

EXHIBIT B



We Want A Dead Simple Web Tablet For \$200. Help Us Build It.

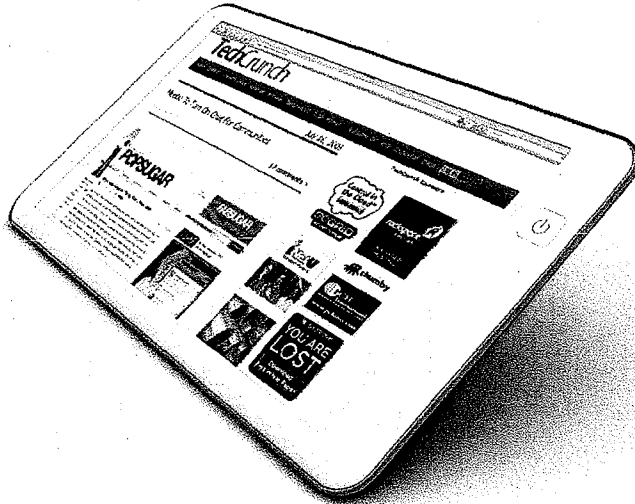
by [Michael Arrington](#) on Jul 21, 2008

1,295 Comments

4 Buzz

39

newWeb



I'm tired of waiting - I want a dead simple and dirt cheap touch screen web tablet to surf the web. Nothing fancy like the Dell latitude XT, which costs \$2,500. Just a Macbook Air-thin touch screen machine that runs Firefox and possibly Skype on top of a Linux kernel. It doesn't exist today, and as far as we can tell no one is creating one. So let's design it, build a few and then open source the specs so anyone can create them.

Here's the basic idea: The machine is as thin as possible, runs low end hardware and has a single button for powering it on and off, headphone jacks, a built in camera for video, low end speakers, and a microphone. It will have Wifi, maybe one USB port, a built in battery, half a Gigabyte of RAM, a 4-Gigabyte solid state hard drive. Data input is primarily through an iPhone-like touch screen keyboard. It runs on linux and Firefox. It would be great to have it be built entirely on open source hardware, but including Skype for VOIP and video calls may be a nice touch, too.

If all you are doing is running Firefox and Skype, you don't need a lot of hardware horsepower, which will keep the cost way down.

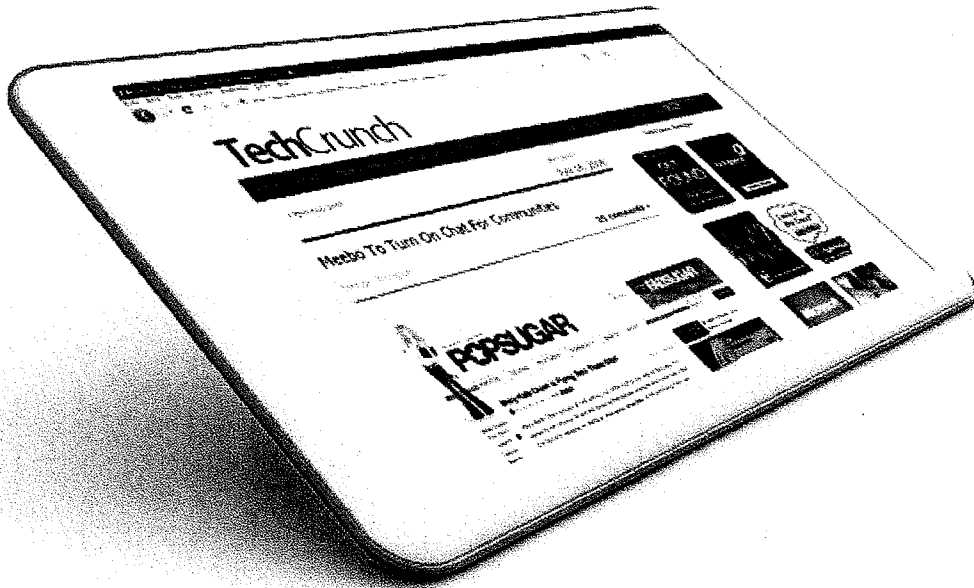
The idea is to turn it on, bypass any desktop interface, and go directly to Firefox running in a modified **Kiosk mode** that effectively turns the browser into the operating system for the device. Add Gears for offline syncing of Google docs, email, etc., and Skype for communication and you have a machine that will be almost as useful as a desktop but cheaper and more portable than any laptop or tablet PC.

It will also include a custom default home page with large buttons for bookmarked services - news, Meebo/Ebuddy for IM, Google Docs/Zoho for Office, Email, social networks, photo sites, YouTube, etc. Everything that you use every day.

We're working with a supply chain management company that says the basic machine we're looking to build can be created for just a few hundred dollars. They need us to write the software modifications to Linux and Firefox (more on that below) and spec the hardware. Then they run with it and can have a few prototypes built within a month.

What will we call it? The best name I can think of is the Firefox Tablet, but that will take a round of discussions with Mozilla.





Here's The Plan

We'll organize a small team of people to spec this out. First is the marketing document that just outlines what the machine will do - we have a first draft of that already and will post it soon. Then we'll spec out the hardware and get people to help write the customized Linux and Firefox code. Once we've completed the design we'll start to work with the supply chain company to get an idea on the cost of the machine (the goal is \$200), and hopefully build a few prototypes. Anyone who contributes significantly to the project would get one of those first prototypes. If everything works well, we'd then open source the design and software and let anyone build one that wants to.

The goal is to keep the machine very simple and very cheap. I think this will be a lot of fun, and it may just turn into an actual product that we can use to surf the web and talk to our friends.

We'll be coordinating the project **over at TechCrunchIT**. Leave a comment there if you want to participate and we'll be in touch soon.

39 [retweet](#)

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Update On The TechCrunch Tablet: Prototype A

by **Michael Arrington** on Aug 30, 2008

319 Comments

Buzz

0

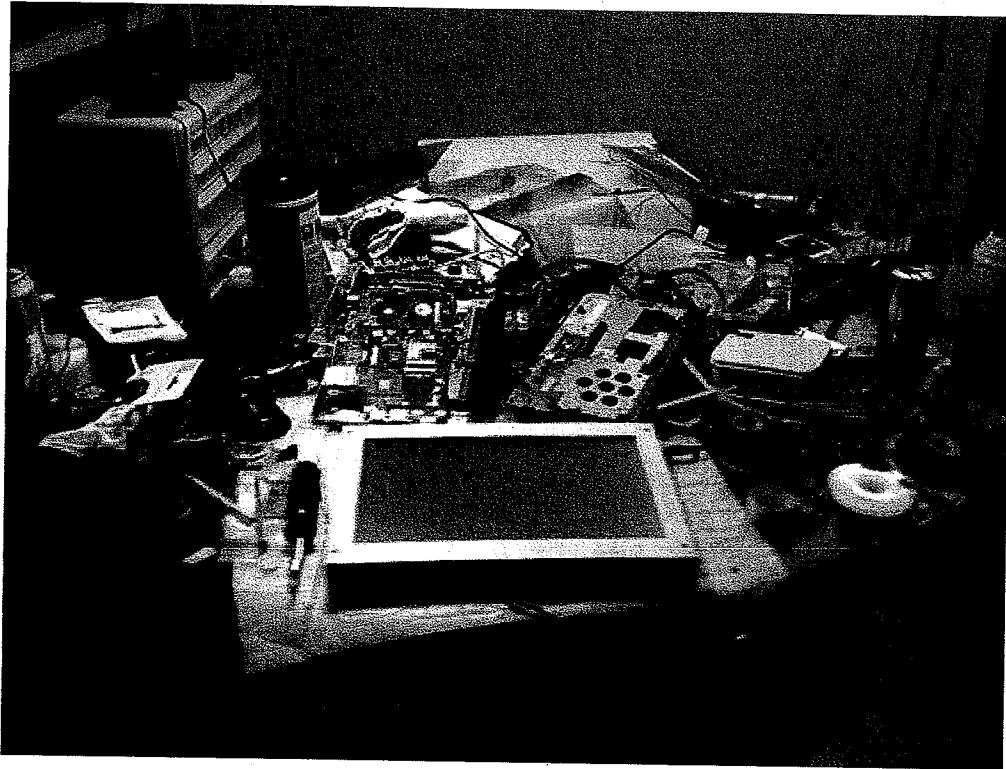
Web

Update on the **TechCrunch Tablet**: A humble (and messy) beginning. Prototype A has been built. It's in a temporary aluminum case that a local sheet metal shop put together for us that's at least twice as thick as it needs to be, but the hardware has been defined and is nearing lockdown. We booted the machine in the case for the first time today, accessed the Wifi network and were able to navigate a web page via the touch screen.

Most of the work is transitioning to software and UI, and real industrial design work on the case is beginning.

We are still far from having beta units but there is now a team working on the project, and an incredible group of people and companies have reached out to us to help. We've learned a lot about building a hardware device over the last few weeks, and it's clear that it is quite possible to build a high performance web tablet in the price range we anticipated.

A teaser picture:

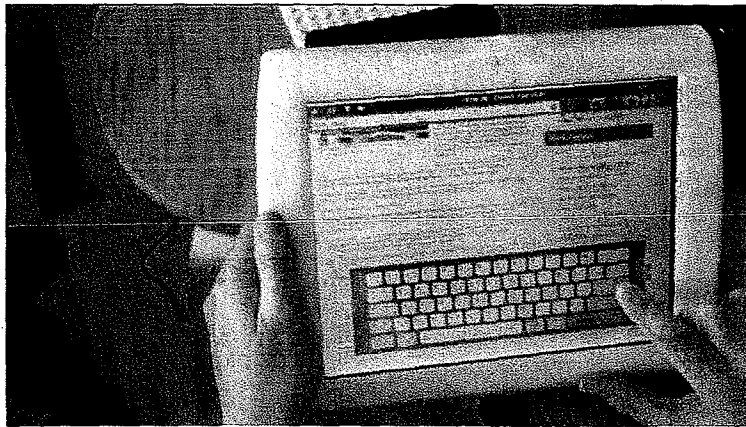


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TechCrunch Tablet Update: Prototype B

by [Michael Arrington](#) on January 19, 2009 | [787 Comments](#) | [365 retweet](#) | [Share](#) | [113](#)



It's time for an update on the progress we've made on the low cost touch screen tablet that I first wrote about in July 2008 when I asked for a dead simple touch screen web tablet that boots right to the browser. Here's our [first post](#) on the tablet, which we're now calling the CrunchPad internally.

The idea is to get a new type of device into people's hands for as cheap as possible (we were aiming for \$200, it looks like \$299 is more realistic). It fits perfectly on your lap while you are sitting in front of the TV, so you can look up stuff on Wikipedia or IMDB as you channel surf. It plays Flash video flawlessly so you can watch movies and TV shows on Hulu or Joost or wherever. Or listen to music on MySpace Music. Or use TokBox to have a video chat with your parents. Then check email and call it a day. Facebook, MySpace, YouTube, Hulu, Wikipedia, Google Docs and Gmail are the killer apps for this device.

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We built a working but very humble **Prototype A** in August. It barely booted, but once it did it was a working touch screen web tablet built on very low end hardware. And when I surfed the web with it, I knew I wanted one that worked properly.

Since August a lot has happened. First, we now have a team lead - **Louis Monier**. Louis, formerly the founder/CTO of AltaVista (he is credited with building one of the first Internet search engines), has also spent time at eBay (head of the Advanced Technology Group), Google and Cui. Louis left Cui in the Fall and has been spending his spare time working with outside teams to build the new prototype. He's in love with the project, and we're lucky to get his time.

Second, we've completed Prototype B of the CrunchPad and are ready to show it to you. I include pictures and video to show it in action.


CrunchPad Prototype B

The device has a 12-inch touchscreen with a 4:3 aspect ratio (which is ideal for web browsing in my opinion). It is powered with a Via Nano processor, which has performed at par with the Intel Atom in our testing. 1 GB of ram (its more than we need) and a 4 GB flash drive to store the OS and browser and any cache. Resolution is 1024x768, which means the vast majority of websites are viewed in full width without scrolling. The device also has wifi, an accelerometer (so when you turn the screen on its side you can view more of a web page), a camera and a four cell battery. Total cost of the device, when we include estimates for the case, codecs and other miscellaneous items, is just over \$200. Prototype B is actually much less expensive because the screen we used isn't very good. The price estimate includes a much better, more expensive LCD.

The case, which was designed and built by David Yamell and Greg Lalier from **Dynacept**, is 12.5" x 9.7" x 1.3". It's about twice as thick as it needs to be without further engineering - we just built in a safety thickness in case of heat or other issues. The device weighs three pounds, partially due to the extra batteries we've stuffed into it to see how long we can run it without power. Still, the device weighs in at 2 oz less than the 10" eeePC.

The software: currently we're running a full install of Ubuntu Linux on the prototype with a custom Webkit browser. A lot of the work done to date has been on the drivers and the virtual keyboard, which you can see in the videos. The software has been created by Singapore-based **Fusion Garage**, who continue to work with Louis on the feature set and user experience.

reply

 **Jon** - January 19th, 2009 at 2:59 am PST

Congrats as well... it's nice to see you expand beyond your blog and into real products (diversification is nice).

Jon
<http://WoodMarvels.com> - Create Unique Memories

reply

slide out keyboard - January 19th, 2009 at 3:00 am PST

slide out keyboard which also work as stand instead of Lego..

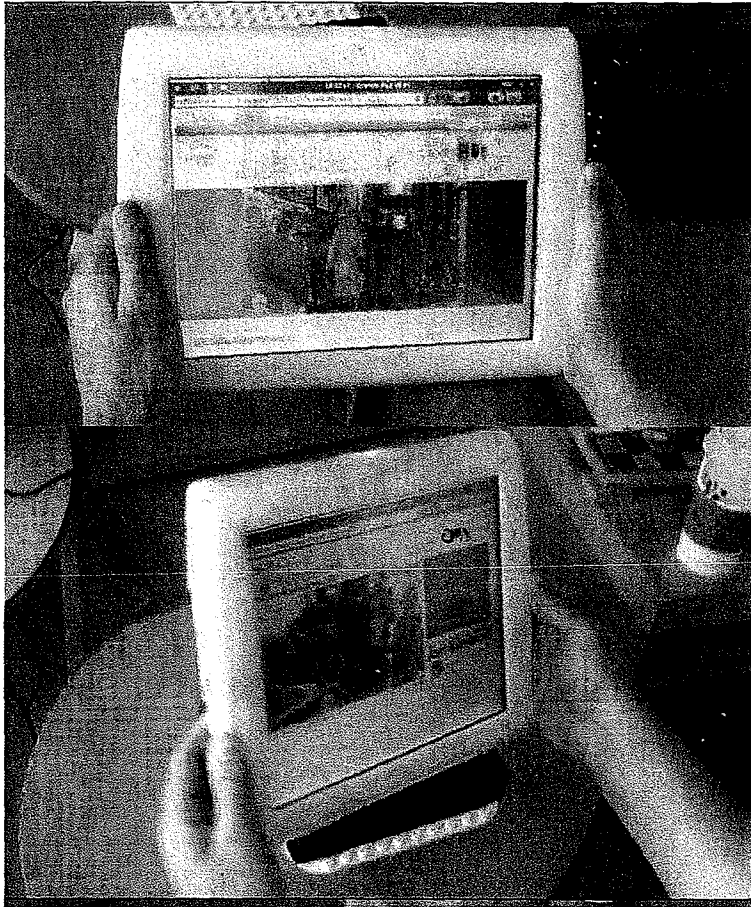
reply

rubric - January 19th, 2009 at 12:26 pm PST

Please say "no" to the slide out keyboard. It has USB for an external keyboard. Leave it at that. This is a laptop, not a cellphone.

reply


More pictures:



Mike - April 21st, 2009 at 1:59 pm PST

he meant to use as a stand, not on the crunch pad having a built-in slide out keyboard

reply

 Ian Mikutel - January 19th, 2009 at 2:28 am PST

Too all TC peeps reading about the CrunchPad, I just spent some time writing up a detailed post on it, trying to synthesize a lot of the information posted here, including new info gleaned from Mike in all the comments so far.

I think its a pretty complete post, take a look and feel free to share your opinion, would love to hear from you all.

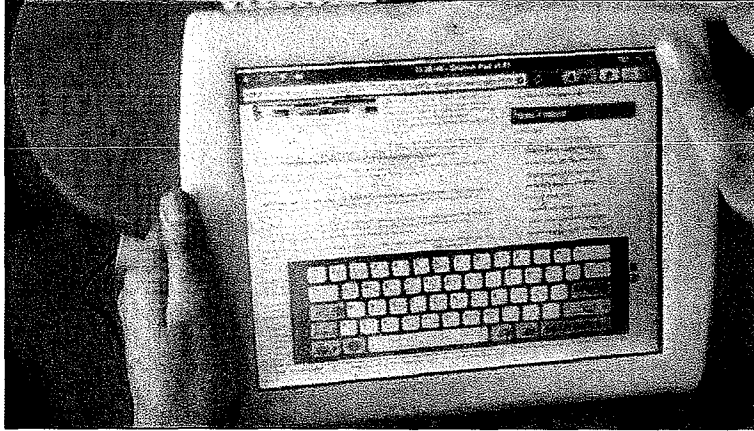
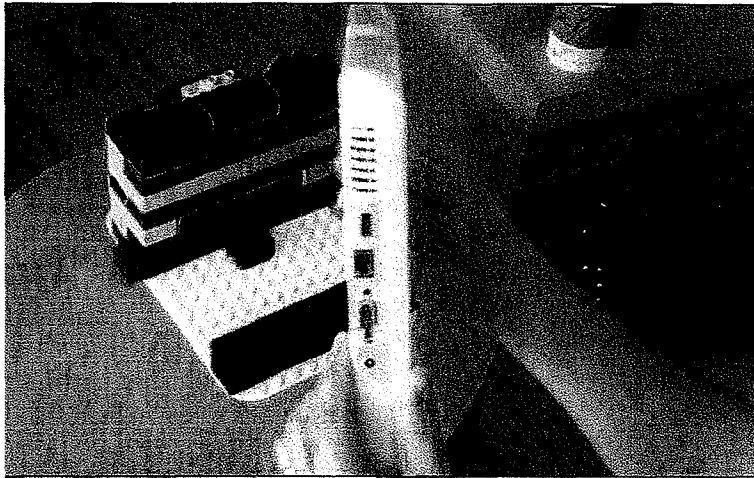
<http://www.ianm...-prototype.html>

reply

rootingforacause - January 19th, 2009 at 1:23 pm PST

Hey all you Vulture Capitalists out there ...

look at this Arrington guy - he's from your stable - lawyer, innovator, venture capitalist, well versed in IT and IP law, made lots of bucks, arrogant like the majority stakeholder in a big bad business, and yet, knows how to listen to geeks and common people with good ideas.



Here are the videos:



replies

This is a challenge to all of you vultures out there - you have it in your pocket to get our economy out of the shit that (...) got it into. But do have the common sense to go with all the money you have tucked into your safe? Spare a few bills for these techie types - who DONT ask for expensive furniture in posh offices - all they ask is a web platform, the hardware they need to test their ideas and some money for assurance to not go hungry. Wanna be the next Buffet? These techie guys are your friends. Don't spend all your money on sexy models and expensive furniture. Buy these guys kits, hardware, web servers and of course, pizza, coffee, clothes and rent.

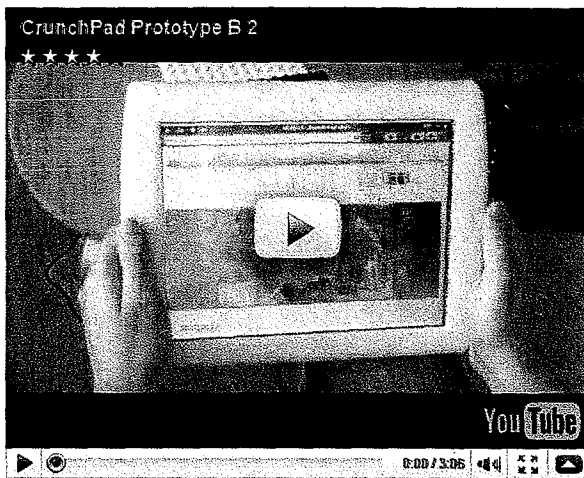
Larry and Sergey were turned down by "respected" vulture capitalists for over a year. Ask those guys how they feel now. Really, ask them. Now.

Mike is showing you in all the glorious detail, how to go about doing it - unfortunately, you need to do some thinking beyond your stock valuation and risk prediction percentages and figures and also beyond your secretary's figure. Go figure.

If you cant do anything on your own just read what Mike has posted so far and remember, Larry and Sergey were turned down by VCs for over a year. One rich guy saw what they saw and he didn't trouble them with a single question. He just put the cash into their hands after a hour's worth of talking and he didn't come back to ask for anything for months. And now, you cant live without that one-box website they made, can you? I'm talking of Google (some VCs still do not know their story) In short, study this story properly. (PS: No hat tips needed :-))

reply

Here are the videos:



What's next?

We've completed our original goal of building a "dead simple and dirt cheap touch screen web tablet to surf the web." The hardware is nearing lockdown. Software development is rolling. And we've spent very little money to get to this point.


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(PS: No hat tips needed :-))

reply

KUSH - January 31st, 2009 at 1:50 am PST

cheers to that

reply

 brian - January 19th, 2009 at 11:13 am PST

I can't help but think you people are missing the picture. By building a team around someone who has never done a consumer CE project, you're missing most of the costs. Like the tech support call center. Like the returns. Like the profit for the retail channel. Like profit for yourselves. Like advertising - selling 1,000 units to the tech crunch loyal is all well and good, then what?

The rule of thumb is end user purchase price is 2x bill-of-materials. If you've got a \$300 pre-transformation BOM, you've got a \$600 end user product.

Go look at GPS units. Lower hardware profile in a couple of ways, far cheaper screen, maps are a profit center for most companies, and look at their prices. That's the effect of marketing, sales, support, channel. What, you think they're just out there burning their money? That's a tough business, and if they could present a \$10 lower price they would.

Another example is the Kindle, which is probably selling at 0 profit and 0 ad budget

We've completed our original goal of building a "dead simple and dirt cheap touch screen web tablet to surf the web." The hardware is nearing lockdown. Software development is rolling. And we've spent very little money to get to this point.

We've received **thousands** of comments and emails from people who want this device right now. We've had tremendous support from the community in helping us build the prototypes, and Via has been flat out amazing with their support of the project.

We've also gotten quite a bit of interest from the investment community. The real question for us is whether this project has legs and should go forward towards production units, which is a very big step from a working prototype. That would require spinning the company off from the blog and building a team around Louis. It's a decision we haven't made yet.

35 

 Buzz up!

could present a \$10 lower price they would.

Another example is the Kindle, which is probably selling at 0 profit and 0 ad budget because it's on the front page of the largest retailer in the world every day. And guess what - amazon won't publish their sales figures, but it's pretty low.

If you have a way to sell products that doesn't involve advertising and channel and profits for investors, you may be on to something. But when you go to investors, I suggest you leave that last part out.

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91 comments

Amazon Promotion Tempts Book Lovers With Free Kindles

77 comments



brian - January 19th, 2009 at 11:19 am PST

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Responses

- Ben Barren - Confessions of a Mad Man > forget a job or consulting, fake ver death.

Andrew - January 19th, 2009 at 12:50 am PST

Do you use N-trig digitizer? As far as I know they support multi touch and the touch is capacitive which is a must for such a device.

reply

Michael Arrington (@arrington) - January 19th, 2009 at 12:53 am PST

it also costs \$100, on top of the screen. doesn't work at the price point we're looking for.

There are some high end resistive screens that actually work really well (the prototype is resistive and very responsive). multi-touch is best for when you need to zoom in and out of a screen. we don't need to do that. so single touch and resistive may be just fine on this device.

reply

nemrut - January 19th, 2009 at 12:54 am PST

...problem i see is that Sony could knock one of these things off in a heartbeat if it sees real demand. Not only could they beat you on price but would be willing to sell units at a loss with future profit potential.

Another challenge you will face is improving the design and engineering which will raise the cost by at least 2-3x at the scale youre producing.

So in the end, it is a great effort and proof of concept but you guys should look to partner with someone w/deep pockets and expertise in this area.

reply

Michael Arrington (@arrington) - January 19th, 2009 at 12:58 am PST

agree, although it's not like we've been secretive about the project, and readers have been pretty vocal about "want one." I'm not sure the big guys can psychologically get away from the OS as the center of attention. or the lack of a keyboard.

reply



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About Those New CrunchPad Pictures

by [Michael Arrington](#) on April 10, 2009 **463 Comments** **266** **67**

A little background for those of you who haven't heard of the CrunchPad: This is the post that kicked off the project. I wanted something I couldn't buy, and found people who said it could be built for a lot less than I imagined. The goal – a very thin and light touch screen computer, sans physical keyboard, that has no hard drive and boots directly to a browser to surf the web. The operating system exists solely to handle the hardware drivers and run the browser and associated applications. That's it.



The key uses: Internet consumption. The virtual keyboard will make data entry a pain other than for entering credentials, quick searches and maybe light emails. This machine isn't for data entry. But it is for reading emails and the news, watching videos on Hulu, YouTube, etc., listening to streaming music on MySpace Music and imeem, and doing video chat via tokbox. The hardware would consist of netbook appropriate chipsets (Intel Atom or Via Nano), at least a 12 inch screen, a camera for photos and video, speakers and a microphone. Add a single USB port, power in and sound out, and you're done. If you want more features, this ain't for you.

Price? it can be built for less than \$250, including packaging. Add in fixed costs and other stuff you have to deal with (like returns), and you can sell it for \$300 and probably not go out of business. Physical design is important, and the software is the key to winning.

We stumbled through an initial prototype that barely booted, but we finished it in a month. Prototype B was much more impressive and usable. That effort was led by [Louis Monier](#), with software developed by Singapore-based [Fusion Garage](#) and industrial design work by [David Yarnell](#) and [Greg Lalier](#) from [Dynacept](#).

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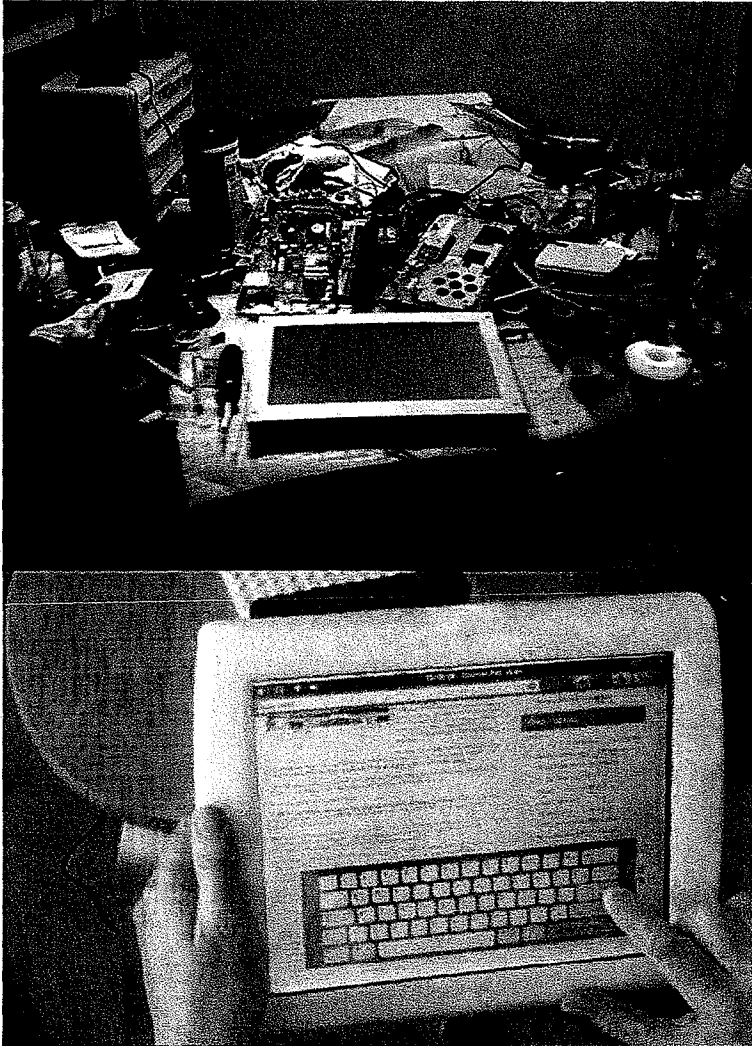
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reply

 **Robert Scoble** - April 10th, 2009 at 9:21 am PDT

I want one, how do I order?


reply

 **Raúl Colón-Scarano (@ramcosca)** - April 10th, 2009 at 2:08 pm PDT

Oh, Robert. It's hilarious that you say this, knowing the history of these pictures. :-P

Great way to stir things in, heh. :)

reply

 **jyoseph** - April 10th, 2009 at 7:18 pm PDT

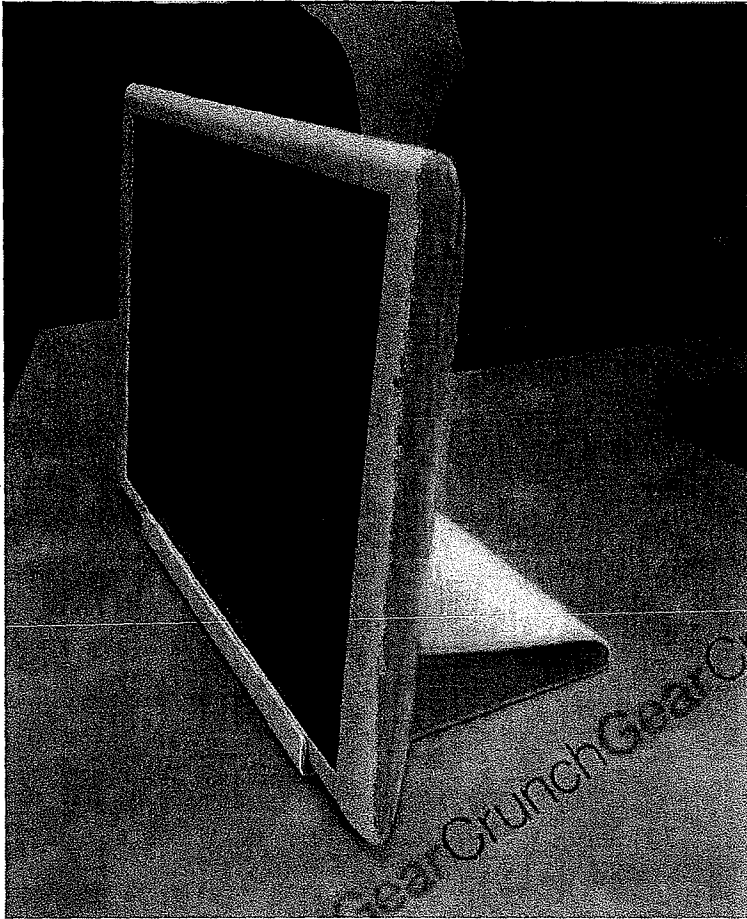
Count me in for a couple too!

reply

Jakub Jochec - June 8th, 2009 at 8:28 am PDT

Me too! For distribution in Czech Republic and surrounding countries if you are interested

reply



Christine Lu - April 10th, 2009 at 12:33 am PDT

Mike, please tell me that's a pink version I see. I mean, I see the outer packaging that's pink. Can you confirm that there's a pink one (or is it redish maroon. lighting. hard to tell)

I'm so excited! Great job. Seriously.

reply

Michael Arrington (@arrington) - April 10th, 2009 at 12:34 am PDT

as you requested, it's pink.

reply

Christine Lu - April 10th, 2009 at 12:40 am PDT

!! :D

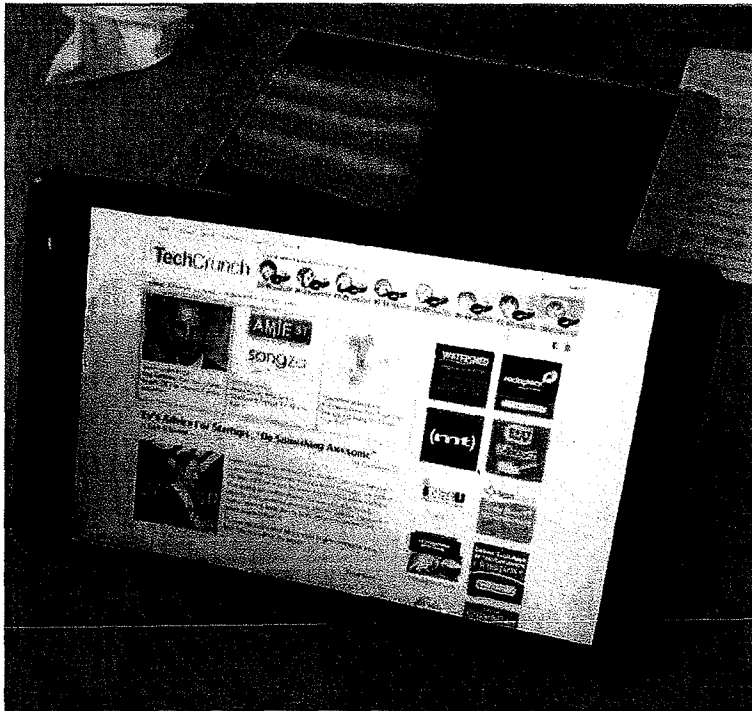
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call - April 10th, 2009 at 4:08 am PDT

Feel free to pick up your custom-built pink "thing" in Mike's magic basement.

reply

netlor66 (@netlor66) - July 7th



300 Buzz up!

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Anticipating the Apple Tablet: When journalism becomes fanfiction

2009 at 3:28 pm PDT

laws!!!!



Robert - April 10th, 2009 at 5:57 am PDT

Awesome Mike, its awesome! Lawyer turned Tech Writer turned computing visionary! I love you... please add a low profile GPRS/EDGE/EVDO/CFDISK/RAM/GPS/Sensors expansion slot so that people could buy them to do more than what they bargained for.

Imagine with sensors(accelerometer,xyz axis data etc) one could play motion detecting java games, flip a page by flipping the device, with javascript api. Web pages could reveal hidden views by tilting the device (3d views etc)... with GPS know where I am, where the nearest coffee bar is. With GPRS/Edge/whatever module one could place cellular calls do skype over net.

And to make it all green, and making it a viable option for people during travel or in remote locations, please add an option to purchase a similarly designed solar panel that trickle charges the battery.

In any case have a expansion slot! You can add features later.

PS please do us the favour that we could install any linux distro of choice and that there is a good developer documentation.

Good luck!

check out <http://www.linuxdevices.com/>

reply