I'm Gustav Söderström. I head up product, engineering, data and design for Spotify. And you're listening to Spotify: A Product Story -- the podcast that brings you the untold stories behind Spotify’s biggest product launches -- and the lessons we learned from them -- all in the words of the people who lived it and actually made it happen.

Most music listening has always happened in the home -- but back in 2011 it was still really really hard to figure out how to play your digital music library over a decent set of speakers. Some tech geeks rigged up elaborate hacks:

**Thomas Cullen:** We're starting to run, NAS drives in our house and all this kind of stuff and you know, we started to realizing that wow all this music sitting here just needs a line out, so now we're going line out from the P.C. into the stereo. And now you got this PC next to the stereo. And it was a pretty weird arrangement.

But while most people had a really good set of speakers at home, they often settled for listening to their mp3s over crummy computer speakers or tinny little earbuds and saved their stereos for their CD collections.

**Mikael Ericsson:** Computer speakers were enough to make some noise. So convenience over quality was definitely my personal stance there.

On today's episode -- Hardware is Hard. We'll walk through how Spotify worked its way down to the very bottom of the stack on a quest to create the perfect home listening session, how we had to build a new media protocol in the process and ultimately found a way for users to pass something called: “The Beer Test.”

(02:03)

At Spotify, we've always been guided by the mission of giving our users “the perfect listening experience.” When we're facing an important product decision -- or just envisioning what the next new feature might look like -- we come back to that idea of: how would this experience work if it were perfect? And then, we figure out how to get from here to there.
Back in 2011, this led us to imagine a world where your music could just seamlessly flow from one device to the next as you go about your day, from your desktop to your phone to your home speakers -- like so many other advancements in tech, it seems intuitive and obvious now, but at the time, in a world of moving CDs and files around between devices, it was visionary.

Unfortunately for Spotify -- unlike when we made the move to mobile -- software simply hadn’t “eaten” home speaker systems yet, so there was no platform for us to write software for.

Instead, there were 100s of manufacturers making 1000s of speakers. Most of which were not connected to the internet, and relied on Bluetooth that at the time was super buggy, slow to connect, and routed everything through your phone or computer.

There was only one company out there that shared our vision: Sonos.

Thomas Cullen: We were sitting and meeting with you folks really early on about this subject. And I said, why don't you just use Bluetooth? And somebody on your team looked at me and he goes; because Bluetooth sucks.

Thomas Cullen co-founded Sonos -- the high-end wifi-connected speaker system -- in 2002. Four years before Daniel Ek and Martin Lorentzon started Spotify.

Thomas Cullen: You know, you spend a lot of your time just trying to explain to people what's possible, right? Using all these bizarre analogies like piles of cd's and all this kind of stuff. That really is a very separate problem from making a good product. You have to do this mass, mass habit change. And the questions people are asking you are constantly in the previous context. So you're trying to show them tomorrow and they're asking you questions using yesterday's words. How many CDs does it hold or something, you know what I mean, you’re looking at them like, what?!

Like us, Sonos had started with the goal of providing the perfect listening experience. And they found their answer by connecting their state-of-the-art speakers directly to the internet.

From a strategy perspective, partnering with Sonos to pilot our first home speaker integration was quite straightforward:
Although Sonos’ connected speakers were too pricey for most of our users back then -- we were willing to bet that it was only a matter of time before Moore’s Law drove prices down enough that everyone who owned a CD player -- which meant literally everyone -- would leapfrog past the awkwardness of trying to play their mp3s over their home stereos using cables. Straight to wifi-connected speakers. Speakers that already had all the world’s music built in, through a seamless Spotify integration ready to go, out of the box.

Unlike Bluetooth and Airplay, these new wi-fi connected speakers would pass what Thomas called “The Beer Test.”

**Thomas Cullen:** There you are with a bunch of friends. You pull out your phone and you press play on your Spotify and it’s playing on your speaker and you got Airplay going and it’s great. And you’re out of beer and a person goes hey, I’ll be right back, and they head down the stairs, and the music stops. And everybody’s like, what happened? Well, it’s because the music was coming from the Internet to your phone, to the speaker, even though the speakers are on the Internet, the phone’s on the Internet, the music’s on the Internet. And all these devices are on the Internet. What the hell is that? Right? It made no sense.

Partly because we wanted to see if our dream was even possible and partly because we didn’t know how to achieve it yet, when we first built the Sonos integration, we followed Sonos’ standard operating procedure for integrating Spotify into their user interface.

Our engineering team had already pared down Spotify’s client desktop app into the absolute bare minimum -- a library we called Lib Spotify. So we worked hand-in-hand with Sonos’ engineers to translate Lib Spotify into code that could actually run on their speakers’ tiny little computer chips.

Sonos users could then access their Spotify libraries through a one-size-fits-all UI that rolled all streaming music services into the Sonos app experience.

But we pretty quickly found out that our goals were sometimes at odds with Sonos’.
Thomas Cullen: Ultimately, as I look back on it, I think our biggest challenge was we had a fundamental disagreement on technology that I think over time, we just compromised our way to the middle.

(06:51)
The crux of that disagreement was about whether to optimize for the speaker UI or for the music service UI.

And that's because of our first product strategy lesson. Lesson #1: everyone thinks of the user as their user.

If Sonos was betting on a future where they were the only stand-out speaker in a sea of music services, we wanted to be the exact opposite: the only stand-out music service in a sea of speakers.

Thomas Cullen: We had this notion that the queue needed to be heterogeneous, meaning you should be able to load stuff in the queue from anything. And in the early days of Sonos, people used to have queues that had five songs from their library, their little local disk, and you could put a Google Play track, a Spotify track and a Rhapsody track in our queue, and they would just play as if nothing happened. Right? They would play perfectly. We, I think, in retrospect, made a mistake. And the mistake was that we really thought that there would be thousands of services. And I think it turns out there's only 10 that matter in the world.

Because we hadn't moved into original content yet, we were essentially offering our users the exact same music catalog that they could get anywhere else. So we had to compete on experience. What music you got, and how you interacted with it. Which meant that we needed to have control over the experience.

Although we both shared the ultimate goal and vision of providing a flawless listening experience -- Sonos understandably had no real incentive to maintain or upgrade any kind of custom Spotify interface in their app or custom features and code on their hardware devices.
To be totally honest, this created some tension early on -- so I asked Thomas what it felt like on the other side.

**Thomas Cullen:** We never had like an attachment to the app view as being important. Like, if you're a pure app company, then your app view is everything. Right? But our interface to the user, if people in Sonos, in my opinion, were being candid with themselves, was not an app or even a box, it was the sound flowing through the house. And so, you know, from my point of view, I always told people, look, if we ever get to the point where you think of it, it starts playing; we're done, we can go home. And so what happened -- I have this belief that companies need to understand what their natural role is. And so, I'm sitting there going; Sonos' natural role for sure is great sound everywhere in the house. What is Spotify's natural role? And, you know, how do we overlap? And I realized that Spotify's natural role, if it was to thrive, was to solve the question of what should I play for all the people who aren't sure, for all the people who know what to play you made it easy to get. And Sonos’ natural role is to make sure it sounds awesome out loud.

From Thomas' point of view, because our companies’ natural roles complemented and even amplified each other, Sonos’ best move in the long run was to help us reach and engage with our users on their device, not battle over which app the user should use. Or, as Thomas explained it to his colleagues at Sonos:

**Thomas Cullen:** And so as we look at these desires to play directly from the app, we should realize that's helping them fulfill their role while we fulfill ours, which is great sound everywhere. And so I was like, OK, we need to do this.

But not everyone at Sonos reached the same conclusion.

**Thomas Cullen:** And there was some people at Sonos going; “well, you know, isn't our natural role to do discovery since we see what everybody's playing?” I'm like no, no consumer thinks we have a natural role in what you should play next, but they do think we have a natural role in making sure that the stuff they want to play sounds great everywhere. And it was really about understanding whose role was what. And, you
know, obviously the way it goes, if you find out you both have the same natural role, then cooperation is over. Right? But we didn't in any way. And so that was the progression.

(10:59)
This is the other key product strategy lesson to take away from the partnership with Sonos.
Lesson #2: Know your role.

If you and your potential partners understand each other’s roles, it will make it possible to accomplish more together than you would alone. And if you don’t know your roles, maybe it’s time to re-evaluate the partnership.

Working so closely with Sonos made one thing crystal clear:

Sten Garmark: We needed to invest in a different client architecture software stack that we didn’t have.

That’s Sten Garmark, Spotify’s VP of Global Consumer Experience -- you might remember him from Spotify’s quest to discover a new freemium tier in episode 3.

Sten Garmark: Sonos -- they came from that world. They had that optimization. They wrote the software for Spotify for their devices, using support from our engineers, being able to read our source code and so on. And then they wrapped their own experience around it.

The problem was, as we were making our way further and further down the stack, we didn’t really create any meaningful benefit to our users.

As far as our users on a Sonos speaker were concerned, Spotify was still just another service that worked exactly like everyone else, not worse, but also not better.

What’s more, if we were reduced, commoditized and locked-in to a format where we had to work exactly like all other music services to be able to play on a speaker, we by definition would no longer have the ability to innovate.
So if we really wanted to build the perfect listening experience, we simply couldn’t afford to give up that much control.

**Sten Garmark:** So we were betting on our future. We were betting that we’re gonna be innovating. We’re going to be continuously, constantly innovating. We’re never going to be done. So it’s important for us to be able to own and control it so that we can deliver the real Spotify experience to our consumers, regardless of what device they’re using.

**Gustav Söderström:** What was the vision? How was it supposed to work?

**Sten Garmark:** At the time maybe a lot of things were quote unquote dumb, but over time everything is going to be connected. So, you know, you wake up in the morning and maybe your alarm clock is playing Spotify. You go into the kitchen, you hit play on a tabletop speaker that’s in the kitchen and the audio continues playing there. You go to your car, you start the ignition and the music just takes over. You go to work, you go to your computer, it continues there. So this just follows you around. You know, Spotify living in the cloud, knowing what you’re listening to in the cloud and then looking at every device running Spotify software, playing music to you. So that was -- that was the vision.

This is one of those big ideas that sounds obvious now but at the time was pretty fringe. So let’s take a second to break it down.

The vision Sten just described represented a user-centric model, as opposed to the dominant device-centric model of the time. While Sonos was connected to the cloud, it was still a speaker-centric model.

What we wanted to do was something different. Why not take what Sonos did with their speakers to its full extent and build a user-centric streaming protocol that allowed all your wifi-connected devices to see what your account was playing and seamlessly control and move music between any device?

Why even bother with the phone, except as a kind of “remote control” to adjust the volume, or hit pause, or switch playlists?

Say hello to Spotify Connect.
Sten Garmark: So what we did there was that we enabled Spotify Connect, which is this remote controlling experience. The Spotify app on the mobile talks to the device so you can do everything that you can do on your mobile app. But the music streams to that device and the audio is coming out of that device.

I like to think of it as this: you really only press play on Spotify once in your life, the first time you use the service. You can pause it and switch device, but the service doesn't live on your device, it lives in the cloud, and it's all really just one long listening session. Sometimes you listen on your smart watch. Sometimes you listen on your TV. Sometimes you listen on your Sonos.

Sten Garmark: Then you can start interacting with the phone and you can skip or select different track, and it just seamlessly work. In a device centric world, you couldn't assume that it's the same user. So there's like friction being introduced everywhere in the experience, in the device centric experience that can be taken out if you wrap it around the user.

With Spotify Connect, we could achieve the kind of vertical integration that made it possible for us to innovate faster and provide lower latency and more reliability across every device -- including future devices that hadn't even been invented yet.

But that didn't mean our partners -- the original equipment manufacturers or OEMs -- were happy about it.

Gustav Söderström: The scary thing was that they were going to run our code, on their devices. So basically, we could, you know, we could crash their devices. And I mean, we know for a fact that when others come and ask us to embed big libraries of code that we don't know anything about, that's pretty scary because it can break your whole experience. What were the different constraints here, what were we optimizing for?

Sten Garmark: We tried to predict what they care about. So for instance, we want to have static memory allocation so it doesn't, you know, suddenly just use up more memory than you have on the device. Low CPU usage, low ram usage, low usage on their flash for the file size. And we also want it to be written in C with like a -- so it's very portable. So it can compile to any kind of operating system. And it would like -- it's kind of the most portable language around. So we can compile that for a bunch of different
operating systems, for a bunch of different CPU architectures. And then the rest of it is kind of about -- on trusting us. And in the beginning -- it was again, we're betting on our future. We didn't even have engineers that were schooled in embedded engineering and we even hired that skill set. And we'd been getting better at it. In the beginning we weren't very good at it, but we were basically making the bet that we're going to have to be good at this and we're going to have to kind of incrementally create that trust by working with more and more partners. And over time, people are going to be trusting us and putting our library in.

(17:56)
Which brings us to lesson #3: understand the market dynamics. You need a fragmented market to introduce a new standard, or providers will never agree to it.

We were betting on two different futures -- hundreds of streaming providers or hundreds of speaker providers. And somebody had to run someone else's code in their system for this to scale.

If there had only been one or two dominant OEMs (original equipment manufacturers), they would have said no way -- you're not running your code on our chips. And we never would have achieved a user-centric model, it would have remained speaker centric.

But because there were fewer streaming services than speaker manufacturers, we could make the case -- fairly -- that the manufacturers should use our library, because there was no way we could incorporate all of their different libraries into our app. Our app would have been gigabytes instead of megabytes.

Due to this fragmented market, we could use our learnings from the Sonos integration to chart our own path and build for the future we wanted, even if the rest of the industry was still catching up.

Sten Garmark: We often talk about the future being path dependent. And if you're a speaker OEM at the time, there were two paths that you were thinking about. It was the AirPlay Bluetooth path, and it was the Sonos path. Both of those experiences were kind of the norm at the time. But then everyone was looking at Sonos. These are the people
who are succeeding in the consumer market, so whatever they’re doing, we need to copy what they’re doing and they have their own app and then they’ve integrated all these streaming services into it. So that's what we want. So when they showed up at our door and the BD team, the only tool that they had in the box was the Lib Spotify library, which was an API, which is exactly what you would want if you just want to build your own app. So everything was there. You can come to us, knock on the door. Oh, here you got Lib Spotify, you know, create the best Spotify experience that you can, because there was no strategy on our side. We were kind of reactive. So that’s how that world worked and would have worked. But then when we actually developed our own strategy for it, like we started predicting into the future, what future do we want to build? And we had a different vision of the future. We had a vision of us being able to vertically integrate and innovate on the experience, have a consumer centric experience, streaming from the cloud. Everything being controlled from within our app, etc. And then the only way to get Spotify on your, you know, checkbox on the box was to build for our vision. There was no other way, like there was -- at the time that was a controversial way of managing partners. They came to us. We want the APIs, we want to build a Sonos experience just as they have. The only way to integrate Spotify is take this library here and then we’re going to control everything from within our app and every hardware OEM at the time were like what do you mean, we're building out this Sonos strategy, we have this team of consultants building an app here on the side. We want to build that. And we're like, we had this political fight with everyone in the beginning, we're like, no, that's not going to happen, gonna build it this way. And this is where size matters. We were the biggest of this small group of companies that were building for a streaming future, biggest of the small. But we were like big enough, or like the growth was big enough. And the vision was compelling enough. So all these hardware OEMs. They were also betting on a future. They were not just betting on a past, like streaming is happening. Who's the leader in streaming? Ok, that's Spotify. So we need to build with them. We absolutely need Spotify in our products, in these new future looking products. So timing was really important. Having that leverage was really important. And we used it for consumers’ benefit.

In 2011, we took a gamble on the switch to connected speakers. From a numbers point of view, it didn’t really make any sense yet -- at the time, only a tiny slice of users even had connected
speakers and they were quite expensive, but we put a substantial percentage of our engineering brainpower towards developing Spotify Connect.

It wasn’t until seven years later that we finally saw our return, when voice-activated speakers hit the mainstream. Suddenly, everyone decided to upgrade that old CD player to a connected speaker. And by that time, almost every large manufacturer already had Spotify Connect integrated.

**Sten Garmark:** If you have an ambitious vision for a future, you need to allow it to take significant time to materialize. You need some strong conviction in the beginning, and then you need -- you need enough management support and cultural support to be able to keep that investment alive for a long time. The things that turned out to be important for the long run also tended to be things that took quite a long time to move from inception to actual impact. But looking at it like in financial terms here and now, it's not the kind of investment that makes sense. But I think that's true for a lot of the things that we've done over the years. And a lot of things that our kinds of companies do -- you know, there are compounding effects on beliefs, compounding effects on metrics. And there is a lot, you know, making bets on a future that you're trying to -- not the world that you have today, but the future you're trying to build. But there are a lot of things that had to come together here. But now we're living in this world where there's like tremendous amount of engagement. So the future that we were envisioning is here now. And like if we wouldn't have done that, maybe there was no one else that would be taking that fight. And we would just be living in a world where every streaming service would be in a different app from a different hardware OEM, because no one made that investment, took that fight to make this future that we now live in.

So, thanks to Sonos, we learned how to work with partners whose natural roles complement our own, and the importance of understanding a fragmented market.

But we also learned that it can be very hard to know if a product is successful, even years after launch. The best product strategy often requires playing the long game. To pull off these long term bets you need to have a lot of conviction, and in order to have a lot of conviction, you need a clear hypothesis and rationale for people to have the stamina to actually see it through. Because some of the biggest bets take the longest to pay off.
Today -- Spotify Connect is found in more than 2000 different devices from over 200 different brands. You can listen to Spotify on your PlayStation, in your car, or through your Apple Watch.

Nicole Burrow oversees all of these brand integrations.

Nicole Burrow: Designing something for the car versus a voice speaker versus, you know, your TV. Those are three really different moments in the day, three different needs on the part of the user, probably three different session types, you know, in your car maybe you're listening to a podcast, at home on your TV you're probably listening to your dinner music while you're eating dinner with your family. But at the end of the day, I think our goal is to hide all of that complexity from our users, right? They have a set of expectations that they're listening to Spotify and it needs to feel like Spotify.

As Spotify's Senior Director of Design and Consumer Experience, part of Nicole’s job is to make sure that lesson #1 -- everyone thinks of the user as their user -- doesn’t play out within our own company.

But while the obvious way to avoid this phenomenon of having your org chart show up in the user interface might seem to be to just force every experience to work exactly the same way, it’s not as simple as that, either.

Nicole Burrow: We actually have a series of design principles that we use within the design organization at Spotify that help guide our thinking when we approach any type of project, but especially a space like this that is so complex and has so many different variations across all of these different touch points. They’re unified, relevant and human. And so the unified pillar in particular is super interesting here, because, again, you’ve got this one user at the end of the day who just wants to listen to something on Spotify and they expect that to be easy and they expect that to be fluid. That doesn’t mean it’s going to be the same on every single platform. It just needs to feel connected. It needs to feel like it’s coming from the same place and feel familiar and that you have access to the things that you expect to have access to. But the other principle that’s really relevant here is the relevant principle, actually. So you think about what’s relevant on that platform, in that moment for the user. So it's not about kind of lifting and shifting the
entire mobile app experience into a voice speaker and expecting somebody to kind of navigate with their voice the same way that they would navigate an app. That's totally crazy.

With Nicole's design principles, every experience -- no matter how varied -- feels like Spotify while still optimizing for that particular device. But that's really only half the story.

In reality, you don't actually want to optimize for the device. As Nicole says you want to optimize for the user need.

And that brings us to our final lesson for today. Lesson #4: Be aware that what might appear as a user need, may just be a constraint of the UI.

**Nicole Burrow:** I think in order to have one consistent vision, you have to just stay focused on the end user. Like for them it's about getting what they're playing from their device to their speaker. They don't care how this is working and they don't care about all these different partners and companies that they have to navigate in order to get to that. It's just important that the experience remains consistent for them. And, you know, there's naturally kind of different behaviors that you need to account for across these different platforms. But we've developed something within this platform and partner experience team that we call the ubiquity baseline. And this has actually been an incredible aid for us in determining; what do we actually need on all of these different platforms that we support and what is the baseline set of features that our users expect to have in these different moments, and being really strict with ourselves about that. Because it's fun designing in a gaming space, and it's fun designing in the car and all these different form factors. And it's easy to get caught up in that. You know, designers like to explore. But we've actually tried to be pretty strict with ourselves in keeping, at least at the start, to that baseline experience, you know, letting people play, letting them discover, letting them make it theirs, you know, be able to save content in that moment.

**Gustav Söderström:** I think it's so crucial to think about one user and model them as one person who might behave slightly differently, but one of the big challenges as you go between these situations is to disambiguate if the user need actually changed or if this user interface is constraining what they actually want to do. So we've had these endless
discussions, right, about you see people on a speaker and they don't do the same thing as they do on mobile or desktop. They play so many more artists. And there is this instinct to say -- to think of it as a different user, which is like, well, there is the speaker user, the voice speaker user. And then you have to remind yourself like, no, it's the same user using voice. It's not a different user. So why are they using artist more? Is it because the need somehow changed, or is it because it's just much easier in a voice constraint interface to search for artists than your playlists that has a weird name right?

Nicole Burrow: Right. To ask for an artist.

Gustav Söderström: Exactly.

Nicole Burrow: Because that's what's familiar. That's all you can think of in that moment, you don't have a visual prompt to remind you.

Gustav Söderström: Exactly. So is it what you want to play or the only thing you can play? And so we have these discussions about what is the user behavior that we should actually accept as this is the user intent and optimize for that versus this is just because the user interface is constrained. They actually want to do something different. Right? And I think it's so easy to get caught up again in local optimization where, you know, the voice team thinks about the voice user, as if that's a different user than the person who is using the steering wheel buttons in their car or using their desktop. So one interesting framework that I know we've discussed and used when we think about new situations is as a baseline, for example, what is the most unconstrained interface where there are almost no constraints and you could think about the desktop. So you have full keyboard. You can background and foreground, you can browse, you have a mouse. You have video and screen and audio. So looking at that is at that interface as the most unconstrained and that as the most true description of what the user intent would be if they have no constraints and then look at the other devices as constrained versions of that intent. It has some drawbacks, which is maybe actually do have different intents, because when you're at work, maybe you want background music, not audio. Right.

Nicole Burrow: Totally.

Gustav Söderström: So it's dangerous. But this is one of the principles that is interesting to think about using -- to try to understand what it is that you're actually seeing as a designer or a product manager in these situations. And what you should react to and what you should actually say. This is just because the UI's in the way, it's not what they want to do.
Nicole Burrow: Absolutely, absolutely. And we're actually doing some really interesting experiments in that space right now, and I think you miss all the shots that you don't take on goal, right. But at the end of the day, you know, our goal is to take advantage of the unique offerings of the specific platforms. Consider the context that the user is in, do a bunch of research, of course, to kind of shadow these individuals and see; what does it look like when you're on your couch playing a game in your home. You know, this is a lot easier before covid and we could actually go sit with people on their couch and watch them play in a game and, you know, see how they interact with Spotify in that moment. So we rely on those insights and the user behavior actually in context, which is much better than having somebody fill out a survey or, you know, just asking questions over a hangout call. That's never going to tell you what it tells you. You ride along with somebody in their car and see how they're navigating with their kids in the backseat, yelling at them, them trying to put on the radio and trying to listen to something and answer the phone at the same time. All of these signals are kind of combined together to help inform, like we probably need to keep the car experience pretty simple on the phone and keep the controls pretty simple on the watch, because you're likely not spending a lot of time kind of assessing and, you know, doing these activities that you might do.

Gustav Söderström: Yeah I think that's fascinating. The fact that you're not really on a device. The way to think about it is you may be listening through a device, but you're on all those devices at the same time. You have the watch on your arm. You have the phone in your pocket and you have the speaker playing. And maybe you have the desktop right next to you. So where do you push the user to go depending on what they want to do, instead of thinking about them as different users and being on one device, we just think of them as being on all devices at the same time, regardless of which one is playing. Which one is playing is very indicative of the use case, but you should leverage all controls at the same time.

Nicole Burrow: And I get really excited about that because we know that humans are a complex species and we all have really different needs and different moments throughout the day. And if we can start understanding when the right time is to dial up certain aspects of the interface and dial down others, that gives us so much freedom to play in terms of how we design in these experiences that we could potentially create for our users.
A decade after we first envisioned the perfect listening session where music “follows you around” we have it on more devices than we could have imagined, with new integrations in the works every day.

Before we go, here’s a rundown of the product strategy lessons we covered today:

Lesson #1: Everybody thinks of the user as their user. This can happen even inside your own company.

Lesson #2: Know your company’s natural role. How does it overlap with your partners, and is that going to be a problem later?

Lesson #3: Understand market dynamics. If you want to introduce a new industry standard, you need to find a fragmented market.

Lesson #4: - maybe my favorite lesson - Be aware that what might appear as a user need, may just be a constraint of the UI. Sometimes, it’s hard to know if the user data you are seeing is what the user actually wants to do, or if it is the only thing they can do in that user interface. Look at what the user does in the least constrained experience you have to understand the real user need.

To learn more about how you can use Spotify Connect, check out Spotify dash Everywhere.com. We’ve even got a tool that shows you if your device is compatible with Spotify Connect, and what you need to get the most out of it.

Next week, we’ll bring you the backstory behind our first second product and how we hope to usher in a golden era for podcasting.

Daniel Ek: The reality was every other place had Justin Bieber, including YouTube and radio and all of these other services. So we won by other things. But ultimately, it would be harder and harder for us to compete in that world. And so we knew that eventually the final point of differentiation would be to differentiate on the content itself.
And if you haven’t listened to our earlier episodes yet, now is the time! Every episode showcases a different Spotify product launch -- from the first desktop app and its unusual architecture, to the promise and peril of moving to the cloud, to the answer to the question -- how do you give away half of an app for free?

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Veronica Harth is our in-house Spotify correspondent.

We’re edited by Frances Harlow and mixed by Joakim Löfgren, Viktor Bergdahl and Andrea Fantuzzi.

Our theme music was composed by Andrea Fantuzzi.

I’m Gustav Söderström. Thanks for listening.