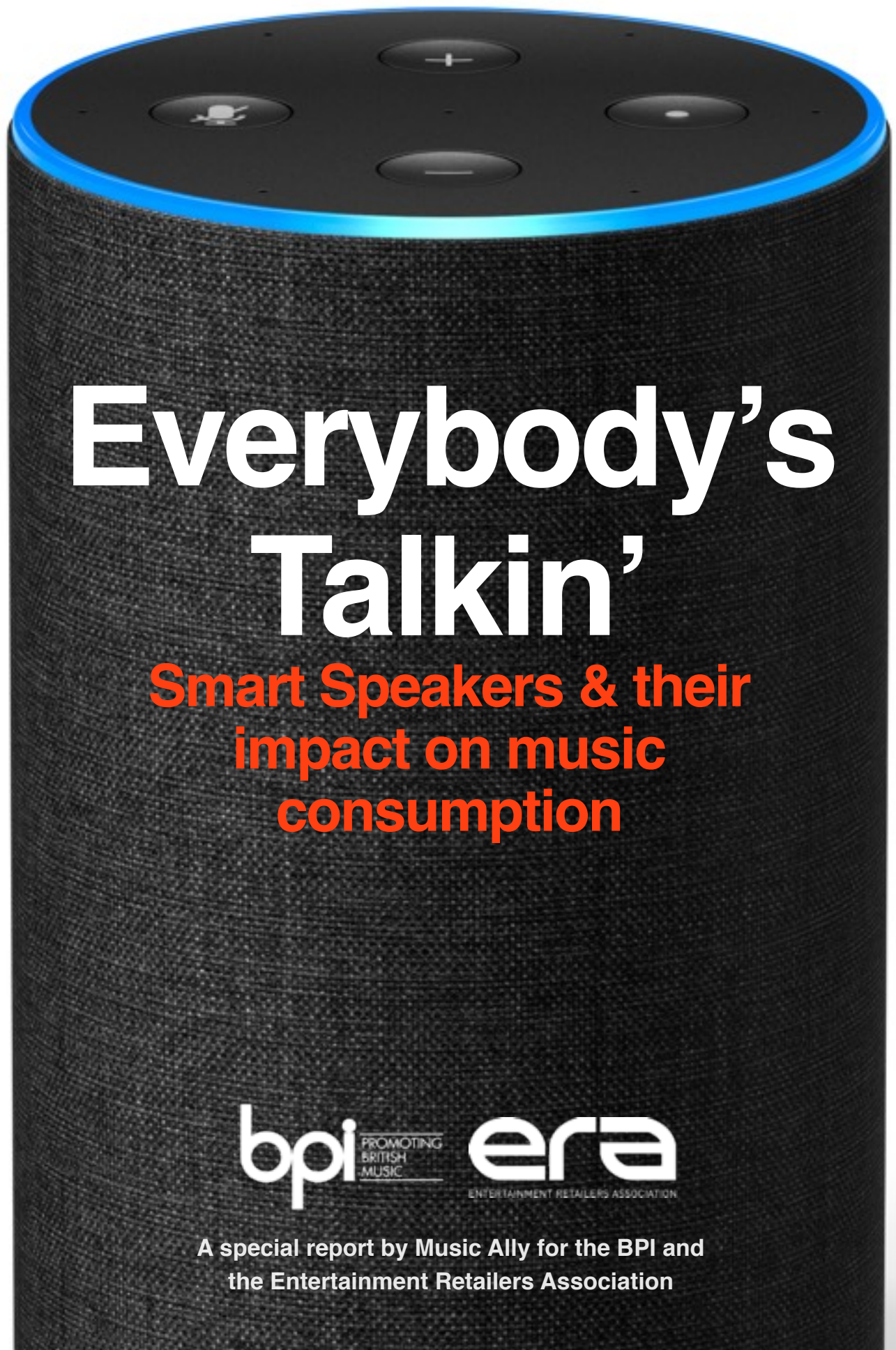




Everybody's Talkin'

**Smart Speakers & their
impact on music
consumption**

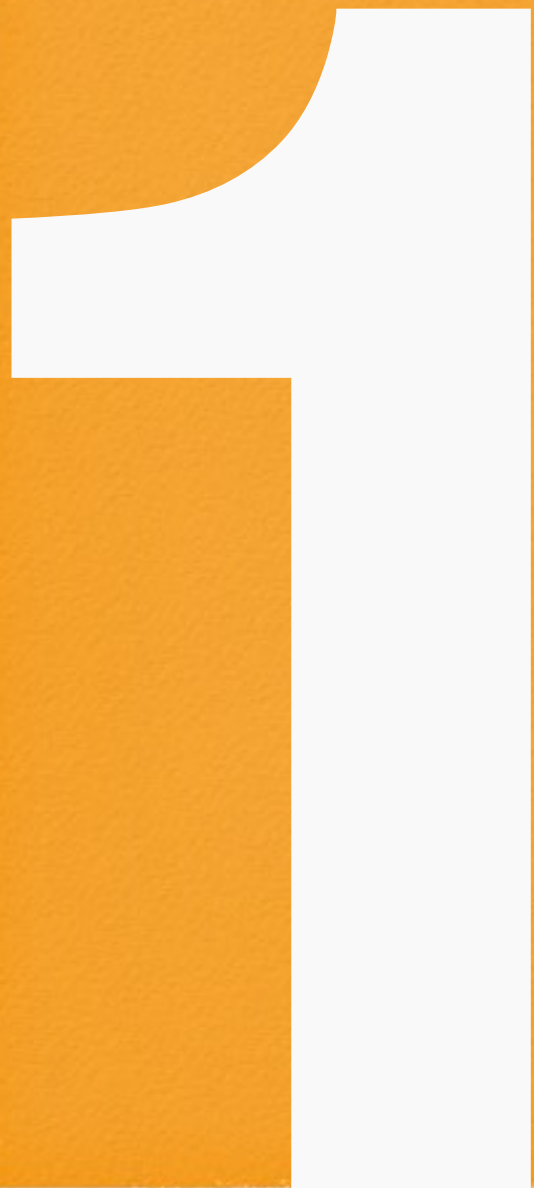


A special report by Music Ally for the BPI and
the Entertainment Retailers Association

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Forewords



Geoff Taylor, chief executive of the BPI, and Kim Bayley, chief executive of ERA, on the potential of smart speakers for artists and the music industry

Forewords



Kim Bayley, CEO
Entertainment Retailers Association

Music began with the human voice. It is the instrument which virtually all are born with. So how appropriate that the voice is fast emerging as the future of entertainment technology.

The iTunes Store decoupled music buying from the disc; Spotify decoupled music access from ownership: now voice control frees music from the keyboard. In the process it promises music fans a more fluid and personal relationship with the music they love. It also offers a real solution to optimising streaming for the automobile.

Naturally there are challenges too. The music industry has struggled to deliver the metadata required in a digital music environment. Voice takes those challenges to another level.

It also poses challenges to individual companies. None of the dominant pureplay physical retailers achieved the same position in downloads. The dominant download player has not yet achieved a comparable position in streaming. Everyone is determined to stake their claim to the voice-controlled future.

Over the past decade ERA's members have reshaped the entertainment industry, benefitting both consumers and content owners. Thanks to new digital services, an industry in rapid decline is now back to growth. If ever it was in doubt, it is clear that innovative new services drive music listening and music revenues. Working hand-in-hand with our colleagues at the BPI, we are delighted to sponsor this exclusive glimpse into a voice controlled future.



Geoff Taylor, CEO
BPI and BRIT Awards

Smart speakers are poised to kickstart the next stage of the music streaming revolution. With fans consuming more than 100 billion streams of music in 2017 (audio and video), streaming has overtaken CD to become the dominant format in the music mix.

Smart speakers will undoubtedly give streaming a further boost, attracting more casual listeners into subscription music services, as music is the killer app for these devices.

Playlists curated by streaming services are already an essential marketing channel for music, and their influence will only increase as AI-powered voice assistants help to select what tracks to play.

We don't yet know how the new voice interface will affect music discovery, but it's likely to have a transformative impact, and labels will need to develop new metadata and applications (or "skills") that can surface new releases to fans in an environment characterised by more "lean-back" listening.

Voice control is the next big thing - bringing fresh opportunities for subscription and e-commerce, but also new challenges in terms of how fans access music and how artists and labels in turn engage with them.

We hope this report, produced with our friends at ERA, will help promote the debate about the impact of this exciting new technology.

Executive Summary

2

Just over three years in to the smart speakers market – Amazon launched its first Echo device in November 2014 – this category is the talk of the music world, with fellow tech giants Google and Apple already joining the fray

Executive Summary

- The term 'smart speaker' describes an internet-connected speaker controlled by voice commands, with an artificial intelligence (AI) assistant responding to the owner's requests.
- Amazon's Echo with its Alexa assistant was the first to launch in late 2014, but it has since been joined by Google Home (with Google Assistant) and Apple's HomePod (with Siri). Sonos, Harman Kardon, Baidu, Alibaba, Xiaomi and Line have also launched smart speakers, while consumer-electronics firms like Sony, LG and Panasonic have used Google Assistant as their devices' brains. Spotify and Facebook are both rumoured to be exploring this area.
- Analysts' estimates for 2017 suggest that between 24m and 27m smart speakers were sold that year globally, with a lucrative Christmas period fuelled by discounts and aggressive marketing from Amazon and Google.
- According to research firm Futuresource, 7% of UK households owned at least one smart speaker by the end of 2017, after shipments of 2.8m devices in the UK that year. The ERA / BPI Entertainment Consumer Tracker found that in November 2017 that 4.2% of UK respondents said they'd listened to music on a smart speaker in the last three months – but this more-than doubled to 8.7% in March 2018.
- Thus far, the US has taken the lion's share of smart-speaker sales including sales before 2017. Futuresource estimates that 13% of US households had at least one smart speaker at the end of 2017: 11% with an Echo and 2% with a Google Home. Meanwhile, NPR and Edison Research claim that by January 2018, 39 million Americans owned a smart speaker.
- Analyst predictions for sales in 2018 are bullish: Canalsys forecasts that 56.3m smart speakers will be sold globally this year, while Loup Ventures predicts around 58.3m units.
- Further on, Juniper Research expects smart speakers to be installed in 55% of US households by 2022 – 175m devices in 70m homes. Meanwhile, Accenture claims that these devices will be owned by one third of the online population in China, India, Brazil and Mexico as soon as the end of 2018.
- Early buyers' satisfaction with smart speakers is high, although this may be mainly because they are being used for

simple music and information tasks. Indications so far are that price is the most important factor in buying decisions, ahead of voice-recognition accuracy, audio quality and access to a range of music-streaming services.

- Music is the most popular use case for smart speakers, and studies suggest that people listen to more audio than they did before purchasing one of these devices. One study found that 34% of Echo and Home owners spend more than four hours a day listening to music, compared to 24% of the general population. 48% of these smart-speaker owners said that they had a subscription to a music-streaming service.
- This poses challenges for traditional radio: one study found 39% of smart-speaker owners saying that time spent listening to the device was replacing time spent listening to AM/FM.
- Smart speakers may be fuelling more casual interaction with music. Rather than asking for a specific album or artist, queries like 'Alexa, play music' are common, leaving it up to the personalisation algorithms of the speaker's assistant to generate a stream of music. Amazon, Google and Apple are also creating algorithms to respond to conversational commands like 'play party music from the 80s'.
- These devices are highlighting an important challenge for the music industry: having faced challenges in the past to supply accurate metadata to streaming services on songwriters and

publishers related to individual recordings, now labels must grapple with the task of creating metadata around genre, mood and possible activities (from working out to trying to get to sleep) to ensure their tracks are surfaced by the voice assistants when responding to more-casual commands.

- Smartphones have apps, and smart speakers have 'skills' or 'actions' – applications created by developers and companies that can be used by listeners. There's an opportunity here for labels to launch skills for their artists – or for wider swathes of catalogue – but at the time of writing, few have done it. 2018 will be an important year for labels to experiment.
- Amazon, Google and Apple own the three most prominent smart-speaker brands in the west, while also running their own music-streaming services. Pureplay streaming services Spotify and Deezer are pressing for regulators to ensure that the tech giants do not become 'gatekeepers' rather than 'gateways' to listeners, if they prioritise their own services as their voice assistants' capabilities improve.
- Smart speakers are taking music-streaming into a new world of shared listening, rather than individual consumption through a computer, smartphone or tablet. As their understanding of the residents' different tastes improves, so this will affect their recommendation algorithms – and will perhaps open opportunities for labels to create skills / actions that focus on multiple listeners at once.

Devices Guide

3

From Echo, Google Home and HomePod to the emerging devices in Japan and China: what smart speakers are available now – and what may be coming later in 2018?

Amazon Echo

“Amazon has a new product that doesn’t really have any current equivalent from any other tech company,” wrote tech-industry site [TechCrunch](#) in November 2014, when Amazon unveiled its first Echo speaker as a product that people could only buy after receiving an invitation.

That original device has since been updated as the second-generation Amazon Echo, as part of a family of products that also includes the Echo Dot, Echo Plus, Echo Show and Echo Spot. Meanwhile, the Alexa voice assistant that powers them can also be accessed from smartphones, tablets, televisions and cars, among other products.

The second-generation **Echo**, which currently costs £89.99 in the UK, streams music from services including Amazon’s own Prime Music and Music Unlimited, but also Spotify, Pandora (in the US) and other services. Alexa can also set alarms; provide weather, traffic and sports results; manage to-do lists; control other smart devices around the home; and make voice calls to other Echo devices, as well as the Alexa mobile app. It can also be used to shop on Amazon itself.

The three newer Echo devices all use Alexa, but are targeting different use cases and price points. The **Echo Dot** is a £49.99



miniature version which can also connect to existing (non-smart) speakers around the home. The **Echo Plus**, meanwhile, offers better audio quality as its main draw, for £139.99.

Amazon was also the first company to add screens back in to its smart speakers. The **Echo Show** (£199.99) includes a

seven-inch display and a front-facing camera, offering features including video calls and the ability to watch shows and films from Amazon's video-streaming service. It also offers 'video flash briefings' from partners including the BBC and the Telegraph in the UK.

Finally, the **Echo Spot** (£119.99) is more of an alarm-clock sized device, with a round 2.5-inch screen that can switch to a clock face, but is also capable of video calls, displaying lyrics and other visual features.

Amazon has guarded specific numbers for Echo sales carefully, but in early January 2018 the company said that it sold "tens of millions" of Alexa-enabled devices worldwide over the Christmas period. In December 2017 the company said Echo devices were now available in 89 countries, with India and Japan among the latest additions.

Like Google and Apple, Amazon has its own music-streaming services that can be accessed by Echo and Alexa. Prime Music, with ad-free access to a catalogue of around 2m songs, is bundled in to Amazon's Prime membership program.

Amazon Music Unlimited, meanwhile, costs £7.99 a month or £79 a year for Prime members and £9.99 a month for everyone else, offering a full 40m-song catalogue. There's a family plan for up to six people costing £14.99 a month or £149 a year.



Amazon's most inventive licensing approach has been its 'Echo Plan': £3.99 a month to get Music Unlimited on a single Echo or Echo Dot, but no other devices. It's the first example of a music-streaming subscription tied to an individual speaker.

Google Home

Google revealed its opening gambit in the smart-speaker market in May 2016 at its I/O developer conference, when it unveiled the first Google Home. The company was bullish from the off. “We’re competing feature for feature in most of the areas. And in the areas that really matter to the consumer, we’re going to do a better job,” said its VP of product management Mario Queiroz at the time.

Google’s equivalent to Alexa is Google Assistant, which was first announced at the same conference. It offers a similar blend of musical commands, responding to search queries and other voice-assistant tasks.

Like the Echo, Google’s smart speaker has expanded into a family of products, albeit one (not yet) offering built-in screens: the core Google Home has now been joined by the Google Home Mini and Google Home Max.

The **Google Home** costs £129 in the UK, and offers a similar array of features to the second-generation Amazon Echo in terms of fielding voice enquiries, playing music and controlling other smart-home devices. It also works with Google’s Chromecast technology, to stream shows, films and music through the owner’s TV and other speakers.



The **Google Home Mini** is cheaper (£49) and corresponds to Amazon’s Echo Spot: a smaller speaker designed more for bedside tables and other rooms where audio quality isn’t so important. It offers all the Google Assistant-powered features of the larger model though. Finally, the **Google Home Max** (\$399 in the US, but not yet available in the UK) is larger – more akin

to one of Sonos' flagship speakers – with much better audio quality. Besides Sonos, its key equivalents from other companies are Apple's HomePod and Amazon's Echo Plus.

While hard figures have not been announced by Google for the total number of Home speakers sold so far, in January the company said that it “sold more than one Google Home device every second since Google Home Mini started shipping in October” – which by Music Ally's calculations meant around 6.7m units sold in that period.

At a conference the same month, Spotify's chief marketing officer Seth Farbman claimed that “Home had a wonderful, wonderful fourth quarter, from what I'm understanding and data I'm seeing” while research firm Consumer Intelligence Research Partners (CIRP) claimed that Google Home accounted for 40% of smart speakers sold in the US over the holiday season.

Just as Alexa has skills, so Google Assistant has ‘actions’, and a program to encourage companies and developers to build them and thus add extra functionality to its speakers and other compatible devices. In early 2018, Google launched [a directory page](#) for these actions.

Apple HomePod

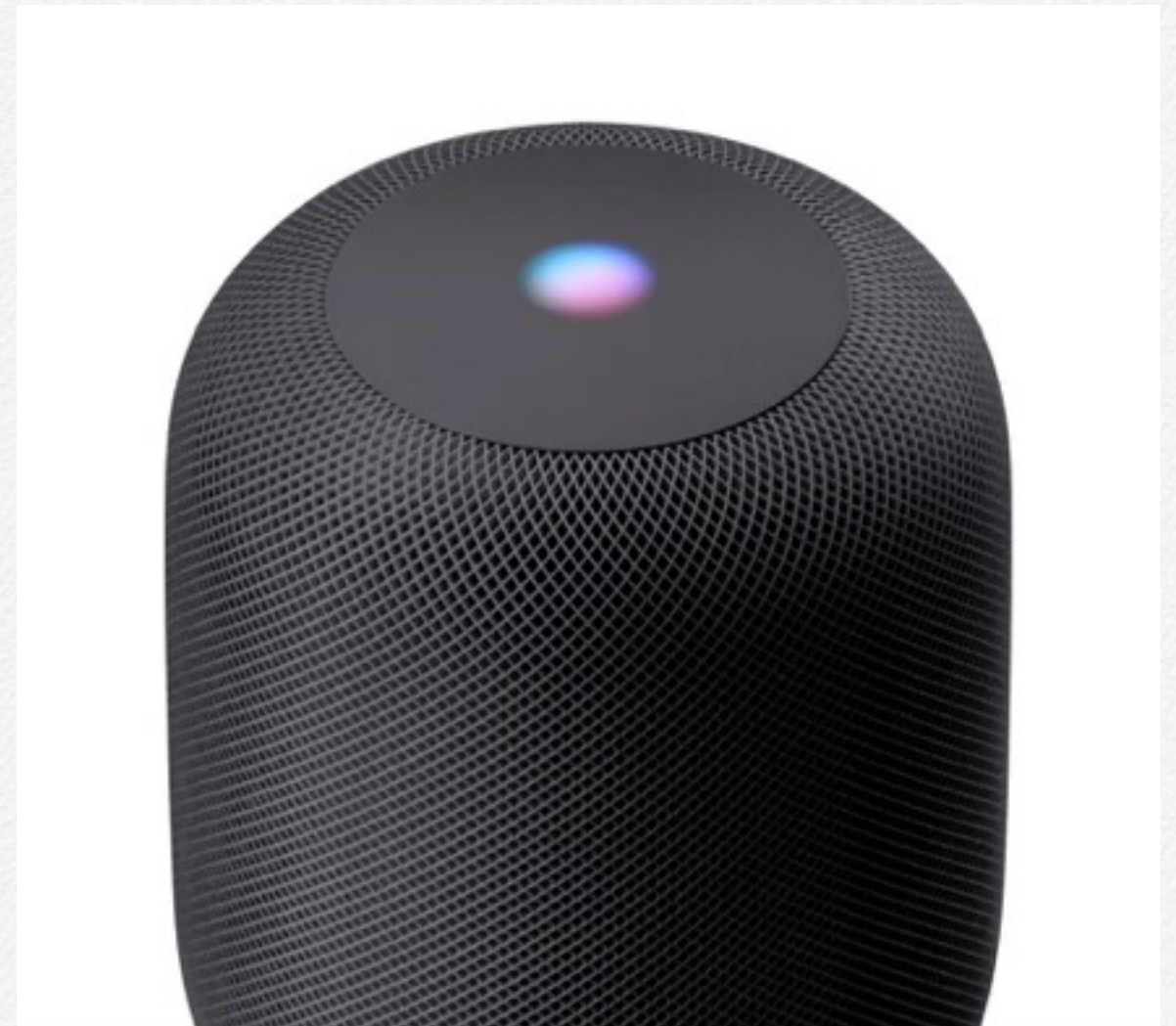
Apple biding its time to enter a new product category, but then aiming to do it better than anyone else? Where have we seen that before?

From MP3 players to smartphones, tablets, set-top boxes and smartwatches, Apple prides itself on being a quality player, rather than always the first-mover or even the biggest seller. Its **HomePod** smart speaker fits in to that strategy.

Apple revealed the speaker at its WWDC developer event in June 2017, with the name providing a direct link to its original music device (the iPod) while also scotching the pre-show rumours that its name would be 'Siri Speaker'.

The HomePod costs £319 in the UK, and has so far been launched in the US, UK, and Australia, with France and Germany due to follow in the near future. It's shorter and squatter than an Echo, but pitched firmly as the best-sounding smart speaker of all, with Apple having designed in-house a number of its internal audio components.

HomePod's voice-assistant has been around for rather longer, though: Siri made its debut as an independently-developed iOS app in February 2010; was quickly acquired by Apple; and then



relaunched as part of its iOS software in October 2011. As with Alexa and Google Assistant, Siri can field music-related commands, as well as search queries; requests for news, weather and sports results; and it can control other compatible devices around the home.

It's as core a part of iOS and Apple's other devices – the Apple TV set-top box for example – as Alexa has become for

Amazon's tablets and Fire TV stick, and Google Assistant for Google's range of hardware.

The HomePod is associated with Apple's own music-streaming service Apple Music, which can be accessed via Siri voice commands and also controlled from a nearby iOS device. It can also access owners' iTunes libraries of music downloads, as well as podcasts.

The device is the least open to other streaming services of the major smart speakers, in that there is no option to (as listeners can for Echo and Google Home) set an alternative service like Spotify or Pandora as the default. That said, it is inaccurate to say that HomePod does not work with non-Apple streaming services: their apps running on an iOS device can connect to the HomePod using Apple's AirPlay technology, and thus play music through it.

Sonos One

Billed as “the smart speaker for music lovers” the **Sonos One** is the first attempt by Sonos – which was a pioneer in internet-connected speakers – to respond to the threat posed by the Echo and its ilk.

Sonos announced the £199 device in October 2017 as an update to its existing speaker of the same name. Sonos’ twist on the category is to support multiple voice-assistants from the big-tech companies: it launched with Alexa, with the promise that Google Assistant would follow in 2018.

The device can also be controlled using Sonos’ mobile app, which ensures support for a range of streaming services: Spotify and Apple Music included. The pitch is for a ‘Switzerland’-style neutrality to both streaming services and voice-assistants, with Sonos stressing regularly that it has no ambitions to compete with those services itself.

The company has shown some teeth in the way it seeks to compete with other hardware, though: as the launch of Apple’s HomePod neared, Sonos rolled out an offer for people to buy two Sonos Ones for £349 – nearly matching the price of a single HomePod, and not-so-subtly reminding people of its device’s multi-room capabilities.



Other Smart Speakers

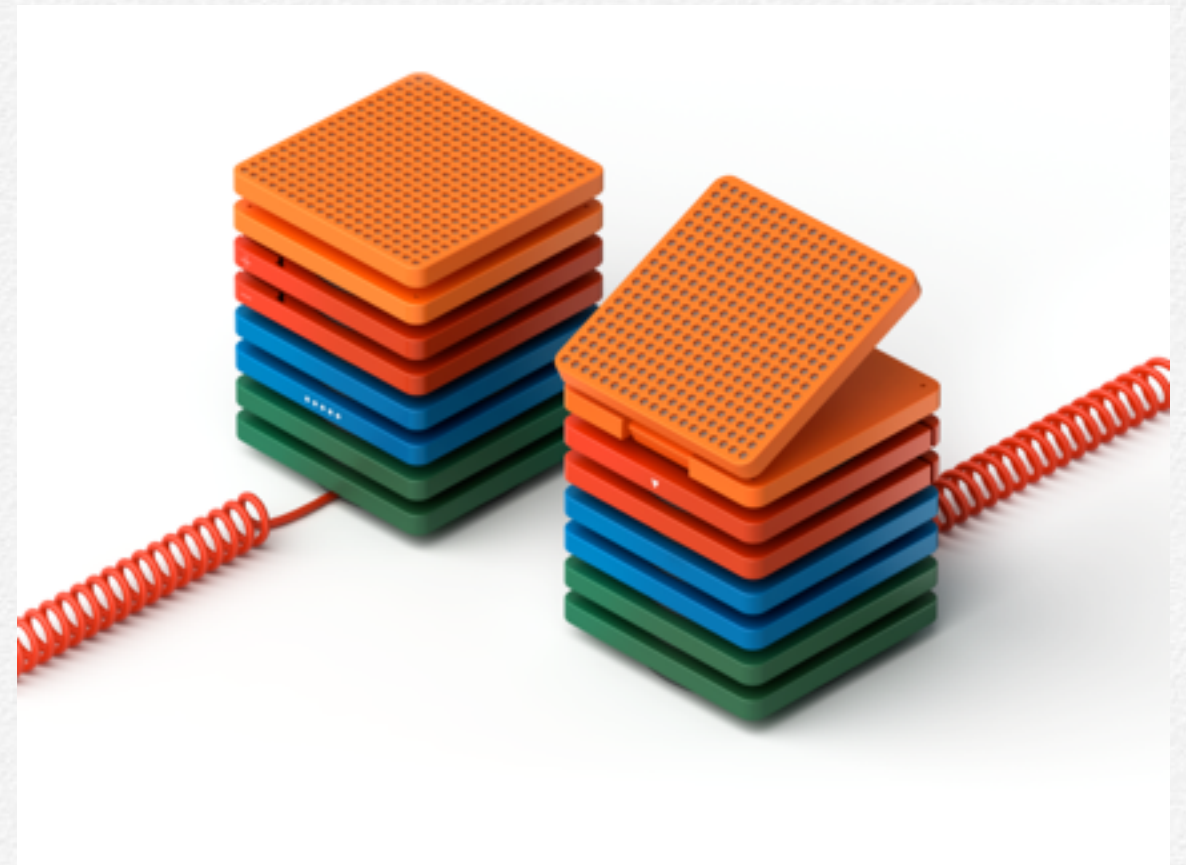
China and Japan join the race

It would be a mistake to assume that the western tech giants will dominate the smart-speakers market. In China and Japan, for example, technology companies have also launched devices, or are preparing to.

Chinese search giant Baidu, for example, unveiled its **Raven H** speaker in November 2017. Here, too, Baidu has its own voice assistant called DuerOS, which launched earlier in 2017. The speaker can play music as well as search the web and access other online services.

Elsewhere in China, e-commerce firm Alibaba announced its **Tmall Genie** smart-speaker in July 2017, using its own AliGenie voice assistant. As with Echo, shopping is very much a core feature here: the speaker can be used to buy from Alibaba's Tmall shopping site, but it can also play music, search the web and control smart-home devices.

Tencent, which is by far the biggest player in the Chinese music-streaming market, launched its own Xiaowei voice-assistant in June 2017, but not any dedicated hardware. However, the company partnered with Beijing Shuzijiaoyuan



Technology Co to design a device called the **Qinjian M10**, which was unveiled in January 2018.

Elsewhere in China, hardware firm Xiaomi shipped its first smart speaker, the **Mi AI**, in August 2017 with a sub-\$50 price. But by far our favourite name for a smart speaker was coined by another Chinese company, Beijing LingLong Co. The **LingLong DingDong** launched in November 2016, and was the first Chinese-speaking smart speaker available.

While Japan is an important market for Amazon's Echo range, it is also spawning its own smart speakers. Line, which built its

brand based on its popular messaging app, unveiled its first smart speaker in June 2017. The **Wave** used Line's own Clova voice assistant, and used its Line Music streaming service as its musical source.

Consumer electronics veterans look for partners

One important point about the smart speakers market is that the voice-assistant technologies are as important as the hardware. That's why a number of traditional consumer electronics companies are choosing to partner with Amazon and Google to provide the voice assistants for their products in this category, rather than developing their own.

Examples include Sony's **LF-S50G**, LG's **ThinQ** and Panasonic's **SC-GA10**, which all use Google Assistant – “Panasonic Sound, Google Brain” as the marketing slogan for the latter device puts it.

The **JBL Link View** and **Lenovo Smart Display** were among the other Google-powered devices announced at the CES technology show in Las Vegas this January, while Alexa found its way into speakers like Anker's **Eufy Genie** too.

Well-known hi-fi maker Harman Kardon opted for another partner in the big-tech world: Microsoft. Its **Invoke** smart speaker uses the latter company's Cortana voice-assistant, and was one of the first devices in the market to target audiophiles

with better sound. Another hi-fi firm, Onkyo, opted for a partnership with startup SoundHound, which has developed the Houndify voice-assistant.



Kygo, kids and the blockchain

Back in the west, we have even seen one musician launch their own smart speaker. Norwegian EDM star Kygo announced plans for a device called the **Kygo B9/800** in January 2018, as part of his 'Kygo Life' range of merchandise and gadgets. The device will use Google Assistant for its voice features.

Children are the target market for British startup **Yoto**, which was co-founded by Ben Drury, former CEO of B2B digital-music

company 7digital. The company raised more than £33k in 2017 on crowdfunding site Kickstarter, with the Yoto due to ship to its first backers in June 2018. To preserve the privacy of its young users, it won't offer voice-control or open internet connectivity.

Finally, and more quirkily, blockchain-technology startup Musicoin is working on a smart speaker called Volareo, which it says will use a 'tips' system that rewards artists with the company's cryptocurrency if listeners clap when their music is playing.

Facebook, Samsung... and Spotify?

Facebook has has been the subject of persistent speculation that it is preparing to enter the market. In January, technology-news site Cheddar claimed that Facebook's first product would be a screen-equipped speaker codenamed **Portal**, which would be a rival for Amazon's Echo Show. Video-chat with friends and family is expected to be the focus.

Samsung is also preparing its play. In August 2017 the company's mobile division's president DJ Koh confirmed that it was working on a speaker using Samsung's own Bixby voice assistant, which would debut "soon". Despite speculation that this meant an early-2018 release, by late February Koh was saying that the speaker would not be available until the second half of the year.

Plus, of course, there is Spotify. The fact that the main western smart-speaker makers – Apple, Amazon and Google – are also three of its main rivals in music-streaming is a key competitive challenge for Spotify, as we'll explain later in this report. Launching its own hardware would be one way to tackle this challenge head-on.

In February 2018, Music Ally noticed a new job advertisement claiming that "Spotify is on its way [to] creating its first physical products and set-up an operational organisation for manufacturing, supply chain, sales & marketing" with duties including to "manage the supply chain, demand and forecast & inventory".

Many journalists picking up our story jumped to the conclusion that an Echo-style smart speaker is on the way. There remains the question of where it will get its voice assistant, however: Spotify could license Alexa, Google Assistant or Cortana; work with (or even buy) a startup like Houndify; or develop its own voice assistant in-house.

In March 2018, it emerged that Spotify *is* testing its own system of voice commands within its mobile app, with commands like 'Play My Discover Weekly' and 'Play Today's Top Hits'. While this will be useful for the app – for example when it's being used while driving – it's also a pointer towards potential hardware ambitions for the company.

Market Data

4

How many smart speakers have been sold so far, and what predictions are analysts making for how the market will grow?

Speaker sales and future forecasts

According to research firm Futuresource Consulting, 26.6m smart speakers shipped globally in 2017, a year-on-year increase of 212%. It claims that Amazon devices accounted for 74% of those shipments, and Google's for 16%.

Other analysts are broadly in agreement with these estimates: Strategy Analytics said in October 2017 that it expected 24m smart speakers to ship last year, including nearly 12m in the final quarter alone. IHS Markit, meanwhile, estimates that 2017 shipments of these devices were 27m units.

“Smart speakers are moving towards the 100 dollar sweet spot, used as loss-leaders to populate homes with what could become home retail terminals, linking consumers to a supply chain that opens the door to a range of services,” said Futuresource's Simon Bryant in January 2018. “The winner of today's smart speaker land grab could be the owner of tomorrow's consumer.”

Futuresource estimates that the US and UK were the key markets for smart speakers in 2017, accounting for 89% of global shipments between them.

The company claims that 7% of UK households owned at least one smart speaker at the end of 2017, after shipments of 2.8m devices in the UK that year – 75% of which were Amazon Echos.

Some other estimates are higher. Strategy Analytics, for example, pegs UK smart-speaker sales at 3.9m units in 2017, taking the overall install-base to 4.4m by the end of the year. It believes that Amazon took a 70% share of those 2017 sales, with Google accounting for 25%.

Meanwhile, according to the February wave of the ERA / BPI Entertainment Consumer Tracker, 8.7% of British respondents said they have used a smart speaker to listen to music in the last three months. That's more than double the figure from November 2017's wave: 4.2%. For 25-34 year-olds, the percentage rose from 9% to 13.5% in the same period.



Simon Bryant of Futuresource

US market and the Christmas 2017 boom

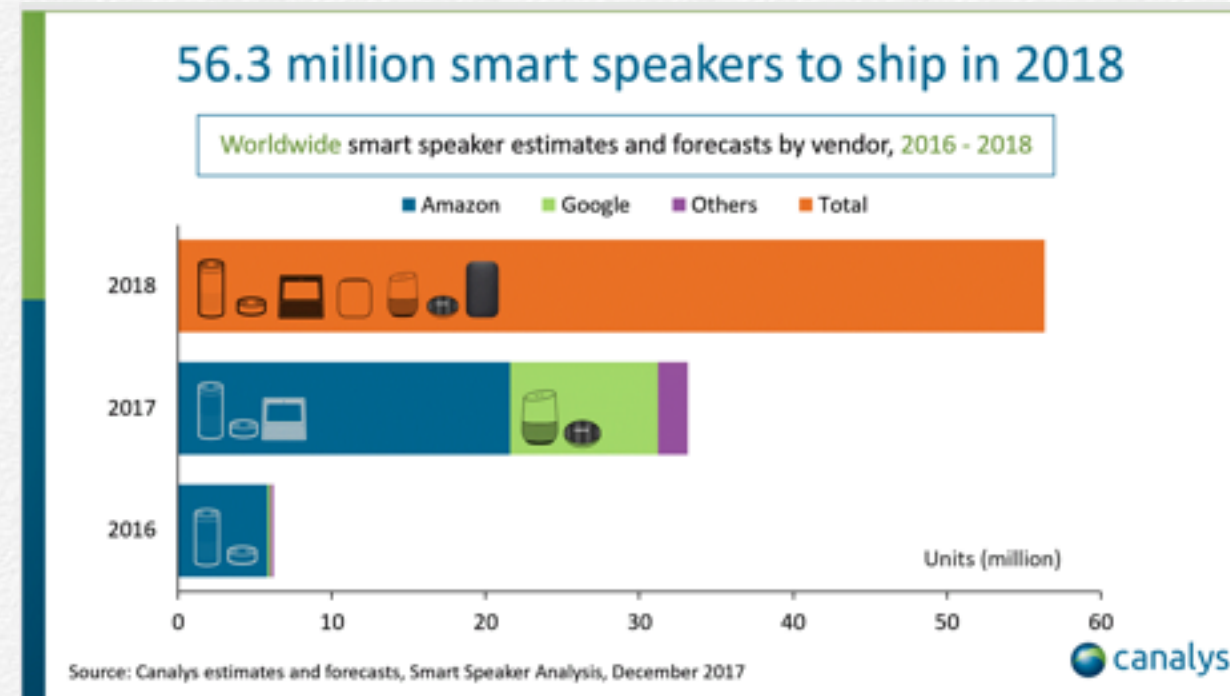
Much of the research around the size and growth of smart-speakers focuses on the US, although given that market's importance to British labels and artists, the figures are still useful. Futuresource estimates that 13% of US households had at least one smart speaker at the end of 2017: 11% with an Echo and 2% with a Google Home.

In January 2018, NPR and Edison Research's '[Smart Audio Report](#)' claimed that one in six Americans now owned a smart speaker – 39 million people.

It claimed that 11% of adult Americans owned an Amazon Echo, and 4% a Google Home. The survey also suggested that 7% of Americans got a smart speaker over the Christmas period, and for 4% it was their first.

The latter claim backs up a [previous report](#) by AudienceNet and the Music Business Association in November 2017, which claimed that 10% of Americans owned an Echo and 3% a Google Home – the difference between the two reports being the Christmas 2017 season, a bumper period for sales.

By March 2018, tech site Voicebot was publishing the results of [a new survey](#), suggesting that nearly one in five US adults now have access to a smart speaker – 47.3 million people.



Future predictions for strong growth

Research firms see the growth in smart-speaker sales continuing in 2018 and beyond. Canalys [predicts](#) that 56.3m units will be sold globally in 2018, with the US accounting for a 68% share of those sales. It sees the category as having “grown faster than any other consumer technology we’ve recently encountered, such as AR, VR or even wearables”.

Investment firm Loup Ventures [forecasts](#) that Apple’s HomePod will sell 7m units in 2018, giving it a 12% global share. That in turn implies overall smart-speaker sales of around 58.3m units, which is close to Canalys’ prediction.

Loup expects Amazon to take a 52% share of sales this year, with Google on 32%, although interestingly it sees the latter

pulling ahead by 2022, when it expects Google's share of sales to be 48%, Amazon's 37% and Apple's 12%.

It's notable that the latter forecast places great emphasis on the western technology firms making smart speakers, with just 3% of 2022's predicted market share left over for companies outside the Google/Amazon/Apple axis.

Not every research firm agrees, however. Taiwanese company TrendForce [sees](#) Chinese tech companies Alibaba and Xiaomi taking 6.3% and 5.1% shares of global smart-speaker shipments as soon as this year (2018), not that far short of Apple's predicted 8.9% share, if still a long way behind Google (21.6%) and Amazon (50.8%).

This is an important aspect to the smart-speakers ecosystem: not just projected sales in the big western music markets, but also the potential impact in emerging markets, where British labels and artists are keen to reach new listeners.

Consultancy Accenture's recent ['Time to Navigate the Super Myway'](#) report, which uses the term 'standalone digital voice assistant' (DVA) devices, claimed that "If stated purchase plans hold, DVA device ownership will reach one third of the online population in China, India, the US, Brazil and Mexico by the end of 2018". It even predicts that 39% of India's online population will own one of these devices by the end of 2018.

Voice assistants aren't just on speakers

When we talk about smart speakers, we also talk about their voice assistants: Alexa for Echos, Google Assistant for Google Homes, Siri for HomePods and so on. But these assistants are also available in other devices, from smartphones and tablets to TVs and even (as of January) smart toilets.

As the music industry considers the impact that voice will have on the way people access music, it's important to think about this bigger picture of devices. In January 2018, IHS Markit predicted that this year more than 5bn "consumer devices supporting digital assistants" will be in use around the world, with another 3bn added by 2021.



Jack Kent of IHS Markit

"Amazon has a clear lead over rivals Google, Apple and Samsung, in terms of the numbers of skills and third-party apps and services supported by its Echo products, but more needs to be done by all platforms, to help users discover new skills and uses for the technology," said IHS Markit's director of operators and mobile media Jack Kent.

The Impact on Music

5

Smart speakers are popular, and sales are expected to grow. But what does this mean for the music industry and its artists in the years ahead?

Smart Speakers and the Music Industry

“Clearly, voice is for real, and it’s a thing, and it’s going to be adopted probably at a more rapid rate than other technologies,” said Spotify’s chief marketing officer Seth Farbman in January.

This is an important point. Smart speakers, voice controls and constantly-improving AI assistants like Alexa are a cutting-edge technology, but one that is being marketed from its earliest days at a thoroughly-mainstream audience.

The early adopters here are as likely to be families shopping on Amazon for a sub-£100 speaker as they are hardcore tech-geeks. It’s a big contrast to some other well-hyped products, like virtual-reality headsets or smartwatches, which are still trying to escape niche status.

Cutting-edge technology marketed to mainstream consumers, and thus mainstream music fans, makes for a fascinating dynamic for the music industry to study. Here are some other lessons we think are worth bearing in mind.



Early satisfaction is high

When Loup Ventures published a survey of American smart-speaker buyers in February 2018, it found that 89% of respondents were satisfied with their device. Perhaps not unusual for early adopters, but the company suggested that expectations were relatively low.

“A closer look at the results reveals the reason for this high satisfaction; early use cases are simple (Music, weather, general questions),” wrote analyst Gene Munster. “While

questions remain simple today, we expect what users demand from their smart speakers to become more complex.”

There’s a comparison to be made here. When Apple launched its App Store in the summer of 2008, novelty apps – a Star Wars-style lightsaber and a virtual pint that could be tipped up and ‘drunk’ – were a hugely-popular way to show off an iPhone.

In 2018, asking Alexa to tell a joke or Siri to beatbox is the equivalent for smart speakers. Early delight as the baseline for more complicated tasks and interactions later.

Price counts for more than audio quality... so far

How do people decide which smart speaker to buy? Apple’s HomePod undoubtedly appeals to people who are already firmly baked in to its ecosystem of devices, while Google Home plays a similar role for Android, and Amazon has its large customer base to market Echo to.

Research firm Morning Consult offered some data in June 2017 on other factors at play, based on a survey of 2,200 smart-speaker buyers. It found that 30% said price was the most important factor in their purchasing decision; ahead of 14% who chose voice-recognition accuracy; just 7% who said speaker/audio quality; and just 3% who cited access to a variety of music-streaming services.



That’s not the whole story, those stats were for people’s *most* important factor. When asked how important audio quality was, 51% said it was very important and 24% somewhat important, while access to a variety of streaming services was very important for 30%, and somewhat important for 30%.

Bear in mind that this survey was conducted at a still-early stage of the market. With the launch of the HomePod, Echo Plus and Google Home Max, audio quality is more to the fore.

Music is key to the experience of smart speakers

Music is far from the only use for a smart speaker, but it is the most important at this early stage of the market. According to Futuresource's 'Living With Digital' survey, 62% of Echo owners play songs on their speaker – a similar percentage to those who use it for simple information-checking such as news and weather. More than 40% have their Echo connected to a streaming service. This is something that labels are already celebrating as significant.

“Definitely north of 80% of the use case around these devices is listening to music. It’s filling more and more and more of our time and our lives with access to and consumption of music. It’s incredible,” said Universal Music Group’s SVP of digital strategy and business development Jonathan Dworkin in January 2018.

80% may be a little optimistic, but studies so far suggest that music is high on the activity list for these devices. NPR and Edison Research’s survey in January suggested that 60% of smart-speaker owners play music on their devices when spending time with friends and family, while 71% reported listening to more audio since getting their device.

The AudienceNet / Music Biz study in November 2017 found that 52% of Echo owners listened to music through the device on a daily basis, while 26% used it for music several times a

day – stats that were 54% and 20% respectively for owners of Google Home speakers.

The survey also found that 34% of Echo and Home owners spend more than four hours a day listening to music, compared to 24%

of the general population. Meanwhile, 48% of these smart-speaker owners said that they had a premium subscription to a music-streaming service.

“Although smart speakers have not been around for very long, nearly one in five owners say that these devices are the way that they most often listen to audio,” said Edison Research’s VP of strategy Tom Webster in June 2017.

Smart speakers may have an impact on radio listening

Many studies have talked about a rise in ‘audio’ listening through smart speakers, which reinforces the point that this is not just about music-streaming services. Podcasts, audiobooks and live radio stations are all accessible too.

One trend to watch is whether these devices fuel a shift in listening away from radio and towards on-demand streaming



Jonathan Dworkin of Universal Music

services. NPR / Edison Research's study found 39% of respondents saying that time spent listening to their smart speaker was replacing time spent listening to traditional AM/FM radio, for example.

This plays in to one of the music industry's key challenges in 2018: attracting listeners away from radio and towards on-demand streaming. It's topical partly because in the US, the lack of performance royalties from AM/FM broadcasters is a longtime sore point for rightsholders. But also because for free or partly-free services like Spotify, Pandora and YouTube, attracting more of the estimated \$32bn of annual radio-advertising revenues is a key business ambition.

Pete Downton, deputy-CEO at British digital-music firm 7digital, has been making this point. "Consumption of music is still dominated by free-to-air services. Principally radio. The UK is the second largest market for Spotify in terms of revenue... but for all of the years of effort, we've not really shifted behaviour a great deal when it comes to listening to radio. This is where the passive massive still lives," he said in January 2018.

Downton drew on data from AudienceNet showing that all the streaming services combined accounted for 15% of music listening in the UK, well behind the 52% from radio. However, he suggested that smart speakers will tilt the balance towards on-demand streaming services.

"12 months ago, if you were to look at a Sonos owner in the UK, maybe 70% of the listening time was spent listening to the radio, and 30% listening to streaming. If you look at the Amazon Echo, it's the mirror opposite. Why? Because these experiences are extremely convenient... This is the most profound change in consuming music that we've seen," he said.

Downton had already tackled this issue in an interview with Music Ally published in December 2017.

"You have got a product where you don't need to be a music expert in order to use it. You can come in and start it whether you're six years old or 40 years old. And it competes head-on with radio. It's largely additive to [streaming] music listening, particularly the Prime model. It's really about that passive massive," he said then.

"It rips away the barriers in terms of actually accessing the service... It makes it really easy to say 'play me some music from...' and just start that journey... 'What to play next' is the music fan's problem. Most people's problem is 'What do I play first? How do I even get started?' And how do they get started if they've only got 15 minutes sat having their breakfast before leaving the house? They just want to press play, and don't have time to think about it."

More casual listening, but is that good or bad?

Downton's argument touched upon another aspect of smart speakers that has been sparking mixed reactions within the music industry: whether they encourage more casual music-listening habits for their owners.

At the NY:LON conference, Amazon Music director Ryan Redington suggested that one of the key queries is simply 'Alexa, play music' rather than spending too long trying to decide *what* to play. "It takes two seconds, if that, and you immediately have music playing. That immediately opens up the opportunity to listen to more music... It makes it so easy for the consumer to actually engage in the music they want to listen to," said Redington.

The debate may be over whether these listeners are engaging deeply enough with music and with the artists who make it. A fear expressed by UMG's Jonathan Dworkin in January.

"What does worry me is that with the ease of consumption, and with the disappearance of the UI layer and the rise of the algorithm... and the glut of content. I do worry that music is at risk of becoming an 'and' experience," he said, referring to music as pure wallpaper: background to other activities.

"I don't see the experience of going down, putting vinyl down and having a focused listening experience... that doesn't seem



to be as much the consumption experience as it is 'play me music that sounds like I'm hanging out in a cool hotel'."

Amazon has talked publicly about the way it's teaching Alexa new commands and interactions to more-general music enquiries: for example, 'Alexa, play upbeat pop music from the 90s'. "I don't think I've ever seen that search typed in to our music service in the past, but people talk like that to Alexa," said Redington.

Alexa creates these stations on the fly, personalised to the tastes of the listener. The concern for some labels is that while this may lead to people loving Alexa, it doesn't necessarily lead to them loving (or even knowing) the artists they are listening to through the devices.

This isn't an argument limited to smart speakers: it plays in to some of the tensions around the growth of programmed playlists on Spotify and Apple Music, and the question of whether listeners are more aware of the playlist brands than the artists they're hearing through those playlists.

The counter-argument is that the majority of music listeners have always been casual, and in the 'just play me music' mindset: they're the people whose music consumption mainly came through turning on the radio.

"It's capturing a new audience that traditionally perhaps might not have consumed music via streaming, and it's people engaging in a way they haven't before. We're seeing a lot more engagement: people are saying they are listening to music more using these voice-activated devices," said Warner Music Group's SVP of global business development and strategy Tracy Gardner at a conference in January.

It is also possible that as these speakers and their assistants evolve, some of this casual listening will be a gateway towards deeper interactions with music. Amazon has recently rolled out new Alexa commands, for example, to help people create playlists and add songs to them as they play.

"You need to be able to tell it commands that are complicated, for you to be able to use it to learn, or get engaged with new music, and not just the music that is already out there being

played on the top 50 list," said Norwegian journalist Geir Gråbein Nordby, on a smart-speakers panel at the recent by:Larm conference.

However, in the same session, Warner Music Norway's marketing director Bjørn Reinfjell suggested that even if smart speakers are *not* a driver of deeper music discovery, this may not be a problem for labels.



Tracy Gardner of Warner Music

"Maybe music discovery isn't what you're looking for when using one of these? Maybe music discovery is something you do elsewhere in another setting?" he said. The point being that this discovery elsewhere could then feed in to the music that the smart-speaker chooses to play to that listener.

New metadata challenges for the industry

A more important reason why the 'Alexa, play me upbeat party music' and 'Hey Siri, play me rock music' generic-style enquiries should be considered carefully by the music industry relates to a well-known challenge for rightsholders: metadata.

As recent publishing-related lawsuits against Spotify in the US have demonstrated, there is work to do for labels, publishers and digital services alike in simply linking publishing and recordings metadata. Yet smart speakers are ushering in an era where more complex metadata around a track – from whether it's happy or sad, to whether it qualifies as 'party music' – will be required to ensure relevant songs are served up to listeners.

Amazon has been open about the fact that it's having to create a lot of this metadata itself, while also coding the algorithms that interpret it to respond to people's queries.

"In a voice world, the bar is extremely higher. We don't have the luxury of returning a bunch of search results, returning 10 results above the fold, and as long as one of them is right, we're good. In a voice environment without a screen, we just have to start playing music," said Redington.

Amazon is also having to teach Alexa how to interpret a query like 'Alexa, play the new song by Ed Sheeran', which may be simple if he's only just released a new single, but harder if it's a few months after the release of an album.

"We're having to invent new metadata: ways to say that this track has just been served to radio, or this is the one that's climbing the singles chart, so that when people ask for an artist's 'new' song, they get the one they've just heard on the

radio or wherever it was," Amazon UK's Paul Firth told Music Ally in November 2016.

Should labels be creating this metadata and serving it to the voice assistants? Major labels already have teams working to understand what needs to be done. "How do we become smarter about metadata for voice... where we're optimising our performance in the service? We're diving into metadata in a different way," is how WMG's Gardner put it.

"There's a new intermediary, where the human is uttering a search, and where the hardware device is interpreting that search, and deciding what type of search to send to the streaming service. That's bringing a whole extra layer of complexity that we haven't had to deal with before."

There are also potential concerns about censorship: for example music with explicit lyrics – being screened out by devices that are often being used in family environments.

"I worry a bit in this day and age we take offence very easily to a lot of things. We're offended by everything! If you're an underground artist, you will probably be offending some people," said Geir Gråbein Nordby at by:Larm.

"It'll probably be easier to get censored with these types of algorithms, and everything is owned by private companies. I'm pretty worried about the underground music in this sense."

The potential for voice-based music marketing

One of the most interesting – yet underused thus far by the music industry – aspects of smart speakers are these devices' equivalent of apps. Amazon calls them 'skills' while Google calls them 'actions' but in both cases they mean services created by third parties to offer content and information through their speakers.

There's clearly an opportunity here for labels to create skills and actions as a way for smart-speaker owners to discover and interact with their artists. In January 2018, Sony Music's RCA UK label launched an Alexa skill called Paloma's Bedtime for Paloma Faith. Aimed at parents with young children, it offers lullabies, stories, white noise and acapella tracks from Faith's latest album.

We have also seen a project from Amazon with U2 in November 2017 called The U2 Experience. It was a radio-like show (or station) broadcast on a loop through Amazon Music in the US, UK, Germany and Austria. Fans could tune in from their smartphones, computers and – in the US and UK – by saying 'Alexa, play The U2 Experience' to their Echo speaker.

It offered a mixture of historical interviews, tracks from the new album and U2's back catalogue, and a new talk with the band by Amazon Music's global head of programming Alex Luke. The



station was available for two days leading up to the release of the band's latest album.

"This all goes back to voice innovation, and what we've built is an immersive, ephemeral listening experience for our customers," said Luke, although in truth this was more of a traditional radio broadcast than a truly-interactive skill for Alexa.

In December 2016, Universal Music's then-CTO Ty Roberts talked to Music Ally about his vision for how labels could create music-discovery experiences for smart speakers.

"Today it's a command-and-fetch robot: 'Tell me what the number one song was in 1989' or 'Play me Lady Gaga's last album'. But it has the opportunity to evolve into a conversation," he said, suggesting that an assistant like Alexa might ask a listener "Would you like to learn about early jazz, the founders of hip-hop or explore music from Chicago?" before taking them on a music-and-spoken-word journey.

"It's an opportunity to get into a dialogue, to be a discovery experience driven by dialogue. I don't want it to be a school: it should be like when you talk to that great friend you have who knows about music. Conversation! But it will probably take a few years," said Roberts. Given the lack of such experiences launched since that interview, he may have been right.

Music Ally believes that 2018 is the year for some experiments that investigate these and other possibilities. Music-streaming services may be involved too. A blog post in June 2017 from Spotify's head of UK label relations, Chris Stoneman, showed that the challenge had been on his mind.

"Audio is about to have a revolution," wrote Stoneman. "New audio platforms, led by smart speakers and AI powered voice interfaces, will give birth to brand new types of audio content

which we can't imagine today... Why hasn't audio evolved? Because there hasn't been a perfect mass market internet delivery platform that specialises in audio."

One final stat to encourage labels on this front: NPR / Edison Research's recent survey finding that 43% of smart-speaker owners would be interested in using skills/actions from companies or brands that they follow on social media. Given the popularity of musicians on those platforms, artist-focused skills are well worth investigating.

Competition challenges for pureplay streaming services

In the west, the three most prominent smart-speaker brands belong to Amazon, Google and Apple, all of which have their own music-streaming services. That poses a headache for pureplay (hardware-less) services like Spotify, Deezer and Pandora, for whom smart speakers are a route to listeners that is controlled by their richest rivals.

It's not a new problem, of course: Google and Apple have the smartphones market locked up with their Android and iOS software, where they take a 30% cut of all in-app subscriptions for streaming services – although that falls to 15% once someone has subscribed for a year.

Deezer and Spotify have been most active in talking publicly about the competitive issues around 'access to platforms'

including smartphones and smart speakers. In May 2017, their CEOs Daniel Ek and Hans-Holger Albrecht (pictured right) signed a letter to the European Commission alleging that the big-tech companies “can and do abuse their privileged position”, pointing to a risk that “gateways” to consumers can easily become “gatekeepers” that place restrictions on rivals to their own services.

In December, Ek and Albrecht signed another letter, to EC president Jean-Claude Juncker, calling for “clear and enforceable obligations that are a deterrent and prevent unfair businesses practices by platforms” that should “go beyond mere transparency requirements, which alone will not ensure platforms act as gateways rather than become gatekeepers to the digital economy”.

Albrecht expanded on this topic in his keynote at the Midem conference in June 2017. “They do it via the voice control nowadays, which we believe is a key idea to drive where the consumer is going via these control aspects,” he said.

“So if you go on Alexa for example, they don’t direct somebody who’s searching for Abba to Deezer for sure! They direct them to their own services. So you see this kind of situation where you have those big giants, and they go into hardware, they go into software, they go into these functions that drive the consumer into the internet. And that’s a concern.”

Thus far, Amazon and Google have both opened their smart speakers up to third-party services, even allowing listeners to set those services (Spotify and Pandora included) as the default. Apple’s HomePod has yet to offer such a feature, although non-Apple-Music listeners can stream other services through it using the AirPlay feature.



Hans-Holger Albrecht of Deezer

Spotify’s Seth Farbman offered a not-so-veiled criticism of this approach in January. “It’s a poor product if you launch a piece of hardware that does not deliver against the intent that people want. And the intent is people want their Spotify,” said Farbman.

Pandora has stressed the positive aspects of smart speakers. “We have achieved spectacular listener growth through voice-activated devices,” CEO Roger Lynch told analysts in February 2018. “In Q4, Pandora listening on voice-activated devices was up 145% year-over-year.”

Lynch went on to predict an “explosive growth in connected and voice activated devices... we expect one out of every two

people will have a connected device in their home by 2022, and this will encourage incremental audio listening”.

Smart speakers are not a closed environment. Listeners can set Spotify, Pandora and other services as the default streaming source on Echo and Google Home devices, if not yet on HomePods. Sonos is also taking a neutral approach with its smart-speaker hardware. Evidence so far suggests that listening on the main devices is not dominated by the streaming services run by their manufacturers.

In November 2017, AudienceNet and Music Biz reported that, when asked for their main service, 20% of Echo owners said Amazon Prime Music and 14% Amazon Music Unlimited, but 21% said Spotify, 16% YouTube, 10% Pandora Premium and 7% Apple Music.

For Google Home owners, the pecking order was 23% Spotify, 22% YouTube, 17% Google Play Music, 10% Amazon Prime Music, 7% Amazon Music Unlimited, 6% Pandora Premium and 6% Apple Music.

Smart speakers spark shared listening

Finally, it’s important for streaming services and the music-industry alike to think about smart speakers in the context of being a shared experience: in the home for now, but in time, beyond.

NPR’s study found that 52% of respondents said their smart speaker is in the living room or family room; 21% said it is in the kitchen; and 19% in the master bedroom. Voicebot’s March 2018 study found 45.9% of respondents with a smart speaker in the living room; 41.4% with one in the kitchen; and 36.8% with one in the bedroom.

NPR also found that 53% of smart speaker owners use the device with others in their household most of the time, while 39% say they do it occasionally. Smart speakers are taking music-streaming into a world of shared listening, rather than individual usage on computers, smartphones and tablets.

As a smart speaker’s voice assistant learns the tastes of different people in a household – and perhaps soon, is able to identify which of those people are in the room at the time – the algorithmically-curated streams of music that it provides may be tuned for shared, rather than solo listening. There will also be an opportunity to build musical skills or actions for these devices that focus on shared interaction: like music quizzes.

Shared listening will also go beyond the home, particularly as smart speakers and their voice assistants expand into cars. NPR and Edison Research found that 64% of current smart-speaker owners are interested in having the technology in their cars. This could be yet another trend that pulls listening away from AM/FM radio and towards on-demand streaming services – and the paid subscriptions that they offer.

What Comes Next?

6

We've looked at the growth of smart speakers and some of the current implications for the music industry. But what might happen next as this product category grows?

Next steps for smart speakers

The smart-speakers market is still young, with the first Echo only having been launched in November 2014. Yet there are already some firm signals around what this hardware category means for the music industry, for the streaming services that have been fuelling its recent resurgence, and even for physical music formats like vinyl.

Smart speakers will drive subscriptions growth

According to the Entertainment Retailers Association (ERA), between 8.1 million and 8.3 million people in the UK were subscribed to a music-streaming service in January 2018. This came after a year when Brits spent £577.1m on streaming subscriptions, up 41.9% year-on-year, and helping overall music-spending to grow by 9.6% in 2017.

At the same time, UK labels association, the BPI, reported that over 68 billion audio streams had been served in the UK in 2017 - a 51.5% rise in consumption over the previous year.

Global body IFPI won't be releasing its 2017 worldwide figures until April, but they are expected to show a sharp growth in the number of paying music subscribers, following a rise from 68 million at the end of 2015 to 97 million at the end of 2016.

One of the most exciting things about smart speakers for the music industry is that these devices could be a key driver for the next wave of growth in paid music subscriptions.

Smart speakers have been marketed at a mainstream audience rather than just to technology early-adopters or hardcore music fans. The basic models are cheap (sub-£50 for the Echo Dot and Google Home Mini) and their voice interfaces are even more accessible than smartphone apps.

Just as importantly, these devices are often, if not always, associated with an existing billing relationship between the listener and the manufacturer. Certainly for Amazon and Apple, the expectation is that Echo and HomePod buyers will have their credit-card details on file with the maker.

The net result? The process of signing up to a paid music subscription is now as simple as saying 'Alexa, sign up for Amazon Music Unlimited' to an Echo. Meanwhile, if more of these speakers come with free trials of premium music services, they could become a new and powerful funnel for the next wave of subscriptions growth for our industry.

NPR and Edison Research's recent study found that 28% of smart-speaker owners said that getting the device had caused them to pay for a music-subscription service. As sales of these speakers grow, so does their potential power on this front.

Smart speakers can make music ubiquitous

The impact of smart speakers is not just about boosting subscriptions. It's about putting music at the centre of people's lives, especially as these devices proliferate throughout the home, and into cars. Devices as accessible and affordable as radios, but associated with paid streaming subscriptions.

As several studies covered in this report suggest, owning a smart speaker leads to people listening to more audio, music included.

The emergence of programmed playlists on streaming services has already made 'context' a hot topic within the industry: music to cook to, work to, drive to, sleep to etc. Smart speakers are ideal devices to serve those use cases.

The opportunity – but also a challenge not to be underestimated – is to take this ubiquity of music for an audience that would traditionally be classed as 'radio listeners' – and convert them into paying music subscribers.

We can expect (and welcome) more experiments around how subscriptions are marketed to and priced for smart-speaker



owners: Amazon's £3.99-a-month Echo Plan being one of the most interesting examples so far. There have long been calls for more price flexibility around music subscriptions, so hardware can play a useful role here.

Smart speakers pose a challenge for pureplay DSPs

There is also an important question around how smart speakers will alter the competitive landscape of the music-streaming market. These experiments around marketing and pricing will, by definition, be focused on the streaming services run by the companies making the speakers: Amazon, Google and Apple.

Spotify in particular faces a strategic dilemma as it navigates this new world, even if two of the gatekeepers are familiar from its experience building its business on smartphones.

Should Spotify develop and launch its own smart speaker to compete on level terms? Should it throw more development effort into developing its own voice ‘skills’ for the big-tech firms’ devices to mirror their services’ new interactions? Should it continue to press politicians to ensure it has fair access to these smart speakers? Our sense is that it will be a combination of all three.

That being said, it’s important for the music industry to think about smart speakers outside the UK/US context that has dominated the discussion thus far. Accenture’s claim that these devices could reach one third of the online population in China, India, Brazil and Mexico as soon as the end of 2018 is bullish, especially if the speakers require fixed-line broadband.

But that’s a temporary barrier – smart speakers could be sold with a built-in SIM and thus mobile connectivity. In emerging markets where music-streaming has been a heavily-mobile trend so far, these devices have the capability to establish a new bulkhead for streaming around the home – and thus play their part in driving usage and subscriptions revenues.



Smart speakers could drive sales of physical music

What will the emergence and growth of smart speakers mean for physical-music sales? It’s tempting to assume that the effects will be entirely negative: speeding the decline in CD sales, since these are music-playing devices in the home that by definition can’t play CDs, and may well be replacing devices that can. It’s undeniable that if smart speakers fuel more growth in streaming, that will in turn have an impact on physical.

And yet... labels must not forget that these devices are more than simply music-playing devices. They are portals to search engines and stores. Amazon doesn’t want to put Echos in as many homes as possible simply to grow its music-streaming service: it wants them to make online shopping even easier.

NPR and Edison Research's Smart Audio Report claimed in January that 29% of smart-speaker owners have used the device to research an item they might want to purchase, while 31% have added an item to their shopping cart to review it later for purchase (picture above). As this kind of behaviour increases, so there will be opportunities for selling all kinds of music products, from vinyl to tickets and merchandise.

There are two aspects to remember here. First: the nature interface of a voice assistant, where buying a ticket could be a conversational interaction rather than just a series of clicks. In September 2016, Ticketmaster's VP of open platform and innovation Ismail Elshareef told Music Ally how this process could work – he was referring to text-based chatbots at the time, but added that voice interfaces could do this too.

The possible interaction: 'Hey, do you know Adele or Christine and the Queens are going to be playing in your city next month? If you want tickets reply 'yes',' explained Elshareef. "And then if you say yes, it'll ask you what kind of tickets you like: GA [general admission] or mezzanine? And you'll get more options relating to that all the way through to buying a ticket... It will not be a contrived conversation between you and the bot: it will feel super-natural and super-easy."

Second, there is the potential for music fans' listening data to filter in to this process. Once Amazon (or Apple, or Google, or Spotify if and when it has a device) knows that a fan loves a



particular artist, it might be able to suggest products to them. "You've been listening to Ed Sheeran a lot recently, would you be interested in pre-ordering the vinyl version of his new album at a discount?" is one possible interaction.

Clearly there are sensitivities here: fans won't want their smart speakers to be constantly pestering them to buy products. But particularly as advertising becomes more of a factor on these devices – for free streaming and other forms of audio content at least – there will be opportunities to suggest physical purchases, including vinyl, tickets and merchandise.

Smart speakers pose metadata and marketing challenges

Our final conclusion concerns the two key areas where labels can take action now: metadata and marketing.

The metadata issue must be at the forefront of label and publisher minds in 2018, as their understanding grows of how fans are interacting with smart speakers, and how the recommendation algorithms of voice assistants like Alexa, Google Assistant and Siri are evolving.

The challenge here is creating metadata about the song's era, its genre, its lyrical themes, its place in culture and other context-rich topics. The industry is knuckling down to the task of creating metadata for interactions and algorithms that we can't imagine yet, as well as the early 'play me upbeat 80s pop music' examples that Amazon has talked about.

For labels, this is a step on from thinking about how best to pitch for inclusion on Spotify and Apple's programmed playlists. Now, they're also thinking about what metadata each track needs to ensure it's being served up by the voice assistants to relevant requests from listeners. Amazon took a lead in creating that metadata itself, but rightsholders can and will take more of a role in 2018 and beyond, in partnership with speaker-makers.

The second key task for labels is how to adapt music marketing for a voice-controlled world. Just as labels have built (or at least

commissioned) websites and apps and chatbots; got to grips with digital advertising and social-media content creation; and learned how to pitch for the streaming playlists; so now there is an opportunity to start building applications to help their artists reach new and existing fans alike through smart speakers.

In 2018, what should an Alexa skill for Ed Sheeran, Little Mix, Stormzy or Sam Smith look (or rather sound) like? How could a Google Assistant action introduce new listeners to 1960s Merseybeat, 1990s rave or the current grime scene? How could voice apps open up the back catalogue of world-renowned labels like Trojan Records, Warp, 4AD, Ninja Tune and Creation Records? These are creative challenges that labels will relish.

Final thought

While the growth of smart speakers should continue the upwards momentum of music-streaming for the industry, these devices can also be a platform for new kinds of music-discovery and consumption experience.

It is potentially as big a shift as smartphones and their app stores were a decade ago. And one final, crucial point: if labels can capitalise on this latest wave of hardware innovation, it will drive more revenues, which in turn can be funnelled back into their core tasks of developing and supporting artists.

Stuart Dredge, Music Ally report author on behalf of the BPI and ERA