



# Stanford eCorner

## Create More Value Than You Capture [Entire Talk]

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Sharing inspirations from both innovative companies and works of art, entrepreneur and technology sage Tim O'Reilly weaves together a series of thoughtful lessons for startups. From rethinking workflows and experiences to the valuable role of idealism in business, O'Reilly makes the case for entrepreneurs to work on the hard problems that matter.



### Transcript

Thanks. Thanks very much for having me. I like to say after one of these introductions my reputation exceeds me. So, and in keeping with that thread I will say, I like to start my talks with a quote because as Oscar Wilde noted quotation is a serviceable substitute for wit. And the quote I'm going to start you with is one of my favorites that's from Edwin Schlossberg who said the skill of writing is to create a context in which other people can think. And a lot of what I've done in my career has been to frame things in such a way that people can see what's important about them. And what I'm going to try to do today is to look at a couple of interesting start-ups or projects and pull out some of the things that I find interesting about them, as a way of giving you some perspective both on technology, but also on values and business strategy. So, the company that I really want to talk about the most right now is Square, and Square is interesting for a number of reasons. But I want to just ask how many of you have actually shopped in a store that has a Square Cash Register? So a fair number of you. How many of you had the Square Wallet app running when you did that? Smaller number of you.

I really recommend it. It's pretty weird when you walk into the store and they say are you Tim O'Reilly? Obviously, the clerks need a little retraining because of course they should be asking you what's your name, so that you have to provide it and then you get two-factor authentication instead they just looking at your name on the cash register and your face, but still you look like yourself, you probably are okay. But there are a number of wonderful things, lessons in this app I want to tease them apart. The first one is to do less. We hear a lot in the mobile world about how it's a small screen, we hear about how people use mobile devices differently, but there is something that's incredibly important that's going on in mobile that I think we're just beginning to understand. And that is that your mobile device knows so much that you don't have to tell it as much as you use to. I am an investor in Foursquare, but I still think how stupid is it that I have to check in somewhere. I mean, my phone already knows I'm there. I'm an investor in RunKeeper, but I say why do I have to tell my phone that I started running? It knows I started running. It knows when I stopped.

And one of the things that I love about Square is that Jack has exploited this. When you show up in that store, if you are running the Square Wallet app, your identity is broadcast to any Square Cash Registers. Now if you talk to a merchant, he will say oh, yeah sometimes we get people in the next store over, it's not like a real check-in. But the fact is, Jack figured out I don't actually have to ask the user to tell me that they're there. The phone tells the Cash Register that it's in the vicinity without any human intervention, other than starting the app and running it in the background. Now there may be some battery issues with that and so on, but think about that as a trend and a theme that you've got to come to grips with in designing apps. We now have devices that have so much information, so much implicit context, and it's going to be I think a revolution as we take away more and more of the instructions that we give to the device and realize, oh wait we can just assume that. So, first lesson. Second lesson, of course from Square is that you have to embrace hardware as well as software. Brad Feld, who is a technology investor from Colorado, made a humorous comment at our MAKE Hardware Innovation Summit last year, which

sounded very retro when he thought about it.

He said, I am not interested in investing in software anymore, I'm only interested investing in software if it's wrapped in plastic, which made you think he was referring to shrink-wrapped software, but no, no he was referring to that somebody had figured out some maker element to, whether it's Fitbit or Square or whatever. But there was a clever bit of hardware hackery that Square used up front to bootstrap its business to make a phone into a credit card reader. The thing actually listens, actually uses the audio jack for input to the device, a very, very clever bit of hardware hackery and there is no power in the thing. There is a lot of maker smarts in that device as well as software smarts. The third lesson that you see in Square is the notion of software above the level of a single device. We are so used to thinking of the software as being what's running here. We have been in this transition really for a decade, decade and a half and we are just getting deeper and deeper and deeper into understanding what this means. The line software above the level of the single device actually came from Dave Stutz's parting letter to Microsoft when he resigned in about 2003 or 2004 and he said stop looking over your shoulder, there is plenty of money to be made building software above the level of the single device. The name - the term stuck with me, because at the time I was giving a series of talks called the Open Source Paradigm Shift and it was really about the real implications of Linux, I mean everybody was still at that time thinking, oh, wait Linux is in competition with Windows and I was like no, no you guys are missing the point. And I would ask audience to say how many of you in the audience use Linux? And I got a show of hands depending where I was talking very many or very few and then I would say well, how many of you have used Google? And every hand in the room would go up and I say well then you use Linux, it's not just on the computer in front of you.

And so trying to get across the notion that the computer that was in front of you was not the only one. But what's really interesting is that we are starting to see with applications like Square literally someone has designed a system that is in the space between these devices, between the app in your pocket and the cash register app on the - at the front desk of the coffee shop or the local merchant. And that notion is again something I think we're going to be seeing more and more as a design pattern. How do you think through a whole set of interactions between users who might be on different devices, and obviously there is a software backend that has that credit card information, it has that picture, when you are there, there is a lot going on there and it's a system, it's not just a single application. So fourth lesson, harness network effects in data. This was the heart of my thinking that came out of that open source activism was when I realized that - it was actually something Clay Christensen called the law of conservation of attractive profits. I realized that open source software and open protocols of the Internet we are going to make software as it was less valuable and something else would become valuable when that became commoditized. And I came to the conclusion it was data and so that was really what distinguished companies like Google or for that matter Amazon from the previous generation of software companies. But this is a key part of Square as well. Remember when I first talked to Jack about the application, he was saying, well, we are going to use people's social network to help with credit scoring and obviously they are retaining data in the form of people's credit card information, their pictures, all of these kinds of things that are required in that application really is going to get better and stronger the more people are part of the network.

So network effects in data is a critical piece again of what makes Square a really interesting and paradigmatic app. The fifth lesson that I take from Square is to rethink workflows and the experience that someone has. Again, so many apps that experience is this, that's not a very interesting experience. The experience of walking up to a storefront and talking with a person while the devices are doing this work in the background, it is a complete rethinking of that workflow. But in another place where you see this also in a retail context is in the Apple Store, I mean, how amazing is the Apple Store. You go into a typical retailer, you can't find a salesperson to save your life and instead what Apple has done is they have given all these - they have taken that cash register workflow and totally decomposed it, so that everybody who works for Apple in the store can check you out. They can check inventory, they've turned them into augmented humans with superpowers. So you have instead of no clerks, here is automation creating more clerks and making it an extraordinarily profitable store. And I think this model can be applied in other areas. So I was in a brainstorming session run by the Marco Foundation with Todd Park who is the federal CTO, he was at the time CTO of the Department of Health and Human Services and he was talking about how Walgreen is trying to do this for pharmacy assistance where they're trying to get them to be able to be more helpful to people because they have access via a phone to the database.

It will basically make maybe a home health assistant, somebody who has superpowers, rather than this being a low-level job; it becomes a high-level job when you give that person access to the machine. And I think this is really perhaps one of the most interesting things about Google GLASS, is it will allow more of these kinds of workflow innovations where people are going to be able to be connected to computers in more powerful ways in a professional setting. So a lot of people say, well wow, will this be weird, they think about all the consumer applications, but there is a huge set of applications in purely professional settings where you are really going to be able to rethink the workflow, how somebody does their job because they have access to the computer in a different way. So, there is another lesson that's sort of implied in all of those just last examples, which is really to think differently about man-machine symbiosis. One of the key ideas that I had when I was sort of promulgating the idea of Web 2.0 was that it was about harnessing collective intelligence. What distinguished the apps that survived the dot-com bust from those that didn't was that, companies like Google and Amazon were really good at figuring at

how to get their users to contribute to what they did. I could go into that in great detail, but over the last decade we found more and more interesting ways to do that and there was a wonderful paper by JCR Licklider written in 1960 called the Man-Machine Symbiosis, I updated it called Human-Machine Symbiosis, since we are not quite so sexist now, although we still have a long way to go. But, he was just talking about this possibility of connecting humans and computers in new ways. And so, a really a great example of this that I can't pass by is the Google Autonomous Car. What I find so fascinating about this project is that in 2005 it was, we had the DARPA Grand Challenge and the winner went seven miles in seven hours.

Six years later Google says oh, we have a car that's driven hundreds of thousands of miles in ordinary traffic. What happened? What was different? And there was a wonderful line from Peter Norwich, he said we don't have better algorithms, we just have more data. And what was that data? It turns out it was Google Street View vehicle. So the difference is the recorded memory of humans who drove those roads. You equip humans with sensors, very, very detailed sensors that measured everything, that photographed everything, collected all that data, stored it in the global brain and then return it for use by that car. That's a brilliant rethinking of Man-Machine Symbiosis, Human-Machine Symbiosis. Similar examples in robotic surgery, but really fascinating Peter made the comment it's a fairly hard AI problem to pick a traffic light out of a video stream, it's a trivial eye problem to figure out if it is red or green if you already know that it is there. And that's really one of the key insights that went into that vehicle and again so that's something you ought to think about. So but back on this notion of - since we're on the subject of cars, another application that puts a bunch of these principles into work, software above the level of a single device is Uber and rethinking workflows. Think about that wonderful experience you've got a phone in those where you are the driver has got a phone in those where he is or she is, and then Uber has this memory, this brain, which is identifying that routing, telling everybody how to get together, that's a system.

Its software above the level of the single device, it's providing a whole lot of context without you having to do a whole lot when you first - Uber does a decent job of figuring out where you are, maybe you have to correct it a little bit. They have done a pretty good job of applying these principles. But there is another principle that Uber brings up, kind of a really interesting thing. When you use Uber you're asked to rate the driver; the driver is also asked to rate you as a passenger. That's a really, really interesting thing and Uber is pretty ruthless about weeding out people who get bad marks from their passengers. Now you think about your experience of if - how many people here have actually driven in a Uber? Fair number, you have pretty good experience isn't it? It's kind of one of those magical things like going into a Square-enabled coffee shop or going into an Apple Store, you go, wow, this is really good. When you compare that to your experience with the cab driver, you have the guy's playing loud music, he doesn't nowhere he's going, all kinds of terrible experiences, you get an Uber driver does that, they are out on their ear and you think about the old-school way that taxi cabs are regulated, well, we are going to test people, we are going to figure out who is approved to do this, Uber has actually done one better. There may be some regulatory issues there that need attention, but there is a lot of ways that we're starting to see reputation systems that we're seeing on Internet application starting to have a relevance in the real world. And I think that's - I am not putting that as a principle, I'm just asking it as a question, I think it's one of the great interesting unanswered questions in the government area. But the lessons - my next lesson that I really wanted to highlight from Uber is to close the loop.

What makes that Uber experience so different is that you know when your cab is going to arrive. When you - let's say, you want to go to the airport and you call a cab, you never know are they going to show up, are they close, did they forget, you are standing on a street corner in the rain, you don't know how long it is going to be, think about Uber, you can sit in the restaurant, you can sit in the coffee shop, you get a text when the driver is outside. Uber has closed the loop. You want to know where they are, you can actually look on the map and you can watch their progress towards your location. Uber has closed the loop. And I got that framing from Chris Sacca, who is an early investor in Uber, he was also Google's Head of Special Projects for a long time and say what he learned from Google is to only invest in things that close the loop. And I think that's a really, really important principle and if you are doing a start-up think about what loops you can change. Another piece of how do you make things smarter, so that you don't have these open ended systems where you don't really know what you're going to get. So, but I want to return a little bit to Square for my next lesson, which is a slogan that we've used a lot at O'Reilly. Create more value than you capture.

Think about when Jack first started Square, he had a social mission in mind. He wanted to enable a class of small merchants who we felt was disadvantaged, who couldn't take credit cards. He wanted to enable anybody to exchange money in a new way. He was thinking hard about how you actually make the economy work better? That's a big interesting question and one that I think we miss a lot. We have a lot of start-ups that all they're really thinking about is how do I get a start-up that will get funded and get me to an exit. And maybe you think well I have an interesting problem, but this is the kind of thing my sense was that Jack wanted to solve that problem whether it turn into a big business or not, he just thought it was really, really interesting to solve. But there is also this sort of sense of trying to enable an economy that feels really important. This quote that I love from Les Miserables and it's so wonderful. How many people do you - how many people saw the movie? Okay, I have seen the play or whatever, how many people read the book? Even better. The book is absolutely wonderful, probably one of my favorite novel of all-time.

But, the story for those of you don't know it's a guy who was a prisoner for many years, he was in prison for stealing a loaf of bread. Like so many people in our prison system he's kind of ruined by this, he becomes sort of a criminal and he gets out, he can't get a job because he is branded as a criminal, he ends up stealing some candlesticks from a church that takes him in and the abbot there instead of turning him into the police, when the police come around he says, oh no, I gave them to him. And so Jean Valjean becomes, he sort of feels like has an obligation to do good after this. And he goes and he becomes a businessman and he creates this wonderful factory where he builds this wonderful business and this is the line that I love so much. He makes the entire region prosperous, so there was no pocket so obscure that had not a little money in it. No dwelling so lowly that there was not some little joy within it. And here is this key point, Father Madeleine, he is living under pseudo name because he was an escaped con. So Father Madeleine made his fortune, but a singular thing in a simple man of business did not seem as that were his chief care. He appeared to be thinking a much of others and little of himself. You think about how many people in business that you could say that of? There are not that many and that's something really wrong with that.

And I think it really started with this idea which came out in the '80s that the only obligation of a business is to make money for its shareholders. We've seen where that has taken us and into a situation where the Wall Street banks can think it's perfectly legitimate to screw over the entire economy as long as it fattens their profits. This is not okay. It's the big lie of modern business. You have an obligation if you're in business to create value. And that's one of the lines that I use all the time is that we should create more value than we capture. But this idea that Jack had that he wanted to build something that helped the economy that helped the small business. And you see this in Etzy, you see it in AirBnb, they want to figure out how to make an economy. They want other people to succeed as a result to this; you see it in Kickstarter obviously. So, these are really important lessons if you are creating an ecosystem, if you're creating value for other people, your business will succeed.

I didn't coin that line we made a motto for O'Reilly, it was actually Brian Erwin, who was at that time my VP of Marketing. We had a management retreat just back 10, 12 years ago and we were just talking about sort of key principles at O'Reilly and I mentioned that some number of Internet billionaires who said, oh yeah, it all started with an O'Reilly book and I laughed and said, I got 30 bucks for it. And he said yeah, that's one of our guiding principles, create more value than you capture. And I love that ever since because it's such a great idea, if you could make other people successful, if you can do what Father Madeleine did in Les Misérables, you can make the world a better place, you are really doing a good thing. So, that kind of another way of saying the same thing would be this other principle that I have which is simply to work on stuff that matters. And we'll talk a bit more about that in a moment, but I want to lead up to another principle just by reflecting very briefly on some of the things I have been associated with: open source movement, Web 2.0, the maker movement, open data, open government, these were all in a lot of ways things that matter. But they are also big ideas that told a story. And that is what I wanted to come to is this, as the 10th principle for you, which is idealism is not only good for your business, not only good for the world, it's the best marketing. When we started working on the open source movement, it was because we said, hey, this is a really important thing that nobody is paying attention to it. But we sold a lot of books because we told the big story that mattered to all those communities that we made them proud of who they were, we made the world know who they were, and it was great marketing for us, it was great because we were helping others and we helped our own business.

Web 2.0, a lot of people don't realize this, 441 00:24:36,680 --> 00:24:39,929 but the reason why we started that marketing campaign was because after the dot-com bust a lot of our customers were out of work and we actually had our strategic goal in 2003 to reignite enthusiasm in the computer business. We basically - we went out there and we told a big story that was designed to help other people and, sure, it helped us build our business as well. Clearly I have been doing that in areas like open government, I'm looking at healthcare, I'm really interested in that. But there is another element of that idealism that I want to share and I want to start with a talk I gave in 2008 called "Why I love hackers" and that was at our Emerging Technology Conference and in that talk I gave, I read a poem and you can't really see in the background, it's a painting by Delacroix in the background of Jacob wrestling with the Angel. It's a biblical story. And the poem by Rilke is about how the wrestlers of the Old Testament would go wrestle with the Angel and they knew they couldn't win. But they got stronger by wrestling with the Angel and it's a wonderful line from Rilke he says, what we fight with is so small, and when we win it makes us small. What we want is to be defeated decisively by successively greater beings. And I love that and I said - so I told this and it was funny because the reaction from the audience was people love to be challenged with idealism. They love to be challenged to do stuff that matters and so in the last - ever since I gave that talk I've really just been focusing on that just like I don't care what you do something that matters to you more than money.

That's a great way to succeed. But even if you don't succeed, the world will be in a better place and that's what you should think of as an entrepreneur and you should think about working on things that are hard. Remember that what we fight with is so small and when we win it makes us small. Find hard problems. I think a great example of this my son-in-law had started a company called Makani Power, which does high altitude wind energy and one of the things that - first of all a really hard problem, what really stuck in my mind was a guy who quit a hedge fund to come work for Makani. It's basically pretty hard, you're basically controlling a flying drone that is generating power it has to be able to fly autonomously for years of the time or else come up and down at least in a very controlled way. But the guy said, I quit working with the hedge fund to come work here because the math is harder. And that spirit of somebody who says I want to come work on a hard problem, I don't want to

work on stuff that's easy. That's one that I find really exciting. Working on stuff that matters may mean doing a start-up like Makani, it can also mean nonprofit kinds of things.

I'm very involved with an organization called Code for America, which tries to get people like you to go give your service working with city governments, working to make better interfaces for government. I think governments are a really important part of our economy, important part of our society, it is clearly broken, we need to take responsibility for fixing it. Code for America is doing a lot of that. One of the projects that we are working on this year described by this woman Anne Milgram as money-balling criminal justice, turns out that one of the biggest costs for cities is pre-trial incarceration. This sort of prison industrial complex which profits from keeping people in jail, cities are really kind of stuck here because there is always fear mongering, who can you let out. And the bail system is really broken, it was originally designed to let out the petty criminals keep the big guys behind bars, but of course the big guys are profitable enough that the bail bondsman will put up a bond for them, the little guys can't come up with the \$500 bail and they end up rotting in jail, turns out you are more likely to actually be sent to jail if you come into your court appearance as a prisoner than if you come in from the outside, you lose your job because you're held, all these kinds of things. And in fact many of these people could be released on their own recognizance. This group called the Arnold Foundation has built a data model that actually helps to predict who is safe to let out and the project we are doing in New York City and Louisville is actually to apply that data model, build an app for judges and we will see how that works. But the story that I wanted to share, the fellows just were out there and they were in Louisville, and the Louisville fellows as part of their, they kind of go to the city, they studied the problem, they got booked into jail. And this is a really amazing story that they are being escorted to their cell because they've kind of gone through the whole process and some prisoner call us out, hey warden, who are your new friends? And she says these are the Code for America fellows.

And the guy, the young prisoner he says, oh my god, it's the Code for America fellows, they are here to fix it, they are here to fix this and it was like, boy, what a burden, it's like they kind of like, oh, crap, are we going to be able to do that. But the fact that and he started telling him all things that had gone wrong during his, that's so powerful when you can have that impact, there is so many problems where you have impact on people's lives. So, anyway if any of you are interested go to codeforamerica.org and look for the fellows application. There is also something called the White House Presidential Innovation Fellows, which is trying to do the same kind of thing at the federal level where they are looking for talented people to come work on problems of government. So they are also in their application cycle right now. Finally, I think there's a lot of huge opportunities in healthcare. But there's also start-up opportunities. Jen Pahlka, who founded Code for America, wrote a really wonderful post on LinkedIn recently about a start-up idea that the two of us have battered around for a long time which is how would you enable the small corner store with logistics, with whatever, to basically give them the same buying power as a Walmart, predictive analytics about what people will buy, there's all kinds of interesting things you could do to reinvigorate and reinvent the corner store. Kind of social business, but also big business opportunity. 576 00:31:10,699 --> 00:31:10,799 578 00:31:10,829 --> 00:31:10,999 580 00:31:11,099 --> 00:31:11,199 582 00:31:11,269 --> 00:31:11,369 584 00:31:11,469 --> 00:31:11,569 586 00:31:11,609 --> 00:31:11,709 588 00:31:11,986 --> 00:31:16,080 So, with that since this is - I am going to end with a little bit of self-promotion in addition to doing O'Reilly Media and a variety of associated business we do have on early stage venture firm, O'Reilly Alpha Tech Ventures, oatv.com and if any of you are interested in, or are doing start-ups that have applied the kinds of things I am talking about here or particularly do things that are going to make a big difference in this world, I want to hear from you.

So I'm tim@oreilly.com or @timoreilly on Twitter. So with that, I am going to open it up for questions. Thank you. All right. Thank you very much. It's a very inspiring speech. And my question is about the peer versus owner in the ecosystem. In terms of the Internet ecosystem, it feels like each participant feels that themselves like AirBnb, Kickstarter are the place - they make order within their platform. So, I am curious how about the interactive in terms of the view of the whole ecosystem to make use of ecosystem could be that better balance between the peers and the owner? Between the what and the owner? The kiosk and the owner. Kiosk? Yeah, so I mean, for example oh, okay sorry my point is that each participant in the ecosystem play their game in their own way.

Yeah. So how do they interact with each other in terms of the principle of the ecosystem and is there any party should fully dedicated to build the principles for the whole ecosystem? Well, I guess, what I would say for - let me start by repeating the question to the extent I understand it. There is a balance when you are building an ecosystem between the central party that is controlling that ecosystem and then the various other players, how do you design the ecosystem as a whole and the question I would just say it's an ongoing process. You think about for example the web ecosystem and all the problems we have with web spam, with SEO spam Google has to work constantly to make sure that there are thinking okay how do we improve results. But they can make decisions that say we are going to favor certain kind of project over another. We are going to pay attention to certain kinds of signal. We're going to try to give a priority to whatever we think are the best results for users, not the best results for advertisers for example. And you see this in something like AirBnb where they have ideas about how they want to support the experience of their providers. And you think about with Etzy, where they are favoring small sellers, they are trying not to encourage big players to join the ecosystem. You see it clearly with Kickstarter where they are funding certain kinds of projects and not others.

Managing an ecosystem I think is really, really important because companies that don't get that right I think lose their edge. eBay was a great example. They started favoring the big sellers, did really well for them for a while, but it took away a lot of the vitality of that ecosystem of course created opportunity for somebody like Etzy, but also Amazon for that matter. Okay, how about down here. So, my question is really like around open source business models, and I feel like Red Hat and to some extent Ubuntu have proven they are relatively viable, but really like it's a question because my co-founder thinks that open sourcing our platform is completely insane. But I think that it could make a lot of sense if it were licensed right and I think my example to him was like you guys give away your books DRM free, but you still happen to make money on them. I mean so there is anything you could speak to like about that? All right. So the question is about open source business models and how you make money when you are giving away your product for free. Let me point out a couple of things here. First, I do think that the biggest open source success stories were not people like Red Hat.

They were people who actually built and sold services that used open source and obviously - it's a bunch of obvious players, Google, Amazon, Facebook, Twitter, they are all open source companies that took open source to use to deliver service. But there is an even more direct example, the entire web hosting business, very thin skin of selling DNS as a service, selling WordPress as a service, selling web, selling Apache as a service, you have for a subscription fee. And so, there is a pretty clear case where there was an open source business model that was sitting in plain sight that didn't look like the business model of a software company. And I think it's really important to look a little sideways. It was a wonderful talk at our Open Source Convention once by a guy named Robert Lefkowitz, goes by the name Rommel and he basically started in with this long conversation about Sharia compliant mortgages, which is - under Islam you can't loan money. So he said basically that the Islamic banks, he went through the two or three different ways so they get around this, they basically rent your house for 30 years and at the end of 30 years they make a gift of it to you. So there he kind of explains this and he says okay, so now let me show you the P&L for Borland versus the P&L for Red Hat. And he says look the percentages are identical all the way down the line. There is only one difference. This line says licenses and this line says subscriptions.

Sharia compliant mortgage. Basically Red Hat it was the same business as Borland. And so when you think about open source the most important thing to think about is where do you get your business advantage? Now there are open source business models where you get your business advantage because, hey, at least in the early days this is a great way to get my software in people's hands. But in the era of cloud that's actually not really much of an advantage anymore because anybody can get their software in other people's hands. So that's really gone. That was the idea from MySQL and the whole idea of dual licensing, we build the market by letting anybody use it then we will up-sell from there, but today that - it's probably easy to do that with a cloud app than it is with open source. So you have to think I think a little bit harder about where you get your business advantage and why you want open source it. You might want to get contribution from users. I don't know anything about your business. The huge way to do it is, is that with some other network effect that comes into play as a result of your software.

Either you get a network effect because lots and lots of people use it or because it produces data that you are actually going to monetize, is another. So there are a lot of answers, but I would just urge you to think sideways, and don't get caught in open source being a simple variation on a business model where I would have charged and I would have had a proprietary fee, but - yeah, so I don't know what the right answer is for you, maybe we can talk more about that later. Okay, let's go up to the back up there. Hi, my name is Dias, I'm from Philadelphia. So I'm actually working on a project called Code for Philly, which is basically part of Code for America. Yeah. But in the East Coast we don't really have as big community of hacker and open source people. So, my question is do you have any suggestions to bring - to make the community of hacker and open source in Philadelphia better? Gosh, I would have said there's a pretty good open source community in Philadelphia, but you know better than I do. So yeah, the thing I would say is, find interesting problems that are relevant locally and work on them, work on them publicly, talk about them. There's a wonderful line that Dave Winer once said about blogging and its significance for business, which is it's about narrating your work in public.

So narrate your work in public, make sure that you tell the story of what you're doing, why you're doing it. And keep telling that story until you get other people to come with you. Now keep in mind that sometimes it takes a long time. I think of some of the movements that I've been associated, it takes a long time. We launched MAKE Magazine in 2004, right. And it's only now that the VCs are all over it; what's that, eight years? I started talking about this idea of data and that the real business model of open source being these network effects and data and what became cloud, again I started talking about that in 1997. And that we were building an Internet operating system, I gave the conference called building the Internet operating system, in 2001 and everybody said what the hell are you talking about? So just keep at it. Over here? Great. So speaking of stories, can you tell us your story? 776 00:41:35,330 --> 00:41:37,644 I mean, you've had a really long and illustrious careers doing all these amazing things. Where were you when you were at the age of most of the students in this room and how did you get from there to here? The shortened version.

All right. The short version of how I became Tim O'Reilly. So, my initial - I got out of college and I didn't want to have a job. Simple as that. I had this notion that I wanted to have interesting work, but I didn't want to be constrained; I wanted to build the

kind of lifestyle business and somebody said, joked that O'Reilly was just a lifestyle business that got out of control. My initial business plan was, interesting work for interesting people. And it was not more than that. And what we did originally was a tech writing consulting company, but I started getting asked to write manuals for the same kinds of products and so I started retaining the rights. These were things like 'oh, well you want a Fortran manual? We've already got one, and we'll sell it to you'. And then that turned into the publishing company because we realized that - we were originally selling directly to companies, so we'd license - effectively we're a documentation company, we say 'okay, you can pay us \$25,000 and have it in six weeks instead of \$50,000 and have it in six months.' But then we realized that people were more excited to actually buy individual copies.

And the big turning point in our business was Sun Microsystems had turned us down on a \$25,000 license fee for our Xlib programming books and then a year later they bought \$1 million worth of printed copies of the same books. And we went 'oh, okay wait'. And - but again when we really thought about that, it actually made sense because when we sent - sold them a source license they had to go manufacture tens of thousands of copies of these things and this is in the day when you would print out - companies would print out their manuals on a dot-matrix printer and put it in a binder and it cost them the same amount of money as buying the individual copies from us. So it was actually not as crazy as it looked. So again, getting a little deeper I think into your customers problems is a really important part of understanding the business. We launched our conference business because - it was really actually because of a Microsoft ad campaign I think, it was in 1997 when they were promoting a technology called ActiveX and they actually had television commercials. And Andrew Schulman who was an author who was working for me at the time, had done a lot of books about Microsoft Technologies said that in this particular ad campaign all of the sort of activate the Internet things that they were demonstrating in the ad were done with Perl, except for this one little animated taxicab which was the ActiveX control. And I was sort of a little - I was sort of pissed off about that, and I decided - and this came at the same time as the book buyer at Borders had told me that Programming Perl had been one of the top 100 books in any category at Borders the preceding year. So I went, 'woah. And nobody's talking about Perl, so I'm going to do that' and I launched my Perl Conference really just to promote Perl.

Again, nobody's - it's not getting any respect. That turned into a really good business. So we - then we launched the Open Source Convention and then went from there to realize that organizing conferences was a great way to help promote the technologies and ideas we cared about. Somewhere along the line we realized, wow, we could invest in some of these things. So we launched our venture firm. So we just kind of - there was probably a big turning point for me, was around 2000, I think I read the book Built to Last by Collins & Champy. And I remember we talked about great companies having big, hairy, audacious goals. And I sat there and I thought what ties everything that I do together? And what I wrote down was changing the world by spreading the knowledge of innovators. And that helped us realize that we weren't just a publishing company, that we really were about finding interesting people, finding interesting ideas and amplifying them. And it drives everything from our - the businesses that we're in, to the marketing that we do.

And we're always looking for those ideas and those transformations. By the way, a book that I would recommend, it's an e-book that I read recently that is really helpful in this regard is - it's by Michael Schrage, called Who Do You Want Your Customers to Become. It's really worth thinking about. He makes the point that really great companies have an idea about transforming the lives of their customers. The examples he gave, Henry Ford, didn't just invent the assembly line, he invented the driver. He invented the weekends, so people would have time to go drive cars, he invent - there are all these ways that he thought about changing people. And you think about how the iPhone isn't just a piece of technology, it - the smartphone has changed who we are, Google changed who we are, Google didn't just create a search engine, they created a population of people who take for granted that they can find anything they need to know. And that's a really, really powerful idea. And so we've been sitting there at O'Reilly trying to think about this and say, who are we trying to change, what are we try to change them into? So that's another piece of this sort of thinking about big ideas, when I say changing the world by spreading the knowledge of innovators; that people have these important ideas and I want the world to go in important, new, better directions. And so I look for interesting problems and I basically try to do a lot of - mostly I do a lot of lazy web stuff to get other people to do all the hard work to make the changes that I'd like to see happen.

There's actually a wonderful point in - it was at our Emerging Technology Conference and Quinn Norton wrote a piece, I forget what was it was in for, but it was in some fairly reputable magazine. She said, I finally understand Tim O'Reilly. If he wanted a jet car, he would give a talk about how wonderful jet cars are, and how we really need them. And it was very true because there's so many things that I want to see happen; that's why I threw in that Bodega 2.0 slide of Jen's. 906 00:48:24,040 --> 00:48:25,859 You know, we're kind of like we want this to happen. Let's hope we can inspire some entrepreneur to do it. Okay, over here? My name is Zach and my question is where do you think will the marriage between digital media and online advertising will be going in the next 10 years? In digital media where will..? Where will the marriage between digital media and online advertising? Okay, marriage between digital media and online advertising. Well, I guess I would say it's not so much a marriage as it is sort of an ongoing affair. But back in 1994 I wrote - I gave a series of talks and I wrote it down eventually, a paper called Publishing Models for Internet Commerce. And I think we've had this long dalliance with advertising as the primary business model for online.

And I think we're really starting to realize it's not the only one. Back then I said, I thought the publishing industry had actually a great deal to teach the Internet. They had lots and lots of business models, crazy business models. I mean there's actually a kind of business that harnesses schoolchildren to go around and sell magazine subscriptions, that was Publishers Clearing House, remember those guys? I don't know if they still exist or not. There's crazy stuff that we're start - that we're going to discover. So, I think we're going to get way beyond advertising. We're already seeing it, subscription is really big, and that was one of the reasons when we launched Safari Books online in 2000, it was like subscription is going to become a really important business model, we should place a bet on it. Pay-per-view, I mean that's really what downloadable e-books are. Or apps. And so, I think we're starting to see we now have three or four great business models for Internet content and digital media: pay-per-view, subscription, and advertising.

Guess what, they were all there in the print publishing business as well and I think we're going to see others as well. Okay, let's - here? So, what's your opinion of the current trend about open source hardware or so called makers really revolution? And can it be - can these kind of works be classified as what you're talking about works will change the workflow of the human-computing environment? And for these directions how can we find the unique value or unique competitiveness of the services or product? Yeah. So let me talk - the question is really what do I think about the maker movement and the opportunities there? And I guess I would say a couple of things. And the first is that the maker movement has a lot hidden inside of it. And the first thing you have to look at is the arc of new technologies. Every new technology starts with a maker moment, I mean, the Homebrew Computer Club, the early World Wide Web, everybody was rolling their own, right. And it turns into a big business. And so it's really important to understand the maker movement, first of all, as a stage of the industry. And it has this characteristic that as soon as it becomes mainstream people don't see it as maker any more. So a great example of this is multi-touch displays.

I remember back in 2005 we were showing off at our ETech Conference, Danny Hillis' map table which was this giant table he built for the Air Force or the CIA or somebody that you could do all those things on. And then it was Jeff Han, 2006 he's there at TED and our ETech Conference showing his homebrew multi-touch display which actually later he turned into a company and sold to CNN when you see them up there doing their Perceptive Pixel display. But fricking 2007, it turns into an iPhone. Nobody thinks of multi-touch as a maker thing - it was only two years from being a maker thing to being in the hands of millions of people. And I think we're going to see a lot of technologies that we call maker now, that'll just be like, hey, that's consumer electronics. So that's the first thing I would say there. But there are some very, very deep lessons in the maker movement. The first is this notion that I talked about here about how sensors are becoming part of everything and how hardware informs software and how it's going to change the nature of the interfaces when you have devices that actually have their own sensorium. So that's one. Then there is the other big wing, which is manufacturing being perhaps democratized in some profound ways whether it's through 3-D printing or whether it's through low-cost reusable hardware platforms, or whether it's through access to manufacturing in China.

And then there's, I guess I would say finally this - what GE is calling the industrial Internet, which is applying all these principles to really big pieces of equipment. So, there's a lot going on there and it will have a massive impact on business; it already is. So back there in the middle? Yeah. So, I'm a huge fan of what you're doing with government 2.0. I'd love to know your perspective, where should people start when creating a conversation with government about new opportunities. Specifically I'm from San Diego and our transit system is broken. I'm curious if I were to say start that conversation, what does good transit for San Diego look like, where do you even start that? Yeah, I don't know - the question is when you're working in the open government context, how do you start? And it's - I will say, it's hard to know. The way that I've always tried to do it, whatever I do is you tell the story of people who are doing things right and you hope that there's somebody out there listening who says, I want to be like that. So, you say, wow, they're doing really great stuff in Portland, here's what it looks like. They're doing really great stuff over here in New York, whatever it might be, wherever it might be, and you try to talk that up.

And hopefully by holding up the torch you get some moths to come out towards the flame and then you got them. So, there may be other ways, but they're very labor intensive: finding the right person in a bureaucratic organization. What I've tried to do is simply to celebrate success, talk about what the future might look like. And then you find the people who care, and you get enough of them, you start to get some attention. But there are practical things you can do. With Code for America, that's actually been a strategy for finding the smart people in cities. We have an application process and we say we're looking for forward-looking cities who want to engage with us around projects. We're increasingly thinking about particular areas we want to work in and - but just it takes time and footwork. There are a lot more civic startups, my friend Ron Bouganim, who works with us on the Code of America accelerator is raising a gov tech fund looking for civic start-ups. So there's a lot going on there.

Okay, last question here. You're sitting there in the middle, you've been raising your hand a lot, so ... Where do you see the future of conferences in the next 10 years and what has been your most delightful experience with Friends of O'Reilly? All right. Where do I see as the future of conferences over the next 10 years? I'm not very good at predicting the future, despite what people say. I just talk about what's happening in the present that seems interesting to me and I go by William Gibson's dictum that the future is here, it's just not evenly distributed yet. So, what do I see right now about conferences that are super

interesting? Well clearly, you got to pay attention of the fact that TED has syndicated its conference out into the world, that's hugely interesting. Second, you have to look at the success of something like Foo Camp which is our original unconference, which was then copied by BarCamp, which was again spread all around the world, the idea of self-organizing conferences where you bring in interesting people and they develop their own program, that's hugely important. I think there's a really interesting thing happening with a kind of festival as opposed to a conference, whether it's OpenCo, which John Battelle launched recently or things like the XOXO festival for Kickstarter that was down in Portland, IO festival in Minneapolis. There's sort of a really interesting how do you create a community happening. rather than just a professional conference? I think people still like to get together.

I don't think conferences are going away. I do think that they have to become much less of talking heads onstage and much more interactive. And certainly my - to the other - the last part of the question, my own sort of experience with Foo Camp, probably the best - I can't think of what would be the best moment, but I will certainly think of, when people, when you bring people together and they walk away and they do something as a result of the introduction you made, that's a pretty good feeling. Probably the most important thing I would say about my work is, the greatest satisfaction I have is giving ideas to people and then seeing them do something with them. Wonderful. Thank you. Join me in thanking Tim O'Reilly.