

SERVICE AVATARS

SEEING THROUGH DEVICES, SITES AND APPS
TO SERVICES

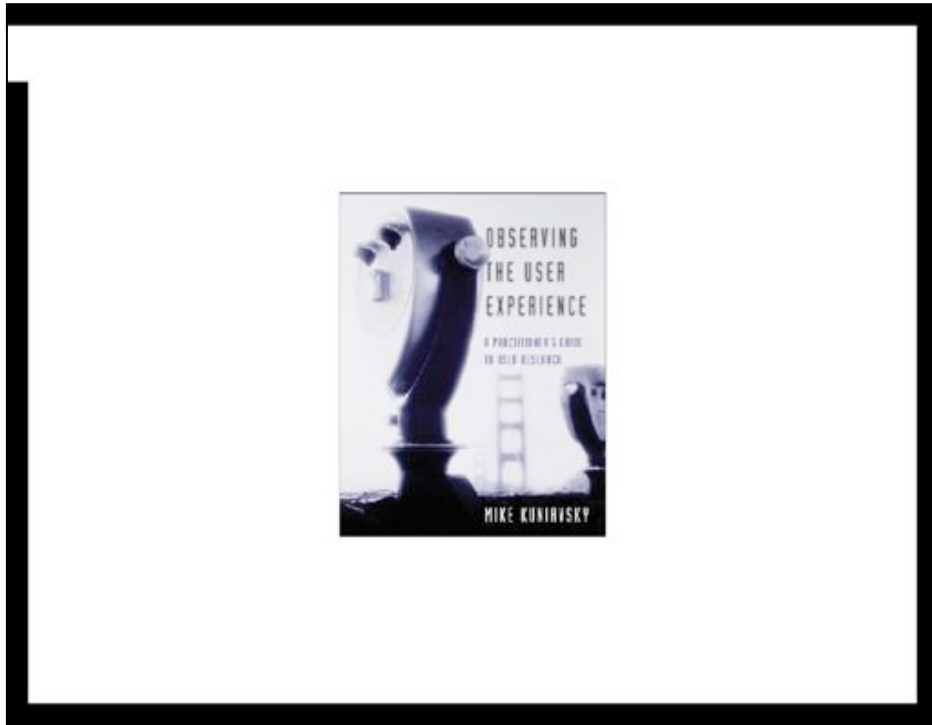
Mike Kuniavsky

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Good afternoon! Thank you Brady and the rest of the O'Reilly team for inviting me. It's a pleasure to be back.



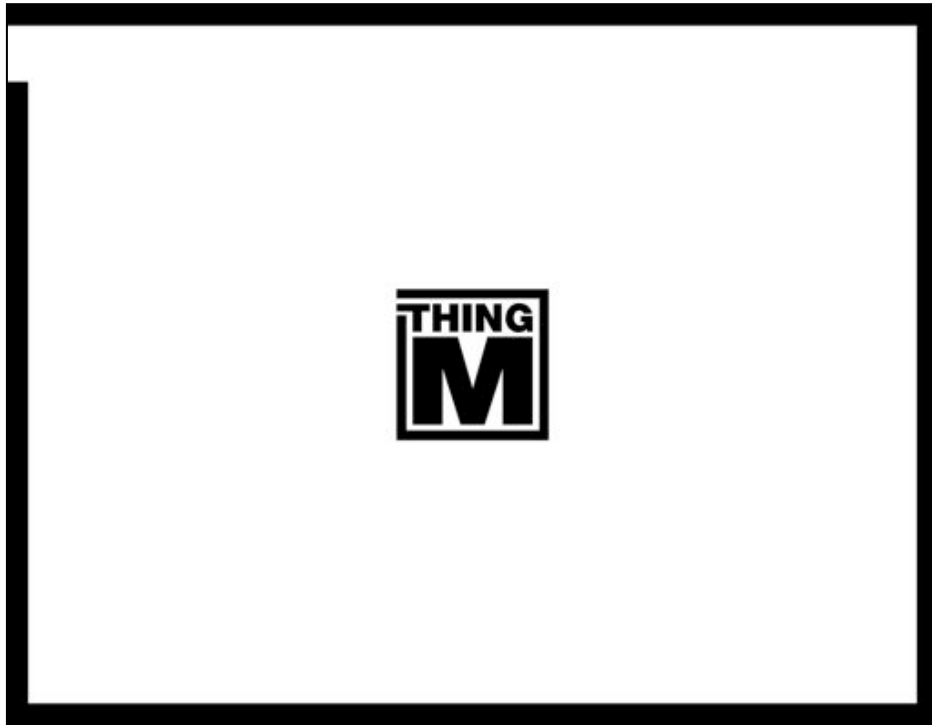
First, let me tell you a bit about myself. I'm a user experience designer and entrepreneur. I was one of the first professional Web designers in 1993. Since then I've worked on the user experience design of hundreds of web sites. I also consult on the design of digital consumer products, and I've helped a number of consumer electronics and appliance manufacturers create better user experiences and more user centered design cultures.



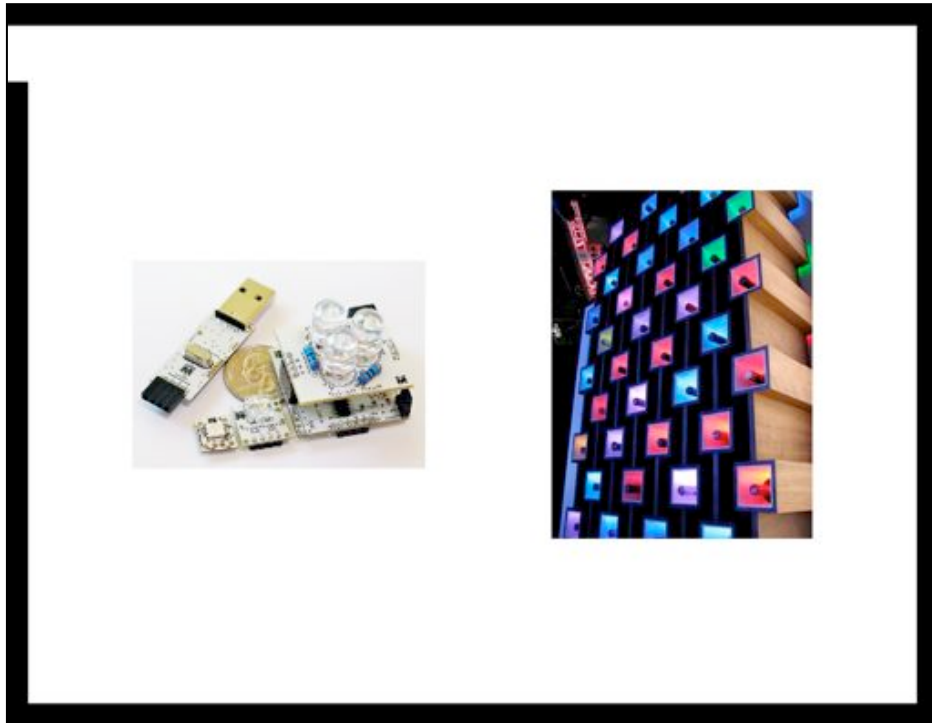
In 2003 I wrote a how-to book of user research methods for technology design. It has proven to be somewhat popular, as such books go.



Around the same time as I was writing that book, I co-founded a design and consulting company called Adaptive Path.



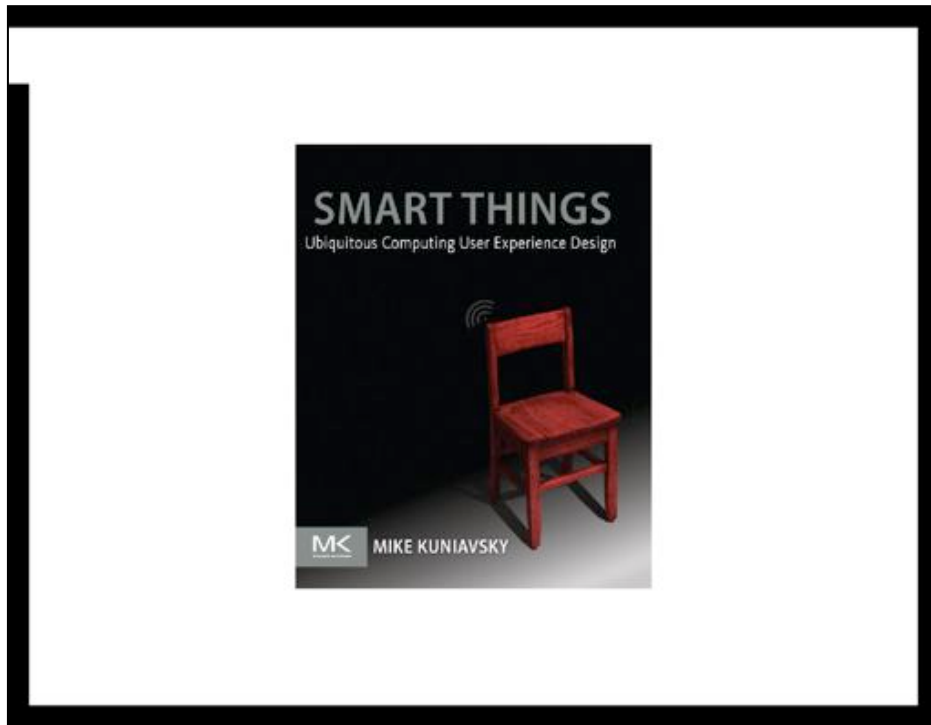
I wanted to get more hands-on with technology development, so I founded ThingM with Tod E. Kurt about five years ago.



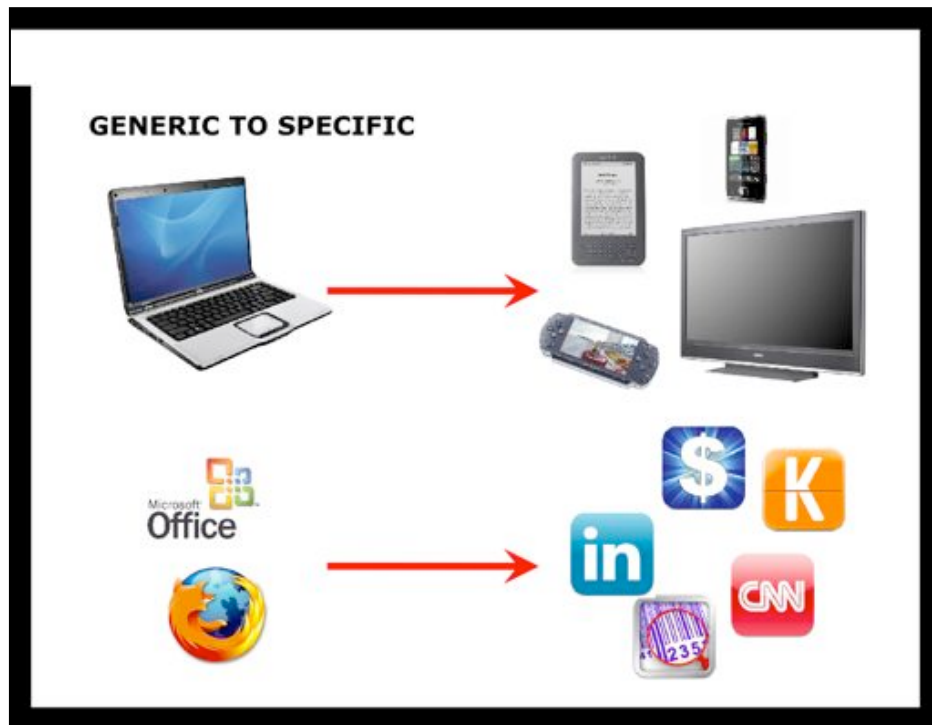
We're a micro-OEM. We design and manufactures a range of smart LEDs for architects, industrial designers and hackers.



I have a new startup called Crowdlight, but I can't tell you about it yet, at least not in public.



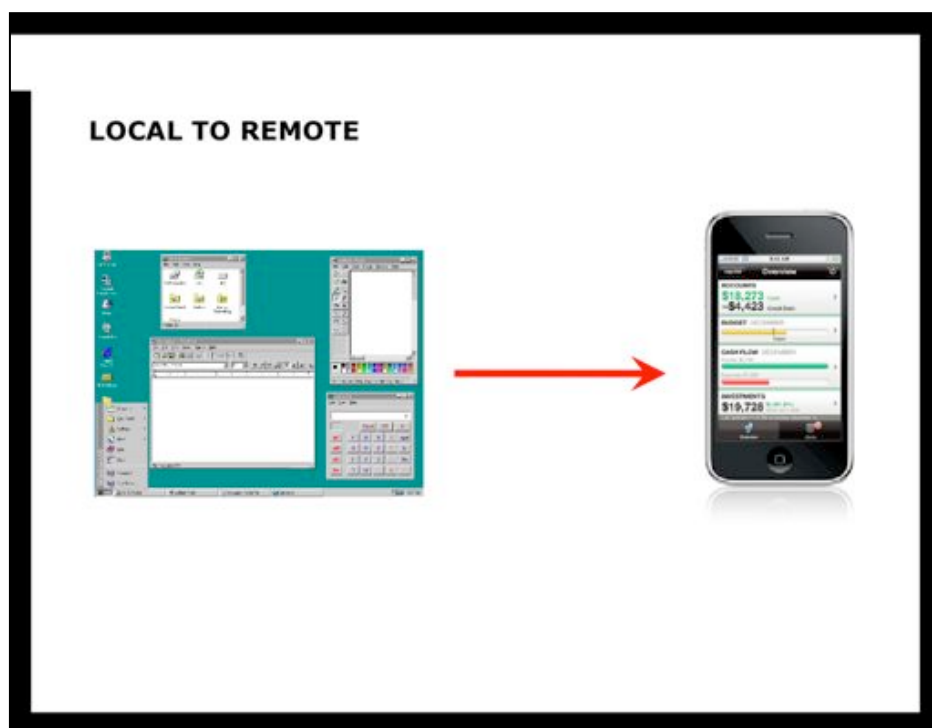
This talk is based on a chapter from my new book. It's called "Smart Things" and it came out in September. In the book, I describe an approach for designing digital devices that combine software, hardware, physical and virtual components.



I want to start by talking about two trends that are shifting our relationship from devices and software to online services, and changing our expectations for what it means to develop a product in the process.

First is a shift from generic devices and software to specialized devices and software. When computing was expensive, you had one or two general purpose devices that had deal with almost every situation. This necessitated design compromises that resulted in devices and software that could do almost everything, but did none of it well. The problem with this approach is that it shifts much of the responsibility of making something useful to end users, who have to take these generic tools and make them appropriate to the current situation.

Now that processing is so cheap, this is no longer true. You can now have a high degree of specialization. Your tool is now a tool BOX, a combination of 10, 20, or 30 computing devices and apps that you get for the price of that one expensive device ten years ago. You acquire new functionality as needed and every device and unit of software has a narrower purpose. The user is now burdened with finding the right specific tools and making them work together, but that's a different problem than making a generic tool work for all situations.



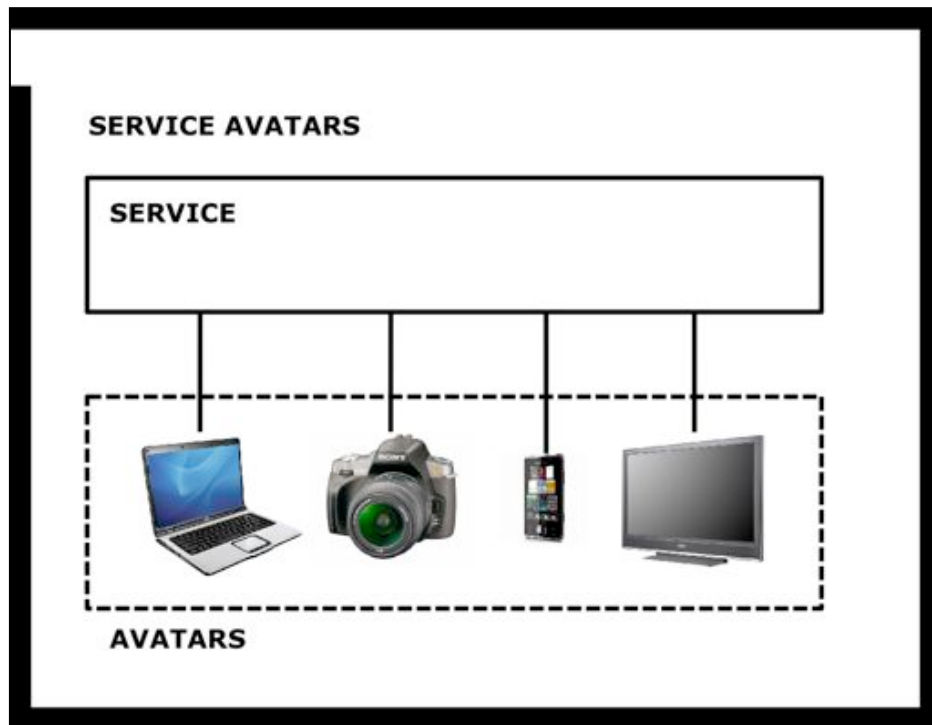
The second trend is the shift in the source of value from being primarily local to being primarily remote. It used to be that nearly all the value of your digital tool was embodied in the tool itself. You KNEW that the computer on your desk was where the information processing and storage took place and everything that you saw was created by the thing in front of you.

The Web, however, changed that. It demonstrated that moving functionality online enables access to more compute power, continuous updates, real-time usage analytics, and (of course) social connections. It also created a shift in people's expectations. Today, most people understand that the experience you see on one device is often a part of something that's distributed throughout the world. There's no longer a need to pack everything into a single piece of software, and there's no expectation that everything will be there.

WE SEE THROUGH SOFTWARE AND DEVICES

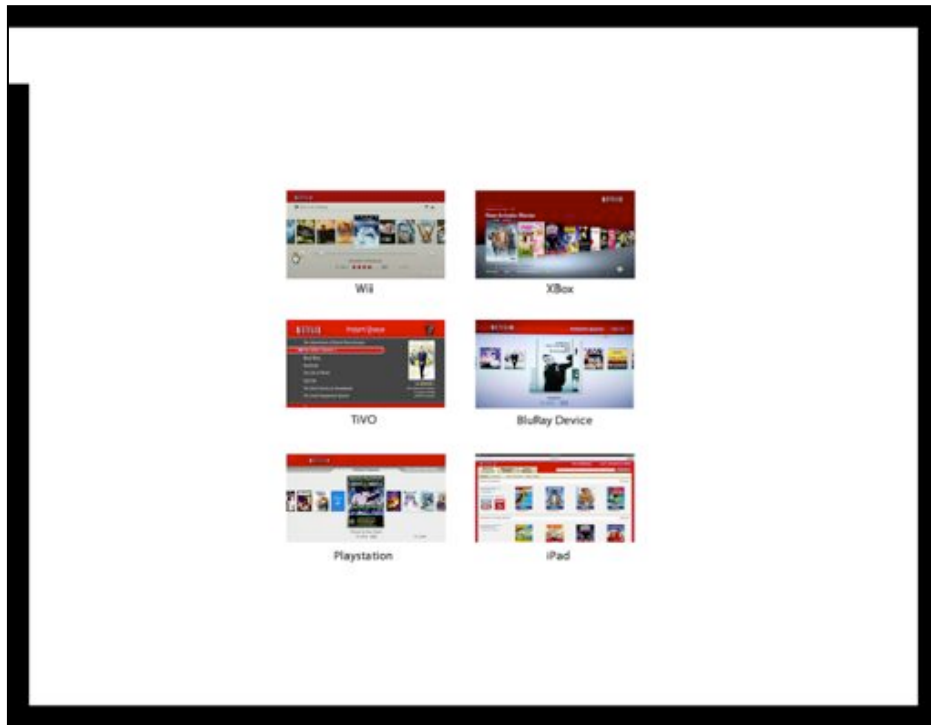


The combination of these two things is that we now see through devices and software to the cloud-based services they represent. We no longer think of these services as being “online,” but services that we can access in a number of different ways, unified by brand identity and continuity of experience. This is a fundamental change in our relationship to both devices and software, since the expectation is now that it’s neither the device nor the software running on it that’s the locus of value, but the service that device and software provide access to.

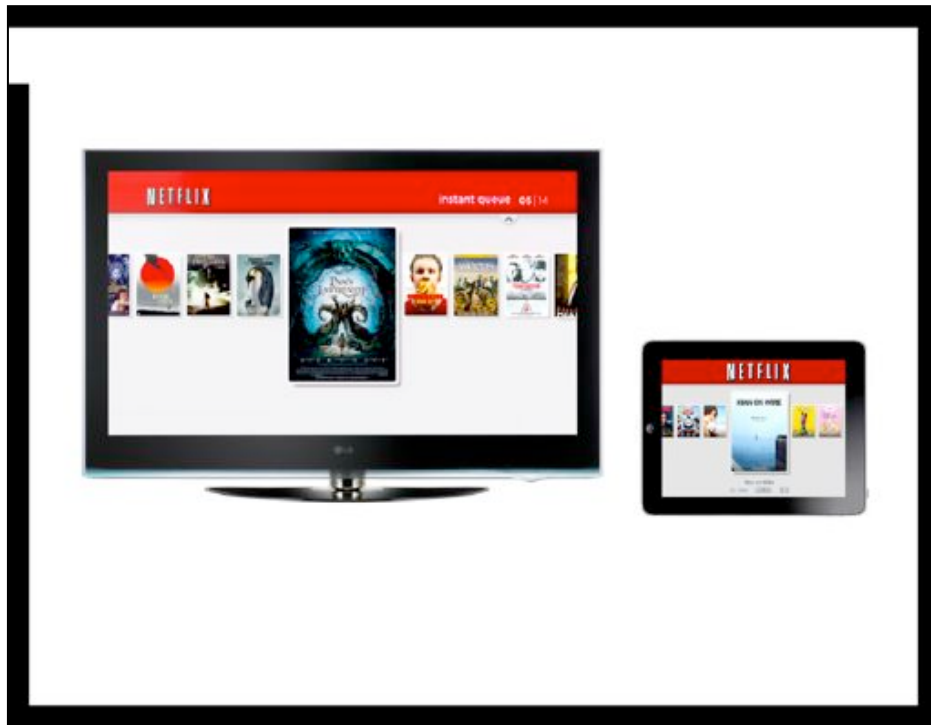


These devices, software applications and websites become of secondary importance. They become what I call “service avatars.” A camera becomes a really good appliance for taking photos for Flickr, while a TV becomes a nice Flickr display that you don’t have to log into every time, and a phone becomes a convenient way to take your Flickr pictures on the road. This is already how Cisco’s Flip works.

There are some interesting implications. For one, hardware becomes simultaneously more specialized and devalued. It’s a temporary holder for the “real” thing, which is the service. And the experience design that ties together all of the avatars into feeling like a single unified whole becomes more important than ever.



For example, you can now get Netflix on virtually any terminal that has a screen and a network connection. You can pause a Netflix movie on one terminal and then upause it on another.



Because to the Netflix customer, any device used to watch a movie on Netflix is just a hole in space to the Netflix service. It's a short-term manifestation of a single service. The value, the brand loyalty, and the focus is on the service, not the frame around it. The technology exists to enable the service, not as an end to itself.



Netflix appliances are created for a single reason: to make it easier to access Netflix. That's what Roku does. It turns every terminal that's not already Netflix enabled into a Netflix terminal. The Boxee box does that for the Boxee service. The new Apple TV does it for iTunes.



Here's a telling ad from Amazon for the Kindle, which is one of the purest examples of a service avatar based user experience. This ad is saying "Look, use whatever avatar you want. We don't care, as long you stay loyal to our service. You can buy our specialized device, but you don't have to." I really like the Kindle avatar experience, too. You can read on the phone on your way home, close the app, open it on your laptop and it picks up where you left off on the phone. You don't think of it as two separate things, but as one thing that exists in two places.

This leads to another experience design conclusion. The core of the product is not the web site that you're designing, or the product you're designing—it's not any of the avatars of the service. The core is the service that lies underneath. The avatars reflect that service, they deliver the product in context-appropriate ways, and their design is very important since they are how people experience the service, but the most important part of the design process is to think through the service design without the constraints imposed by the medium of any single avatar.



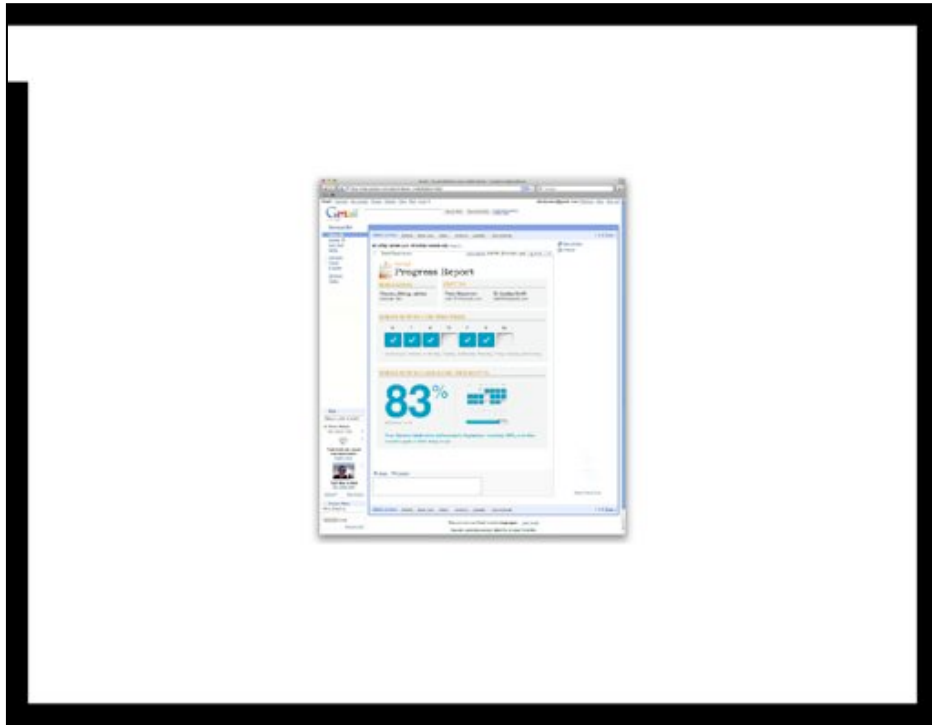
All of these examples have been primarily media based, but one of the most powerful cases for beginning with service design is that by designing the service first you open the possibility for a much wider range of avatars. The ways your service is expressed can be tuned to play specific roles in people's lives. Nikeplus started as a service with a couple very simple avatars—the iPod, a shoe sensor and a Web site—now the service has morphed to encompass a wide variety of devices, use contexts and uses. They've even gamified the experience, so now you can play a game where you capture territory based on your exercise performance. I think it's kind of like *Where in the World is Carmen Sandiego* meets an Army bootcamp, or something like that. The point is that once the core value of the service was defined—in this case the automatic collection, analysis and sharing of physical fitness data—and a couple of core use cases were worked through, they could build and extend the platform in a relatively straightforward way into whatever they believed was an appropriate new use context.

VITALITY

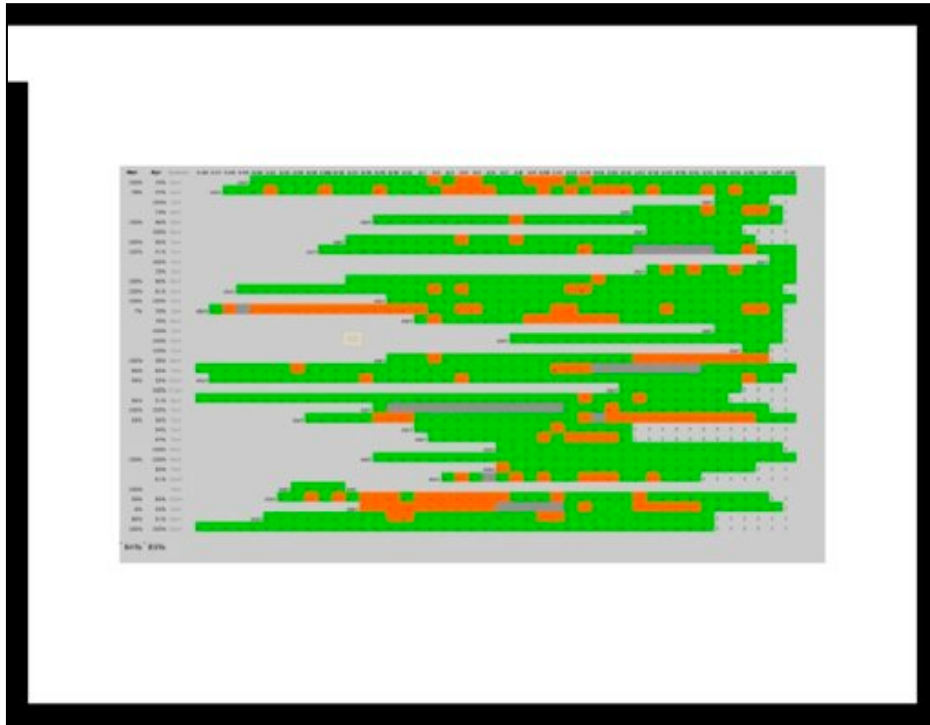


The key thing about Nikeplus is that it's based around a hardware avatar, which I think is very interesting, and which is where the majority of my work these days lies. My favorite example of this is still Vitality Glowcaps, which I talked about here two years ago, though now there are many more examples, such as the Withings products, Green Goose, and Fitbit. They all use a tiny, cheap sensor and some lightweight networking to create a significant effect.

This is Vitality's Glowcap, which is a wireless network-connected pill bottle appliance that's an avatar to Vitality's service for increasing compliance to medicine prescriptions. When you close the cap, it sends a packet of information through a mobile phone-based base station to a central server and it starts counting down to when you next need to take your medicine. When it's time, it lights up the LED on the top of the bottle. That glow is the simplest output as an avatar of the Vitality service. The real power is in the packet of data it sends. That packet opens a door to sophisticated experiences that transcend a single piece of software or a single device.

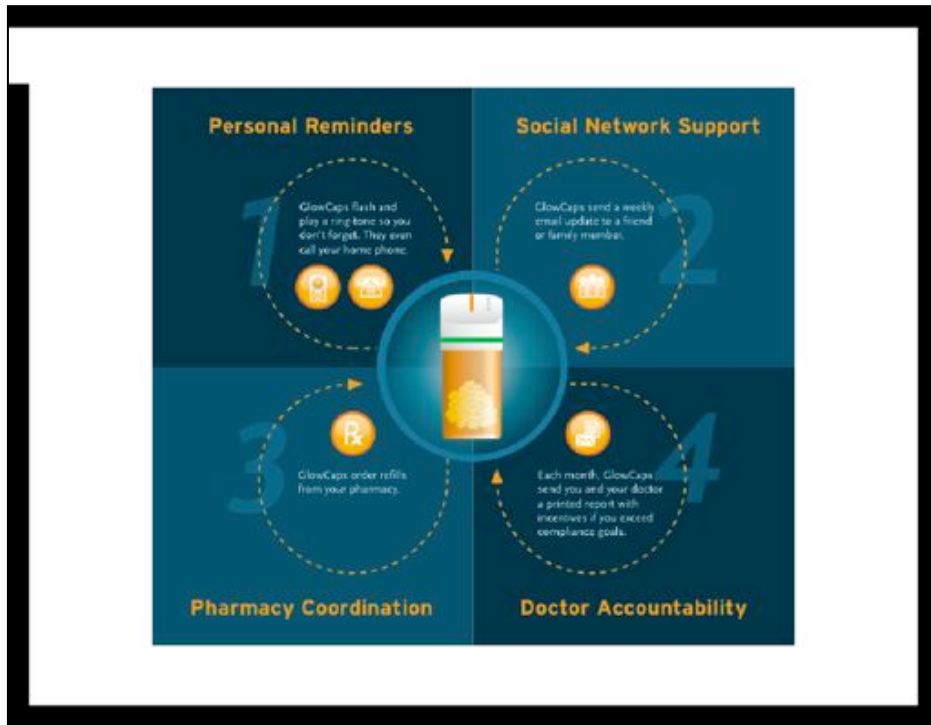


For example, another avatar of the Vitality service is an online progress report that can be used interactively or delivered by email. It's like Google Analytics for your medicine.



Health care practitioners get yet another avatar that gives them long-term and longitudinal analytics about compliance across medications and time.

To me, this kind of conversation between devices and net services is where the real power of The Internet of Things begins.



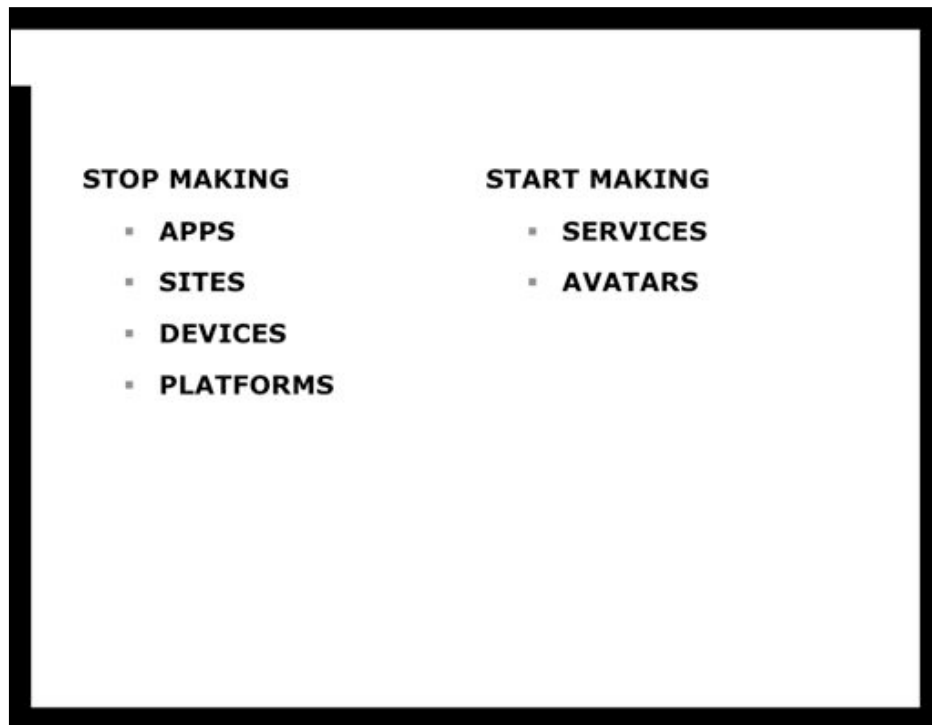
Vitality has developed a complete system around this service that includes a social component, and different avatars for patients, patients families, health care practitioners and pharmacies. Each avatar looks different and has different functionality, but they're perceived, and designed as a single system.

SERVICE AVATARS ARE THE INTERNET OF THINGS



I think Glowcaps are a great, pure model of how many everyday things are going to be designed in the future. Small technological interventions—sensors and lightweight wireless networks embedded into everyday things that are service avatars to products that live in the cloud—will become the way that many things are made. This Tickle Me Elmo may be an avatar to a storytelling service where Elmo learns to acts out a new story every week. The same story can also be read on an iPad app or watched as a cartoon through a connected TV widget. This bike may be an avatar of a transportation service that gets you anything from a skateboard to a moving van, depending on what you need at the moment. Coordinated and paid for using a NFC phone or key fob.

Service avatars erase the line between what's local and what's remote, what's owned and what's rented and what's one thing and what's another. These are profound changes in perception and profound challenges to user experience designers. It's also the basis of how I believe the Internet of Things and ubiquitous computing user experiences will be designed. Computers won't disappear into the background and we won't just have a bunch of different screen form factors. Instead, we'll have devices that we KNOW are computational and networked in nature, but that won't be what makes them interesting, just as the fact that they're made out of plastic does not make them interesting. It will be that the capabilities created by those qualities will be a core way of how we understand what the object is at all and why it's valuable. Avatars are not just things with computers grafted on, or terminals to services somewhere in the cloud. They're experienced in a fundamentally new way.



I want to leave you with some simple, and perhaps obvious, advice. Shift your in thinking away from whether to make an app, a web site, a platform, or a specific device, and start thinking about what service you're providing at a fundamental level. Design the hell out of that service, and then start designing the avatars that will best facilitate that service. This is a risk management strategy that will allow you to maximally capitalize on whatever technological changes and social changes come about, since you'll be able to create avatars for whatever specialized context is appropriate, without having to restructure the core value of what you're delivering.



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Thank you.