wants to defend James’s revision by example he turns to poetry, and chiefly to the poetry of the era between Dryden and Keats – both of whom he mentions. He alludes to ‘The Rape of the Lock’ (and could have evoked the Dunciad). But the 18th century was a period in which the idea of published stability had not yet taken firm root. All works were subject to revision – indeed, endless revision and amplification seemed one of the benefits of the print age, along with new and different editions of encyclopedias etc. Most major writers of the 18th century produced revised versions of their works, and some (Thomson’s The Seasons is an example) went through many variations. Clarissa is among the chief of these, but it is certainly not alone. It is, one feels, written for a public that expects fluidity and change. Richardson could regard the revisions as extensions of the earlier writing process, and (partly because of my own experience) I believe him when he says he restored large parts of the manuscript that he had earlier felt obliged to cut out.

Richardson’s own revision has been severely faulted. William Beatty Warner in Reading Clarissa: The Struggles of Interpretation (1979) compares Richardson’s act to the Victorian restorers of Gothic churches. But painters restore and even change their own works, and a Medieval architect altering his design would have seemed like a fairer comparison. Richardson was not only ‘the same’ man (whatever that means), but his post-publication renovations were continuous with his pre-publication revision. There was no large gap in years between the first, second and third editions. Richardson was continually living in the Clarissa world, as it were, had not departed from its force field. But I would not say the same about the very last edition of Pamela. The tenth edition of Pamela is interesting, but it represents, as do James’s revisions, the work of an artist coming back as a reader to the text, a reader removed by time and interests from the author of the book.

James was no longer living in the world of The American or Portrait or Daisy Miller when he put them under his revising pen and subjected them to his balloons and flourishes. He had not lived in their force field for a long, long time. The notion that a novel is pure concept somewhat misled him – he could never quite see what the younger man had seen. True, there were capacities in James the Elder that were beyond James the Younger. The man who wrote The American could not have written The Golden Bowl. But James couldn’t accept that the reverse was true too.

Time matters immensely to a novel – not only its own dealings with time, which is the element it works in, but the time that wraps it round. That must be respected, even if one hopes, as James hoped, to write a work for all time. I once had the experience of revising what was for me a completed novel. The Alchemists (written 1965-68) was at last published in 1980. Before publication I was urged to revise a little, particularly in the direction of emphasising temporal setting. While I wasn’t looking, my novel had become a historical novel, and I added in some touches (about hemlines and so on) that made the work visibly ‘of the Sixties’ when naturally it had just been of the Sixties. Being called back to revision, even of an unpublished work, was a strange experience, and in that revision I saw that this novel – such as it was – belonged to its own time, to a period of my own life which a sadder and a wiser I could never quite recapture, even if I thought myself a better writer in 1979 than in 1968. I do not rank even as a minor novelist, more as a minima, but still the experience seems worth sharing, even if it’s humbling to admit that I am talking about a book no one recognises. The Alchemists had not been published, but it had been published in an older sense (as it had been read in manuscript by a group of readers). I felt as if it had been completed, and that in some peculiar sense it was a trespass to return to a work begun nearly fifteen years ago. The time-gap was too great.

The ‘personal tradition’ of a truly good or great novelist may be seen by readers and critics, but the endeavour to capture it, to forestall readers and critics by taking on the aggression of the reviewer, seems fundamentally erroneous. If James had kept on revising The American continually after it first came out, his revision would have been a natural part of its life, but to try to take it up again after a span of over twenty years smacks of perversity – a rather splendid perversity. He wanted, not only immortality, but ‘essential identity’ – a wholeness and completeness such as the gods do not grant to those creatures who live in time.

Contents

[Scheduled Webhooks — aka Cron for the Cloud 1](#_Toc154833803)

[Show HN: We built a dev-first open-source Zapier alternative (trigger.dev) 1](#_Toc154833804)

[Google Keep (keep.google.com) 5](#_Toc154833805)

[Ask HN: What tech stack would you use to build an open-source Google Keep clone? 7](#_Toc154833806)

[Show HN: Chunk – Code sandbox for back-end devs (chunk.run) 10](#_Toc154833807)

[Tell HN: How to run a startup for $6 a year 11](#_Toc154833808)

[Taking it up again 11](#_Toc154833809)