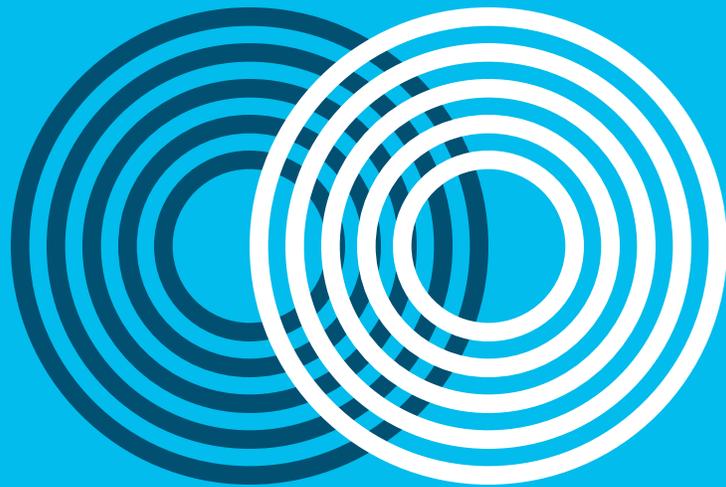


The IoT Value/Trust Paradox



Building Trust and Value
in the Data Exchange
Between People, Things
and Providers



How do value and trust determine the future success of the Internet of Things?

As the Internet of Things (IoT) continues to grow and proliferate, customers need to feel confident that the collection, storage and exchange of their data not only enables new services that add value to their lives – but that it does so while protecting their information. It's the establishment of that trust that will determine which companies are successful in offering IoT services, and which get left behind. This survey of 3,000 consumers, conducted by Cisco, reveals that the companies that can establish and maintain trust through policy, transparency, and data control will have a competitive differentiator that allows them to convert data into growth instead of risk.

According to Gartner, Inc., 8.4 billion connected things are in use worldwide in 2017, a 31 percent increase from 2016. Longer term, the analyst firm predicts the total number of connected things will reach 20.4 billion by 2020, about 2.5 times more devices than in the market today.¹

The number of connected things is not the only indication of the success of IoT. Consumer and business adoption of connected services determines the long-term success of IoT – an important technology investment that has the potential to drive revenue growth, boost industrial productivity, and create new efficiencies.

Like any business transaction, the acceptance and adoption of IoT is rooted in the value that IoT provides. And this value is created by the data exchange between people, things and IoT providers. As consumers become increasingly aware of the connected things around us and the data they collect and share, their understanding of the value that these IoT services bring to their lives is critical. In this new study, Cisco explores the consumer's perception of the value of IoT, the importance of the exchange of data to drive value, and how trust plays a role in consumers' willingness to share data – all of which are critical to IoT adoption and its long-term success.

The study found that in this growing world of connected devices, there is a paradox. In many cases, the consumer's perceived value of IoT is high, but in most cases, their trust in IoT is low. While there is increasing awareness of IoT and people are finding value in different connected devices and services, the data exchange that is required to deliver that value is sitting on a weak foundation of consumer trust. Consumers are extremely wary of the personal data collected for both personal and public IoT implementations. But, despite all this, the study finds that IoT is so integrated into consumers' daily lives that many are unwilling to disconnect.



Key insights

Awareness

When asked to identify if certain devices were part of the IoT, many consumers were aware of personal IoT devices, but only a low percentage are aware of public IoT implementations. This indicates that awareness of the overall scope and scale of how much of our daily lives are connected is still relatively low.

Value

Despite relatively low consumer awareness of the total scope of IoT, the perceived value that IoT brings to their lives is high. The perceived value was much higher for personal IoT devices, however – even for public IoT implementations – more than one-third of consumers could extrapolate that having those public IoT devices connected delivers value to society.

Trust

A majority of consumers are aware of data being collected by IoT devices and services in their personal lives and in the world around them. Along with this awareness is a low level of trust in the security of that data or in how the data is being used. The seemingly constant barrage of news around high-profile IoT security breaches does not help build consumer confidence.

The connected life and the point of no return

Despite this lack of trust, a growing number of consumers are unwilling to disconnect from their internet-connected devices and services, even temporarily. IoT devices and services are so integrated into their daily lives and the value and benefit of these services is so high that consumers are unwilling to give them up, despite the perceived risk.

Data exchange

To mitigate risks involved in the data exchange, IoT providers need to drive more transparency and control. IoT providers willing to create a trusted data exchange can benefit from building consumer confidence. The study found that some people are willing to share more specific types of personal information in exchange for better, more personalized services and an improved customer experience.



The IoT paradox

People find value in IoT, with 53% saying IoT makes their life easier. Yet only 9% have a high level of trust that their data collected and shared via IoT is secure.



Despite extremely low trust, a large number of consumers – 42% – are not willing to disconnect due to the value IoT devices and services bring them.

Awareness

Awareness across personal and public IoT implementations

In the world of IoT around us, consumers have a higher awareness of the connected **personal** devices and services, while fewer people are aware of **public** IoT implementations.

Personal: a majority of respondents identified wearable fitness devices and smartwatches, home security systems and health monitors as part of IoT.

64% wearables
63% home security
50% health monitors

Public: less than half of the respondents identified any elements of public infrastructure as part of IoT.

25% street lights
23% vending machines
20% wind turbines

Value



53% **Convenience:** 53% said that personal connected devices make their lives easier.

47% **Efficiency:** 47% said that personal connected devices save time or make them more efficient.

36% **Cost savings/investment:** 36% said it saves them money or makes their things more valuable.

34% **Safety:** 34% said personal connected devices help protect them and their family.

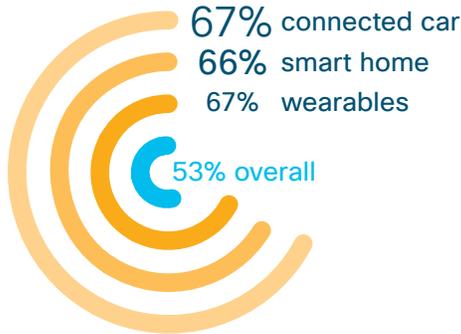
Overall the value of IoT in our **personal** lives indexes higher, with respondents generally ranking **public** IoT infrastructure as less valuable.



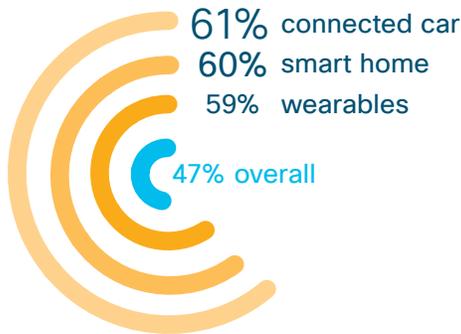
40% **Public efficiency:** 40% said public connected devices are valuable for creating more efficiency for society.

33% **Public safety:** 33% said public IoT infrastructure helps protect society.

Value



Increased convenience



Increased efficiency

Additionally, consumers with more direct experience with IoT, specifically personal IoT experiences, express higher perceptions of value, demonstrating the impact of both awareness and adoption.

When it comes to the value around specific IoT experiences, consumers found higher value in connected car and smart home experiences.

Smart Home

Almost 50% say smart home devices increase value.



Connected Car

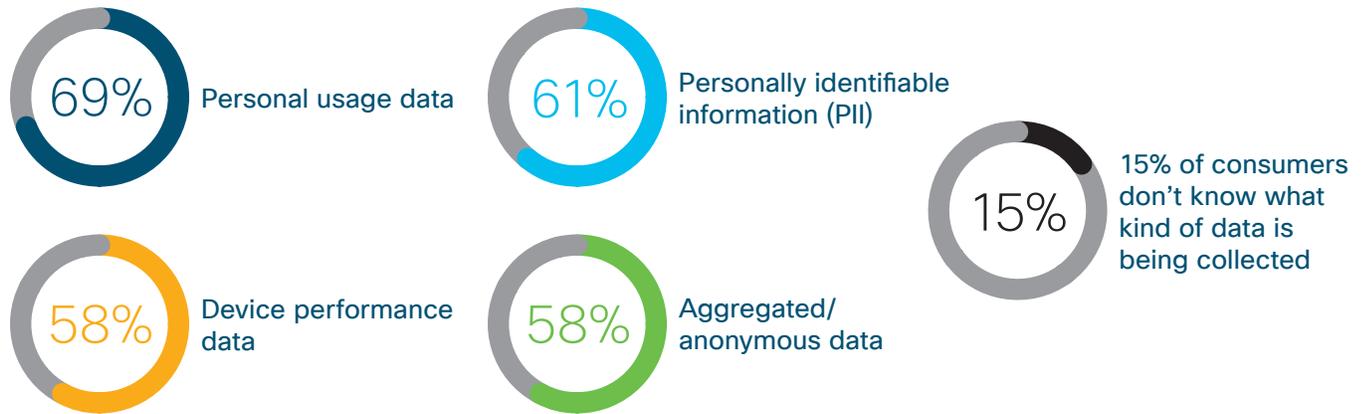
Almost 60% feel it is somewhat or very important to have connected car features.



Trust

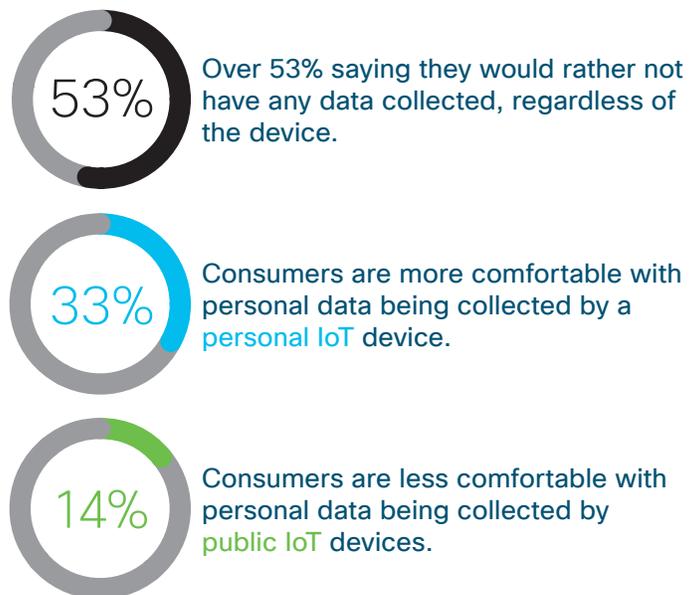
Awareness of data collected and shared across IoT

In the all-important exchange of data that is at the heart of IoT, there is high awareness among consumers that IoT devices collect a wide range of data, with personal data indexing the highest.



Consumer comfort level with data collection

Overall, consumers are not comfortable with their personal data being collected by either personal or public IoT devices



Value threatened by low trust

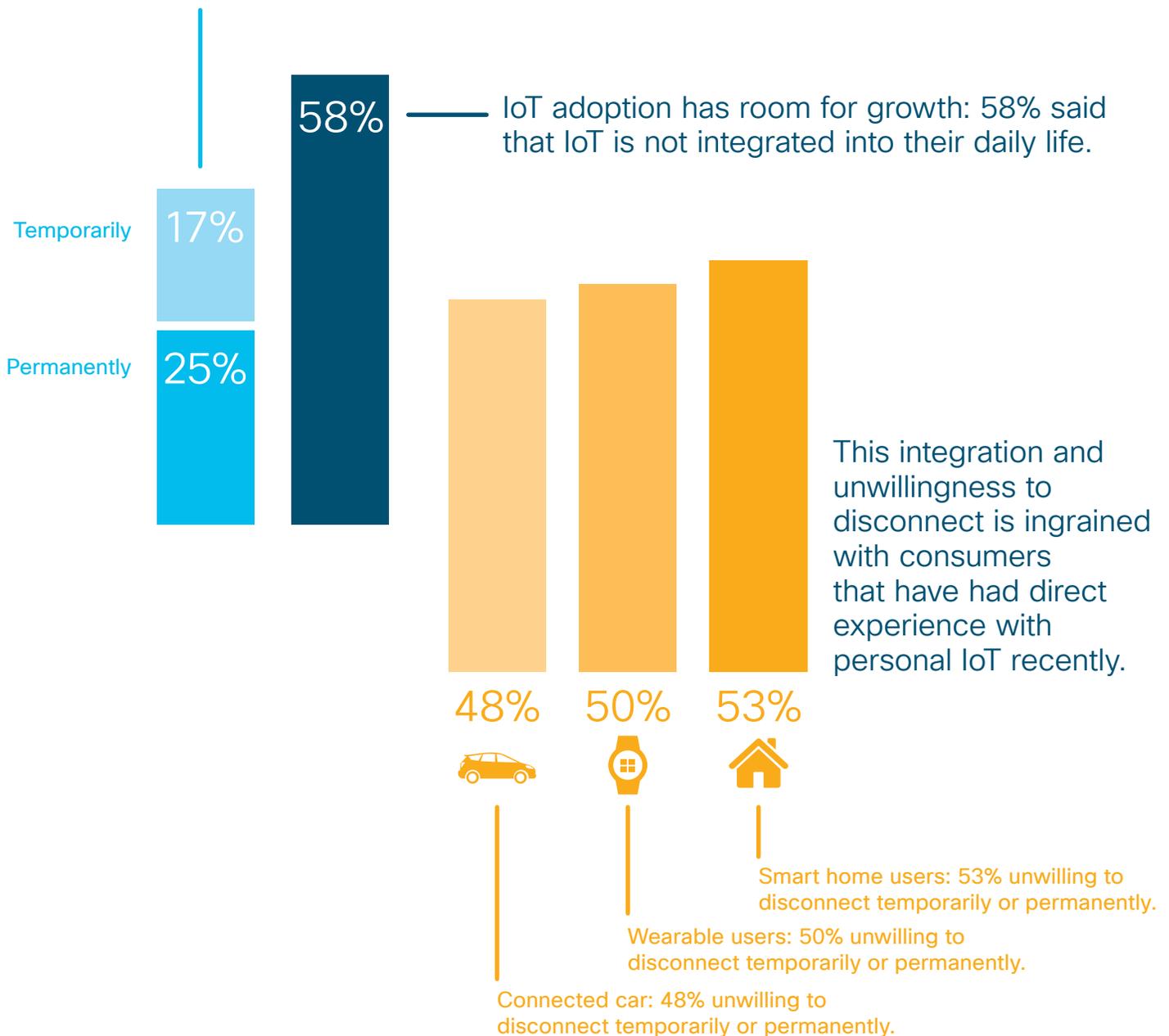
52% have either a low level of trust or no trust at all that their data is secure

9% of those surveyed have a high level of trust that their data is secure

The connected life and the point of no return

Consumers who are already connected to IoT are aware of data collection and sharing practices, understand the risks, yet have reached a point of no return in terms of disconnecting from the IoT devices and services that are integrated in their daily lives.

42% said that IoT is so integrated into their lives that they would have difficulty disconnecting temporarily or permanently.



Data exchange

Mitigating risk and building trust in the data exchange

To increase overall adoption and integration of IoT into consumers' lives, we must first address the trust issue.

37%
Transparency

IoT providers could be doing a better job of informing consumers about data collection practices, according to 37% of consumers.

IoT providers can build greater trust with consumers by creating more transparency around data collection and sharing practices and partnering with them on data control.

70%
More control

Consumers want more control: 70% want more control over what personal data is being collected and shared through the IoT services they use.

Even with the high levels of distrust, consumers said they are willing to share more data if it makes their lives more convenient and/or efficient.

43%
Data sharing

43% of consumers are willing to share more specific types of data with IoT providers if it means more control and more personalized experiences.



Conclusion

As the number of connected devices continues to grow exponentially across all industries, IoT has become a major business priority and technology investment. In 2017 alone, IoT endpoint spending is expected to top \$1.6 billion, according to Gartner.² But IoT volume and spend shouldn't be confused with actual user adoption and public acceptance in the increasingly connected world.

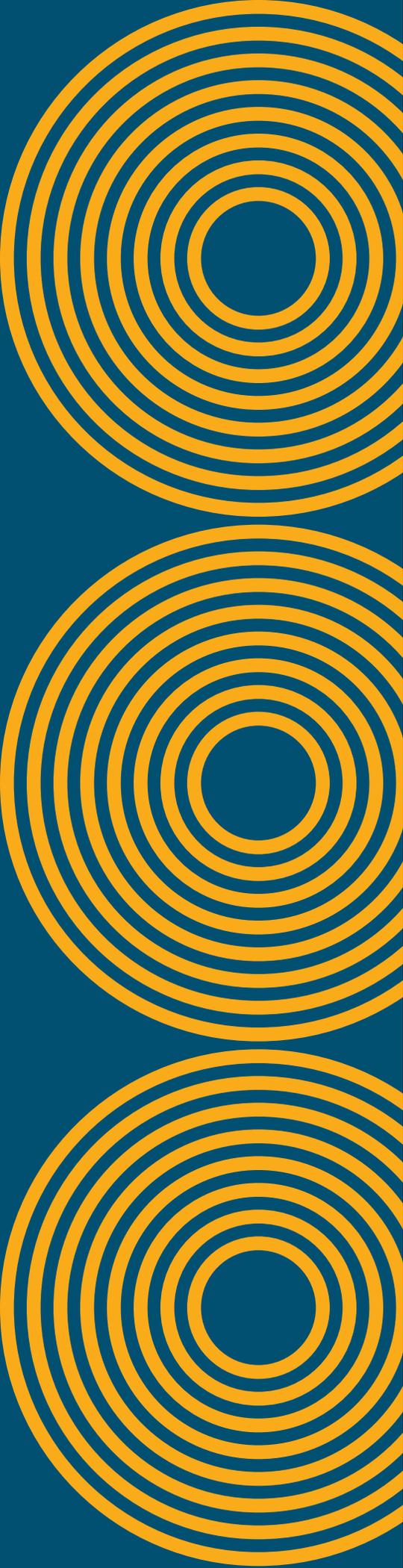
Consumer adoption continues to grow, and the value that consumers find in different IoT experiences, from personal to public, is also high. The promise and appeal of the connected life is gaining acceptance and momentum in our culture. Consumers want the features and benefits of IoT devices and services like connected cars, smart homes and wearables. But the number of IoT endpoint connections per person represents a much larger digital integration than any other major technology shift. That level of integration into consumers' daily lives also means an increased risk around security and privacy. So consumers need to know how, where, when and with whom their data is exchanged. That level of transparency creates a foundation of trust that will be fundamental to the growth in IoT.

In some IoT use cases, consumers have a lot of control over what data gets collected and shared – think personal fitness devices, medical monitoring devices or personal GPS systems. In other cases, consumers will have little to no control over the information that is collected about them via municipal traffic systems, energy meters, commercial security systems or other industrial implementations. But their trust in how businesses and government organizations manage and use that data is critical to the overall success of these projects. If a public IoT rollout in one city faces public resistance – even if it is based purely on perception – other cities may rethink their plans unless they can proactively combat those negative perceptions.

So what does this mean for organizations today? Why should they care about this discrepancy between consumer value and trust? As companies build their businesses around IoT services, they need to first understand the importance of educating their customers on the role of IoT in delivering new, valuable services that will enhance their lives. Only when customers understand the value of IoT – and trust that these new services can be delivered in a way that respects and protects their data – will mainstream adoption increase.

See takeaways on the next page >>>





Key takeaways for business

Companies providing IoT services today have a trust issue with consumers. Here are three steps businesses can take to increase trust and consumer confidence, and ultimately accelerate the adoption of IoT services:

Establish a clear, concise data policy and share that with your users

Consumers are asking for more transparency and control of the data collected and shared across connected devices and services. Companies that can provide transparency into how they are using and securing data, and how this helps to improve their customers' experiences, can improve their brand reputation and potentially gain even more valuable data from their customers.

Take granular control of your data

IoT solution providers should create a process to determine who gets what data, where and when. For example, perhaps not all data that is collected from a single device should go directly to a public cloud. Companies might want some data – like usage information – to go to a public cloud so they can do big data analysis of consumer behavior, but they may decide that other data – like the performance data of the hardware – should only be shared back directly with the device manufacturer. Or that a user's health data should only be shared back with a healthcare provider, if authorized by the user.

Create accountability

Everyone in the IoT value chain plays a critical role in making an IoT business secure: device manufacturers, application developers, network providers, cloud platforms, security software vendors and the IoT service provider. You must evaluate all the providers in your IoT value chain and establish minimum security standards and requirements so you can hold each provider accountable. This is where end-to-end IoT solutions become critical. When evaluating IoT solutions, make sure they provide you the capability to not only connect your devices, but to derive real business value from the data that those devices produce – all while ensuring the secure delivery of that data. It's also important to seek IoT technology providers that partner with other industry leaders to build an IoT ecosystem focused on establishing the highest standards and protocols for IoT.

References

1. "Gartner Says 8.4 Billion Connected 'Things' Will Be in Use in 2017, Up 31 Percent From 2016," Gartner, February 7, 2017. <https://www.gartner.com/newsroom/id/3598917>
2. Ibid.

Methodology

Cisco surveyed over 3,000 U.S. and Canadian consumers on their perceptions and experience with the Internet of Things. The survey was conducted online in October, 2017 and was completely anonymous.

