

HEY SIRI, LISTEN UP - CONSUMER DATA PRIVACY IN THE ERA OF SMART TECHNOLOGIES

By: Catherine Thomson

I.	INTRODUCTION	2
II.	RISE OF SMART TECHNOLOGY.....	2
	A. <i>Smart Technology and Why It Is So Popular</i>	2
	B. <i>Types of Smart Technology</i>	3
III.	PRIMARY CONSUMER DATA CONCERNS	3
	A. <i>Previous Data Protection Lawsuits and Security Breaches</i>	4
	B. <i>Wake Word Devices</i>	5
	C. <i>Data Collection and Tracking</i>	5
IV.	CURRENT REGULATIONS AND LAWS	6
	A. <i>A Multitude of Unhelpful Federal Laws</i>	6
	B. <i>State Privacy Laws and Their Problems</i>	7
V.	COMBATting ORGANIZATIONAL RISKS AND CONSUMER WORRY.....	7
	A. <i>A Federal Comprehensive Data Protection Law</i>	7
	B. <i>How Businesses Can Build Trust with Their Customers</i>	8
	C. <i>What is the GDPR and Why Is It so Effective?</i>	8
	D. <i>Is the GDPR the Right Solution for the U.S.?</i>	9
VI.	CONCLUSION	9

I. INTRODUCTION

Though smart technologies have brought convenience and efficiency over recent years, there is a growing concern these smart home devices are not as safe as believed.¹ While some states have unsuccessfully attempted to resolve the issue of data privacy, others have not yet acted at all.² Furthermore, the U.S. does not have a singular law which covers the privacy of all types of data.³ Instead, the current state of privacy law encompasses a mixture of federal and state laws which look at particular types of data while leaving other types vulnerable.⁴ With the increased usage of smart devices and the growing apprehension over privacy, it is up to both the legislature and businesses to protect consumers.

This paper argues for increased protection through federal regulation and business transparency to lessen the data protection fears of consumers. The first section of this article discusses what smart technology is and its continued growth. The second section discusses consumers' primary data concerns and touches on what a wake word is and the problems that stem from them. The third section discusses current data protections and their shortcomings, and the fourth section proposes solutions to address consumer worries and concerns.

II. RISE OF SMART TECHNOLOGY

A. *Smart Technology and Why It Is So Popular*

Smart technology refers to “devices, systems, or appliances that are connected to the internet and can communicate with each other or with users.”⁵ “Smart” denotes advanced capabilities, such as the ability to gather and process data, make intelligent decisions, and provide a personal experience for each user.⁶ Smart technology's popularity stems from the fact it offers the ability to enhance the convenience of daily life in several ways.⁷ From 2018 to 2023, the number of U.S. homes using

1. See Venky Anant et al., *The Consumer-Data Opportunity and the Privacy Imperative*, MCKINSEY & CO. (Apr. 27, 2020), <https://www.mckinsey.com/capabilities/risk-and-resilience/our-insights/the-consumer-data-opportunity-and-the-privacy-imperative>.

2. Thorin Klosowski, *The State of Consumer Data Privacy Laws in the US (And Why It Matters)*, N.Y. TIMES: WIRECUTTER (Sept. 6, 2021), <https://www.nytimes.com/wirecutter/blog/state-of-privacy-laws-in-us/>.

3. *Id.*

4. *Id.*

5. IBM, *What Is the Internet of Things (IoT)?*, <https://www.ibm.com/think/topics/internet-of-things> (last visited Oct. 3, 2025).

6. Manuel Silverio-Fernandez et al., *What is a Smart Device?*, 6 VISUALIZATION IN ENG'G 1, 3 (2018).

7. Jee Heon Rhee et al., *Review of Applications and User Perceptions of Smart Home Technology for Health and Environmental Monitoring*, 9 J. COMPUTATIONAL DESIGN & ENG'G 857 (2022).

smart devices grew at an annual rate of 10.2%, reaching 63.4 million households; projections estimate this figure will rise to nearly 94 million households by 2027.⁸

B. Types of Smart Technology

Currently hundreds of devices are considered smart technology, ranging from smartphones to smart cars.⁹ A popular example of smart technology is Ring, a doorbell that starts recording as soon as motion is detected near the doorbell and then sends the recorded video to the user.¹⁰

Another popular example is Amazon's Alexa, a virtual voice assistant that can understand voices, respond to questions or commands, and complete a variety of tasks such as playing music and searching the internet.¹¹ To get Alexa's attention, the user simply commands "Alexa," the wake word, before asking a question or giving a command.¹² Finally, another widely known smart feature is Apple's Siri. Siri, like Alexa, can do a multitude of things and is activated by the command "Hey, Siri."¹³ Notably, for both Alexa and Siri to be "awoken" by their wake words, they must always be listening, waiting for activation.¹⁴

While there appears to be many benefits to smart technologies, considerable drawbacks come from these same devices, which causes consumers to be wary of them.¹⁵

III. PRIMARY CONSUMER DATA CONCERNS

Because it is impossible to keep data completely secure in an ever-evolving tech landscape, many consumers worry about their protection. Some consumers of smart home technology have recently rated their

8. STRATEGIC MARKET RESEARCH, *Smart Home Statistics and Trends 2024*, <https://www.strategicmarketresearch.com/blogs/smart-home-statistics> (last visited Oct. 3, 2025).

9. Paul Kirvan et al., *What is a Smart Home? Everything You Need to Know*, TECHTARGET (Jul. 31, 2025), <https://www.techtargget.com/iotagenda/definition/smart-home-or-building>.

10. RING, *Battery Doorbell Plus*, <https://ring.com/products/battery-doorbell-plus> (last visited Sept. 15, 2024).

11. Dave Johnson, *What Can Alexa Do? How to Get the Most Out of Any Amazon Echo Device*, BUSINESS INSIDER (Nov. 4, 2021), <https://www.businessinsider.com/guides/tech/what-can-alexa-do>.

12. AMAZON, *Invoking Alexa*, <https://developer.amazon.com/en-US/docs/alexa/alexa-auto/invoking-alexa.html> (last visited Jan. 26, 2025).

13. APPLE, *How to Use Siri on iPhone*, <https://support.apple.com/en-me/guide/iphone/iph48873ed6/ios> (last visited Sept. 15, 2024).

14. Beau Feeny, *Does Alexa Always Listen?*, FRONTIER INTERNET (Feb. 25, 2022), <https://blog.frontier.com/2022/02/does-alexa-always-listen/>.

15. See Jessica Guynn, *Americans are Getting Really Creeped Out by Devices Eavesdropping on Them and Tracking Them*, USA TODAY (Jan. 28, 2020), <https://www.usatoday.com/story/tech/2020/01/28/americans-worried-amazon-echo-google-home-spying-survey/4592130002/>.

level of concern a whopping six on a seven-point scale.¹⁶ This comes as no surprise, considering how often data breaches occur.¹⁷ In 2021, smart home technology breaches hit record-setting levels, with one-third of survey respondents claiming they fell victim to some form of breach during the prior year.¹⁸

A. *Previous Data Protection Lawsuits and Security Breaches*

In 2023, Amazon's Alexa was charged with violating various privacy protection acts, which disallow companies from keeping children's data forever, because Amazon saved voice recordings of children under the age of 13.¹⁹ Ultimately, Amazon paid a \$25 million civil penalty for its violations, but is this enough to prevent the company from continuing bad practices?²⁰ Likely not, as \$25 million is a mere drop in the bucket for the almost \$2 trillion company, especially when considering the amount of money Amazon makes by engaging in this type of behavior. Amazon's Ring has seen its fair share of lawsuits as well. In 2023, the FTC accused Ring of allowing its employees and contractors to access customers' private videos to train algorithms, among other things, without customer consent.²¹

In 2024, Wyze, a smart home security camera company, experienced an extensive hack affecting over 13,000 customers.²² Heather Hines, a Wyze customer, was changing clothes in her bedroom when she noticed her Wyze cameras went offline for a short period.²³ Forty-eight hours later, she received an email from Wyze explaining that thousands of customers had opened their phone apps and seen photos and video footage from inside other people's homes.²⁴

The lawsuits and complaints mentioned above only scratch the surface of the issues that consumers worry about when it comes to their

16. Pam Baker, *To Worry or Not to Worry: Answering Questions about Smart Home Security*, THE VERGE (June 15, 2023), <https://www.theverge.com/23753752/smart-home-privacy-security-questions-explained>.

17. *Id.*

18. Paul Silverglate, *Consumers Want More Data Protections in Their Tech Devices*, WALL ST. J. (Mar. 17, 2023), <https://deloitte.wsj.com/riskandcompliance/consumers-want-more-data-protections-in-their-tech-devices-f5976756>.

19. *Amazon Agrees to Injunctive Relief and \$25 Million Civil Penalty for Alleged Violations of Children's Privacy Law Relating to Alexa*, U.S. DEP'T OF JUST. (July 19, 2023), <https://www.justice.gov/opa/pr/amazon-agrees-injunctive-relief-and-25-million-civil-penalty-alleged-violations-childrens>.

20. *Id.*

21. Wyatt Grantham-Philips, *FTC Sends \$5.6 million in Refunds to Ring Customers as Part of Video Privacy Settlement*, AP (Apr. 25, 2024), <https://apnews.com/article/ring-doorbell-camera-settlement-ftc-payments-658a3bae14c4744cf449932099dc4404>.

22. Samantha Murphy Kelly, *That Security Camera and Smart Doorbell You're Using May Have Some Major Security Flaws*, CNN (Mar. 12, 2024), <https://www.cnn.com/2024/03/09/tech/smart-home-cameras-hackers-security/index.html>.

23. *Id.*

24. *Id.*

data. Many people are also concerned with how often smart technologies are listening to conversations not meant for anyone, or anything, to hear.²⁵

B. Wake Word Devices

As mentioned above, many of these devices are typically activated by a wake word and begin recording information only after activation.²⁶ However, for the device to hear the wake word, it must always be listening for the word to be spoken. Because of this, Alexa, Siri, and similar devices can sometimes mishear and begin recording when the wake word is not used.²⁷ In one instance, Alexa sent a customer's entire private conversation to a stranger when it thought it had been activated by its wake word.²⁸ These types of mishaps and product deficiencies are what create doubt and unease in the minds of consumers and make them wary of fully trusting these devices.²⁹

C. Data Collection and Tracking

Have you ever searched a website for a product and then continuously received ads for that same product on multiple different platforms and wondered how that was possible? Well, this happens through data collection and targeted advertising.³⁰

One feature of certain smart home devices is that they can collect customers' preferences when it comes to different topics.³¹ This collected data is typically justified by claiming it improves customer experience.³² According to a report done by researchers, Amazon uses this automatically collected data to serve targeted ads on its platforms and the web by sharing the information with advertising partners.³³ Notably, in 2021, Amazon made more than \$31 billion in revenue from selling

25. See Baker, *supra* note 16.

26. Grant Clauser, *Amazon's Alexa Never Stops Listening to You. Should You Worry?*, N.Y. TIMES: WIRECUTTER (Aug. 8, 2019), <https://www.nytimes.com/wirecutter/blog/amazons-alexa-never-stops-listening-to-you/>.

27. *Id.*

28. *Id.*

29. See *Id.*

30. Karen Weise, *Amazon Knows What You Buy. And It's Building a Big Ad Business From It.*, N.Y. TIMES (Jan. 20, 2019), <https://www.nytimes.com/2019/01/20/technology/amazon-ads-advertising.html>.

31. *Id.*; Susan Meyer, *What Does Your Smart Home Know About You?*, ZEBRA, <https://www.thezebra.com/resources/home/what-smart-homes-track/> (last updated April 5, 2024).

32. Meyer, *supra* note 31.

33. Jennifer Pattinson Tuohy, *Researchers Find Amazon uses Alexa Voice Data to Target You With Ads*, VERGE (Apr. 28, 2022), <https://www.theverge.com/2022/4/28/23047026/amazon-alexa-voice-data-targeted-ads-research-report>.

ads to third parties.³⁴ With this amount of money being generated, it can clarify why Amazon and others are willing to share consumer data with third parties, also increasing the potential for data breaches. So, what can be done, and how can fears be mitigated while simultaneously allowing for business profitability and advancement in technology?

IV. CURRENT REGULATIONS AND LAWS

A. *A Multitude of Unhelpful Federal Laws*

The current state of data protection and regulation in the U.S. leaves a lot to be desired. The U.S. does not have a single comprehensive law that covers all types of private data.³⁵ Instead, it uses a mixture of laws that allow for companies to violate these laws and be undetected.³⁶ Thus, as no uniform federal law exists, companies are free to do what they want with the data with only state laws acting as possible roadblocks.³⁷

One of the federal laws that is currently relied on is the Federal Trade Commission (“FTC”) Act, which prohibits deceptive practices in the marketplace and allows the FTC to go after an app or website that violates its privacy policy.³⁸ Another federal law relied upon by regulators is the Gramm-Leach-Bliley Act, which requires providers of consumer financial products to explain how they share data and gives customers the right to opt out.³⁹

Additionally, there are many other disparate federal laws used by regulators in litigation against organizations that do not protect consumers’ data.⁴⁰ However, these laws are not particularly helpful as they only regulate specific types of data.⁴¹ Thus, state law must currently be relied upon to protect consumers’ data from deceptive companies.

34. Jason Del Ray, *Basically Everything on Amazon Has Become an Ad: Inside the Under-the-Radar Business That Makes More Money than Amazon Prime*, VOX (Nov. 10, 2022), <https://www.vox.com/recode/2022/11/10/23450349/amazon-advertising-everywhere-prime-sponsored-products>.

35. BLOOMBERG LAW, *Consumer Data Privacy Laws*, <https://pro.bloomberglaw.com/insights/privacy/consumer-data-privacy-laws/#the-need-for-privacy-laws> (last visited Oct. 28, 2024).

36. Klosowski, *supra* note 2.

37. *Id.*

38. *FTC Releases 2023 Privacy and Data Security Update*, FTC (Mar. 28, 2024), <https://www.ftc.gov/news-events/news/press-releases/2024/03/ftc-releases-2023-privacy-data-security-update>.

39. Katy Liu, *Guide to the Gramm-Leach-Bliley Act*, IAPP, <https://iapp.org/resources/article/guide-to-the-gramm-leach-bliley-act/> (last visited Oct. 28, 2024).

40. Klosowski, *supra* note 2.

41. *Id.*

B. *State Privacy Laws and Their Problems*

The current state of data protection and regulation in state law leaves much to be desired. As of 2024, only twenty states have passed comprehensive data privacy laws, leaving hundreds of millions of people at risk for data privacy issues.⁴² In 2020, “California led the U.S. by being the first state to enact comprehensive data privacy legislation by passing the California Consumer Privacy Act (“CCPA”).”⁴³ Soon after, Virginia followed suit, and later, eighteen more states enacted similar legislation.⁴⁴

Although the state laws mentioned above are less comprehensive than they purport to be, other states lack any comprehensive data protection laws.⁴⁵ Thus, while the U.S. must create a comprehensive federal data protection law, it is also vital that states lacking these statutory safeguards enact their own comprehensive laws to protect their citizens.

Furthermore, there seem to be many conflicting laws and regulations used by different states throughout the U.S. due to the lack of a uniform federal law. Because of this, organizations in the U.S. have had to contend with inconsistent legal obligations concerning the collection of their consumer data.⁴⁶

V. COMBATTING ORGANIZATIONAL RISKS AND CONSUMER WORRY

A. *A Federal Comprehensive Data Protection Law*

What would a comprehensive federal data protection law look like? Privacy advocates often point to the GDPR’s enumerated personal data rights, some being the right of access and information, the right of rectification, and the right of deletion, among others, as the core provisions that should guide future U.S. privacy legislation.⁴⁷ Furthermore, creating a well-rounded law that encompasses these rights and regulations will serve to protect consumers and create a safer business that is

42. F. Paul Pittman, Hope Anderson & Abdul Hafiz, *US Data Privacy Guide*, WHITE & CASE (July 2, 2024), <https://www.whitecase.com/insight-our-thinking/us-data-privacy-guide>.

43. *Which States Have Consumer Data Privacy Laws?*, BLOOMBERG LAW (Sept. 10, 2024), <https://pro.bloomberglaw.com/insights/privacy/state-privacy-legislation-tracker/#states-with-comprehensive-data-privacy-laws>.

44. Pittman, Anderson & Hafiz, *supra* note 42.

45. INT’L ASS’N OF PRIVACY PROFESSIONALS, *US State Privacy Legislation Tracker*, <https://iapp.org/resources/article/us-state-privacy-legislation-tracker/> (last updated Jan. 21, 2025).

46. *Comparison of U.S. State Privacy Laws: Data Protection Assessments*, CIPL (Feb. 8, 2024), https://www.informationpolicycentre.com/uploads/5/7/1/0/57104281/cipl_comparison_us_state_privacy_laws_dpa_feb14.pdf.

47. See EUROPEAN COMMISSION, *Data Protection: Rights for Citizens*, https://commission.europa.eu/law/law-topic/data-protection/reform/rights-citizens_en (last visited Feb. 9, 2025).

less open to liability and harm that could come from potential costly and time-consuming lawsuits.⁴⁸

B. *How Businesses Can Build Trust with Their Customers*

Another fairly simple way to mitigate data privacy concerns is to build trust with customers.⁴⁹ One way that companies can achieve this trust is by sharing clear privacy policies and by being transparent about how they use customer data.⁵⁰ Honoring consumer privacy choices is another way to achieve this trust. Furthermore, putting data protection back in the hands of the customer will build trust by allowing them to choose what is done with their information.⁵¹

C. *What is the GDPR and Why Is It so Effective?*

The General Data Protection Regulation (“GDPR”) is the privacy law that was enacted by the European Union in 2018.⁵² Currently, the GDPR is the toughest privacy and security law in the world, highlighting Europe’s stance on data protection, as the European Union recognized the obstacles that come with ever-progressing technology.⁵³

Article 25 of the GDPR establishes the idea of data protection “by *design* and by *default*.”⁵⁴ Essentially, companies must create their programs with data protection at the forefront of their minds.⁵⁵ Article 6 of the GDPR outlines the limited circumstances under which it is lawful to process personal data.⁵⁶ Additionally, the GDPR has eleven chapters and ninety-nine total articles that address data privacy and regulation in great detail.⁵⁷ One of the most important chapters is Chapter 8, which states the liabilities and penalties organizations can face if they

48. *Comparison of U.S. State Privacy Laws: Data Protection Assessments*, *supra* note 46.

49. Timothy Morey, Theodore Forbath & Allison Schoop, *Customer Data: Designing for Transparency and Trust*, HARV. BUS. REV. (May 2015), <https://hbr.org/2015/05/customer-data-designing-for-transparency-and-trust>.

50. *14 Ways Businesses Can Build Consumer’s Confidence in Sharing Their Data*, FORBES (Mar. 6, 2023), <https://www.forbes.com/councils/forbestechcouncil/2023/03/06/14-ways-businesses-can-build-consumers-confidence-in-sharing-their-data/>.

51. Masha Komnenic, *4 Ways Data Privacy Compliance Builds Trust With Consumers*, TERMLY, <https://termly.io/resources/articles/build-trust-with-data-privacy-compliance/> (last updated July 8, 2022).

52. *Id.*

53. *Id.*

54. Regulation (EU) 2016/679 General Data Protection Regulation (GDPR), ch. 4, art. 25, 2016 O.J. (L 119) 1, https://eur-lex.europa.eu/eli/reg/2016/679/oj#art_25 (last visited Oct. 10, 2025).

55. Komnenic, *supra* note 51.

56. GDPR ch. 2, art. 6, https://eur-lex.europa.eu/eli/reg/2016/679/oj#art_6 (last visited Oct. 10, 2025).

57. *See generally* GDPR, <http://data.europa.eu/eli/reg/2016/679/oj> (last visited Oct. 10, 2025).

do not comply with the GDPR.⁵⁸ The fines implemented by the GDPR were structured to make non-compliance an expensive mistake for businesses of all sizes.⁵⁹

D. Is the GDPR the Right Solution for the U.S.?

As previously mentioned, there are several problems with the laws that the U.S. currently uses to regulate data. For businesses that operate nationwide, having to comply with contradicting laws can be difficult, if not impossible.⁶⁰ On the consumer side, there is constant worry about private information being used by companies improperly, because state laws are inadequate.⁶¹ Currently, California's CCPA most closely resembles the GDPR regarding its protection of data.⁶² The CCPA allows consumers to have more control over their information by establishing rights, such as the right to know and the right to delete, among others.⁶³ While the CCPA represents a strong state law, it still lacks in certain areas and only protects California residents, showing the need for a federal approach.⁶⁴

VI. CONCLUSION

Although it might never be possible to completely and unequivocally protect consumers' data from all danger, there are several options available for policymakers to adopt measures that advance consumer protection, including stronger safeguards for private and intimate information through transparency, communication, and the enactment of comprehensive federal regulation. By adopting such measures, consumers can feel more secure, businesses can take the moral high ground while building profits, and the government can be assured its citizens are protected.

58. GDPR ch. 8, https://eur-lex.europa.eu/eli/reg/2016/679/oj#cpt_VIII (last visited Oct. 10, 2025).

59. GDPR.EU, *What are the GDPR Fines?*, <https://gdpr.eu/fines/> (last visited Feb. 9, 2025).

60. *Is It Time For A U.S. Version of GDPR?*, FORBES (Feb. 1, 2022), <https://www.forbes.com/councils/forbestechcouncil/2022/02/01/is-it-time-for-a-us-version-of-gdpr/>.

61. Müge Fazlioglu, *Most Consumers Want Data Privacy and Will Act to Defend It*, IAPP (Mar. 22, 2023), <https://iapp.org/news/a/most-consumers-want-data-privacy-and-will-act-to-defend-it>.

62. Chris Singlemann, *GDPR US Equivalent: How the US and EU Compare on Data Privacy Laws*, THOROPASS (Feb. 12, 2024), <https://thoropass.com/blog/compliance/gdpr-us-equivalent/>.

63. STATE OF CAL. DEP'T OF JUST., *California Consumer Privacy Act (CCPA)*, <https://oag.ca.gov/privacy/ccpa> (last updated Mar. 13, 2024).

64. Tony Gagliardi, *GDPR vs. CCPA: Key Differences and Similarities*, DRATA (Apr. 22, 2022), <https://drata.com/blog/gdpr-vs-ccpa>.