The importance of consumer electronics safety

The TÜV SÜD Safety Gauge study

Add value.
Inspire trust.

Abstract

Consumers are increasingly concerned about the safety of electronics devices they purchase. This TÜV SÜD white paper presents the findings of TÜV SÜD's Safety Gauge study on consumers' attitudes and experiences regarding the safety of consumer electronic devices, and offers guidance for device manufacturers to better meet consumer product safety expectations.

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About the TÜV SÜD expert

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Kapil became Global Head of Consumer Products & Retail Services in September 2010 where his key responsibilities are management and growth of TÜV SÜD worldwide operations for the Consumer Products & Retail business and to provide strategic direction, manage P&L and build global resources to successfully run the business. "Consumer Products & Retail" provides product testing, inspection, certification and social compliance auditing services to international retailers, brands and their suppliers for product categories like Softlines (apparel and footwear), Hardlines (furniture, houseware, sporting goods etc), Electricals & Electronics and Toys & Children Products. Under his leadership, the business has seen rapid sustainable growth, increased global representation, and improved efficiency along with a vision and commitment to continue strengthening the business and resources worldwide.

With seventeen years of global experience in areas of general management, sales, sourcing and operations, Kapil began his career with TÜV SÜD in December 2007 as Head of Asia Pacific for Softlines business. He was soon entrusted with global responsibility of the Softlines business in June 2008.

Prior to TÜV SÜD, Kapil worked with Kufner Textil in Indonesia and India as Country Manager and Global Sourcing Manager. Kapil started his career in India with a leather footwear and manufacturing company where he was responsible for business development for the European and American markets.

Leading a multi-cultural and geographically dispersed team has given him an opportunity to gain in-depth business experience in Americas, Asia Pacific and Europe. His key areas of interest and strength are setting up new business units as well as the profitable expansion of existing ones.

Introduction

From personal computers and smart phones, to television sets and audio equipment, and even to state-of-the-art smart home appliances, consumer electronics are an essential, perhaps even indispensable, element in everyday life. Continued technical innovation and increasingly tech-savvy consumers are key factors in the continued growth in the demand for consumer electronics, and in the strong future economic outlook for manufacturers of consumer electronic devices.

But market prospects for consumer electronics manufacturers can easily be derailed or undone altogether when unsafe products reach the market. At the very least, reports of unsafe products typically result in negative publicity for the manufacturer. But unsafe products can also lead to consumer injuries and even death, thereby exposing manufacturers to potential legal consequences. And, the cost of product recalls can have a significant impact on a company's profitability.

So what do consumers think about the safety of consumer electronics? How does the origin of consumer electronic devices influence consumers' beliefs about whether a particular device is safe to use? What is the impact of product safety recalls on consumer buying habits? How do manufacturers of consumer electronics measure up in the minds of consumers when it comes to the safety of their products? And, most important, are consumers willing to pay a higher price for consumer electronic devices that have been evaluated for safety by an independent third-party?

The TÜV SÜD Safety Gauge is the world's first independent study to evaluate consumer and business attitudes and experiences regarding product safety practices in the consumer electronics sector. The results of this landmark study reveal the increasing importance of product safety to consumers around the world, as well as their views about manufacturers' efforts to improve product safety. This white paper summarises the results of the TÜV SÜD Safety Gauge study, and discusses the implications of the study's findings for manufacturers of consumer electronic devices.

Safety gauge study background

The TÜV SÜD Safety Gauge study was conducted in Q2 2012 by an independent market research firm to develop a better understanding of the state of product safety in selected global industries, including children's toys, food and consumer electronics. Specific objectives of the Safety Gauge study included:

- Understanding the general importance of product safety to consumers and producers.
- Uncovering perceptions regarding the level of product safety in specific industries.

- Evaluating the impact of actions by industry and government to improve product safety levels.
- Measuring safety and traceability issues in global supply chains.
- Assessing the role of third-party certification in consumer acceptance of consumer electronic products.

Study research was conducted among consumers and business professionals in top-tier cities in the U.S., the United Kingdom, China, India and Japan. These five markets represent almost half
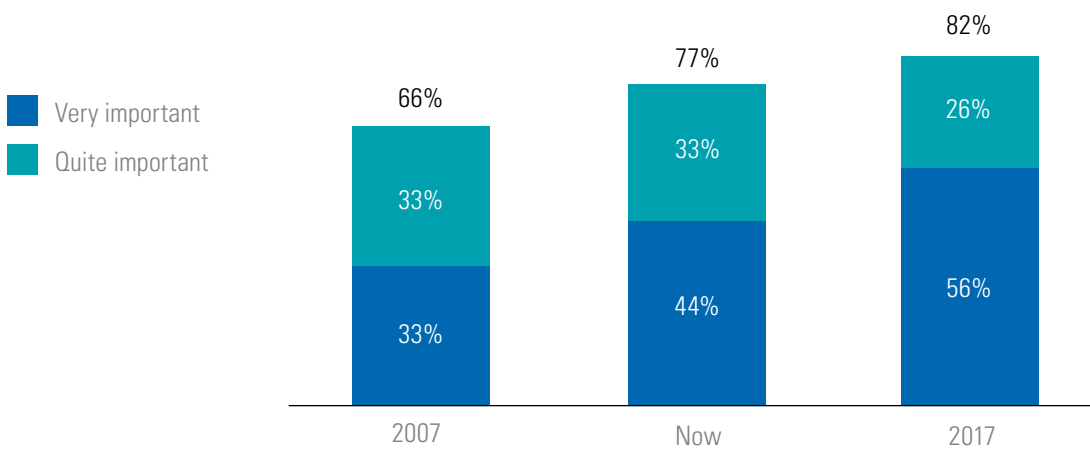
(48%) of worldwide Gross Domestic Product (GDP). Data was collected through online surveys as well as through consumer and business panel discussions. More than 5000 consumers and 500 management-level employees in manufacturing, distribution and retail companies contributed data to the Safety Gauge study, with nearly 4500 consumers and 231 management-level employees responding to surveys regarding the safety of consumer electronics.

Key findings on views on the safety of consumer electronics

As with other industries surveyed in the TÜV SÜD Safety Gauge study, concern among consumers regarding the safety of consumer electronic devices is increasing. When it comes to purchasing consumer products, more than 3 out of 4 (77%) of consumer study participants say that product safety is either very important or quite important to them, up from 2 out of 3 (66%) of consumers in 2007. Further, product safety is likely to increase in importance, as more than 4 out of 5 (82%) consumer study participants predict that product safety will be very important or quite important to them by 2017.

CONSUMER PERCEPTION OF THE IMPORTANCE OF SAFETY WHEN BUYING CONSUMER ELECTRONICS
Percentage of consumer respondents stating product safety is important

Legend:
- Very important
- Quite important

2007: 66% (33% quite important, 33% very important)
Now: 77% (33% quite important, 44% very important)
2017: 82% (26% quite important, 56% very important)

Source: TÜV SÜD Safety Gauge 2012

Detailed results from the Safety Gauge study on the safety of consumer electronics are addressed in the following sections.

The state of consumer electronics safety

The increased importance of product safety to purchasers of consumer electronics may be at least partially attributable to consumers' own experiences with unsafe products. Six out of 10 consumer study participants report having an experience with an unsafe consumer electronic device within the past 5 years. 26% report experiencing a cut from a sharp edge of a product, with an additional 21% reporting an allergic reaction to substance in the product that was not disclosed on the product label or otherwise not known to be used

in the product. An additional 18% of participants report having suffered an injury as a result of a product's design, while 16% say that a product overheated or caught fire.

The average frequency of experiencing an unsafe consumer electronic device among consumer study participants was slightly more than once a year. At least 1 out of 3 (34%) of participants report having at least one experience with an unsafe electronic device during the past year, with 19% reporting 2 or

more experiences per year, and 11% reporting 3 or more experiences within a single year.

Reports of consumer experiences with unsafe electronic devices appear to align with data from manufacturers of consumer electronics. According to TÜV SÜD Safety Gauge management study participants, manufacturers recalled consumer electronic devices more than 10 times during the past 5 years. However, 40% of management study participants report that their companies recalled unsafe electronic

devices more than 9 times over the preceding 5 years, with 21% having recalled unsafe products more than 20 times during the previous 5 years. Only 26% of management study participants indicate that their companies did not recall any consumer electronic devices during the prior 5 years.

Perceptions of the safety of consumer electronic devices

Consumer perceptions regarding the safety of consumer electronics are based on a number of factors, including the type of electronic device, the country from which an electronic device originates, and the retail channel through which an electronic device reaches consumers.

Among the various types of consumer electronic product groups, home appliance topped the list of consumer electronics of greatest safety concern for 52% of consumer study participants. Electrical extension cords ranked highest in safety concerns for 49% of participants, while mobile phones ranked highest for 43% of participants. Computers, laptops and other information technology products ranked highest in safety concern for 37% of participants, and televisions ranked highest for 30%.

An electronic device's country of manufacture is another important factor in consumer perceptions of product safety. Japan was ranked as the safest country for manufactured or exported consumer electronics by 53% of consumer study participants. Countries with the lowest consumer rankings regard the safety of exported or manufactured consumer electronics were generally located in Asia and Southeast Asia.

Consumer study participants also expressed a preference for purchasing electronic devices through online retailers, with nearly 4 out of 5 (78%) of participants reporting that they had purchased consumer electronics online. However, for 57% of participants, concerns regarding product safety were much greater or somewhat greater for consumer electronics purchased online than for those purchased through other retail channels.

In addition to the above factors, familiarity with specific brands of consumer electronics also influences consumer perceptions regarding a product's safety profile. Consumer study participants consistently report that they expect manufacturers of their trusted consumer electronics brands to routinely conduct:
1. Batch testing of products for safety (67%).
2. Pre-shipment inspections (56%).
3. Product certification testing (53%).

Manufacturers of trusted consumer electronics are also expected to conduct supplier audits (51%), and to maintain certified management systems to assure quality and safety (48%).

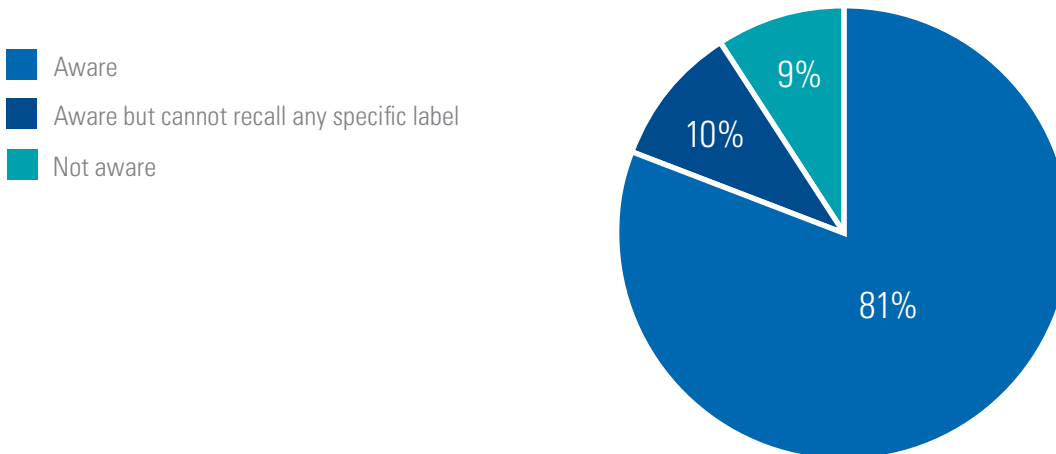# Electronic device safety and purchasing criteria

The TÜV SÜD Safety Gauge study also measured the criteria of greatest importance to consumers in the evaluation of the electronic devices they purchase. Price was the most important or second most important criteria in purchasing specific consumer electronics for more than half (58%) of consumer study participants, followed by product performance (48%), functionality (36%) and product safety (20%). Product safety ranked ahead of other important purchasing criteria, such as energy efficiency (13%), brand (7%) and country of origin (3%), as well as whether an electronic device is considered environmentally sustainable (5%).

For most consumers, the presence of product safety labels is a strong indication of the safety of consumer electronics. Fully 88% of consumer study participants say that they would be much more or somewhat more likely to purchase electronic devices that clearly state on their packaging that the product has met or exceeded applicable product safety standards. Only 8% of participants say that the presence of such information would make no difference in their purchasing decision.

Among consumer study participants, at least 8 out of 10 consumers are aware of at least one type of product safety label or mark, such as a certification mark of a recognised testing laboratory, or those signifying compliance with product safety requirements of the European Union (the CE mark or "RoHS-Compliant") or the U.S. Consumer Product Safety Improvement Act (CPSIA). Even for consumer electronics brands with which consumers are familiar, evidence of product safety certification has at least some influence in the preference of one product over another for 80% of consumer study participants.

CONSUMER AWARENESS OF CONSUMER ELECTRONICS SAFETY LABELS

- Aware
- Aware but cannot recall any specific label
- Not aware

9%
10%
81%

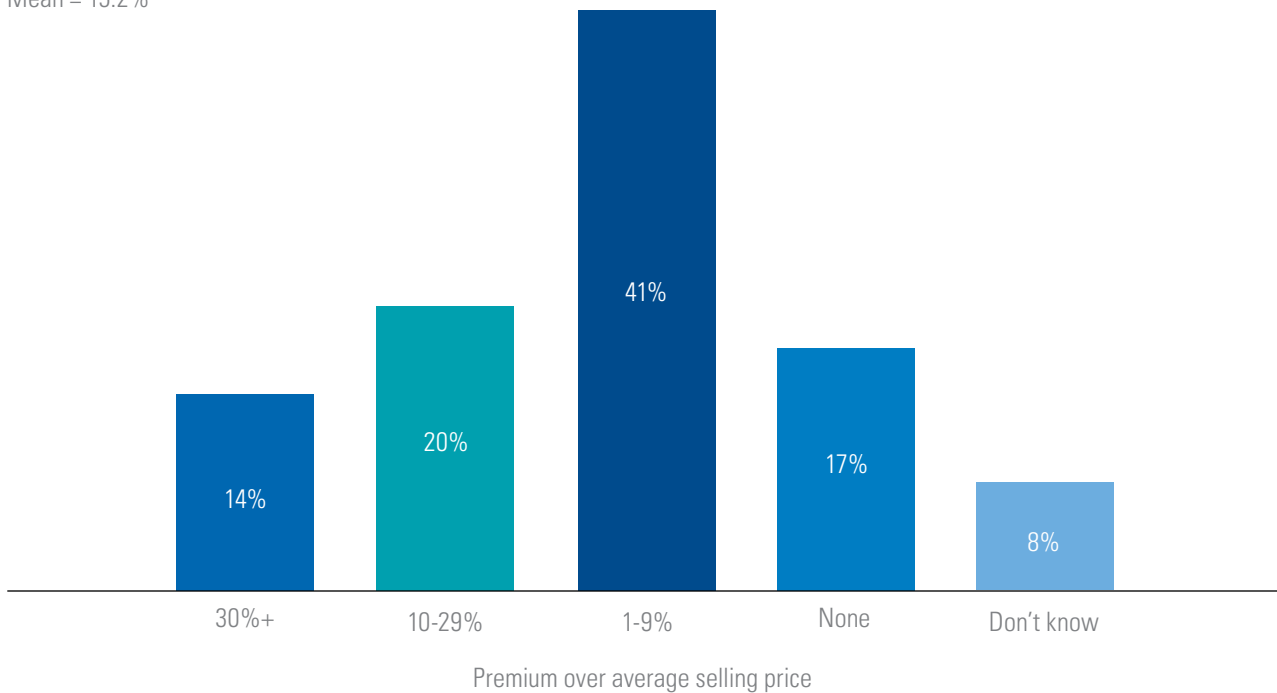Source: TÜV SÜD Safety Gauge 2012

Importantly, consumers are willing to pay a premium price for consumer electronics whose safety has been independently verified. Among consumer study participants, electronic devices that have been verified by a credible, independent third-party as exceeding applicable government standards would command an average 15.2% price premium over similar but unverified products. 14% of participants would be willing to pay a premium of 30% or more for verified safe consumer electronics, while only 17% would be unwilling to pay any premium.

Mean = 15.2%

14%	20%	41%	17%	8%
30%+	10-29%	1-9%	None	Don't know

Premium over average selling price

Source: TÜV SÜD Safety Gauge 2012

The role of government in assuring product safety

Consumers generally expect governments and regulatory authorities to take responsibility for the safety of consumer electronics. 44% percent of consumer study participants assert that government authorities should take the lead in ensuring the safety of consumer electronics in their country, while 20% believe that consumer groups should be primarily responsible for the safety of consumer electronics. Only 12% of study participants identified manufacturers of consumer electronics as the entity primarily responsible for the safety of electronic devices.

However, only slightly more than half (53%) of consumer study participants believe that governments are definitely or mostly doing enough to ensure the safety of consumer electronics sold in the market. Fully 20% of participants believe that government does little or nothing to ensure product safety when it comes to consumer electronics. And only 16% of consumer study participants believe that penalties imposed on companies that fail to meet product safety standards are strict enough.

The importance of third-party certification

Finally, consumers study respondents are clear about the importance of third-party testing and certification of consumer electronics in their assessment of safe electronic devices and their purchasing decisions. 90% of respondents report that third-party certification is either very important or quite important for any electronic device sold in the market. And 83% of consumer study respondents say that third-party certification makes them feel better about buying a specific product, or at least provides some reassurance of safety.
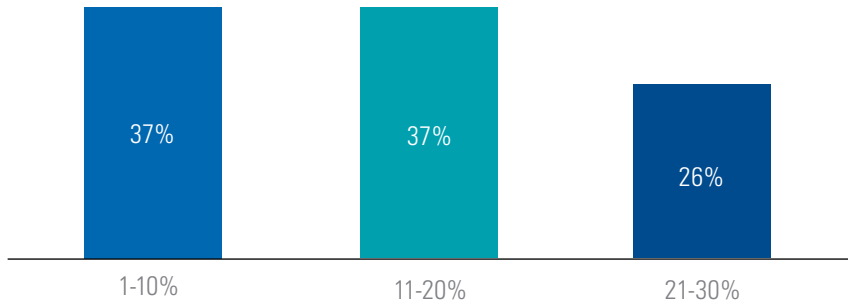
The business cost of product safety

When it comes to the perspective of manufacturers of consumer electronics, data from the TÜV SÜD Safety Gauge study demonstrates that significant improvements have been made to product safety practices over the last five years in the consumer electronics industry. A remarkable 85% of management study participants report that their companies meet or exceed all applicable government product safety requirements today, compared with only 70% five years ago. And nearly half (45%) say that their companies significantly exceed minimum product safety requirements, compared with just 16% five years ago.

Manufacturers typically rely on a handful of methods to drive improvements in the safety of the consumer electronics they produce, including testing and certification by independent third-parties. Nearly 7 out of 10 (68%) of management study respondents report the use of in-house product testing to assure safety, followed by process certification such as ISO 9001

PERCENTAGE OF PRODUCTION COSTS SPENT ON PRODUCT SAFETY MEASURES

Mean = 14.6%

1-10%	11-20%	21-30%
37%	37%	26%

Source: TÜV SÜD Safety Gauge 2012

(61%) and product certification by an independent third-party (57%). Additional methods include sourcing materials from trusted suppliers (56%), training staff on product safety issues (55%), and product testing by an independent third-party (52%).

However, improvements in the safety of consumer electronics have not been achieved without a significant cost. Management study participants report that their companies spend an average of 14.6% of total production-related costs on product safety

measures, with 26% of respondents reporting product safety expenditures of greater than 20% of their total production costs. What's more, management study participants estimate that their companies would need to increase spending on product safety measures by an average of 21.7% of total production costs to achieve compliance with the most stringent safety standards.
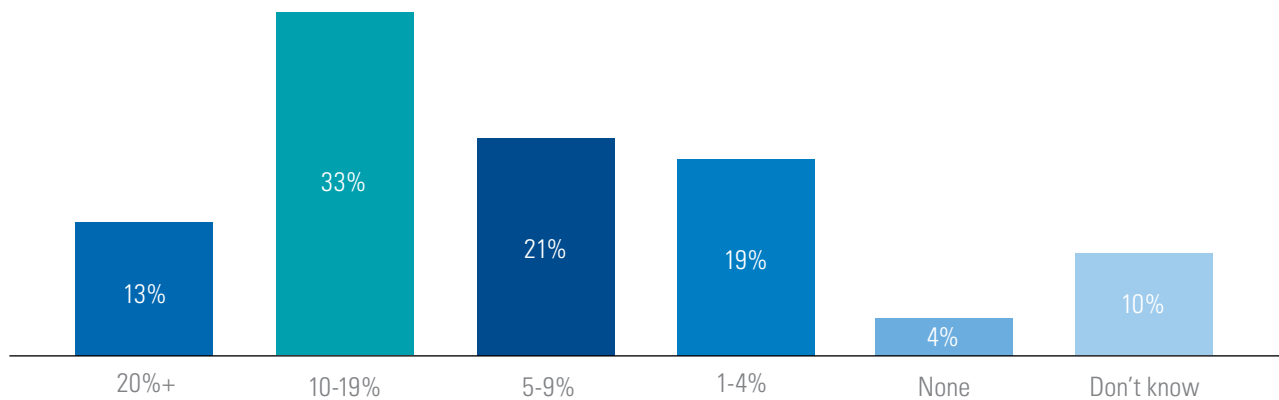
However, these costs must be measured against the financial impact of product recalls resulting from unsafe electronic devices. Among management study participants, companies experienced an average of 13.2 product safety recalls within the previous five-year period, with 21% experiencing 20 or more recalls within that timeframe. Expenses directly associated with product recalls cost manufacturers of consumer electronics an average of 10.3% of annual revenue, with 13% of respondents estimating recall expenditures equaling or exceeding 20% of revenue. Indeed, product recall expenses can have a significant impact on a manufacturer's profitability.

ANNUAL INDUSTRY COSTS OF RECALLS AS A PROPORTION OF REVENUES
Mean = 10.3%

13%	33%	21%	19%	4%	10%
20%+	10-19%	5-9%	1-4%	None	Don't know

Source: TÜV SÜD Safety Gauge 2012

Continued investments by consumer electronics manufacturers in product safety measures can result in fewer product recalls and reduce the expenses associated with them. Further, improved product safety levels can help a producer demonstrate leadership in the industry, and potentially open the door to new markets where higher levels of product safety are expected. Finally, increased product safety contributes to brand reputation in the market, providing manufacturers with greater leverage when it comes to pricing their products.

What manufacturers can do to meet consumers' product safety expectations

The findings of the TÜV SÜD Safety Gauge study clearly show that consumers are placing increased value on the safety of the consumer electronics that they purchase, and are becoming more knowledgeable about how to identify electronic devices that are more likely to be safe. These findings are evidence of a significant opportunity for manufacturers of consumer electronics to leverage consumers' interest in safe products by making safety a priority. The additional investment required to increase consumer electronics' safety can not only effectively reduce the cost associated with product recalls, but can also increase consumer loyalty to specific electronics brands, thereby supporting company efforts to increase market share.

The TÜV SÜD Safety Gauge also shows that manufacturers of consumer electronics are serious about product safety. 69% percent of management study respondents reported that product safety should have priority over company sales and profitability. Further, for management study respondents, the leading challenge to improving product safety is not the cost of third-party testing, inspection or certification but the lack of government regulations. This finding suggests that manufacturers committed to the safety of their products would welcome increased oversight and regulation, and even mandatory certification, as a way to increase the overall safety of consumer electronics available in the marketplace.

No doubt, an increasingly competitive marketplace for consumer electronics will drive demand for electronic devices that are both innovative and safe to use. In the end, the most competitive manufacturers are likely to be those who promote the overall safety of their consumer electronic products, meeting the demands and expectations of consumers, and thereby gaining an important advantage in the marketplace.

TÜV SÜD is a leading international service organisation providing one-stop global solutions for product quality and safety testing and inspections, engineering support, management system certification, and training. With over 19,000 employees, TÜV SÜD operates worldwide at more than 800 locations. As partners in our customers' processes, our specialist teams ensure that technology, systems, and know-how are optimised, thus strengthening our customers' global competitiveness.

GLOSSARY OF ACRONYMS

CPSIA – consumer product safety improvement act

GDP – gross domestic product

Make consumer safety your priority

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Add value. Inspire trust.
TÜV SÜD is a trusted partner of choice for safety, security and sustainability solutions. It specialises in testing, certification, auditing and advisory services. Since 1866, the company has remained committed to its purpose of enabling progress by protecting people, the environment and assets from technology-related risks. Through more than 24,000 employees across over 1,000 locations, it adds value to customers and partners by enabling market access and managing risks. By anticipating technological developments and facilitating change, TÜV SÜD inspires trust in a physical and digital world to create a safer and more sustainable future.

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