

Improving business
performance and resilience
for the automotive industry

bsi.

...making excellence a habit.™

The automotive industry: an engine of global economic growth

The automotive industry has seen tremendous growth in recent years, and despite uncertainties from challenging economic conditions, seismic changes in the political landscape, and increasing globalization, it continues to grow.

In 2016, 88.1 million cars and light commercial vehicles were sold worldwide*, up 4.8% from a year earlier. Global car sales are expected to exceed 100 million units by 2020 with much of this being driven by the growth in emerging markets.

For every job directly involved in automotive production, it is estimated that it supports a further five jobs elsewhere.

Many of these are concentrated in related manufacturing and services. This makes the automotive sector one of the largest providers of employment globally.

Although the automotive industry has long been one of the most efficient and productive sectors, in this time of relentless growth, the need to adapt, innovate, and mitigate risk has never been more important.

Trends that are transforming the automotive industry

Tighter safety and regulatory requirements including stricter government fuel efficiency standards



Automotive manufacturers must **reduce their CO2 emissions** in Europe to 95 grams per kilometre by 2021

The accelerated rise of new technologies including autonomous vehicles and connected car systems means suppliers need to innovate to stay relevant.



The automobile industry invests over **€84 billion** in research, development and production.*

Increasingly complex supply chains with constant pressure to remain lean.



Size of the automotive supplier market worldwide **€620 billion*****

The need for automotive companies to demonstrate good governance and step up their reputation-management efforts especially in light of recent scandals.



In 2014, over **600 million** vehicles were recalled in the US.†

Increased demand from emerging markets means manufacturers need to respond and adapt their offerings to stay competitive.



In China, sales grew by **+15%** (24 million units) in 2016‡

In light of these potentially disruptive trends never has the need to be a resilient organization and adapt to stand the test of time been so important. The ability to produce safe and quality products, whilst protecting your people and the

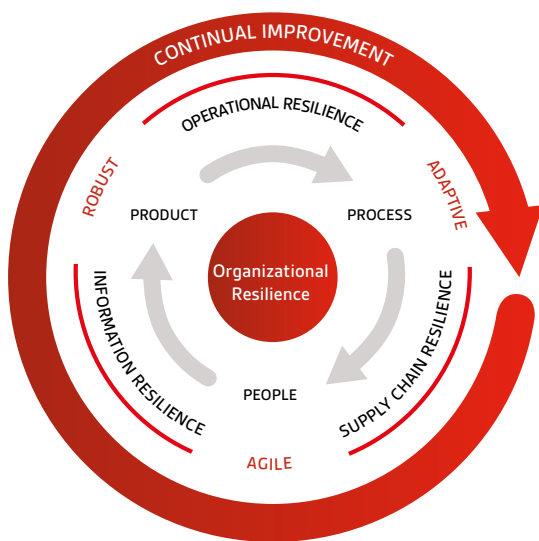
environment remains at the heart of this. In this brochure we use our Organizational Resilience model to show how to increase resilience, face these challenges, and thrive.

Organizational Resilience is the ability of an organization to anticipate, prepare for, respond and adapt to incremental change and sudden disruptions in order to survive and prosper.¹

Three essential elements of Organizational Resilience

BSI's model for Organizational Resilience can be distilled into three fundamental elements: product excellence, process reliability and people behaviours.

We work with organizations around the globe to become more resilient by embedding habits of excellence in each of these three elements.



Product excellence

No matter where you are along the automotive supply chain, do your products /services meet market requirements and customer needs? Do they comply with automotive market regulations? To be truly resilient and ensure customer satisfaction you need to be agile, continually innovate, and differentiate your offering.

Process reliability

Consistent, reliable, and robust processes are crucial for an organization to remain resilient. In the automotive industry lean manufacturing processes have delivered operational excellence and continual improvement. Business critical processes in areas such as, quality, health and safety, environmental management, business continuity management, and information security must be robust and compliant both within the organization and throughout its supply chain.

People behaviours

Organizations must manage interactions with customers and supply chain partners on ethical and social responsibility issues and when managed well results in a positive effect on the brand's reputation.

People must be trained and have right skills. Workers must understand the needs of the customer, be motivated to make continual improvements, and innovation encouraged. This helps keep morale, wellbeing, and retention high.

Whether you're in automotive manufacturing, wholesale/ retail, or in automotive maintenance and repair, BSI identifies three domains today that are critically important in achieving Organizational Resilience:

Operational Resilience

Delivers improvements across your products/services and processes to meet the evolving needs of your customers as well as improving how you govern your business and value your people.

Information Resilience

Enhances your information security and protects your critical infrastructure from cybersecurity threats and information risks, so your stakeholders can trust their sensitive data is secure.

Supply Chain Resilience

Protects the health and safety of your customers, your reputation and your bottom line by ensuring you're using suppliers you can trust to help deliver your products to market.

¹ Source: BS 65000 Guidance on Organizational Resilience

BSI solutions

Our range of integrated services can be structured to your specific needs and help you address quality, supply chain, sustainability and build resilience within your organization:

Standards and subscription services

– provide access to an enviable source of knowledge through standards and publications. Our BSOL (British Standards Online) catalogue includes standards for all parts of the automotive lifecycle from initial design, to end of life, including standards for assembly, production and after-care.

BSI Training Academy

– introduces you to standards, including how to implement and audit them. We also deliver training course on core tools including FMEA and APQP. Our expert tutors will make sure you complete the course feeling confident that you can apply the knowledge you've gained as soon as you step back inside your organization.

“Once again, and as expected, BSI provided a training experience second to none” – General Motors, UK

Independent and impartial certification

– verification proves you're compliant to your stakeholders. Many of the worlds' most widely adopted management system standards were originally shaped by BSI including ISO 9001, ISO 14001, and ISO/IEC 27001.

“The audit was carried out successfully and with professionalism by the BSI auditors” – Valeo Sistemas Electronicos, Mexico

2nd party verification audits,

– including the supply chain tool BSI VerifEye, helps protect and improve your suppliers performance.

“BSI has become an extension of Husky's security programme. It has been a great partnership”

– Husky injection moulding systems, Ltd, UK

BSI Entropy™ software

– helps you effectively manage your systems and processes to drive performance.

Using decades of experience and innovative development in this field, our expert teams can work with you to identify and share the key standards which address your concerns. Best practice is underpinned by embedding the right disciplines within your organization, which can be achieved through management systems training, certification and verification.

The BSI services outlined in this brochure address the fundamental issues facing organizations involved in automotive manufacturing, in wholesale/retail, or in maintenance and repair today and into the foreseeable future.

Operational Resilience

Automotive quality management and process improvement

It's always been crucial for the automotive industry to demonstrate high levels of quality and customer focus, to streamline processes, and reduce waste and variation in the supply chain. Certification and training to globally recognized standards will help mitigate the risks of failure in the supply chain, boost customer satisfaction and make your organization resilient.

IATF 16949 - Automotive quality management

Rather than being a standalone Quality Management System (QMS), this standard is to be implemented as a supplement to, and in conjunction with ISO 9001:2015. It brings quality management and continual improvement into the heart of an organization.

This standard acknowledges some of the latest trends in the automotive industry and enables organizations to reduce risk and build resilience.

- Recognizing the increased adoption of technology in vehicles, it contains processes covering the quality assurance of suppliers of embedded software products.
- Traceability and supplier selection process requirements contained in the standard are designed to reduce the risk of product failures.
- Acknowledging recent challenges faced by the automotive industry, it helps demonstrate your commitment to responsible and ethical working practices as corporate responsibility policies such as anti-bribery, an employee code of conduct, and a "whistle-blowing" policy are required.

Certification to this standard is mandatory for suppliers to most of the Original Equipment Manufacturers (OEM's) in the automotive industry, and replaces ISO/TS 16949.

ISO 9001 - Quality management

The worlds' most widely adopted QMS standard, used by organizations from all sectors and of all sizes to boost customer satisfaction. This powerful business improvement tool forms the basis of IATF 16949 with which it should be used in conjunction. Organizations certifying to IATF 16949 must also comply with the requirements of ISO 9001.

Lean Six Sigma

This is a systematic approach to process improvement that focuses on the customer. It can be applied to organizations delivering a service, or involved in manufacturing and design and can help you to remain efficient and competitive. Using statistical tools and techniques to analyse and improve processes it is a relentless effort to reduce process and product variation and build resilience.



Environmental, and health and safety solutions

A responsible organization looks after the environment and their people. It is estimated that the automotive industry is responsible for roughly 15% of global carbon emissions. With pressure on the earth's resources mounting, the automotive industry has been tasked with reducing the negative impact of manufacturing and driving vehicles by demonstrating its environmental and sustainability-related credentials.

Each year 2% of workers in the UK manufacturing sector sustain a work-related injury². A poor safety record can cause reputational damage and prove costly. That's why creating a safer workplace and reducing the levels of work-related injuries is a high priority throughout the automotive industry.

Our comprehensive range of strategic, management and technical consulting solutions – assessment, compliance, risk management, reporting, training, communication and more – help clients to achieve their environmental, health, safety and sustainability short-term needs and long-term goals. Management system certification can help an organization to fully evaluate its environmental performance and demonstrate compliance and credibility to its stakeholders.

ISO 14001 – Environmental Management

The most established international environmental management system, and originally developed by BSI. It will help you to reduce environmental risks, improve environmental performance, and give evidence to stakeholders that regulatory requirements have been met. Third party certification to ISO 14001 is often mandated by many of the leading automotive manufacturers throughout the supply chain.

ISO 50001 – Energy Management

Energy management in the automotive industry is essential for reducing energy costs. This international standard provides a framework to help manage the energy supply and consumption in an organization. It applies to all aspects of energy use and enables you to help your organization and your suppliers take a systematic approach to achieving continual improvement of energy performance. Adding ISO 50001 questions to your supplier score cards could improve the competitiveness of your supply chain.

OHSAS 18001 – Occupational Health & Safety Management

Ensuring employee safety is critical and OHSAS 18001 provides an occupational health and safety framework that will help identify and mitigate risk as well as defend and protect your workforce, reputation and brand. OHSAS 18001 (likely to be replaced by ISO 45001) can be used to demonstrate an organizations' conformity to some of the personal safety-related aspects of IATF 16949.





Operational integrity and excellence

The quality of the products and services an organization provides to its customers is most often tied to the quality of its processes. Maintaining customer loyalty in today's online world — where events and opinions can be shared in seconds and go viral just as quickly — can be a puzzle with many complex pieces. Not only does how you deliver your product or service matter, all of the pieces supporting that production also have to be taken into consideration to avoid damaging your reputation.

ISO 37001 - Anti-bribery

This is a best practice framework to manage bribery risks and help put adequate procedures in place to protect your organization and help fulfil your regulatory requirements. IATF 16949 now requires organizations to have an anti-bribery policy and certification to this standard could help demonstrate your policies and procedures around this subject are robust.

ISO 55001 – Asset management

An international standard which focuses on the effective and efficient management of assets including usage and return from an asset while potentially lowering the overall cost of ownership or management.

ISO 22301 – Business continuity management

This international standard enables organizations to identify potential threats to their business and make sure they have the capacity to deal with unexpected disruption. It can help you put in place contingency plans and build resilience to protect an organization from events such as natural disasters, equipment failures, or labour shortages. An effective business continuity management system can show your organization is reliable and instils confidence from stakeholders.

ISO 44001 - Collaborative business relationships

A framework for collaborative business relationships to help companies develop and manage their interactions with other organizations for maximum benefit to all.

BS 10125 – Vehicle damage repair

BSI Kitemark for Vehicle Damage repair (BS 10125) is adopted industry-wide by the most forward-thinking body shops and accident repair centres, who wish to demonstrate they are committed to carrying out work to the highest standards. Major automotive manufacturers have adopted it, and it's recognized by many insurance companies.

Vehicle component and glass testing

To help maintain quality and safety we product provide testing services for the automotive industry. For vehicle components, this involves taking samples of the product and assessing your quality system. Conformity assessment provides assurance that goods will perform to expectations and be safe to use.

We also test many different glazing types, including toughened and laminated, for use windscreens and other parts of road going vehicles. This includes optical, impact and resistance testing which can help meet legal requirements in certain markets.

Information Resilience

In the automotive industry, the relentless adoption of new technology, increased vehicle connectivity, and the predicted growth in use of autonomous vehicles, safeguarding information is crucial. A resilient organization has to manage its information—physical, digital and intellectual property—throughout its lifecycle; from source to destruction.

By adopting information-security-minded practices, your staff and stakeholders are still able to gather, store or access the information they need securely and effectively.

ISO/IEC 27001 Information Security Management

An excellent framework to help organizations manage and protect information assets so that they remain safe and secure. ISO/IEC 27001 helps organizations continually review and refine how this is done, not only for today, but also for the future.

ISO/IEC 27017 Information Security in the Cloud

Extending many of the controls established and implemented with ISO/IEC 27001 as well as some additional ones, ISO/IEC 27017 protects the information stored and/or shared via cloud-based services.

ISO/IEC 20000

IT services need to be cost effective, reliable, consistent and efficient. This balance can be achieved with ISO/IEC 20000 whether IT service management is internal or outsourced. It brings organizations up to ITIL standard so that IT services deliver exactly what's needed.

CSA Star

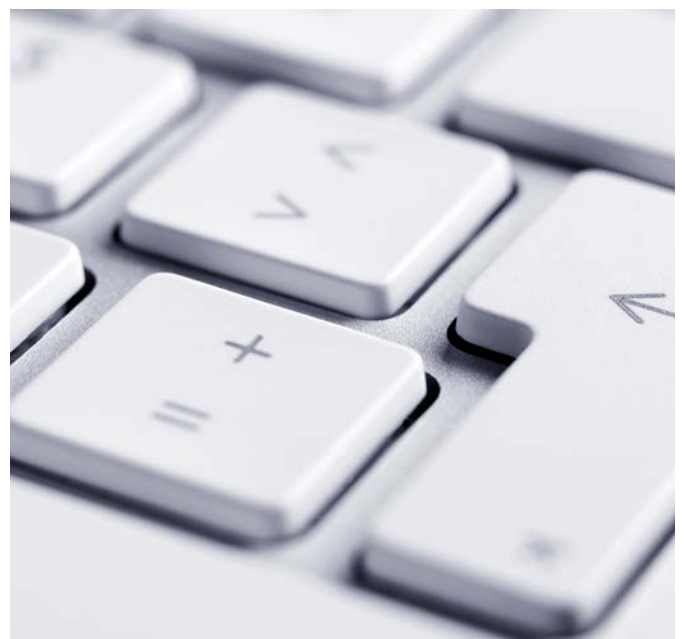
The implementation of CSA STAR, in addition to a compliant ISO/IEC 27001 information security management system allows organizations to put controls in place to protect business critical information.

Penetration Testing

This is the practice of testing a computer system, network or web application to find vulnerabilities that an attacker could exploit, simulating an attack against an organization's IT assets. Our penetration testing services cover aspects of organizational security, such as infrastructure and web applications.

Wombat Security

Wombat Security Technologies, is a security awareness assessment and training solution and can be used to train the people in your organization how to recognize and avoid cyber-attacks. Organizations have used the Wombat methodology to build resilience and reduce successful external phishing attacks and malware infections by up to 90%.



Supply Chain Resilience

The automotive industry comprises of global supply chains which are complex and spread over long distances. Responsible sourcing strategies play a large role in reducing potential quality risks and protecting an organization's brand and reputation. And as globalization increases organizations need to mitigate risk from threats such as counterfeit products which could threaten the safety of consumers.

Delivered by BSI Professional Services, our supply chain solutions can help protect your business, your brand and your customers.

Supply Chain Solutions – Suppliers Verification and Risk Assessment

An intelligence based approach from BSI can help an organization manage its supply chain risk and protect its brand reputation. It leverages standards, risk evaluation tools, verification and supply chain tools to help clients identify and manage their supply chain and thus mitigate risks.

BSI Supplier Verification Audits

On-site profile validation and verification audits based on BSI or client requirements.

SCREEN Intelligence

A comprehensive supply chain intelligence tool including live country heat maps covering security, Social Responsibility, and Business Continuity intelligence to measure country level risk factors. SCREEN helps organizations to identify and understand their supply chain threats.

BSI VerifEye™ Profile

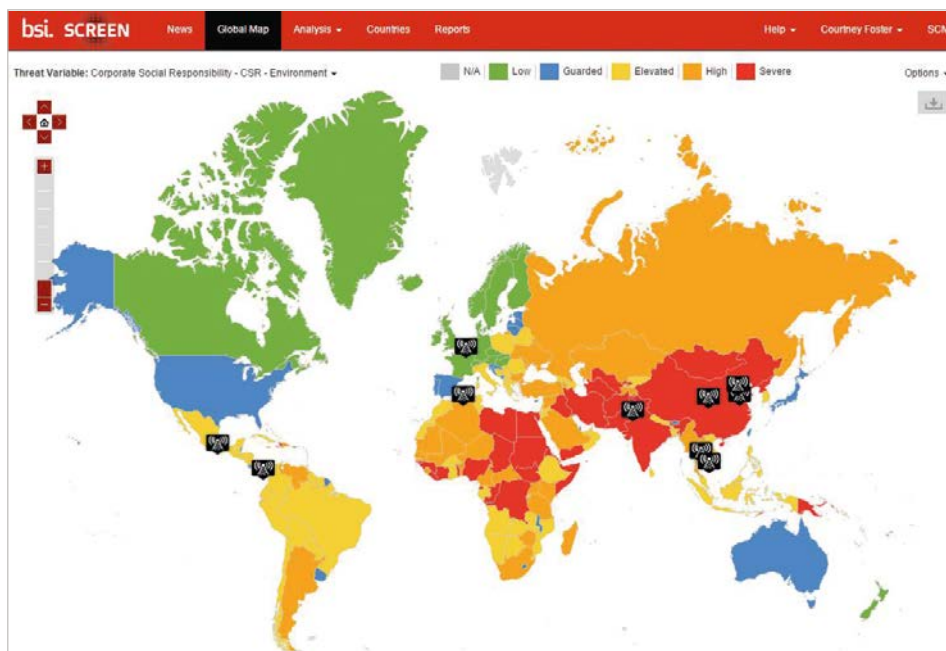
Providing greater visibility and traceability, a trusted BSI VerifEye profile turns certifications, site photos, and business credentials into a positive marketing tool, providing trust and confidence.

Supplier Compliance Manager (SCM) Platform

A web-based tool designed to facilitate and automate mandatory supplier risk assessments. Manage supplier self-assessment and on-site supplier qualification and verification programmes including on-boarding, scheduling, reporting, corrective and preventive action management and benchmarking.

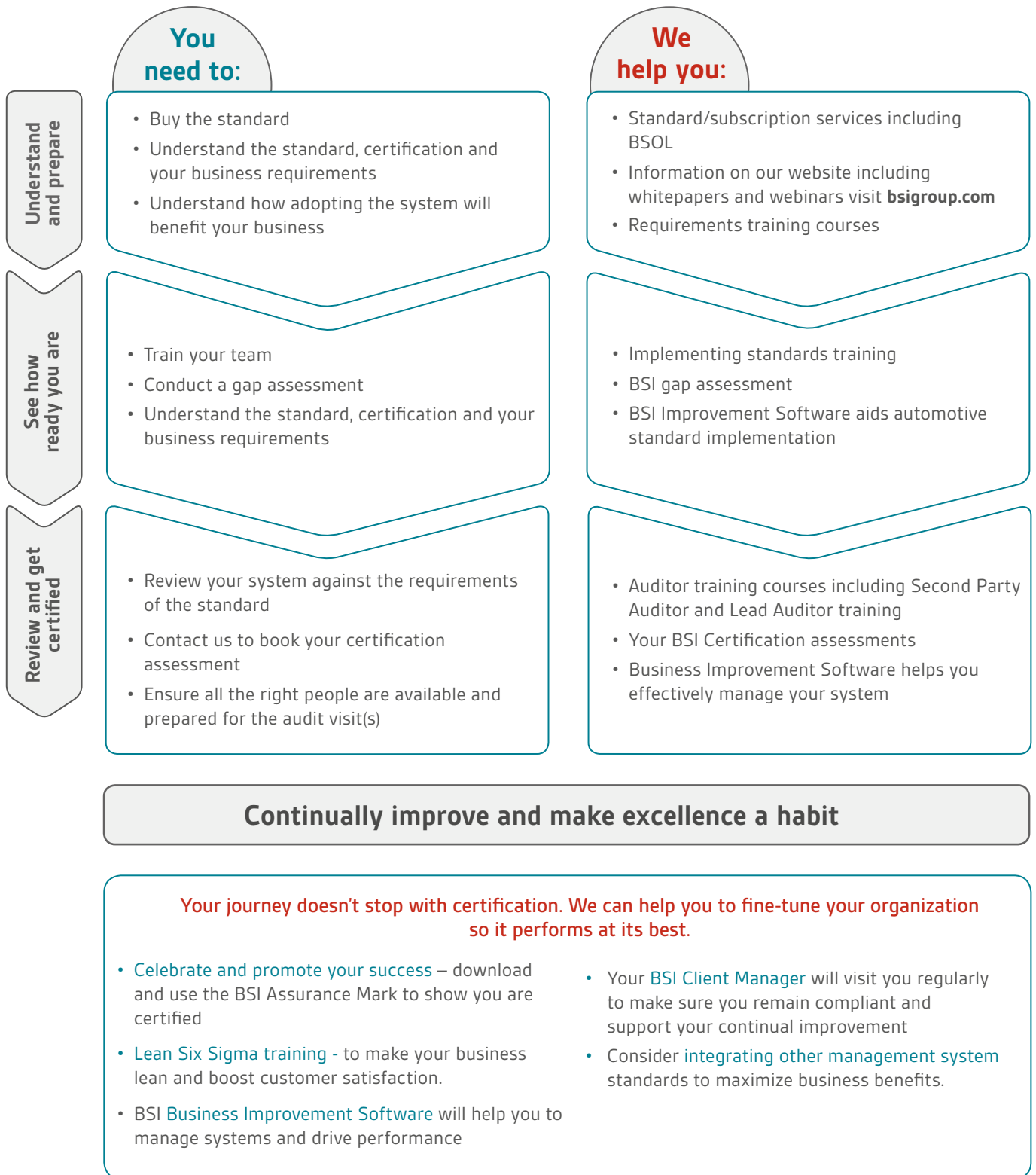
Supplier Advisory Services

Offering technical advice and information on supply chain risk, programme set-up and design.



The customer journey to Resilience

Adopting standards can seem intimidating, but it doesn't have to be. We help our clients on every step of the journey.



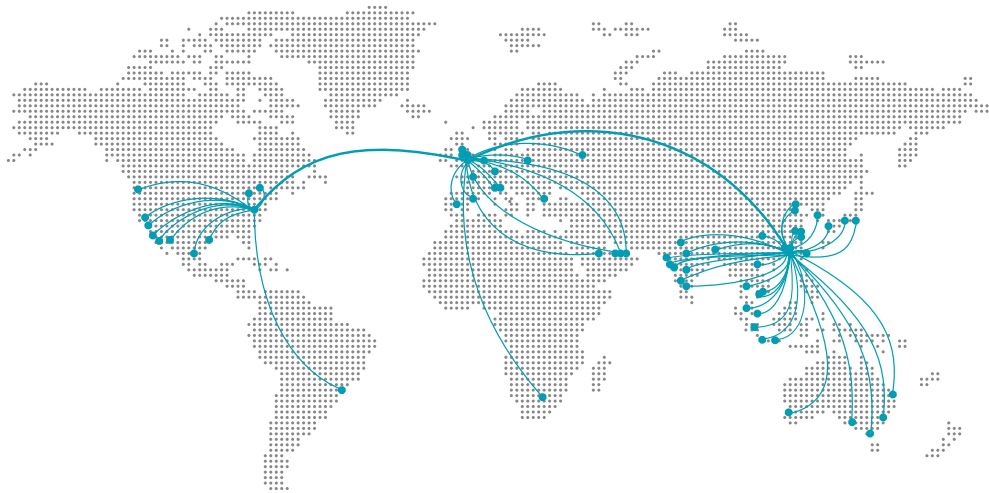
About BSI



By Royal Charter

BSI, by Royal Charter is the business standards company that helps organizations all over the world make excellence a habit through standards creation, system certification, supplier verification and training activities that help organizations manage risk, reduce costs and ensure sustainability.

As the world's most experienced Standards Body and founding member of ISO, BSI leads the way in originating many of the world's most recognized standards, including ISO 9001 - Quality Management, ISO 14001 - Environmental Management, BS OHSAS 18001 - Health & Safety Management, ISO 22301 - Business Continuity Management, ISO 27001 - Information Security, ISO 50001 - Energy Management, ISO 14046 - Water Footprinting, and ISO 37001 - Anti-bribery.



11,500

Industry experts dedicated to your success



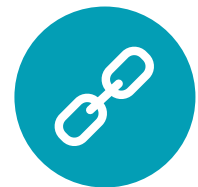
81,000

Customers worldwide operating in 180 countries



Training

Last year we provided training to 134,000 people



Standards

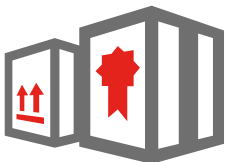
Providing access to 90,000 international standards, with over over 3,000 active, draft and historic standards in automotive manufacturing, health & safety, testing and technology.



Certification

191,000 audit days delivered last year

Attendees score our tutors **9.25/10** in our Global Client Satisfaction Survey



Product certification

A Notified body for CE marking against 14 European Directives/Regulations to access global markets.

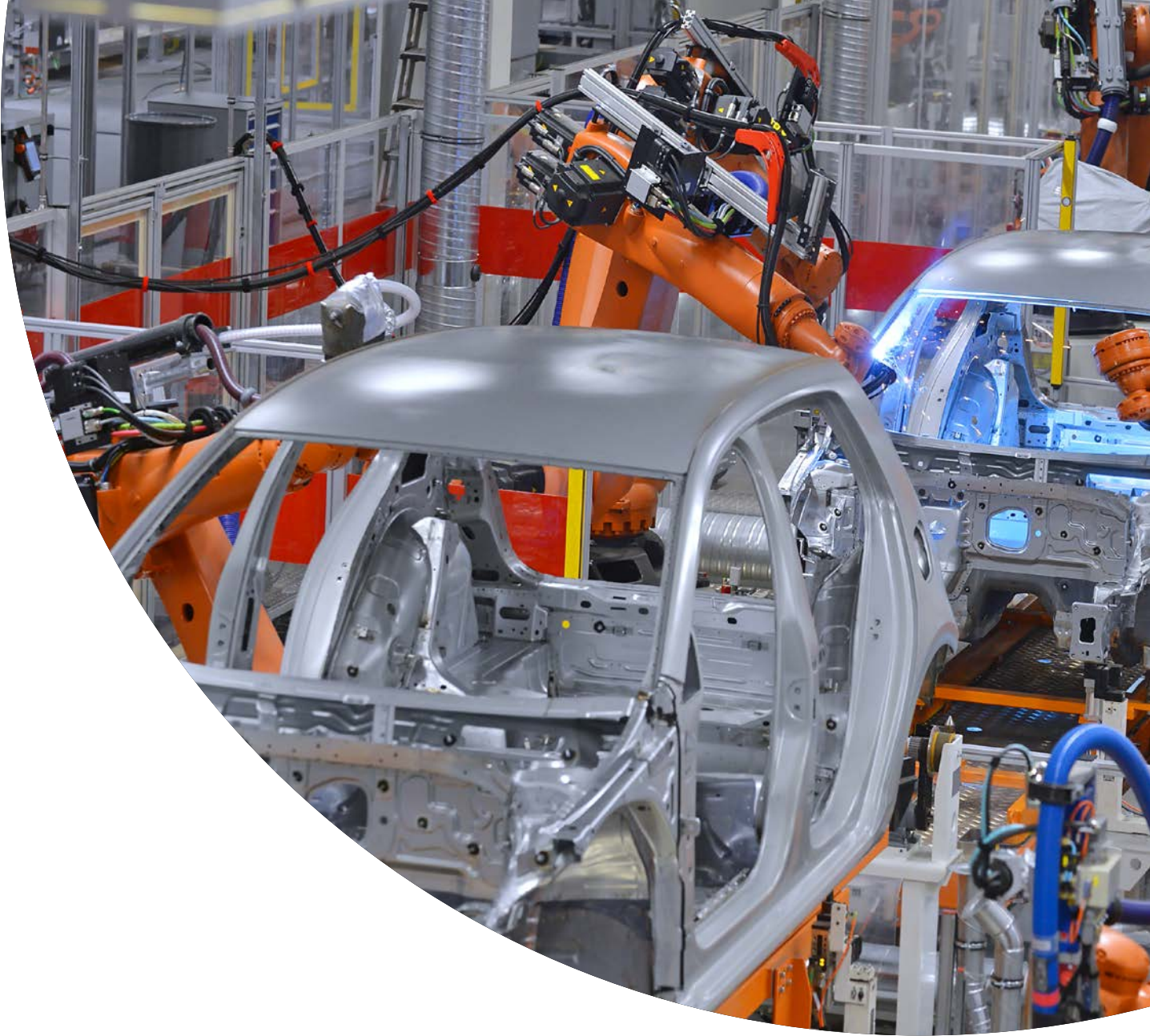


Together our clients account for

75% of the FTSE 100,

51% of the Fortune 500 and

68% of the Nikkei listed companies



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