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Feed.fm's Definitive Guide to Fitness Technology and Music

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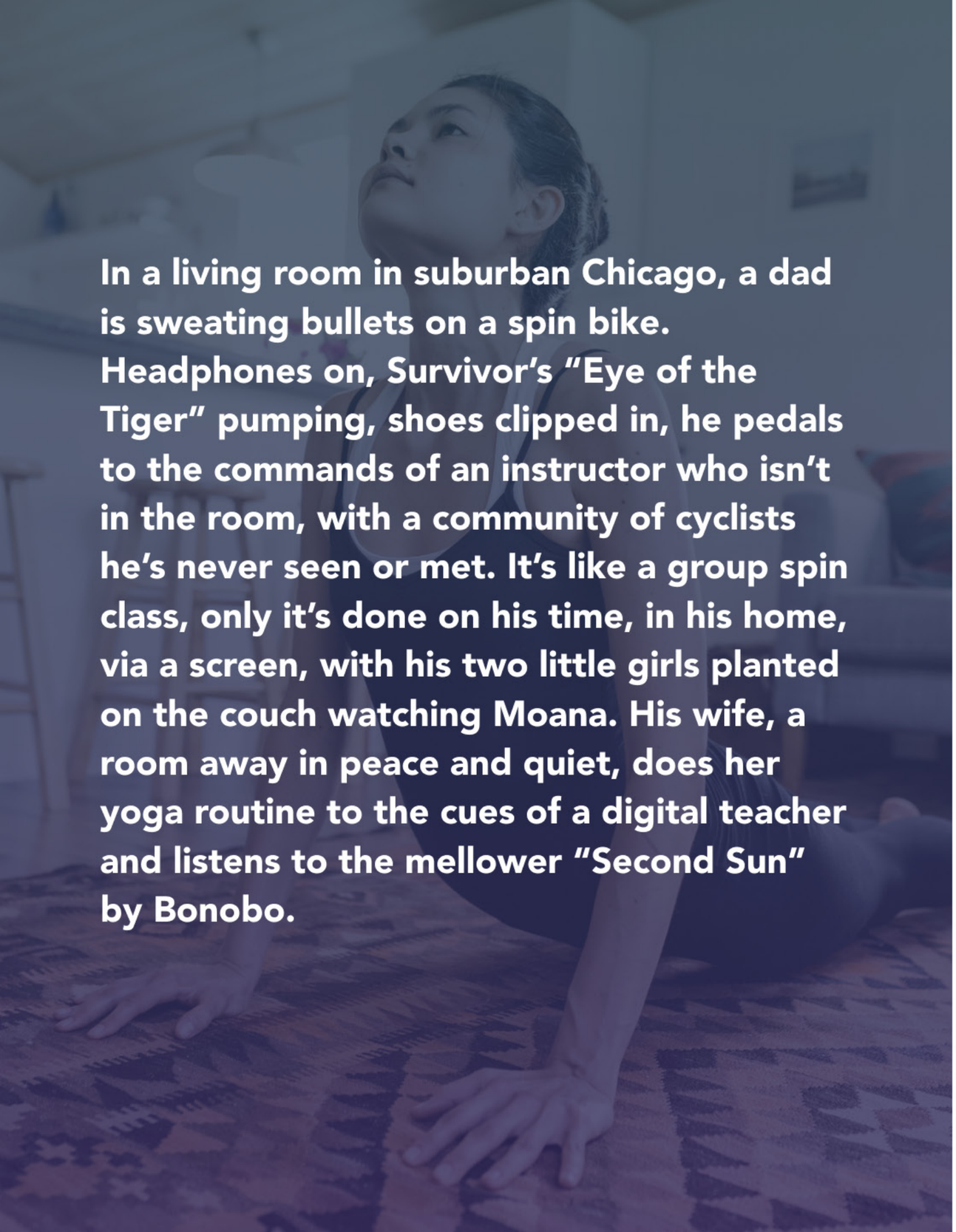


In a living room in suburban Chicago, a dad is sweating bullets on a spin bike. Headphones on, Survivor's "Eye of the Tiger" pumping, shoes clipped in, he pedals to the commands of an instructor who isn't in the room, with a community of cyclists he's never seen or met. It's like a group spin class, only it's done on his time, in his home, via a screen, with his two little girls planted on the couch watching Moana. His wife, a room away in peace and quiet, does her yoga routine to the cues of a digital teacher and listens to the mellower "Second Sun" by Bonobo.

The fitness duo doesn't realize that the musical soundtrack is an essential part of their experience and their apps' business strategies.

The music is hand-curated to fuel their workout and support their commitment to training regularly. A team of musicologists, technologists, content producers, and fitness pros combined their skills to create an experience that, until recently, wasn't available at home.

This is Feed.fm's Definitive Guide to Fitness and Music, an exploration of the way they have converged in the digital era. Our purpose is to orient **tech founders, content owners, and product leaders** who want to understand this trend and act on it.

Towards that end, this guide will examine fitness market dynamics, music as a performance enhancer, licensing intricacies, the curation craft, and the business value of music.

Here's our thesis: to be highly competitive in the fitness technology space, **companies need to integrate workout content, devices, and music**. Traditionally separate, this trio produces a better experience and more resilient business model when integrated.

CHAPTER ONE

Lay of the Digital Fitness Land

Our suburban couple emblemizes the most important trends in fitness technology. Between 2014 and 2017, fitness app usage grew 330% and gained the highest retention rates in the app world, **says Flurry Analytics**. 75% of active users open their app at least twice per week. **96% of these users go with just one health or fitness app**. In other words, digital fitness niches are winner-takes-all markets.

In 2018, fitness apps will account for $619 million in revenue, **according to Statista**, but wearables will generate $2 billion. While Statista projects the wearable market to be static between now and 2022, the apps will generate $954 million by then, representing 54 percent growth in annual revenue. Although the number of app and wearable users are roughly even today, app users will grow to 42.6 million as wearable users dip to 37.6 million. How can that be?

Most likely, we have a labeling problem. You can't use a wearable without an app, but the 'app' can be on a smartphone, built-in screen, or another device. Maybe that's why Peloton, which has a **$1.25 billion valuation** and has sold 200,000 bikes as of January 2018, is hard to spot in the data. The boundaries of content, apps, and devices are becoming a blur, which is another way of saying that they are becoming integrated.

One thing is clear though: whether athletes use an app, wearable, smart bike, or all three at once, they're listening to music.

CHAPTER TWO

The Science of Working Out to Music

In 2014, a **survey by headphone maker SOL REPUBLIC** found that two-thirds of headphone owners "…would be less active without music to push them," and 40% would not do their workouts without headphones. Besides providing entertainment, does the music matter that much? Unequivocally, yes.

In the academic study of fitness and music, the towering figure is Dr. Costas Karageorghis of Brunel University in London. For more than 20 years, Dr. K has investigated the effects of music on exercise and sports and has consulted for Nike, Sony, IMG, Red Bull, and England Rugby, among others. We state this upfront because there's plenty of debunkable pseudoscience on fitness and music, so we concentrated our research with the leading authority.

When you read Dr. K's comments, sometimes it sounds like he's describing an early 20th-century miracle remedy, not the noise that comes out of your headphones. **Dr. K has written** that music "…can be thought of as a type of legal performance-enhancing drug," asserting that music can **improve running performance by 15%**; it can be a sedative or stimulant; a nerve calmer or focus inducer; a pre-workout entryway into flow state; a mood enhancer; and even an agent that blocks out fatigue-related symptoms and **reduces perceived effort by up to 10%.**

> "[Music] can be thought of as a type of legal performamce-enhancing drug"
>
> Dr. Costas Karageorghis, Brunel University in London

In a sweeping, **two-part literature review** titled "Music in the exercise domain," Dr. K and collaborator Dr. David-Lee Priest discuss these enhancements with more nuance. Notably, they state that "The effects of music appear to be at their most potent when it is used to accompany self-paced exercise…"

Therefore, athletes like runners, swimmers, and cyclists who set their own pace benefit slightly more from music than a group HIIT (high-intensity interval training) class trying to keep up with the instructor. Music should be especially beneficial in digital fitness experiences where there is coaching, but the athlete selects her pace and intensity.

While the benefits of music are well-established, Drs. K and Priest say, "The mechanisms that underpin the effects of music are poorly understood at present." It's hard to run MRIs on moving athletes. But, current theories focus on the way music interacts with attentional processing, neurological response to rhythm, relationships between exercise tempo and heartbeat, and emotions.

Translation: the impact of music on fitness **depends on the person, workout, and psychological factors beyond our contro**l (e.g., What was your sports pump-up song in high school?). This brings us to an important question: How do you curate music for a given workout while heeding the science?

CHAPTER THREE

The Art and Science of Music Curation

Interview with Dario Slavazza
Curation Lead at Feed.fm

Once upon a time, there weren't many DJs. Then, with the rise of digital technology, everyone became a 'DJ' (and a journalist, photographer, food critic, brand, etc.). Now, the tide is swinging in the opposite direction. Although anyone can play music, people recognize how hard is to curate well. Particularly when you're selecting music for fitness, there's an art and science to learn.

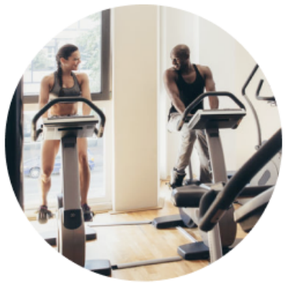
We went deep into the art and science of fitness music with Dario Slavazza, Curation Lead at Feed.fm, because we want readers to leave this article with practical knowledge and applicable skills. This section breaks down some principles and processes of music selection with handy visuals.

The goal is flow

A good set of music, says Dario, is one that induces flow. Athletes don't want their focus compromised, but they do want music to get them out of their own heads. A listener should never be shocked or rattled by the next song. It's all about providing a consistent experience throughout the workout.

Consider your audience and context

The audience is the first criteria in making a fitness set. A pop station for college students is different from a pop station for suburban moms. Likewise, a dance aerobics class is different from a HIIT class. Dario offered some general guidelines for the three most popular types of digital fitness experiences:



Running, Spinning, and other Cardio: Pick songs that help the athlete maintain a consistent pace. Remixes are great, but don't go overboard. Sometimes intense, crazy bands and EDM remixes can be too much. The original can be more motivational and set a better tempo even if it feels 'slower.'

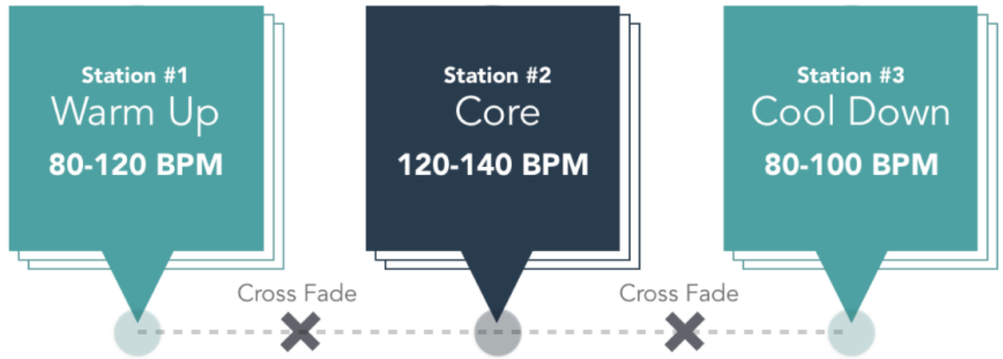
Yoga: Go with downtempo, chill, singer-songwriter options. Avoid the weird outliers or at least think hard about the mood and aesthetic before you add them to a playlist (i.e., are you going after the sporty flow crew or New Age yogi?). Either way, aim not to distract the yogis. Balancing on your head is hard enough without jarring choices.

HIIT and weightlifting: Don't get too caught up in the tempo of a song. The best playlist for, say, a boxing gym may seem slow if look you look at the beats per minute (BPM). But, it can work because it has the right feel, which we'll talk more about next.

The role of BPM and intensity

To trigger that flow state, a set of songs needs to deliver appropriate tempo and intensity over the course of the workout. You can split most workouts into three parts, as depicted below:

Notice how tempo, measured in BPM, changes between the Warm Up, Core, and Cool Down sections. While BPM is the most objective measure for categorizing songs, it can be misleading.



Consider two different songs at 125 bpm: "Bodak Yellow" by Cardi B and "Came Here For Love" by Sigala. Bodak Yellow's deep, resonant beats and aggressive lyrics set a more intense tone – the kind heavy lifters or a HIIT class might appreciate. "Came Here For Love" has a lighter tropical house style and piano notes that would serve cardio activities better. Point being, the intensity is more subjective than BPM but often more important in song selection.

Familiarity versus discovery

Great playlists balance known favorites with new music the audience hasn't heard. The winning ratio is 75% familiar, 25% discovery. Curators like Dario have trusted sources and research processes for finding that unknown quarter.

Some DJs throw YouTube on autoplay and wait for something novel. Dario prefers a systemic process of studying music labels and seeking out affiliated artists from similar areas and time periods. Discovery requires some immersion in the music community.

Human curation versus algorithmic personalization

Music genre metadata is terrible, so good fitness curators need to hear a song before applying any algorithms to it. Machines can pick up BPM, but they can't pick out context, mood, and nuance like the human ear.

Generally, Dario curates three-hour playlists with 30 to 50 songs, and one fitness app might offer six or seven soundtracks each month to serve different demographics. Within each set of music, listeners personalize their experience using the thumbs-up, thumbs-down model. Over the course of a month, two users will end up with two very different playlists based on what they tap.

The goal is for listeners to hear some songs again but not feel like they hear the same thing over and over. Algorithms should serve that balance between familiarity and repetition while filtering out songs the listener doesn't want to hear again.

Common mistakes

Sometimes, says Dario, people throw in quirky personal choices. You might like a song, but that doesn't mean it fits the overall context. If you play Kanye, TI, then Papa Roach, you'll kill the flow. It doesn't matter if everyone in the room likes Papa Roach.

Music selection should complement the type of instruction in a digital experience. EDM and House are great for classes with technical instruction because they don't have lyrics. In workouts based on motivation (e.g., running), lyrics are a plus. The app can always drop the music volume when the coach is speaking.

Keep in mind that the best songs are polarizing. Some people will give thumbs to a song, and others will thumb it down. If everyone is skipping the same song, it's not working and needs to go.

Be mindful of mood breakers – things that take athletes out of their flow with a jarring effect. You don't want challenging music as a listener. Working out is hard enough already. 'Cool' songs might have a big dramatic ridge, and you don't need that when you're working hard physically.

Bottom line

Although everyone can play DJ, playlist curation has become increasingly sophisticated, combining the touch of a musicologist with the personalization of algorithms. As we'll soon see, the business analytics have convinced app makers that to neglect quality music is to lose good users to distraction or competition.

CHAPTER FOUR

The Unwonderful World of Music Licensing

Now that we've covered the fun topic of music curation, let's switch gears, just for a moment, to the subject that makes people's heads explode: licensing. To edge in, let's hear about this topic from the perspective of Ryan Vance, Chief Content Officer at Tonal, a tech company he says is building the world's most intelligent fitness system. Currently, they're in stealth mode.

Before Tonal, Ryan Vance was Head of Content at Fitbit Coach from 2015 to 2017. He joined Fitbit via FitStar, which was acquired by Fitbit in early 2015. His duties included building the music strategy for Fitbit Coach and consulting on the overall product strategy for music within Fitbit.

Like many apps, FitStar (now Fitbit Coach) had commissioned original music for its fitness content. Thus, the company didn't have to worry about music rights and licensing. "I didn't think I would be licensing music from labels given the time and cost associated with that," said Ryan.

Ryan, whose production experience spans almost 20 years, used to worry about 'sync' licenses, short for 'music synchronization license.' Basically, if you want to play a fitness video with popular music, you must pay the labels, artists, songwriters, etc. to play them in synchronization. The sync license enables you to play one track with one video.

For a TV commercial featuring an up-and-coming band, the sync license might cost $10,000. If you want 60 seconds of Cardi B, you might pay $100,000.

With hundreds of hours of workouts available on Fitbit Coach, no wonder Ryan had little expectation of licensing music. That said, Ryan knew that external music players like Spotify and Pandora were problematic – not from a licensing perspective, but from a user retention angle.

"Whenever you have to leave the app to adjust music, it's a barrier," says Ryan. "Users want to be able to change the volume or skip songs in an integrated way. In fitness, especially, you need to eliminate friction because everyone is looking for excuses not to work out."

> "Whenever you have to leave the app to adjust music, it's a barrier"
>
> Ryan Vance, Chief Content Officer, Tonal

If you ping your legal counsel thinking she'll know how to license music, she will say, "Are you out of your mind?" It's a very specialized area of the law. A typical music licensing attorney charges $1,000 per hour and might need 20 hours just to give you a rudimentary understanding of your options. Good luck getting that purchase approved.

Long story short, the statutory license for digital music made it possible for Ryan Vance to integrate popular music into the Fitbit app without paying insane costs. As long as users can't choose or predict which song will come up next, content owners can play popular music without paying exorbitant sync licensing fees. Within the confines of the statutory license, curators like Dario can still create music sets that play Warm Up, Core, and Cool Down tracks in the appropriate order.

CHAPTER FIVE

The ROI of Music in Fitness

In this section, we can't turn to a third-party for data on the ROI of introducing music into fitness apps. Thus, we rely on our data, accumulated from thousands of fitness app users. While we cannot externalize the results to music platforms besides our own, we can generalize the findings to say that music is a type of legal performance-enhancing drug for mobile app businesses, to borrow Dr. K's phrase.

Impact of Music

4.5x	2.2x	2.8x
More Time Spent On Site / In-App	More Likely to Return Next Month	More Likely to Return Next Quarter

In Session Engagement — **Long Term Retention**

As you can see above, music increases the amount of revenue you can expect to earn from users over their 'lifetime' as a customer. When we compare music listeners to non-listeners, we find that the music crowd **spends 4.5x more time in the app**. Likewise, they're **2.2x more likely to return next month**, meaning they're less likely to delete your app and cancel the subscription. More impressively, music listeners are **2.8x more likely to return in a quarter.**

At a finer level of detail, we detect specific changes in behavior. The music listeners spend more total time in the app, have more frequent sessions, and clock longer session times on average.

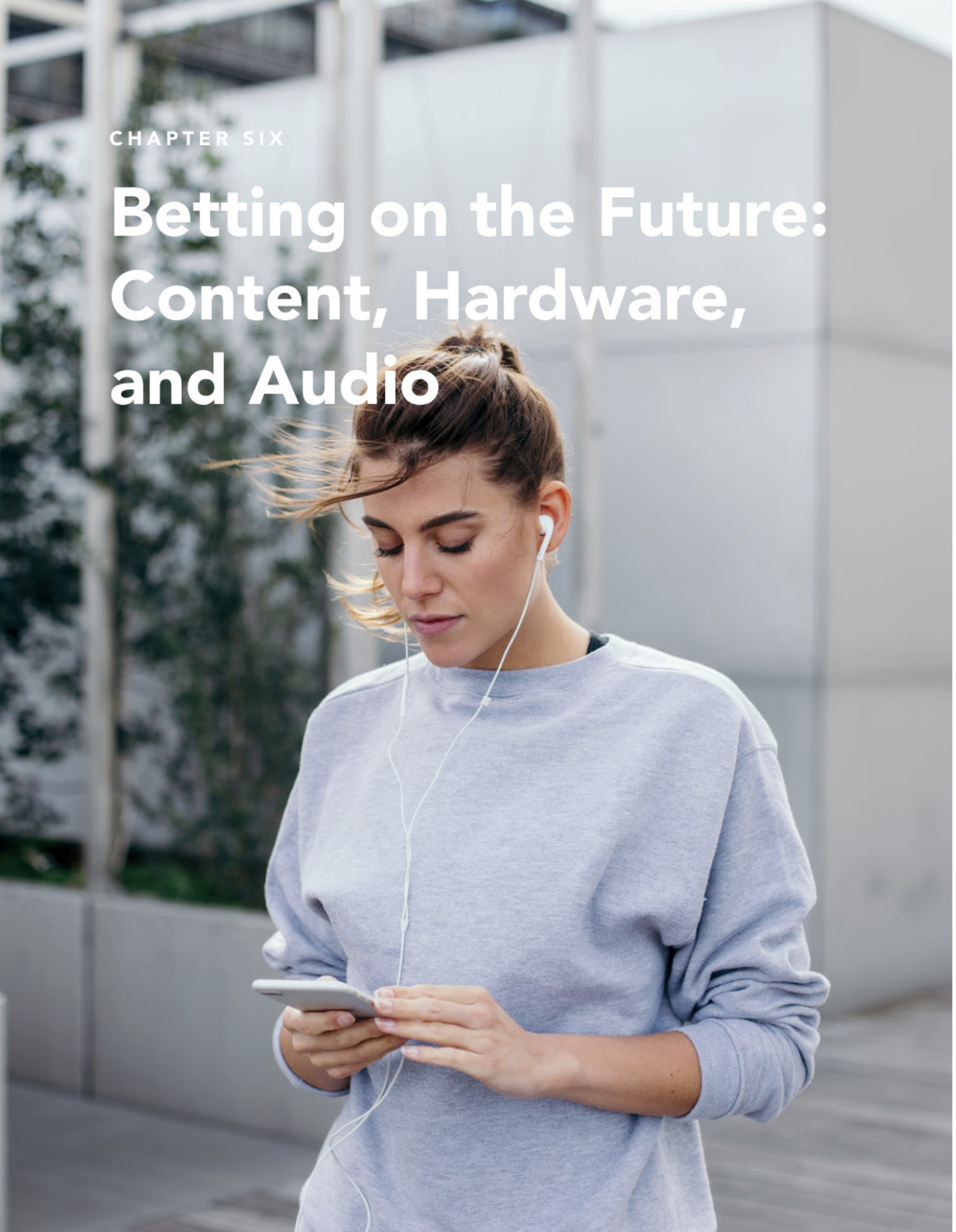
The data gets more interesting when you focus on an app's most engaged and therefore most valuable users. When product managers introduce a new feature like music, they assume that the most engaged users will try it out. Many of them ask us if the relationship between music and engagement is a correlation without causation.

Engaged Music Vs.
Engaged Non-Music Users

Total Monthly Usage per user in minutes	2.6x
Average Sessions per month	1.7x
D90 Return Visitors	1.9x

It turns out that not all engaged users (those whose session times are above average) listen to music. So, we were able to compare engaged listeners and engaged non-listeners. **Music was still correlated with a statistically significant boost in engagement, which suggests a causal relationship. Put simply, the data says that music raises customer retention among fitness app users whether they are already engaged or not.** For an app to become even 'stickier' for its most loyal users is one hell of an improvement.

Most fitness apps follow the 80/20 rule, whereby 80% of revenues are driven by the top 20% of customers. It follows that app companies should target those most engaged customers with quality content and services like curated music. As we learned from the market data, most people use just one fitness app, so anything that cements loyalty is a competitive edge.



CHAPTER SIX

Betting on the Future: Content, Hardware, and Audio

Summer has thawed out suburban Chicago, and our fitness couple is switching up their routine. The dad is out on his road bike, wireless earbuds in, training with an app that will prepare him for his first century race. His virtual coach says he needs more strength training, so he begins to research smart weight equipment. His wife, still rocking her yoga routines, is practicing out on the Lake Michigan shore while her kids build sand castles. She's looking into a new, digital mat that can measure balance, strength, and weight distribution in her yoga asanas while playing awesome music through a built-in speaker.

That is the future of music and fitness. We argued that companies need to integrate fitness content, hardware, and music to excel in this tech segment. The research we've presented illuminates why:

- **Apps + smart devices have become an inseparable medium for delivering great workout content.** Devices account for the bulk of revenue in the fitness tech space, but apps excel at creating engaged, consistent athletes. Peloton's model of integrating an app, screen, audio, and physical bike illustrate this point.

- **Better music, better performance:** Music gives athletes an undeniable advantage, especially when they're working out alone and setting the pace on a smartphone app. We don't know why music is so beneficial, but the research on its benefits to performance, state-of-mind, and fatigue perception are well-established.

- **Good fitness soundtracks take serious skill.** Everyone thinks they are a DJ, but they are NOT. Musicologists and curators can play a

vital role in crafting playlists that are aware of the science and curated for different populations, fitness programs, and coaching content. While athletes can play DJ on Spotify, the effort to make a good playlist may deter them from doing their workout. Great curators help athletes find a flow state by matching music to the Warm Up, Core, and Cool Down portions of the workout. They can personalize the music algorithmically by using a simple thumbs-up, thumbs-down interface.

- **Licensing is a pain in the…** Traditionally, the cluster-jam that is music licensing deterred fitness content creators from using popular music. The sync licenses required to match music to a video track were unreasonably expensive. The licensing game changed with the introduction of the statutory internet radio license. By randomizing music in playlists yet still matching tracks to workout sequences using BPM and intensity data, the license permits an exceptional workout experience that rewards artists without levying an unsustainable cost on businesses.

- **Integrated music = higher customer lifetime value**. Data from Feed.fm illustrates that you can increase customer lifetime value (CLV) by raising app usage and loyalty with music. Athletes use their fitness apps more often, record longer sessions, and are more likely to renew subscriptions if music is integrated. For companies, that translates into a better return on customer acquisition costs, more consistent user growth, and higher total revenue.

As the Peloton model suggests, smartphone apps won't be the only dimension of connected fitness experiences. The exercise bikes,

weight equipment, yoga mats, and other hardware will have integrated fitness content, delivered via an app, that can and should include music.

As Ryan puts it, "Connected fitness is the current trend, as Peloton is proving. People want an in-home solution rather than a gym membership or class. So, content owners are trying to find solutions for connected fitness through wearables and experiences that make fitness more convenient but of equal quality to what people would get in a gym." Here's a takeaway for you. **Notice how connected fitness experiences are beginning to tap into more of our physical senses.**

Apps can provide visual and auditory stimuli. Hardware adds in the sensation of touch, a fundamental part of movement. Food and supplement companies handle smell and taste, but it's not farfetched to imagine a fitness experience that integrates those final two senses into one offering. When athletes fuel and with what can have a dramatic effect on their results.

The integration of fitness content, hardware, and music is a step towards tapping all five senses in one experience. The age of connected, integrated fitness provides new training opportunities to athletes and new business opportunities for innovators.