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DEDICATED AI APPS

Chatbots and personal assistants

Examples of AI-powered mobile apps

Social media

INTEGRATION OF AI INTO EXISTING APPS

Transcription and translation

Navigation

Image editors and generators

Education

Even smarter phones?

Understanding consumers' expectations for AI integration into the mobile ecosystem

On September 9th, Apple unveiled the long-awaited iPhone 16—the brand's first phone designed for full compatibility with Apple Intelligence, the suite of AI-powered products first announced back in June.[1]

This development is part of a potentially seismic shift in the smartphone market: the dawn of a new generation of phones offering a broad range of pre-packaged AI features and equipped with the necessary memory and processing power to fully support on-device AI processing.

While Apple's announcement generated considerable attention from both the public and the media, they're far from alone in shaping the market for "AI-ready" smartphones. Brands like Samsung[2] and Sony,[3] for example, are also making AI capabilities a key selling point of their next-generation devices, while Google has been taking steps

to integrate its Gemini model into the Android operating system.[4]

These hardware and platform shifts will be necessary steps towards optimizing the consumer experience across the ever-growing ecosystem of AI-powered mobile applications. ChatGPT has undoubtedly been the tip of the spear; in the six months after launching on iOS in May 2023, OpenAI's flagship product was downloaded over 110 million times, making it one of the fastest growing mobile apps in history.[5] But it's just one of many AI chatbot and personal assistant apps now vying for downloads, alongside the likes of Google Gemini and Microsoft Copilot.

Moreover, many existing apps have rushed to take advantage of media and investor interest in AI—and generative AI in particular. From social media services to educational platforms, it's

becoming hard to find a popular app that hasn't tried to incorporate AI functionality in one way or another.

But what do consumers think about this shift? Are they ready for AI features to become a core part of the mobile experience? In this paper, we'll unpack expectations for this emerging AI ecosystem among smartphone users—exploring both the challenges and the opportunities this trend presents for device manufacturers and app developers, as well as the steps they can take to accelerate the growth of this market and maximize the appeal of AI-powered products and services.

METHODOLOGY
Unless otherwise noted, data in this paper comes from a study of 1,024 US smartphone users, aged 18 to 64, conducted in September 2024. Participants for this study were selected and weighted to reflect US census data in terms of age, gender, and ethnicity.

[1] Nick Robins-Early, "Apple reveals iPhone 16 and 'Apple Intelligence' AI features," The Guardian, September 9th, 2024
[2] Nickolas Diaz, "This Galaxy Tab S10 keyboard leak gives us a clear look at its 'Galaxy AI key,'" Android Central, September 23rd, 2024
[3] Chris Donkin, "Sony pitches flagship Xperia on AI camera tech," Mobile World Live, May 15th, 2024
[4] Sameer Samat, "Android is reimagining your phone with Gemini," Google Blog, August 13th, 2024
[5] Sarah Perez, "On ChatGPT's first anniversary, its mobile apps have topped 110M installs and nearly $30M in revenue," TechCrunch, November 30th, 2023
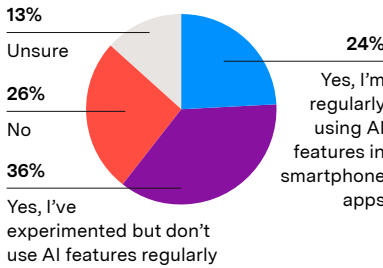
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Consumers have been quick to embrace AI features in mobile apps—and are optimistic about the future

Between the rapid proliferation of chatbot apps and other dedicated AI services and the integration of AI features into pre-existing apps like Duolingo[6] and Google Maps,[7] it's becoming increasingly difficult for consumers to avoid coming into contact with the technology.

Six out of ten smartphone owners say that they've used the AI features in a mobile app at least once; even more may have done so without being aware of the fact. Long-term users of voice assistants like Apple's Siri, for example, may not think of such products as being powered by AI, given that they predate this recent period of intense media and public interest in the technology.

Most smartphone owners, however, haven't yet integrated AI features into their daily routines—or at least, have not done so consciously. Only around a quarter (24%) of consumers say that they're using AI features within mobile apps on a regular basis. Some of the most commonly cited AI-powered apps in regular usage include ChatGPT, Facebook, Snapchat, and the various Google applications that are now making use of the technology.

Q: Have you ever used a smartphone app that has AI features or capabilities?

13% Unsure

26% No

36% Yes, I've experimented but don't use AI features regularly

24% Yes, I'm regularly using AI features in smartphone apps

Still, the fact that almost a quarter of smartphone users are already making regular use of AI suggests that there's a strong customer base for providers to build on as phones optimized for AI, such as the iPhone 16, begin hitting the market. A majority of consumers (57%) expect that their usage of AI features in mobile apps will increase over the next 12 months; **69% anticipate that, within the next five years, almost all smartphones will come with integrated AI features by default.**

And, for the most part, consumers expect that the deepening integration of AI into

the mobile ecosystem will be a force for good. Over half (56%) believe that adding AI features to smartphone apps will improve the experience of using those apps—compared to only 16% who think it will lead to a worse user experience. From helping users find information more efficiently to allowing for the automation of routine life admin and professional tasks, AI-powered mobile apps could have a broad range of benefits for the average smartphone user.

63% of smartphone users think that AI will help to make mobile apps more accessible to people with disabilities

Beyond adding new features and streamlining user interfaces, AI also holds the potential to improve the user experience for traditionally underserved audiences. For example, improved speech-to-text features or alternative navigation options could go a long way towards increasing the accessibility of mobile apps for people with disabilities.[8] Enhanced translation functionality, meanwhile, could be particularly beneficial to non-native speakers.

Q: How do you expect the integration of AI into smartphone apps to affect your experience using those apps?

22% Greatly improve	34% Somewhat improve	29% No impact / Don't know	10% Somewhat worsen	5% Greatly worsen

[6] Bernard Marr, "The Amazing Ways Duolingo Is Using AI And GPT-4," Forbes, April 29th, 2023

[7] Andrew J. Hawkins, "Google Maps is getting 'supercharged' with generative AI," The Verge, February 1st, 2024

[8] Yonah Welker, "Generative AI holds great potential for those with disabilities - but it needs policy to shape it," World Economic Forum, November 3rd, 2023

Hi!
How can I help you?

AI

Consumers' top use cases for AI-powered mobile apps
Ranked by percentage of smartphone users who are interested in using
AI features in mobile apps for professional/personal purposes

PERSONAL USE CASES	PROFESSIONAL USE CASES
01 Searching for information	01 Learning new skills
02 Translating speech or text	02 Enhancing productivity through task management
03 Learning new skills	03 Searching for information
04 Receiving personalized recommendations or insights	04 Analyzing or summarizing data
05 Brainstorming or idea generation	05 Automating repetitive tasks
06 Automating repetitive tasks	06 Translating speech or text
07 Writing emails or text messages	07 Brainstorming or idea generation
08 Summarizing emails or text messages	08 Creating presentations or reports
09 Creating or editing images or videos	09 Summarizing emails or text messages
10 Automating home devices or routines	10 Writing emails or text messages

That said, consumers also understand that these benefits will come with trade-offs. Large language models (LLMs) and other generative AI models are expensive to build and to run, and accessing these models through the cloud can introduce additional lag into processes that would otherwise be significantly faster. Overreliance on the cloud can also create additional data vulnerabilities for consumers, although the Private Cloud Compute model recently pioneered by Apple—in which only the bare minimum of data needed to complete a task is ever moved off-device—may help to address these issues.[9]

57% of smartphone users expect that AI will improve the accuracy of voice recognition and translation features within smartphone apps

As the onboard processing power of mobile devices increases, this will facilitate a broader transition away from cloud-based approaches towards on-device processing for AI models. This shift should further alleviate concerns about speed and security, but at the cost of raising manufacturing costs and potentially reducing battery life.[10] It's understandable, therefore, that 63% of consumers believe that phones with built-in AI functionality will be more expensive than similar models without these features.

[9] Bernard Marr, "Why Apple Intelligence Sets A New Gold Standard For AI Privacy," Forbes, September 11th, 2024
[10] Katie Collins, "On-Device AI Is a Whole New Way of Experiencing Artificial Intelligence," CNET, March 6th, 2024

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There's a significant gender divide when it comes to enthusiasm for AI-powered mobile apps

While the median consumer may be broadly optimistic about the potential for AI to improve the mobile experience, there are still some pervasive social divides when it comes to engagement with and expectations for the technology.

Gen Z and Millennial consumers, for example, are about three times as likely as Baby Boomers to be making regular use of AI features in mobile apps—hardly surprising, given the fact that these younger audiences have generally been the most enthusiastic adopters of AI technologies in both personal and professional contexts.[11]
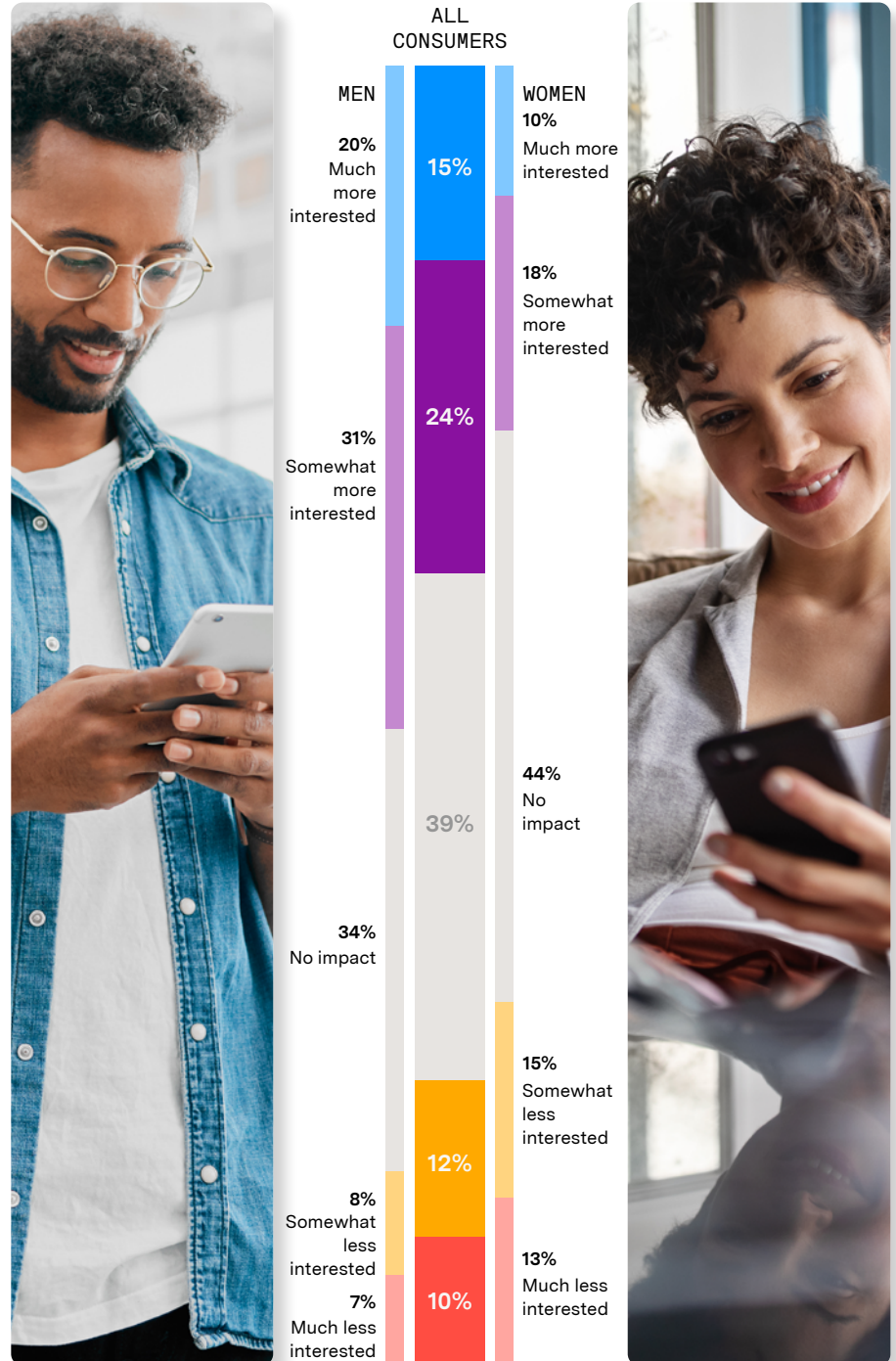
Percentage of smartphone owners regularly using AI features in mobile apps

GENDER
- M 31%
- F 18%

GENERATION
- Z 30%
- M 30%
- X 18%
- B 10%

INCOME
- <$50k 19%
- $50-100k 28%
- $100k+ 30%
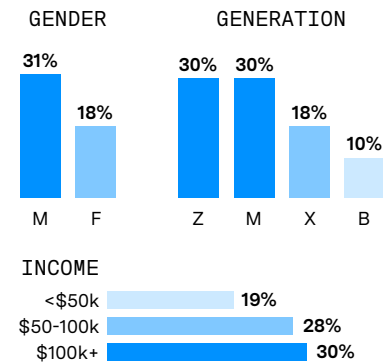
Similarly, there's a steep drop-off in AI usage among consumers with household incomes below $50,000, which may reflect the fact that many people in this income band own previous-generation devices which don't have built-in AI functionality and may lack the processing power to make full use of AI tools.

Perhaps most concerning for the long-term growth of the market for AI-ready smartphones is the fact that men are substantially more likely than women to be making use of AI features within mobile apps—and are also more likely to be optimistic about the future applications of the technology.

Q: If you saw a new smartphone advertised as being "built for AI," how would that impact your interest in purchasing it?

ALL CONSUMERS

MEN
- 20% Much more interested
- 31% Somewhat more interested
- 34% No impact
- 8% Somewhat less interested
- 7% Much less interested

- 15%
- 24%
- 39%
- 12%
- 10%

WOMEN
- 10% Much more interested
- 18% Somewhat more interested
- 44% No impact
- 15% Somewhat less interested
- 13% Much less interested

[11] Amber Hickman, "Young adults are driving adoption of generative AI, according to Microsoft survey," Technology Record, February 8th, 2024

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By extension, men and women appear to respond very differently to AI-centric marketing messages for smartphones and mobile apps. Just over half of male consumers (51%) say that they would be more likely to purchase a smartphone if they saw it described as "built for AI," compared to only 15% who would be less interested in buying it. **For women, however, this kind of marketing message has virtually no net impact on purchase intent.** Only 28% say they'd be more interested in buying a phone that was "built for AI," exactly the same as the percentage who say this kind of labeling would decrease their level of interest.

This trend aligns with previous NRG research on AI, which has consistently found higher levels of enthusiasm towards the technology among male audiences.[12] This may stem from the fact that so much of the marketing around AI products, to date, has played into traditionally masculine tropes and archetypes. At the same time, women tend to be more attuned to some of the social harms of the technology—such as the gender bias present in many AI models, or the potential for it to be used for cyberstalking and sexual harassment.[13]

Whatever the reasons behind it, this gender divide has proved stubbornly persistent over the past two years, despite the rapid mainstreaming of AI products and services. Before they can take full advantage of the potential market for AI-powered mobile services, smartphone manufacturers and app developers will need to develop marketing strategies that resonate with a female audience—addressing the unique concerns that women have about AI and centering use cases for the technology that are likely to appeal to this demographic.

[12] "What the rise of generative AI means for America's creative class," National Research Group, March 22nd, 2024

[13] MaryLou Costa, "Why are fewer women using AI than men?" BBC News, November 2nd, 2023

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Content flagging and watermarking in mobile apps will be vital for safeguarding our information ecosystem

At the same time as investing in more female-centric marketing campaigns and use cases, brands looking to incorporate AI features into their mobile apps will also need to be mindful of the concerns that many consumers still have about the safety of this technology.

The rapidly increasing sophistication of AI image generators and editors, for example, could have a detrimental impact on the quality of the global information ecosystem. While AI-generated images may once have been easy to detect thanks to thanks to the presence of additional fingers or conspicuously missing details, the quality of images generated by products such as Dall-E and Midjourney has increased by leaps and bounds over

the past two years; one study earlier this year found that three-quarters of consumers now struggle to differentiate between authentic and AI-generated images.[14] If anyone, anywhere in the world can create high-quality AI-generated images from their phone, that problem is only going to get worse.

More than three in ten smartphone users say they're worried that AI-powered mobile apps will lead to a deluge of AI-generated content on social media. And almost as many think that these apps will make it easier for bad actors to wilfully spread misinformation—a particularly pertinent concern during an election year.[15]

Fortunately, there are steps that can be taken to address these concerns. Some social media apps, for example, have begun to roll out moderation tools which automatically flag content uploaded from certain other platforms as AI-generated.[16] Similarly, apps that contain AI image or text generating functionality should consider embedding watermarks into their content to allow for easier detection.

Tech companies that don't embrace these kinds of safeguards willingly may soon find their hands forced. The recently-passed AI Act, for example, will make watermarking AI-generated content a requirement for mobile apps operating in the EU from 2026.[17] And previous NRG research has found strong support for similar regulations among US consumers, indicating that it may only be a matter of time before the American regulatory environment catches up.[18]

[14] "Nearly 90% of Consumers Want Transparency on AI Images finds Getty Images Report," Getty Images, April 30th, 2024

[15] Stuart A. Thompson, "California Passes Election 'Deepfake' Laws, Forcing Social Media Companies to Take Action," The New York Times, September 17th, 2024

[16] Martyn Landi, "TikTok to introduce new tools to flag AI-generated content," The Independent, May 9th, 2024

[17] Jacob Wulff Wold, "OpenAI sitting on tool to watermark AI-generated content," Euractiv, August 6th, 2024

[18] "Where consumers currently stand on AI regulation," NRG, June 13th, 2024

Consumers' top concerns about the growing role of AI in mobile apps

31%
It will lead to too much AI-generated content on **social media**

30%
The AI might make **decisions** without my consent

30%
It will be harder to protect my personal data and **privacy**

28%
AI in apps will make it easier for people to spread **misinformation** online

27%
AI apps will be misused by **scammers** and cybercriminals

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A proactive approach to privacy concerns will help grow the market for AI-powered apps and AI-ready smartphones

Data privacy and security are also significant concerns with the growing popularity of AI-powered apps. Again, this has been a consistent theme of NRG's research on public attitudes towards AI. In 2023, for example, we found that privacy concerns were the biggest obstacle preventing consumers from making greater use of AI services to help plan vacations.[19]

Generative AI is still a relatively young technology in the eyes of consumers—and many are still figuring out exactly how much trust they're willing to place in it. It certainly doesn't help matters that many prominent AI companies have faced criticism in the press for their relative lack of public transparency,[20] or have been the subject of high profile data breaches.[21]

We see these concerns about privacy and security reflected in the specific types of AI-powered apps which smartphone users say they'd be most excited to use.

Broadly speaking, consumers show the

least enthusiasm for using AI features of apps that would require them to provide access to significant volumes of highly sensitive personal data—such as health and fitness apps, finance apps, social media apps, and messaging apps.

Conversely, there's substantially more interest in using AI-powered search apps, map apps, and virtual assistants. While these kinds of apps may come with their own data vulnerabilities, it's simply not the same as asking people to hand over years worth of their financial data, healthcare records, or private messages.

This suggests that the path forward for smartphone manufacturers and app developers looking to expand the market for AI-powered mobile apps beyond early adopters will lie in prioritizing these kinds of relatively "low risk" use cases. AI functionality within search apps or navigation apps, for example, can be a useful entry point for AI-curious consumers—a chance for them to play around with the technology and to learn
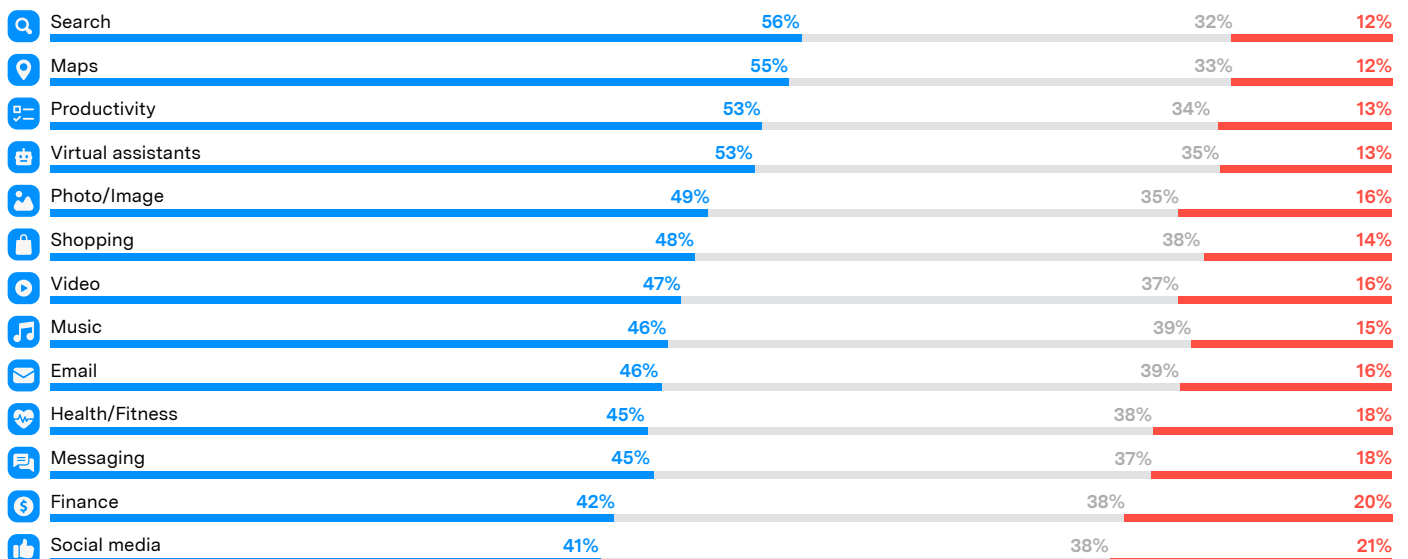
its capabilities and limitations before they decide whether they're comfortable exposing large volumes of personal data to AI applications.

And for AI-powered apps that do require access to sensitive personal information, there needs to be a clear articulation of the benefits case. Brands need to make it obvious to their users what functionality they're going to unlock in return for sharing their data, while also educating them about the steps they've taken to ensure the security of that data and prevent misuse, leakage, or exploitation.

To further alleviate these concerns about privacy and data security, companies should embrace an ethos of transparency when it comes to their mobile apps. Three-quarters of consumers believe that mobile apps that use AI should come with clear disclaimers to that effect; many also feel strongly that companies which use AI in their apps should be open with users about how their personal data is stored and whether it will be used to train future AI models.

Q: If you saw that a mobile app had AI features, would you be more or less interested in downloading it?

● More interested   ● No impact   ● Less interested

App	More interested	No impact	Less interested
Search	56%	32%	12%
Maps	55%	33%	12%
Productivity	53%	34%	13%
Virtual assistants	53%	35%	13%
Photo/Image	49%	35%	16%
Shopping	48%	38%	14%
Video	47%	37%	16%
Music	46%	39%	15%
Email	46%	39%	16%
Health/Fitness	45%	38%	18%
Messaging	45%	37%	18%
Finance	42%	38%	20%
Social media	41%	38%	21%

[19] "How AI could revolutionize travel," National Research Group, May 9th, 2023

[20] Eileen Yu, "Transparency is sorely lacking amid growing AI interest," ZDNET, May 10th, 2024

[21] Brandon Vigliarolo, "Not-so-OpenAI allegedly never bothered to report 2023 data breach," The Register, July 8th, 2024

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75% of smartphone users think companies should **always disclose** to their customers when their apps are using AI

Whatever steps brands take to address consumers' security concerns, there will always be people out there who remain unwilling to engage with the technology—whether due to issues of privacy and personal safety, or because of broader ethical concerns about the way AI models are developed or their social and environmental impact.

To avoid alienating this audience, it's important that companies looking to

incorporate AI functionality into existing mobile apps allow users to embrace these features on their own terms and at their own pace. **More than seven in ten smartphone users think that mobile apps with AI features should include an option to turn off those features.** Even just having those features enabled by default can be enough to provoke a backlash; certain apps, for example, have come under scrutiny in the tech press for their practice of requiring users to proactively opt out of having their data used to train AI models.[22]

It's possible that some of these privacy and security concerns will begin to

fade away as consumers become more familiar with AI and as the regulatory environment around the technology evolves—but for now, these fears need to be taken seriously to ensure the sustainable growth of the market for AI apps. If people feel as if they're being forced to use AI features against their will, or that AI is being used as an excuse for companies to harvest and monetize their data, there's a risk of provoking a wider backlash and amplifying existing hesitancies around the technology.

72% think apps with AI features should come with an option to **turn off** those features

[22] John-Anthony Disotto, "LinkedIn is using your data to train AI - here's how to turn it off," Tech Radar, September 19th, 2024

KEY RECOMMENDATIONS
to maximize the appeal of AI features in mobile apps

01
Encourage consumers to trial "low risk" use cases which don't require them to hand over access to large amounts of sensitive personal data.

02
Develop marketing messages that address the specific concerns of AI-skeptical audiences, such as women and consumers in their 40s and upwards, and which highlight use cases that are relevant to those audiences.

03
Provide users with the option to turn off AI features, preventing them from feeling forced to embrace the technology before they're ready.

04
Embrace an ethos of transparency, making it clear to users which features use AI and how their data will be stored and used.

05
Embed AI safety features such as watermarking in mobile apps to help users distinguish AI-generated content from that created by humans.

06
Promote the social benefits of AI features in mobile apps, such as their ability to enhance accessibility for users with disabilities.

For more on public attitudes towards AI, explore our previous reports, or reach out to us directly at **inquiry@nrgmr.com**.
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The Accountable AI Playbook
Understanding consumers' fears about AI and how businesses can adjust messaging accordingly

The AI-Powered Human
How AI could transform consumers' daily lives, and the use cases they're most excited about

Generative AI and the Creative Class
What the rise of generative AI means for America's creative professionals

Planes, Trains and Large Language Models
How AI could revolutionize the travel and hospitality industry

Pressing Play on AI
The impact of AI on the video game industry

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