



## The Disappearance of the Songwriting Middle Class

By Annie Bass

### Forward

*I would like to sincerely thank Professors George Howard, Kat Reinhart, and Mark Simos for our informative conversations and expertise. I spoke about my article and research process with each of them, but each of our conversations ended up going in directions pertaining to both their experiences in their fields and as Berklee Professors. Professor Howard and I spoke about the future of artists and the technological opportunities to support them, Kat Reinhart and I talked about the importance of prioritizing arts both in cultural and education sectors, and Professor Mark Simos and I discussed songwriters' concerns surrounding streaming, artificial intelligence, and the problems that many songwriters feel they are facing.*

*The topic of the disappearance of the songwriting middle class was brought to my attention while scrolling on TikTok. I came across two videos of Kristin Robinson in September, which resulted in my research this past year to explore and delve further into the topic. Thank you to Kristin for spearheading this important conversation!*

### Introduction

As the music industry evolves with technology and changing trends, the ways creatives are compensated and supported change with it. 73% of people report that they listen to music through licensed audio streaming services<sup>1</sup>, and nearly one trillion songs are streamed every year in the US alone.<sup>2</sup> However, not only does the shifting streaming royalty system fluctuate depending on deals with rights holders, but the very function of streaming undercuts different creative roles in addition to the artist, particularly that of the songwriter. Songwriters, unlike artists, do not make additional money from master/sound recordings, touring revenue, merchandise, or other streams of income.<sup>3</sup> The current streaming model in the digital age rewards streams over physical mechanical royalties, while



album rollouts prioritize singles over a single release of a bundled project, are becoming more common. In addition, stagnant definitions of what it means to be “a writer” are being challenged by the blurring lines between roles of songwriter, producer, and artist as writing rooms change and the songwriting process evolves in the digital age. In the U.S., all of these issues exist within a country that is defunding the creative arts in both educational and governmental sectors. Because of these issues, the modern middle-class songwriter resides in a system that seems to undercut their compensation when compared to previous decades.<sup>4</sup>

### Background Information on Streaming:

#### How Does it Work? Where Does the Money Go?

Every time an artist's song is streamed on Spotify, they are paid roughly

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### MISSION STATEMENT

The Music Business Journal at Berklee College of Music is a student publication that serves as a forum for intellectual discussion and research into the various aspects of the music business. The goal is to inform and educate aspiring music professionals, connect them with the industry, and raise the academic level and interest inside and outside the Berklee Community.

### INSIDE THIS ISSUE

Interview with Former Berklee President Roger Brown

The Environmental Impact of Generative AI

Music's Role in the Growing Wellness Industry

# EDITOR'S NOTE

Dear Reader,

Thank you so much for reading our second issue of 2025!

As my time at Berklee is coming to an end, I'll be saying goodbye as Editor-In-Chief after this spring semester. I'm so happy to have been a part of this amazing organization, working with such a fantastic team to bring you a more expanded view of the modern music industry! Being able to share my passion for journalism and research while also learning more about these respective fields has been such a joy.

This edition of the MBJ will be featuring articles and content exclusively written by our Editorial Team members. Our cover story, written by Annie Bass, features a deep dive into the songwriting industry, particularly the "middle class" of songwriters and how their careers are changing over time. Next, we hear from former Berklee president, Roger Brown, in an interview conducted and edited by Tavishi Nidadhavalu. I give an introductory look into the growing wellness industry, and the increasingly prevalent role music is playing in it. And lastly, Joe Muscarelle breaks down the environmental impact of generative AI, a side effect of the technology that can often be overlooked.

Our podcast, Cut Time, is available on Spotify, featuring new upcoming interviews from Boch Center CEO J. Casey Soward and many more. I hope you enjoy this edition of the journal and that you continue to keep up with us!

Sincerely,



Anna Hudson  
Editor-in-Chief

## MUSIC BUSINESS JOURNAL

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between \$0.003-0.005.<sup>5</sup> When a song is streamed, it is split into two different types of royalties: one for the sound recording/master and one for the musical work itself. The sound recording's royalties are typically paid mostly to the label, while smaller portions go to the artist.<sup>6</sup> The distribution of how much the label and artist each get depends on the specific contract.

### **Digital Service Providers (DSPs)**

Streaming services, also known as Digital Service Providers (DSPs), receive most of their revenue from paid subscriptions and advertising. Instead of paying out a fixed rate per stream, they pool their revenue and divide it based on how a track is streamed. DSPs separate their royalty payments, with roughly 80% distributed to the sound recording (payment towards label/independent artist) and 20% distributed towards the musical work royalty. Half of the musical work royalty is collected by the Publisher and paid to the songwriter, and the other half is collected by a Public Performance Organization (PRO), which distributes it evenly between the publisher and songwriter.<sup>7</sup> Most labels negotiate their distribution deals with DSPs differently, resulting in different royalty rates per stream depending on the label a song is released under.<sup>8</sup> In addition, DSPs often offer free-tier, ad-supported streams that generate royalties worth less than subscription-based streams, resulting in unevenly weighted streams—differing royalty payments dependent on the “type” of stream.<sup>9</sup> Along with issues on the way streams are weighted, the specifics behind royalty calculations are hard to understand due to “an opaque process and non-disclosure agreements” between labels and DSPs.<sup>10</sup>

### **The Musical Work/Composition and Songwriters**

A song's musical work or composition royalties are paid to its songwriters and publishers, who, as mentioned previously, typically receive 20% of a song's total streaming royalties combined.<sup>11</sup> 10% of that share goes towards mechanical royalties, which “represent a musical work embedded in a copy of a recording” that the publisher collects and pays to the songwriter.<sup>12</sup> The other 10% goes towards performance royalties – royalties generated every time the song is played in public, whether that be radio play, in a retail store, or a live performance – that performance rights organizations (PROs) like ASCAP, BMI, and SESAC collect for songwriters and publishers. The PROs will also typically take an administrative fee out

of their royalty payouts before dividing the performance royalties between the publisher and songwriter.<sup>13</sup> Ultimately, the typical earnings for songwriters and publishers are each roughly 9.4% of the total musical work composition.<sup>14</sup>

### **The Shift from Physical to Digital**

With less physical music being sold annually, songwriters who receive the crucial mechanical royalty are not compensated as much within the streaming model. In 1999, \$23.4 billion was generated from CD sales, accounting for 87.9% of the total \$26.7 billion recorded music revenue made that year. By contrast, as of 2023, the CD format generated \$537.1 million, accounting for 3.1% of the total \$17.1 billion recorded music revenue.<sup>15</sup> This supports the idea that while recorded music is now dominated by streaming, it is not bringing in as much revenue as the recorded music industry, which was far more dependent on physical revenue.

While the standard mechanical royalty rate is 12.4 cents per track,<sup>16</sup> this only applies to physical formats and digital downloads.<sup>17</sup> According to Royalty Exchange, the average mechanical payment for streaming is significantly lower; as of 2021, it was about \$0.06 per 100 streams (\$0.0006).<sup>18</sup> Under this rough model, the sound recording receives \$0.0038 per stream, and the composition share receives \$0.0012.<sup>19</sup>

### **The Middle-Class Musician/Songwriter and Mechanical Royalties**

Dan Runcie of The Trapital – which offers analysis and strategic breakdowns of various aspects of the music industry – defines an American middle-class musician as “an artist who reliably takes home \$50,000-150,000 per year.”<sup>20</sup> He argues that “in the CD era, a solo artist was “middle-class” if they sold 20,000 copies of a \$20 album annually.” He uses the example that if an artist made \$4 for every copy sold, they would generate \$80,000, ultimately making the majority of the income from album sales.<sup>21</sup> He points out that the total \$80,000 can't be directly compared to Spotify streams because streams are only considered part of the total revenue an artist receives. He claims that “streaming is a game of scale, access, and recurring revenue.” Scale serves major artists well but means that smaller artists – and their songwriters – ultimately

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“struggle to earn enough.” He also points out that “payouts don’t happen unless fans consume your music, and you can only stream one song at a time. And while recurring revenue is significant for investors and shareholders, it can limit consumer transactions that benefit middle-class musicians.” He makes the point that while middle-class musicians “still need streaming, they also need what streaming can’t offer—niche, ownership, and product sales,”<sup>22</sup> all things accessible in the physical model.

Berklee Professor George Howard thinks the Middle-Class musician is a bit of a myth because it’s always been challenging for songwriters and artists to make a living. While things are measurably worse than before, he brought up the fact that many creatives face consistent instability. He argues that Uber drivers, task-rabbits, and anyone who functions in a gig economy essentially have “exactly the same livelihood that a working-class musician has, meaning no social safety net, no job security, no 401k, no health care.”<sup>23</sup>

### **The Unbundling of The Album**

Another result from the shift from the physical to digital model has resulted in the common practice of “unbundling” an album. According to Josh Kaufman, bundling is when “you combine small offers into a single large offer.” In the case of the music industry, this is a singular album release. “Unbundling” is taking one offer and splitting it up into multiple offers.” He uses the example of selling MP3 downloads instead of the CD.<sup>24</sup> Kriston Robinson, a Billboard Reporter, discusses how this affects songwriters in a TikTok. When songwriters could depend on people buying entire albums, all of the royalties allocated to each person were larger due to the cost of the record itself and the consequent mechanical royalties. Kristen delves into this in her video, saying:

Back in the day, people used to buy entire albums that included maybe 12 songs; maybe there were three singles on it. But when you bought an album, there were royalties that were allocated to every single person on every single track. So, if you were an album cut for a major artist, you were still getting paid really well. Of course, the singles paid better because you also get royalties if it’s played in public if it’s played on the radio. But this created, like, a middle class of songwriters. We did just fine.

With streaming, we get so much more granular data on every single move that someone makes on the platform, and so now, basically, if you don’t get the single, then you’re fucked financially. Of course, doing an album cut with a big artist is still helpful, but the difference is vast.<sup>25</sup>

### **Changing Definitions of a Writer**

Another impact of technology and a fast-paced developing industry has been that the producers, writers, and sometimes artists’ particular roles are evolving. As Kristin Robinson says in her TikTok video, “The line between what a producer does and what a songwriter does and what an artist does are all blurring, which means that everyone is basically taking a cut of the publishing, which was typically reserved just for songwriters.” A producer may bring a beat to a writing session, making them a writer and giving them ownership over a piece of the composition. Additionally, the ways the artist is involved in the creative process are changing, and artists are more commonly given writing credits.<sup>26</sup> Additionally, a sample of someone’s song can be used in a new song, giving the original creator a piece of the composition. An example of this is when “Old Town Road” by Lil Nas X gave a songwriting credit to Trent Reznor of the Nine Inch Nails, as a sample of their song “Further” was used in “Old Town Road.”<sup>27</sup>

Robinson says in her video that “way back in the day” – which can be considered as the years before the rise of the at-home producer – the songwriter’s job was to write melodies and lyrics, “almost like at a cubicle at a job.” Robinson’s example of this position as someone “like Carole King.” Then, Robinson also uses the example of Aretha Franklin as an example of the recording artist. Aretha Franklin sang many songs written by Carole King and brought them to life as an artist, but as Robinson says, she “didn’t really write that much.” Robinson’s example of a producer this time is someone who “was the person at the physical studio that you went to who would help you affix your song onto tape.”<sup>28</sup> Now, with the rise of technology and constantly evolving roles, “the writing and production is happening at the same place.”<sup>29</sup>

George Howard compares two different producers to make this point. George Martin, the Beatles’ producer, is an example of someone from a traditional era of producers.

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As Professor Howard explains, George Martin's job, or someone else's in a similar role at the time, was to "try and bring the songs to their highest and best form. And that didn't necessarily mean he wasn't involved in the creative process, but he was never credited as a songwriter." He says a more modern example of a producer is someone like Dr. Dre, who often "bring[s] beats in" and ultimately is "acting as a co-writer."<sup>30</sup>

Billboard writer Glenn Peoples points out the key issue here, which is "whereas a recording only has one label or artist, a songwriter's streaming income can drop significantly when a song has multiple co-writers."<sup>31</sup> Robinson states, "Although I'm all for creative collaboration, I'm certainly not against the fact that the writing rooms have gotten bigger. It just does make it harder financially." Berklee Songwriting Professor Mark Simos thinks this should prompt a larger discussion of how revenue is distributed in the industry, saying that "the shift towards team-based writing has led to more people splitting the revenue rather than increasing the overall pot."<sup>32</sup>

### **America and the Arts**

Another area for analysis and opinion on what has left the songwriter in financial vulnerability is America's cultural and political relationships with the arts. Staff writers of the *Journal of Interdisciplinary Public Policy*, Berkeley Borkert and Lloyd Skinner, write that "defunding the arts or not financing it according to its needs risks prohibiting creative industries from fostering an independent and positive culture."<sup>33</sup> There have been multiple attempts for the National Endowment of the Arts (NEA) to be defunded beginning in 1989 and then repeatedly throughout the 1990s, yet none were passed.<sup>34</sup> However, this past February, the National Endowment for the Arts canceled \$2.8 dollars worth of funding that was supposed to be put towards the "Challenge America" program, "a grant program supporting projects for underserved groups and communities."<sup>35</sup> Alternatively, groups are allowed to apply to the organization's "general grant program," which will prioritize projects that "celebrate and honor the nation's rich artistic heritage and creativity."<sup>36</sup>

Additionally, According to Americans for the Arts, "low-income students who are highly engaged in the Arts

are more than twice as likely to graduate college as their peers with no arts education," and "students with high arts participation and low socioeconomic status have a 4% dropout rate— 5x lower than their low socioeconomic status peers." Americans for the Arts also published that "93% of Americans believ[ing] that the arts are vital to providing a well-rounded education" and "two-thirds of public school teachers believe that the arts are getting crowded out of the school day."<sup>37</sup>

If America is defunding the arts, both within the government and in schools, it could be interpreted as representative of a political attitude that has only worsened while the music industry has become modernized and digitized. Overarching attitudes toward the arts can cause difficulties in garnering support and attention for these issues. However, as Berklee Professor Kat Reinhart points out, "If we're going to support the arts, then we need to find ways to support the people making the arts."<sup>38</sup>

### **Potential Solutions for the Middle-Class Songwriter**

Solutions that can allow songwriters to be compensated in a rapidly modernizing industry include creating new legislation and systems, reworking the state of PROs, labels, publishing companies, and streaming services, and how they work together, and implementing new technologies.

### **Potential Legislation and the State of PROs**

The Living Wage for Musicians Act was introduced to Congress in March 2024 and would create a new royalty for streaming, paying musicians a flat fee of \$0.01 (1 penny) instead of the current average, which is roughly .003, (3/1000s of a penny).<sup>39</sup> The royalty would "bypass existing contracts and go directly from platforms to artists."<sup>40</sup> In addition to the act being introduced, in February 2025, the US Copyright Office issued a notice of inquiry after the number of PROs doubled.<sup>41</sup> Both actions show potential for a shift in legislative attitudes around music consumption and creative rights.

### **PROs, Labels, Publishers, DSPs, and Potential Collaboration**

Some PROs, Labels, Publishers, and DSPs have begun reworking how they work with one another. The new collaboration between Deezer, a streaming service,

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and SACEM, a French PRO, describes their deal as “the world’s first update.” Under this model, Deezer says that more subscription payments would go toward the artist while fighting fraudulent streaming. These benefits will be offered to the songwriters, composers, and publishers represented by SACEM.<sup>42</sup>

Universal Music Group and Spotify also announced a multi-year agreement called “Streaming 2.0.” This new model has “new paid subscription tiers, new music and non-music content bundling, and a richer audio and visual content catalog.”<sup>43</sup> According to RouteNote, the deal would include changing how royalties are paid to Universal Music Publishing, changing and decreasing bundle-related royalty reductions, and implementing a royalty payout difference between a “bundled user” and a “music-only listener.”<sup>44</sup>

### Implementing New Technologies

George Howard thinks that for artists, songwriters, and producers to be properly compensated, creatives will have to lean into new technologies that allow for direct payment and precise royalty distribution. Technologies like Web3 and blockchain. Because Spotify doesn’t pay on a per-stream basis, PROs don’t pay on a measured basis, and payments to artists are not exact, he argues that technologies like Web3 remove the intermediaries.<sup>45</sup> George thinks that technology is the path forward, saying:

I think we’re closer than a lot of people believe in terms of seeing it start to take place, where artists will be able to set prices for their works, whether that’s for streaming, licensing, etc., be paid directly when those works are streamed – because we’ll be able to see it, we’ll have better transparency –

and be able to set a market bearing price. That’s our only hope, right? That and an expansion of opportunities for artists. Right? Artists need to be able to have their music used in many, many new ways, whether that’s for health, relaxation, etc, and be paid for those types of things. What we cannot do is accept the current standards and the current situations for revenue and opportunities for artists. Nor can we wait for the government to change it.

### Conclusion

The disappearance of the songwriting middle class can be attributed to a number of issues, with much of it stemming from music shifting from the physical to a digital model, which undercuts the mechanical royalty both as a consequence of streaming and the unbundling of a record. Additionally, as the modernization of the music industry changes roles between the songwriter, producer, and artist, the old model is outdated and doesn’t account for these shifting positions. On a larger scale, the overarching values surrounding arts funding and education in American politics contribute to a habit of devaluing the arts. Potential solutions to these issues include introducing potential legislation, looking at the state of PROs, having PROs, DSPs, labels, and publishers collaborate, and implementing new technologies that help artists gain financial autonomy.

1. Carl Hatton, “IFPI’s Global Study Finds We’re Listening to More Music in More Ways than Ever,” IFPI, December 11, 2023
2. Glenn Peoples, “Who Gets Paid for a Stream?,” Billboard, February 25, 2022,
3. Daniel Sanchez, “The Richest Artists in the World Make 75%+ of Their Money from Touring,” Digital Music News, December 29, 2022
4. RIAA, “U.S. Recorded Music Revenues by Format.” Recording Industry Association of America, July 12, 2023
5. Ditto Music, “How Much Does Spotify Pay per Stream in 2025,” RSS, January 6, 2025,
6. Peoples, “Who Gets Paid”
7. Peoples, “Who Gets Paid”
8. Peoples, “Who Gets Paid”
9. Peoples, “Who Gets Paid”
10. Peoples, “Who Gets Paid”

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## ADDITIONAL REFERENCES

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11. Peoples, "Who Gets Paid"
12. Peoples, "Who Gets Paid"
13. Peoples, "Who Gets Paid"
14. Peoples, "Who Gets Paid"
15. RIAA, "U.S. Recorded Music Revenues by Format"
16. Kristin Robinson and Ed Christman, "Songwriters Earn 2024 Cost of Living Adjustment for Physical and Digital Sales," Billboard, December 18, 2023
17. "Mechanical Royalties: Everything You Need to Know," Royalty Exchange, October 1, 2024, <https://www.royaltyexchange.com/blog/mechanical-royalties-everything-you-need-to-know>.
18. Royalty Exchange, "Mechanical Royalties Guide: 2021" Royalty Exchange, February 2, 2021,
19. Royalty Exchange, "Mechanical Royalties Guide"
20. Dan Runcie, "The State of the Middle Class Musician," The Trapital, July 29, 2023,
21. Runcie, "The State of the Middle Class Musician,"
22. Runcie, "The State of the Middle Class Musician,"
23. Annie Bass and George Howard, Interview with George Howard, February 14, 2025.
24. Josh Kaufman, "What Is 'Bundling and Unbundling'?", Bundling and Unbundling - The Personal MBA, September 1, 2020,
25. Kristin Robinson, "Why the Songwriting Middle Class Has Disappeared," TikTok, September 9, 2024,
26. Kristin Robinson, "Why the Songwriting Middle Class Has Disappeared Part 2," TikTok, September 19, 2024,
27. Peoples, "Who Gets Paid"
28. Robinson, "Why the Songwriting Middle Class Has Disappeared Part 2"
29. Robinson, "Why the Songwriting Middle Class Has Disappeared Part 2"
30. Bass, Howard, "Interview with George Howard"
31. Peoples, "Who Gets Paid"
32. Annie Bass and Mark Simos, Interview with Mark Simos, February 11, 2025.
33. Berkeley Borkert and Lloyd Skinner, "Arts under Attack: A Multinational Perspective on Creative Arts Education," The Journal of Interdisciplinary Public Policy, July 2, 2022,
34. Borkert and Skinner, "Arts under Attack"
35. Jennifer Schuessler, "Arts Endowment Cuts Grants Dedicated to Underserved Communities," The New York Times, February 7, 2025,
36. Schuessler, "Arts Endowment Cuts Grants"
37. Americans for the Arts, "Facts & Figures," Americans for the Arts, October 31, 2022,
38. Annie Bass and Mark Simos, Interview with Mark Simos, personal, February 11, 2025.
39. The Violin Channel, "U.S. Democrats Introduce Bill to Increase Streaming Royalties for Musicians," The Violin Channel: World's Leading Classical Music Platform, March 14, 2024,
40. United Musicians and Allied Workers, "Make Streaming Pay," United Musicians and Allied Workers,
41. David Oxenford, "Copyright Office Commences an Inquiry into the Proliferation of Performing Rights Organizations – Looking at the Complexity of Licensing Musical Works in the United States," Broadcast Law Blog, February 13, 2025
42. Mandy Dalugdug, "Deezer Partners With SACEM to Adopt Artist-Centric Payment Model for Publishing Rights in France," Music Business Worldwide, January 15, 2025,
43. Tom Marshall, "Spotify and Universal Music Group's New Deal Pushes towards the Future of Streaming," RouteNote Blog, January 27, 2025,
44. Marshall, "Spotify and Universam Music Group's New Deal"
45. Bass, Howard, "Interview with George Howard"

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## An Interview With Roger Brown: Former Berklee President

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*Edited by Tavishi Nidadhavolu*

Roger Brown is a man with a vision. With a diverse background in philanthropy, business, and the arts, Brown founded the Salt Lick Incubator to connect emerging musicians with the industry, offering them resources, mentorship, and performance opportunities to help them succeed. Before this initiative, he had an impressive seventeen-year tenure as President of Berklee College of Music, during which time he expanded the college's curriculum, upgraded its facilities, and nurtured a new generation of influential artists and music professionals.

"We got a lot done. I think it's a better place for the work we did. I'm proud of Berklee Online, which is the world's largest online music school by orders of magnitude, the 160 building, the Berklee Valencia campus, Berklee NYC, Berklee Abu Dhabi, the merger with Boston Conservatory... we set up a bunch of institutes like the Berklee Popular

Music Institute, Jazz and Gender Justice, Global Jazz, American Roots, the Berklee Indian Ensemble, which has made us famous in India... so I think we got a lot done. I got to know many students in the process, and I think I developed empathy for the journey's beauty and challenges," said Roger.

These accomplishments, along with his wealth of knowledge and experience, contributed to Berklee's vibrancy and laid the groundwork for creating Salt Lick, a thriving artist incubator fostering artist development through mentorship, collaboration, and funding. The Berklee Music Business Journal had the chance to sit down with Roger and explore his experiences at Berklee, the evolution of Salt Lick, and his vision for the future of the music industry.

*Q: Since stepping down as President of Berklee, how has your relationship with the industry and music evolved?*

*Roger:* "The industry is sort of a necessary evil to have the art. I'm not one of those people who hates record labels or Spotify. I actually started and ran a business before Berklee, so I also understand the challenges there, and I admire people who can create successful, sustainable businesses. But what really motivates me is the music itself, and there are times when I think the industry can be really hard on the musician who's trying to find their way. It can be exploitative. There are a lot of people who dangle shiny objects in front of young musicians and take their money or worse. So, you know, I'm just an observer in a way. Salt Lick is not really, in a sense, part of the industry. We're a non-profit incubator helping young musicians. What we're trying to do is prepare them for what they're going to face.

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Not insulate them from the industry because, ultimately, they should be in the industry, and there are a lot of great people in the music business, and there are a lot of people who really want to help artists, and ultimately, I think a good record label, a good manager, a good agent, a good publisher can really be helpful. But it's a very complicated world, which I can't say I fully understand. I think it's changing fast enough that even the people who understood it ten years ago don't understand it now."

*Q: Is there a specific gap in the industry that you were trying to fill when you thought of the idea?*

*Roger:* If there's a gap we're trying to fill, it's that gap between getting your career started and something good happening. Someone discovers you on TikTok, you do a couple of shows, and they're really popular, or you put something out on streaming platforms, and people start listening to it, so you've had a little bit of success, and so the world is saying, we like you, we want more of what you do... but you probably don't have a manager yet, you don't have an agent, you can't really sell tickets to shows across the country or the world and you probably, *definitely* don't have a label or anyone who's given you an advance. You may not even have the resources to go into a legitimate recording studio, and you're probably doing everything in a DIY way.

What we're trying to do is identify artists at that stage who we think have really amazing potential and who we believe in and give them the tools they need, including grant money, so they can undertake a project and have a budget to spend on studios, producers, session musicians, etc.

Our hypothesis is that the song is the single most important thing. If you look at a lot of popular music, it's

clearly not virtuosic musicianship or virtuosic voices that are the differentiator. It's strong songs. We're doing these writing camps so that our young emerging artists can write even better songs, challenge themselves to write more and learn to collaborate. Even if they choose to be solo writers, the process of collaborating is very instructive because you pick up tips from how other people write and think. We also have this radio show on Emerson Radio - WERS that promotes our emerging artists. We have our YouTube channel, which now has 15m+ views, where we put out a new emerging artist each week. So, we have a number of tools, all of which are designed to help this emerging artist find an audience and get to the point where they can get a manager, an agent, and a publishing deal. Essentially, we leave them in the hands of a team they can work with.

*Q: So, what do you look for in these artists? What do you think stands out about the people you're working with?*

*Roger:* From the beginning, we felt like the most important thing is an artistic vision; some sense of who the person is as an artist and why anyone should care about them. We're looking for an artist who can find a niche of people who are very drawn to them. Grace Gardner is a good example. They have an avid fan base and a lot of upside potential, really good songs, a beautiful voice, and, of course, a strong artistic identity.

One of the hazards of music school is that you learn to cover a lot of territory. You learn to sing and play in different styles, and you're exposed to all these great musicians, which can sometimes make you lose your sense of who you are as an artist. But yes, number one is artistic vision. It is distinctive, powerful, and moving. Number two is the quality of songwriting and musicianship. Some successful people don't have great musicianship, so they're

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not the people we want to work with. There will always be people like that who, just for sheer charisma or beauty, people want to see or hear. But that's not where we're focused; we're not focused on popular music, hip hop, pop country, or EDM. We're focused on R&B, neo-soul, singer-songwriter, Americana, bluegrass, alt-country, and alt-folk - very authentic, distinctive types of music, usually very driven by songs, lyrics and vocals.

Our goal is to find people who can carve out a niche, make a sustainable six-figure income through making music, touring, and writing, and then sustain that for 20, 30...40 years. My argument is that music and art should come first, but then you have to figure out, given what you want to create, how you can make money from that, as opposed to 'what's the way to make the most money? How do I do that musically?' Because I think the music world sees through that, and if you're pandering, I'm not sure you'll be successful. You're more likely to succeed in doing what you love and believe in. And honestly, there is enough money to be made.

*Q: Do you think this artistic vision can be developed, or is it something you believe intrinsically exists in the people you're working with?*

*Roger:* I don't think you can manufacture it. In a way, I think it's a Socratic know-thyself process of saying, "Who am I? What do I believe in? So do I believe it's there?" I believe it's there, but I also think that once you've gone through school and lots of different life experiences, you have to excavate it and figure out what it is. There's this artist Corook, who represents an artist who knows exactly what their artistic vision is; it's just so clear in the writing

and the performance. Vince Lima, one of our other artists, had this interesting story; he told us that pre-COVID, he was trying all sorts of things and felt like he was trying to be something he was not. And then COVID happened, and he had to take a step back and look in the mirror, and he became much more honest and authentic in his writing, and that's when his career really blossomed. I think everybody searches for an artistic identity. The person we would all say has the strongest artistic identity of the last hundred years is probably Bob Dylan. In the early days, he was just an imitator of other folk artists, especially Woody Guthrie. The Beatles were the same thing; they were basically a cover band in the beginning, and their writing caught up with who they were. I think they discovered their artistic identity early.

I think it's something you have to work on and be committed to, and you have to be a little bit fearless... because if you present yourself as you are and the world rejects you, it's harder than if you're presenting, you know, some avatar of yourself. There's undoubtedly some risk and vulnerability involved. I think that's why a lot of people don't take that step. Also, it's totally legitimate to be a backup singer or an engineer or play in a cover band, where you're doing all kinds of different music and using your diverse skills. There are people who make a good living doing that, and I applaud that, but that's just a different skill set than being an artist. Being an artist is a different thing, and it requires you to, I think, really be in touch with the point of your artistry.

*Q: Who's on your team, and how are the people you work with helping these artists navigate this space?*

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*Roger:* It's an interesting thing when you get to my phase of life, you look back, and you think, when I was successful, why was that? And if I'm totally honest, it's usually not because of my skills, but because of the people who I'm connected with, who have extraordinary skills, and my strength has been rounding them up and getting them in one place and saying here's what we're going to go try to do. I don't know if you're familiar with *The Wizard of Oz*.. my role in life is to be Dorothy, and I find the scarecrow, the Tin Man, and the lion, and we set off on our journey together.

Currently, the number one person at Salt Lick is Liza Levy, the President. Liza runs the day-to-day. She's been at small and big indie labels and a big major label and has done all kinds of things, from marketing and release planning to tour management. She loves artists and music but is a little more hard-headed than I am. I like everybody and everything, so we balance each other out and make a really good team. We also have a director of operations who helps us get everyone paid, keeps the books, and helps hire the contractors we use for the Salt Lick Sessions and the radio show. And then we have a bunch of great interns who do a terrific job, way better than I ever imagined. Liza is really good at giving interns substantive work to do. For instance, we've got interns pitching our artists to be openers for artists with a similar fan base. We've been putting together little mini-tours like Sofar tours, etc. Our interns do real things that really help us, some have even gone out and road-managed tours, so they've been far more important than I imagined in amplifying what we do. There's not many of us; we're a small band of people, so they've been one of our secret weapons.

*Q: What's the best way for artists or other industry professionals to connect with you and your team to learn more about Salt Lick and get involved?*

*Roger:* We have a good website explaining the grant application criteria and how to apply for Salt Lick Sessions. We also periodically post intern openings, usually on a semester-by-semester basis. We are also a nonprofit organization, and we've been fortunate to have some people give us money, so if someone is moved by what we do and wants to help artists, they can do that. We're trying to challenge ourselves to do the same thing we tell our artists to do: hustle and work and experiment and be clear and authentic. It's a good exercise for us to be on the journey with our artists.

If you're an artist, industry professional, or music enthusiast interested in engaging with Salt Lick, there are numerous ways to participate. Whether you're looking to apply for a grant, seek an internship, or support their mission, Salt Lick constantly seeks passionate individuals to join their journey.

For more information, visit [saltlickincubator.org](http://saltlickincubator.org), check out Salt Lick Sessions on YouTube, and follow Salt Lick Incubator on Instagram to stay informed about opportunities and upcoming projects.

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## An Introduction to Music's Growing Role in the Wellness Industry

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By Anna Hudson

### Introduction

The global wellness economy is currently growing 1.5 times faster than the rate of the global consumer economy.<sup>1</sup> More and more people are prioritizing their health and well-being, and wellness companies are stepping up to fill this rising demand. As the wellness economy grows, and more companies are being created, more of a space has been made for music to become part of this growth. Music has long been proven to relieve stress, improve one's physical health, and help humans cope with grief.<sup>2</sup> This article will explore three different instances across the wellness sector where music's use is innovating & supporting wellness brands and consumers.

### Peloton – Soundtracking Workouts

Peloton is a fitness company that provides machines & independent class programs for its members. It is known for its flexibility & wide variety of options, and its at-home workout business model flourished during the COVID-19

pandemic.<sup>3</sup> Each of Peloton's classes, whether on their exclusive Bike, Tread, or online classes, feature playlists, often curated by the fitness instructors themselves.

Peloton's engagement options regarding music are quite extensive. Members can download playlists, request songs, and find new music all within the online platform - on the Bike, Tread, or on a mobile device. Peloton features its own annual music festival, "All For One", within its classes. Like typical music festivals, the company lists a lineup of artists.<sup>4</sup> "All For One" classes are themed around these artists & their music—sometimes even actually featuring them in-person at their live studio classes. Peloton's Track Love feature, introduced in 2020, allows members to "love" their choice songs on workouts they join, and automatically saves their songs to a playlist on their Spotify or Apple Music profile.<sup>5</sup>

Peloton, in order to legally feature this music, has gone on quite a journey. In 2019, the company was sued for copyright infringement. The suit, seeking over \$300 million in damages, alleged they had not obtained proper sync licenses for over 2,000 songs featured in their workout programs.<sup>6</sup> Since then, the suit has been settled, and proper licensing deals have been struck with all major record labels along with some larger independent ones.<sup>7</sup>

Peloton has clearly created one of the largest fitness-related spaces for music and wellness to interact. As of 2022, Peloton licenses over 4 million tracks.<sup>8</sup> According to Goldman Sach's *Music In The Air* report of 2023, Peloton actually paid the music industry more than TikTok did. Both of these platforms were considered to be "emerging platforms", a category making up 14 percent of the record industry's total revenue.<sup>9</sup>

As a major contributor to the recording industry's revenue,  
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Peloton is a prominent example of a growing space for music to exist and thrive within the fitness sector of the wellness industry.

### **Calm – Enhancing Wellness Apps**

Wellness apps such as Calm focus on benefiting users' mental health through meditation & mindfulness, featuring music and calming soundscapes. Calm utilizes music and artists in unique and new ways, featuring bedtime stories<sup>10</sup>, exclusive in-app music releases<sup>11</sup>, and more. Its content is created to assist users with meditation, mindfulness, and sleep. Calm's content is mostly available behind a paywall, but features several different payment plans depending on how each customer intends to use the app.<sup>12</sup> According to Sacra, a research platform for private markets, "As Calm has transitioned from largely free content to mostly paid content and improved their conversion rate, they have become the #1 health and fitness app by consumer spend around the world."<sup>13</sup>

Calm, an app with over 50 million downloads<sup>14</sup>, features personalizable music options, ranging from curated & manually created playlists to natural ambiances. Calm features over 15 different types of rain sounds, and more unique options, such as submarine ambience.<sup>15</sup> The efficacy of Calm has been tested and proven to help the mental health of college students who participated in an 8-week study while using the app. Students found that their stress levels were reduced, and mindfulness and self-compassion levels improved.<sup>16</sup>

Calm has taken on a different approach to bringing music to consumers. Through its exclusive music library, it is considered a streaming service. Though its numbers and users are far less than the likes of Spotify or Apple music, the app is certainly making an impact, generating over 135,000,000 streams to date.<sup>17</sup> Additionally, Calm has long

been utilizing the voices of popular musicians, one such being Harry Styles, who read aloud a select few of the app's bedtime stories. Calm is currently collaborating with artists like Styles who are open about and advocates of prioritizing mental health.<sup>18</sup>

Cross collaboration between musicians & wellness apps such as Calm may be another example of how music is playing a larger, growing role in the wellness industry. In a recent interview with the *LA Times*, Calm founder Michael Acton Smith noted, "The music industry feels like it's [at] a really interesting point. It's a great time to come to artists with creative ideas."<sup>19</sup>

### **Record Label-Driven Startups**

Alongside integrating their music into popular wellness apps such as Peloton, record labels are also working with startups to create more movement within the wellness industry. Universal Music Group (UMG)'s Innovation Department does just that; its self-described purpose is to "drive significant ethical and responsible innovation in the music-tech ecosystem, through the development of the next generation of diverse music-related startups and entrepreneurs who accelerate the next wave of transformation."<sup>20</sup>

One such startup UMG has worked on is Sollos: an audio-wellness app and venture currently available for free download in the UK.<sup>21</sup> The app creates curated audio sessions aimed to assist the user's focus, relaxation, and sleep.<sup>22</sup> Sollos's work is entirely backed by and proven to be successful through research.<sup>23</sup> It regularly conducts in-house research studies, and its music is chosen "based on decades of secondary, peer-reviewed scientific literature on the cognitive impact of different acoustic and compositional properties of audio."<sup>24</sup> By utilizing this research alongside algorithms, Sollos adds specialized

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sound waves to the user's music in order to assist with their wellness goals. These algorithms used by Sollos are developed internally by the Sollos team and utilize AI/machine learning to both analyze and generate audio. All of the AI used in Sollos's programming is both created and used by producers who maintain full control/ownership over the finished product.<sup>25</sup>

Because of the company's partnership with UMG, Sollos is able to utilize the label's massive roster of artists and music in its programming, never having to worry about licensing issues or potential lawsuits. Through funding and supporting ventures such as Sollos, Universal Music Group is at the forefront of collaboration opportunities between record labels and music companies, using research and catalogues of music to improve the health of people worldwide.

## Conclusion

Through cross-collaboration between music companies and wellness ventures, a growing wellness economy can provide additional spaces for music to exist and thrive. Record labels and individual musicians, through working with rising wellness companies, can provide additional channels of revenue for the recording industry, taking the form of sponsorships, additional royalties, and creative & targeted marketing opportunities. Music has long been connected to the well-being of humans across the world, and as wellness becomes more and more prioritized, music's space in an alternative industry can become more cemented.

1. Authority Magazine Editorial Staff, "Wellness Reimagined: David Knies Of PA Consulting On 5 Things That Should Be Done To Improve And ," Authority Magazine (blog), July 8, 2024, <https://medium.com/authority-magazine/wellness-reimagined-david-knies-of-pa-consulting-on-5-things-that-should-be-done-to-improve-and-372a077f7769>.

2. Rachel Hajar, "Singing," Heart Views : The Official Journal of the Gulf Heart Association 22, no. 3 (2021): 233–34, [https://doi.org/10.4103/heartviews.heartviews\\_95\\_21](https://doi.org/10.4103/heartviews.heartviews_95_21).

3. Jordan Valinsky, "Peloton Sales Surge 172% as People Scrap Gym Memberships for Home Fitness | CNN Business," accessed April 22, 2025, <https://www.cnn.com/2020/09/11/business/peloton-stock-earnings/index.html>.

4. "All for One Festival: Celebrate Community with Music & Movement," accessed April 13, 2025, <https://www.onepeloton.com/all-for-one>.

5. Peloton, "Take Your Favorite Class Tracks Anywhere With Peloton's New Feature," The Output, accessed April 13, 2025, <https://www.onepeloton.com/blog/peloton-track-love/>.

6. Chris Perone (#JaxintheSaddle), "Peloton's Extraordinary Music Licensing Journey: Not Always a Smooth Road," The Clip Out,

---

## ADDITIONAL REFERENCES

---

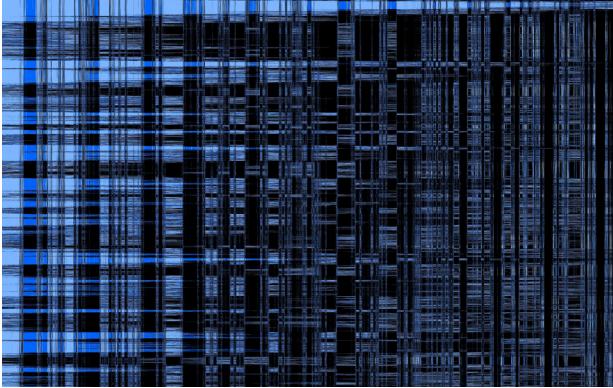
August 12, 2023, <https://theclipout.com/pelotons-extraordinary-music-licensing-journey-not-always-a-smooth-road/>.

7. Perone (#JaxintheSaddle).
8. Perone (#JaxintheSaddle).
9. Tim Ingham, “Peloton Paid the Record Industry More than TikTok Last Year, Says Goldman Sachs (and 3 More Revelations from Its Latest ‘Music In The Air’ Paper),” *Music Business Worldwide*, July 10, 2023, <https://www.musicbusinessworldwide.com/peloton-paid-the-record-industry-more-than-tiktok-last-year-says-goldman-sachs-in-latest-music-in-the-air/>.
10. “Drift off to Sleep with Harry Styles,” *Calm Blog*, accessed April 15, 2025, <https://blog.calm.com/blog/drift-off-to-sleep-with-harry-styles>.
11. “Moby Releases His New Album Exclusively on Calm,” *Calm Blog*, accessed April 22, 2025, <https://blog.calm.com/blog/moby-releases-his-new-album-exclusively-on-calm>.
12. Steven Rowe, “I Tried Calm to Help Me Sleep—This Was My Experience,” *Verywell Mind*, accessed April 13, 2025, <https://www.verywellmind.com/i-tried-calm-app-for-sleep-7565934>.
13. “Calm Revenue, Valuation & Growth Rate,” accessed April 13, 2025, <https://sacra.com/c/calm/>.
14. Cathy Applefeld Olson, “Meeting Of The Minds: Why The Music & Mental Wellness Industries Are Syncing Up Now More Than Ever,” *Forbes*, accessed April 8, 2025, <https://www.forbes.com/sites/cathyolson/2020/08/18/meeting-of-the-minds-why-the-music--mental-wellness-industries-are-syncing-up-now-more-than-ever/>.
15. Rowe, “I Tried Calm to Help Me Sleep—This Was My Experience.”
16. Jennifer Huberty et al., “Efficacy of the Mindfulness Meditation Mobile App ‘Calm’ to Reduce Stress Among College Students: Randomized Controlled Trial,” *JMIR mHealth and uHealth* 7, no. 6 (June 25, 2019): e14273, <https://doi.org/10.2196/14273>.
17. Olson, “Meeting Of The Minds.”
18. “Drift off to Sleep with Harry Styles.”
19. Olson, “Meeting Of The Minds.”
20. “Digital Innovation - UMG,” accessed April 22, 2025, <https://www.universalmusic.com/digital-innovation/>.
21. “Sollos,” Sollos, accessed April 22, 2025, <https://findsollos.com>.
22. “About,” Sollos, accessed April 22, 2025, <https://findsollos.com/about>.
23. “Science,” Sollos, accessed April 22, 2025, <https://findsollos.com/science>.
24. “Science.”
25. “Technology,” Sollos, accessed April 22, 2025, <https://findsollos.com/technology>.

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# Cloud Storage Unit: Generative AI and its Environmental Impact

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By Joe Muscarelle

## Introduction

Artificial intelligence and its closely related programs have occupied major conversations surrounding popular culture within the past year. The research and compartmentalization capabilities it offers have completely revolutionized operations in a large number of industries. This newfound concept has raised mixed feelings of apprehension and curiosity in relation to human function. In AI's early stages, it is difficult to decipher what long-term impacts these programs will have on humans and the way they operate. As of now, the music industry is a particular epicenter of conversations surrounding the future of AI within art and creation, with no clear answer on the matter. What is more tangible however, are the environmental effects when these programs are in use. This article will delve into the usage and storage of the data produced by generative AI and the subsequent environmental impacts of such programs.

## A Background on Data

To understand the environmental effects of AI, it is important to note exactly how the internet operates.

The internet's primary component is made up of data.<sup>1</sup> Everytime the internet is used, whether that be a question in a search engine, or opening an application, data is retrieved to provide these results.<sup>2</sup> Data is also produced when interacting with these websites and applications, such as uploading content.<sup>3</sup> Although not a material item, this data needs to be stored. Typically, this data is stored on physical servers solely dedicated to hosting this information.<sup>4</sup> Data centers act as warehouses for these physical servers, and are placed throughout the world, operating constantly to accommodate the widespread use of the internet.<sup>5</sup> Reforms in data management are constant, but at a baseline, all data needs to be stored physically.<sup>6</sup> Data and its relationship with generative AI spark a unique conversation surrounding the importance of storage.

## Forms of Storage

The storage of generative AI encompasses the specific technology and systems used to store, manage, and retrieve data used within these programs.<sup>7</sup> Unlike typical data frameworks, these systems need to have the capacity to handle the significant and unique workloads of AI. High-speed data access, large-scale storage capacity, and integration capabilities with AI frameworks are non-negotiable for these systems.<sup>8</sup> A simple search on an engine will connect a person with articles and resources related to the keywords typed. A simple search using Generative AI programs, however, needs to have the capability to read and write, gather information over a multitude of different sources, and create a curated answer for one specific question or prompt - all while doing the research that a person would have had to do themselves.<sup>9</sup> AI workloads commonly utilize and require simultaneous

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access to multiple streams of data, making their storage systems a unique process of data facilitation.<sup>10</sup> As mentioned before, these hoards of data still require storage at physical data centers. While a similar base structure to typical storage locations, computing power and I.T. structures differ vastly in AI data centers.<sup>11</sup> For example, CPU's, or central processing units, are more commonly used within conventional data centers, whereas GPU, or graphics processing units, are used in AI data centers, and oftentimes require more square footage.<sup>12</sup> These provide advanced storage, energy, and cooling capabilities, needed solely for the sheer velocity of data from AI programs. Due to uncertainties around the rising demand, creation of these warehouses, and future expansion plans, estimating the precise size of all data centers is difficult. However, CEO of Maryland based Ciena, Hannover's Gary Smith, remarks on the size of data centers. In an interview with *The Technology Letter* in December 2024, he stated "You have data centers that are over two kilometers", noting how some centers are multiple stories, and are much more significantly sized than he had known was possible.<sup>13</sup> Conversations around the sheer size creates curiosity around the location of these data centers. These warehouses are strategically placed at many locations around the globe.<sup>14</sup> Notable hubs include tech development epicenters such as Silicon Valley and Northern Virginia within the United States, with the nation holding the title for the most data centers in the world.<sup>15</sup> Other notable locations include European countries such as Germany and the United Kingdom, along with China leading in Asia.<sup>16</sup>

### **Environmental Effects**

These data centers within the generative AI sphere specifically do a great deal to contribute to climate change. Primarily, these warehouses have massive energy demands.

Since AI data storage operates at a higher velocity, their energy use and subsequent environmental impact left behind is significant.<sup>17</sup> Typically cooling systems account for a majority of these centers energy use.<sup>18</sup> According to the US Department of Energy, the largest data centers that operate up to tens of thousands of storage machines, utilize 100 megawatts of energy.<sup>19</sup> This is enough power to sustain around 80,000 households within the United States.<sup>20</sup> These cooling systems also use significant amounts of water. For example, a 1 megawatt data center is estimated per year to use up to 26 million liters of water. This is equivalent to the yearly water use of 62 families within the United States. Furthermore, as of December 2024, the current capacity for data center wattage within the United States is 40,000 megawatts.<sup>21</sup> Water usage even within recreational use of chat-box AI programs is significant. A report by the Washington Post stated that a 100-word response from ChatGPT, a leading generative A.I chat-box tool, uses 519 milliliters of water and 0.4 kilowatt-hour of energy.<sup>22</sup> While estimations of environmental impacts are constantly evolving, it strikes a chord surrounding the integration of such programs within the arts.

### **Music's Involvement**

What does this mean for music? Opinions on this matter are subjective, and the implications of generative artificial intelligence and its impact on the environment have created divided opinions. These conversations become particularly complicated, especially when considering the crossroads between art and AI. Many musical organizations are dedicating time and resources to researching the negative environmental impacts of AI. *The New Interfaces for Musical Expression* particularly has been facilitating research on new technologies for performance, those of which including AI-powered

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instruments, and in general how to build more sustainable practices within the music industry given the recent widespread use of these systems.<sup>23</sup> Others seem to embrace these technologies, Imogen Heap notably being an open supporter in recent years. Throughout the beginnings of popular AI systems, Heap had been in the process of creating her own program named “Mogen”, a voice replicating model and information center for the artist. Initially, this was a premium application for dedicated fans, where “Mogen” could generate responses and opinions on certain topics fans requested, based on a large sum of data from Heap, including past interviews and quotes. Essentially, this was a generative AI search engine and chat-box, solely for Imogen Heap. In a 2024 interview with The Guardian, she stated “Anything I’ve ever said or done,

I want Mogen to have access to that,”<sup>24</sup> Recently however, she has expanded upon her use of the program, utilizing it within her music for the first time in 2024 on a featured remix of “false god” by Karin Ann. While Heap still produced the record, her vocals are completely artificially generated, having marked her first musical pursuit with AI.<sup>25</sup> While the conversation surrounding the ethics of art and generative AI are ongoing, it is clear that the use of these programs utilizes significant amounts of energy and resources, in turn negatively impacting the environment. It is unclear what the long term use of these programs could mean for climate change around the world, and the development of music creation within the industry.

1. “How Does the Internet Work?,” accessed April 22, 2025, <https://web.stanford.edu/class/msande91si/www-spr04/readings/week1/InternetWhitepaper.htm>.
2. “Information Retrieval: The Great Search for Knowledge,” IONOS Digital Guide, December 20, 2017, <https://www.ionos.com/digital-guide/online-marketing/search-engine-marketing/information-retrieval-how-search-engines-retrieve-data/>.
3. “What Is Uploading? | Definition from TechTarget,” WhatIs, accessed April 22, 2025, <https://www.techtarget.com/whatis/definition/uploading>.
4. Edward Mercer, “What Is an Internet Data Center Server & How Does It Work?,” Chron - Small Business, January 12, 2013, <https://smallbusiness.chron.com/internet-data-center-server-work-60422.html>.
5. “Four Primary Types of Data Centers | Data Center Virtualization - Alibaba Cloud,” accessed April 22, 2025, <https://www.alibabacloud.com/en/knowledge/tech/four-primary-types-of-data-centers? p lc=1>.
6. “Cloud Storage vs. On-Premises Storage: A Comparative Analysis,” Calsoft Blog (blog), March 29, 2024, <https://www.calsoftinc.com/blogs/cloud-storage-vs-on-premises-storage-a-comparative-analysis.html>.
7. “What Is AI Data Storage? | Supermicro,” accessed April 22, 2025, <https://www.supermicro.com/en/glossary/ai-data-storage>.
8. “What Is an AI Data Center? | IBM,” February 21, 2025, <https://www.ibm.com/think/topics/ai-data-center>.
9. Matthew Edgar, “Generative AI vs. Traditional Search: Technical Differences,” Matthew Edgar (blog), March 3, 2025, <https://www.matthewedgar.net/generative-ai-vs-traditional-search-technical-differences/>.
10. “What Is AI Data Storage?”
11. “Storage Technology Explained: AI and Data Storage | Computer Weekly,” ComputerWeekly.com, accessed April 22, 2025, <https://www.computerweekly.com/Storage-Technology-Explained-AI-and-Data-Storage>.

---

## ADDITIONAL REFERENCES

---

computerweekly.com/feature/Storage-technology-explained-AI-and-the-data-storage-it-needs.

12. Ben Atherton, "The Square-Foot Race for AI Space: Physical Requirements for AI Data Centers," AFL - Hyperscale solutions, October 21, 2024, <https://www.aflhyperscale.com/articles/physical-requirements-for-ai-data-centers/>.

13. "AI Data Centers Are Becoming 'mind-Blowingly Large' | ZDNET," accessed April 22, 2025, <https://www.zdnet.com/article/ai-data-centers-are-becoming-mind-blowingly-large/>.

14. "Where Are Most Data Centers Located? | Top Markets Worldwide," accessed April 22, 2025, <https://blog.enconnex.com/where-are-most-data-centers-located-top-markets>.

15. "Where Are AI Data Centers Located? Exploring Key Global Markets - C&C Technology Group," March 21, 2025, <https://cc-techgroup.com/where-are-ai-data-centers-located/>.

16. Marcus Lu, "Ranked: The Top 25 Countries With the Most Data Centers," Visual Capitalist, January 21, 2025, <https://www.visualcapitalist.com/ranked-the-top-25-countries-with-the-most-data-centers/>.

17. "Explained: Generative AI's Environmental Impact," MIT News | Massachusetts Institute of Technology, January 17, 2025, <https://news.mit.edu/2025/explained-generative-ai-environmental-impact-0117>.

18. "The Basics of Liquid Cooling in AI Data Centers," accessed April 22, 2025, <https://flexpowermodules.com/the-basics-of-liquid-cooling-in-ai-data-centers>.

19. "Annual Energy Outlook 2023 - U.S. Energy Information Administration (EIA)," accessed April 22, 2025, <https://www.eia.gov/outlooks/aeo/index.php>.

20. "Understanding Data Center Energy Consumption - C&C Technology Group," January 22, 2023, <https://cc-techgroup.com/data-center-energy-consumption/>.

21. Lakshmee Sharma, "AI Data Centers Threaten Global Water Security," Lawfare, December 19, 2024, <https://www.lawfaremedia.org/article/ai-data-centers-threaten-global-water-security>.

22. "ChatGPT Energy Consumption Visualized - BEUK," February 17, 2025, <https://www.businessenergyuk.com/knowledge-hub/chatgpt-energy-consumption-visualized/>.

23. Fabio Morreale, "Where Does the Buck Stop? Ethical and Political Issues with AI in Music Creation," Transactions of the International Society for Music Information Retrieval 4, no. 1 (July 20, 2021), <https://doi.org/10.5334/tismir.86>.

24. Katie Hawthorne, "'I'm Empowering My Song to Go and Make Love with Different People': Imogen Heap on How Her AI Twin Will Rewrite Pop," The Guardian, October 16, 2024, sec. Music, <https://www.theguardian.com/music/2024/oct/16/im-empowering-my-song-to-go-and-make-love-with-different-people-imogen-heap-on-how-her-ai-twin-will-rewrite-pop>.

25. "Imogen Heap Uses Her AI Voice Model, Ai.Mogen, to Create a Remix for the First Time," MusicTech, accessed April 22, 2025, <https://musictech.com/news/music/imogen-heap-ai-voice-model-ai-mogen-karin-ann/>.



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