



focus

#113

Your gateway to International Standards



Just out!

the new **ISO 9001** and **ISO 14001**



22



#113



36

ISO focus

November-December 2015



Photo: Patrick H-

30



6



14



44



buzz

20-21 A taste of standards at Milan Expo 2015
ISO Survey states its stats for 2014
Crowdsourcing reinvents standardization

- 2** Sustainable success
Comment by Scott Steedman.
- 4** 15 seconds to #speakstandards
Zooming in on ISO's first WSD video competition.
- 6** Giving ISO 9001 a fresh sparkle
The jewel of quality management system standards gets an update.
- 14** India puts quality in the pipeline with ISO 9001
Quality conduits keep the oil and gas flowing.
- 22** Achieving environmental focus with ISO 14001:2015
The world's most popular standard for environmental management has just been revised.
- 30** IBM leverages ISO 14001 for sustainable business
Meet one of the world's greenest high-tech companies.
- 36** Having our say
Argentina shares its experience in the 2015 revisions of ISO's flagship management system standards.
- 38** Healthy soils for a healthy life
2015 is the International Year of Soils.
- 40** Why the world needs ISO 45001 for workplace safety
This future standard will make safer working environments for all.
- 44** Building a better future
Highlights from the General Assembly in Seoul.

ISOfocus November-December 2015 – ISSN 2226-1095

ISOfocus, the magazine of the International Organization for Standardization, is published six times a year. You can discover more content on our Website at iso.org/isofocus, or by staying connected with us on:



Director of Marketing, Communication and Information | **Nicolas Fleury**
 Head of Communication and Content Strategy | **Katie Bird**
 Editor-in-Chief | **Elizabeth Gasiorowski-Denis**
 Editors | **María Lazarte, Clare Naden, Sandrine Tranchard**
 Copy editor and Proofreader | **Vivienne Rojas**
 Contributing writers | **Garry Lambert, T.S. Kathayat**
 Designers | **Xela Damond, Pierre Granier, Alexane Rosa**
 Translators | **Alexandra Florent, Cécile Nicole Jeannet, Catherine Vincent**

Subscriptions and back issues

If you enjoy ISOfocus, you can subscribe and download the pdf for free, or purchase single hard-copy issues through our Website iso.org/isofocus. You can also contact our customer service at customerservice@iso.org

Contributions

You can participate in creating this magazine. If you think your contribution can add value to any of our sections, please get in touch at isofocus@iso.org. All content in this magazine is © ISO, 2015. No part can be reproduced without the prior written permission of the publisher. If you wish to do so, please contact us at isofocus@iso.org. Views expressed are those of the respective contributors and are not necessarily those of ISO or any of its members.



This magazine is printed on certified FSC® paper.



Sustainable Success

Never has industry been more aware of the importance of good governance. The pace of change in the global economy means that any organization that aspires to sustainable success needs a coherent business strategy that addresses not only the quality of its products and services, but its processes and people.

To survive and prosper, organizations need to become resilient. This relies on identifying change and its associated risks and opportunities early, no matter where they come from. They form the fundamental building blocks for successful businesses.

The decision by ISO to bring all of its management system standards (MSSs) into line through a common structure recognizes the increasing complexity of business concerns and the need to integrate and simplify. To date, only a handful of standards have been published to this common structure, but with this year's publication of the new editions of ISO 9001 for quality management and ISO 14001 for environmental management, the management system standard really comes of age.

There is no doubt that industry benefits from the implementation of an MSS. Research has shown increased performance, improved organizational reputation and, ultimately, more business for those organizations that use the management standards effectively.

The concurrent revisions of the world's most implemented MSSs, both of which are led by the UK's national standards body, BSI, create a historic opportunity to stimulate business performance improvement around the world. Some organizations are understandably cautious about the substantial changes to the standards, but the shift to the common structure is good news for business and enterprise everywhere. Under the new revisions, it is no longer acceptable to create silos within organizations, with quality managers working independently of environmental managers, competing

for resources and commitment. Now, if an organization is implementing an MSS – whether quality, environment, information security, or any other business issue – the focus must be aligned to wider business objectives and supported at the highest level in the organization.

The new format for ISO 9001:2015 and ISO 14001:2015 addresses directly the importance of senior leadership commitment to business management. In the new revisions, everything depends on commitment, coherence and context. What does your organization need? What are the risks and opportunities you face? What are your ultimate objectives?

There is no need for a company to produce additional paperwork to demonstrate compliance with the standards. Indeed, there is no requirement to produce paperwork of any kind. If companies are maintaining their business management information on the cloud or on a smart phone, this can be perfectly acceptable.

The new versions bring a new maturity to the way auditors will interact with businesses. Auditors cannot tell organizations what to do; instead the standards are designed to initiate dialogue and self-examination. It is up to business leaders to take control, and to use the standards as the valued business improvement tools they are intended to be.

With the 2015 revisions, the millions of organizations already benefitting from ISO 9001 and ISO 14001 will be able to integrate and streamline their management systems to ensure that no issue gets overlooked. The alignment

of the new standards with leading practices completes an important transition for quality and environmental management systems from the early days, where quality management was frequently perceived as a “bolt on” for manufacturing companies, to a contemporary business management tool that can be fully embedded at the highest level in any organization worldwide. ■



Scott Steedman, Director of Standards, British Standards Institution.

15 seconds to #speakstandards

How do you get people inspired by the work we do in standardization? That was the challenge of **#speakstandards**, the first video competition organized by the World Standards Cooperation (IEC, ISO, ITU) to celebrate World Standards Day 2015.

We asked the public to imagine one thing that would not work or be a lot more complicated without standards, because many of us only realize how important they are... in their absence. To spice things up a bit, we gave a 15-second limit – just like an Instagram video!

The results were impressive: we received over 130 video entries from all over the world. They featured people from all walks of life in stories involving gigantic credit cards, randomly placed door handles, square wheels, crazy scientists and much more. After selecting our top 10 finalists, we let the public decide. We received more than 6 500 votes, and here are the results.



Watch the videos of the top 10 finalists.

#1st place

Video showed a world without... **standardized graphical symbols, making even the simplest messages much more confusing!**

- **Gabriel Enrique Hernández García**, a multimedia developer in a certification body who enjoys soccer, the beach and technology
- **Norma Noemí Herrera Ramírez**, a biomedical engineer passionate about dancing and music
- **Edgar Antonio Hernández García**, a graphic designer and lover of coffee, museums, opera and art
- **Miguel Ángel Romero Cortés**, an enthusiastic teenager who loves playing soccer

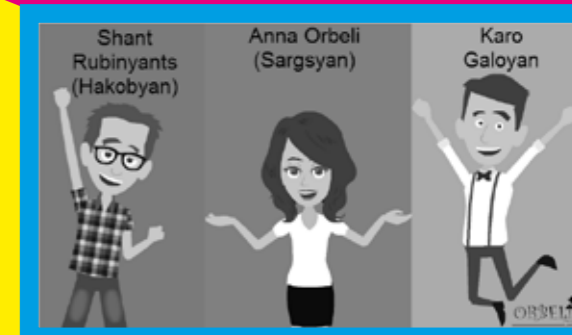


The 1st place winners come from Mexico.

#2nd place

Video showed a world without... **safety standards for light bulbs – be wary of electrocution!**

- **Anna Sargsyan**, Founder, Orbeli Productions
- **Shant Hakobyan**, Character Designer, Orbeli Productions
- **Karo Galoyan**, Scene Designer, Orbeli Productions



The 2nd place winners come from Armenia.

“Thanks to the competition, we now realize the importance of International Standards too! When we shared our experience with our friends, they were also surprised to learn about the role of standards in our life.”

#3rd place

Video showed a world without... **standards for the milk food chain, from animal feed and farming to processing, packaging and distribution, will make us sick.**

- **Gabriel Enrique Hernández García**, a multimedia developer in a certification body
- **Norma Noemí Herrera Ramírez**, a biomedical engineer



The 3rd place winners come from Mexico.

They also won 1st place with their video on standardized graphical symbols!

#4th place

Video showed a world without... **standards for electromagnetic compatibility (EMC), which would make using more than one electronic device at a time chaotic.**

- **Ongard Jitprom** (Oh), Librarian, Thai Industrial Standards Institute (TISI)
- **Nathinee Chantajaru** (Mod), Foreign Relations Officer, TISI
- **Narit Lerkmoung** (Gap), Standards Officer, TISI
- **Varavute Eaimpituck** (Pae), Audiovisual Technical Officer, TISI



The 4th place winners come from Thailand.



Giving **ISO 9001** a fresh sparkle

The new 2015 revision of ISO 9001, brought right up to date in response to vast changes in technology, business diversity and global commerce, promises to be the most effective, user-friendly and relevant quality management system yet.



ISO 9001 has just been updated! In the world of global quality management, this is an exciting event and important news for well over one million ISO 9001-certified organizations worldwide, and for the millions more individuals who use ISO's famous quality management system standard (QMS) daily to facilitate trade. The latest 2015 revision, just published, gives the "jewel" of quality management a fresh sparkle, keeping it relevant and bringing it right up to date with today's connected world.

Introduced in 1987, ISO 9001 has been revised four times to date, and the new version – ISO 9001:2015 – is the first major revision since 2000. It has been three years in the making and is the work of hundreds of experts from industry and commerce, standards stakeholders (i.e. consultants, users, test laboratories, certification bodies, etc.), academia and research bodies, government, NGOs, representing 81 ISO member bodies around the world, as well as many thousands of participants in the national mirror committees who reviewed and commented on the draft standard during its development. The result of this evolutionary process brings ISO's best-selling standard firmly into the 21st century.

Certified organizations have three years following publication of ISO 9001:2015 in September to align their quality management systems to the new edition of the standard, although it is hoped they will not wait until the last minute to benefit from the significant changes in the latest version.

"It's a game changer!"

Early feedback from reviewers and users of the standard has been very positive. "It's a game changer," says Simon Feary, Chief Executive at the Chartered Quality Institute in the UK. Alan Daniels of Boeing, who represented the International Aerospace Quality Group on the ISO 9001 revision subcommittee, sees it as "a real improvement that will lead to a more robust QMS". "This is a wonderful opportunity for organizations to refocus their QMS on their business operations," concludes Sheronda Jeffries of Cisco Systems, representing QuEST Forum, a global quality organization for the telecom (ICT) community. As for Mark Braham of the Automobile Association (United Kingdom), he believes ISO 9001:2015 will have huge impacts across the world, while Luiz Nascimento of the Brazilian Association of Technical Standards (ABNT) thinks it will provide more confidence that quality management systems really do work.

Why change?

Many users, happy with ISO 9001 in its current form, may well ask “if it isn’t broken, why fix it?” But this latest revision is a response to vast changes in technology, business diversity and global commerce in the 15 years since ISO 9001:2000.

ISO 9001:2015 recognizes the increased prominence of the service sector and its need for quality management. It also reflects calls for greater QMS alignment and integration with an organization’s business and strategic direction, and makes it easier to adopt multiple ISO business management standards such as ISO 14001 and sector-specific QMSs such as the aerospace industry’s AS9100.

Representing the aerospace industry view, Alan Daniels also highlights changes in business models, more complex supply chains, and increased customer expectations as further compelling reasons for adapting the standard to a changing world. He believes ISO 9001 must enhance an organization’s ability to satisfy its customers while reflecting the increasingly complex environments in which they operate. It should also recognize the needs of all interested parties and align with other management systems – hence the call for extensive and detailed revision.

Have the changes been successful? In the opinion of Anni Koubek, Head of Innovation, Quality Austria, the 2015 version of the standard “clearly fits the global, dynamic, complex, networked and IT-driven business environment most organizations have to operate in much better than the 2008 version”.

What has changed?

The first piece of good news is that ISO 9001:2015 will be easier to use, particularly in conjunction with other management system standards, and will be less prescriptive – for example, documentation will be less mandated and more user-friendly, and the language has been simplified. It also follows the underlying philosophy that “output matters”, so it will ask if an organization’s processes are achieving their planned results, and if the system is actually delivering on its promise – central to implementing ISO 9001 – of “providing confidence in the ability to consistently provide conforming products and services”, explains Nigel Croft, Chair of the ISO subcommittee that revised the standard.



Nigel Croft, Chair of ISO/TC 176/SC 2 on quality systems, the subcommittee that revised the standard.

“ISO 9001:2015 is very much performance-based, with a focus on *what* has to be achieved rather than *how* to achieve it,” he adds. The new version combines the successful “process approach” with a new core concept of “risk-based thinking” to prioritize the processes, employing the Plan-Do-Check-Act (PDCA) cycle at all levels in the organization to manage the processes and the system as a whole, and to drive improvement. This new risk-based focus is intended to prevent undesirable outcomes such as non-conforming products and services.

The 2015 version adopts a new high-level structure for ISO management systems standards – based on Annex SL of the consolidated ISO Supplement to the ISO/IEC Directives. It is expected to have a significant impact on organizations, trainers, consultants, certification and accreditation bodies, auditors and standards writers. Annex SL provides identical structure, text and common terms and definitions for all future ISO management system standards (MSSs), giving each a similar “look, touch and feel” and making implementing multiple standards within one organization easier. Now, all new ISO MSSs will follow this framework to ensure consistency and compatibility, ending some earlier confusion during implementation.

Mark Braham, CQI Category A liaison in ISO/TC 176, *Quality management and quality assurance*, sees “huge benefit” in following the Annex SL framework to integrate other management system standards, and help reduce management time and effort to meet requirements, while Sheronda Jeffries says that the inclusion of the new annex will better allow organizations to see the differences and similarities of ISO 9001:2015 with other MSSs.

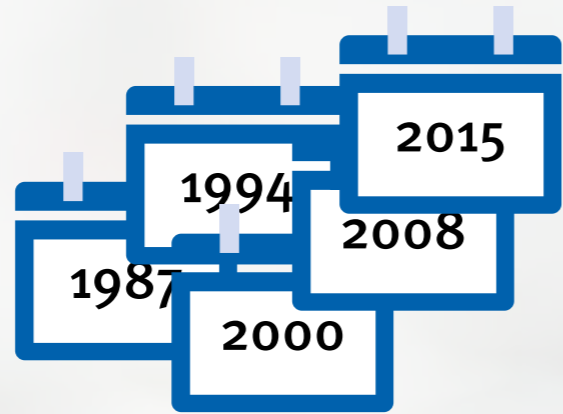
How will the changes benefit you?

“ISO 9001:2015 recognizes the importance of the organization’s business in terms of the type of products and services it provides, their criticality, and the external and internal factors that affect the way it works,” says Nigel Croft. The latest version obliges each organization to think about its own particular circumstances, rather than prescribing a “recipe” for how to design the quality management system. Organizations will therefore have greater flexibility in the way they choose to implement the standard, and the amount and nature of the documentation that is required.



ISO 9001:2015 will be easier to use, particularly in conjunction with other management system standards.

ISO 9001 is 25 years old



The **different editions** of **ISO 9001**

The **recognition** gained by **ISO 9001 worldwide** is **incredible**



In the last 10 years, the number of ISO 9001 certificates has increased by **72%**.

Work done during the revision process



ISO/TC 176/SC 2, Quality systems, is in charge of the development and revision of ISO 9001.



This latest revision is a response to vast changes in technology, business diversity and global commerce.

One very important factor has been the greater alignment of structure, content and terminology for all ISO management system standards, particularly evident when looking at the new versions of ISO 9001 and ISO 14001, he says, alluding to Annex SL. This is intended to make life easier for organizations needing to address the requirements of several standards in a single management system.

Assets of risk-based thinking

According to Alan Daniels, the new version will lead to a more robust QMS because it links the process approach with PDCA and risk-based thinking, and connects the QMS to strategic planning and the business processes. “Identifying risks adds value and opportunities for improvement, and the engagement of top management enhances the chance of success on all levels.” For Sheronda Jeffries, introduction of the term “risk-based thinking” along with the term “risks and opportunities” will encourage an organization to be more proactive.

“Risk-based thinking will help organizations make business decisions based on risk by providing the structure to manage it,” says Lorri Hunt of US-based quality management system training, auditing and consulting firm Lorri Hunt & Associates Inc. Anni Koubek also views it as the most important change in the new 2015 version, although she adds that it is not one single element that makes this standard different from the 2008 version; “it is the consequent orientation on results and a certain flexibility on how to build the management system that can be seen throughout the standard”.

Revision process and transitioning to the new version



Discover the video



Watch the Google Hangouts

Drafters of ISO 9001:2015
have succeeded well
in developing a more
robust QMS.



Involving the leadership

For Simon Feary, the most significant change is the switch from *management commitment* to *leadership and commitment*, embedding responsibility for the operation and performance of the QMS at *all* levels of the organization. The requirements for greater senior management involvement will put the quality profession in front of senior management like never before, he claims. Whether delivering quality management programmes or auditing against management system standards, he urges quality professionals to seize the opportunity to develop new skills and add greater value to their organizations.

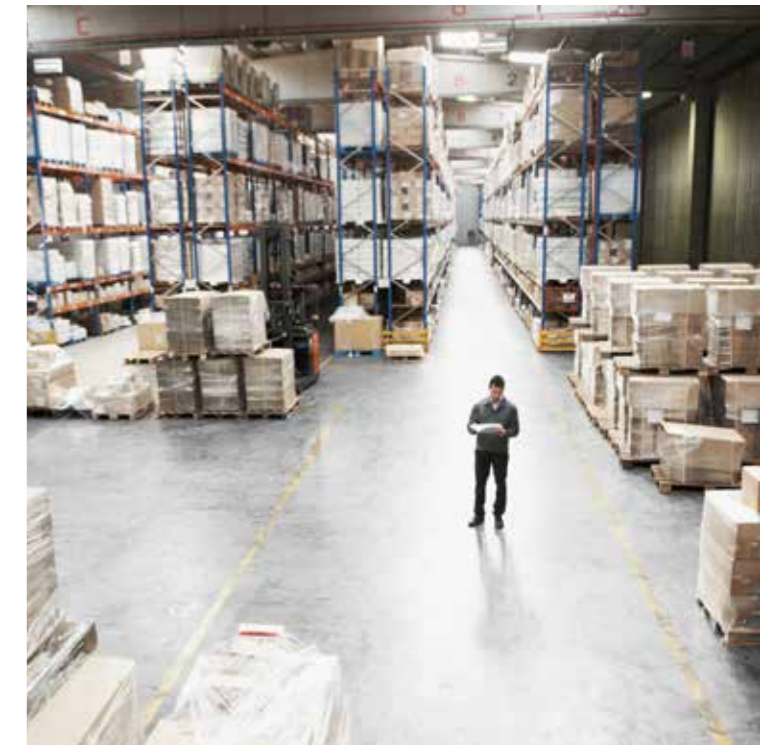
The new emphasis on top management involvement is one of the most important changes for Mark Braham, particularly as “they must do tasks to meet the requirements and cannot delegate”. Lorri Hunt interprets the focus on leadership as a transition from the implication of one management representative being responsible for the QMS to the philosophy of a system owned by all of the leadership.

This top-down approach will significantly raise the status of ISO 9001 in the eyes of senior management, believes Leopoldo Colombo, Executive Director of the Quara Group, a Latin American management consulting and training organization. He thinks the days when quality managers would be thanked for their QMS status presentations and then asked to leave the meeting because “we have business to discuss” are over! “Version 2015 has set the requirements and anchorages needed to ensure that the QMS will be strongly integrated with the organization’s business and aligned with its strategic direction, so reviewing the effectiveness of the QMS will equate to reviewing the effectiveness of the business.”

A fresh start

“ISO 9001:2015 is an opportunity for a fresh start in the way users have been implementing ISO 9001,” says José Domínguez, Board Member of the Latin American Quality Institute (INLAC) and Director General of Plexus International in Mexico, a QMS training, assessment and coaching services organization. In his view, if users are serious about ISO 9001 as the main tool for implementing, maintaining and improving the QMS and use it as the foundation for their business operations, they will find it a more flexible and robust standard that can easily adapt to the nature and context of the organization.

Luiz Nascimento believes that, in general, all the changes constitute a real improvement in providing more confidence that quality



management systems really work. “Chances are that the perception of the quality management system as a bunch of useless paperwork and unnecessary bureaucracy will change,” he said, adding that, if well applied, the new version can enhance the credibility of certification.

Third-party certification

What are the implications of ISO 9001:2015 for accreditation and certification bodies? Although Mark Braham thinks ISO 9001:2015 will initially create work to complete a gap review, implement changes and prepare for the first certification audit, he also expects that certification bodies will be able to reduce the number of audit days, therefore saving costs.

Sheronda Jeffries believes the introduction of “context”, “interested parties” and “scope of the quality management system” will have a positive impact on the third-party certification process because organizations will be encouraged to consider the boundaries of their QMS, and acknowledge the needs and expectation of their customers.

Simon Feary adds a caveat to balance his enthusiasm for the new version by saying that successful implementation will depend on certification bodies accepting the challenge by reflecting the standard writers’ intentions in the services they offer. Mark Braham concurs, adding that, “the success of the new standard will be down to the capability of the certification body and a healthy challenge”. He believes that will make the difference between a certificate on the wall or an effective management system enhancing customer satisfaction and reducing operational costs.

No problem adapting

Early signs suggest that the drafters of ISO 9001:2015 have succeeded well in developing a more robust QMS that will allow organizations to build confidence in the products and services they deliver throughout the supply chain to customers worldwide. If they prove right, Nigel Croft concludes that organizations currently operating a well-implemented ISO 9001-based QMS should have no problem whatsoever in adapting it to the requirements of the new version. ■ GARRY LAMBERT



India puts quality in the pipeline with ISO 9001

The world's oil and gas transport infrastructure relies on a globe-spanning network of quality pipelines to distribute the crude oil and natural gas we humans depend on. Indian line pipe manufacturer Welspun Corp. Ltd. relies on ISO 9001 to make this happen.

All global
organizations will
profit from upgrading
to ISO 9001:2015.

They've got half the planet covered! On an earth circumference of 40 000 km, Indian steel pipe manufacturer Welspun Corp. Ltd., one of the world's largest line pipe producers, has already supplied more than 20 000 km of pipe line for both Onshore & Deep Offshore application. With a strong culture of "engineering excellence", the Mumbai-based conglomerate takes pride in supplying some of the most critical pipelines in the world from its plants in India and the USA. It has produced pipes for the world's deepest pipeline project (Independence Trail, Gulf of Mexico), the highest pipeline project (Peru LNG), the longest pipeline (Canada to USA) and the heaviest pipeline (Persian Gulf). In fact, its high-profile clients include most of the Fortune 100 companies operating in oil and gas.

India did not immediately warm to the manufacturing of pipe lines. Its products were often seen as third grade by the West. But when the wave of globalization hit the country in the 1990s, the corporate mindset changed and entrepreneurs started to focus on manufacturing products of unimpeachable quality so

that they, too, might enjoy a share of the new global market.

Steel pipe is central to the oil and gas industry, from the drilling of exploration and production wells to the transportation to refineries and the distribution networks carrying hydrocarbon fluids and natural gas. Oil and gas companies operate in increasingly complex conditions, in some of the planet's most extreme environments, to find and exploit new reserves. This places extraordinary demands on pipe manufacturers, making safety and reliability absolutely essential. So when it comes to quality, Welspun remains faithful to its company motto – "Dare to Commit". From the procurement of raw materials to the state-of-the-art coating of pipes, only the very best products leave its premises. What's more, it has a score of certifications to prove it, including ISO 9001 for quality management systems. With a new edition of the standard published in September 2015, T.S. Kathayat, President, Corporate Quality & Technical Services at Welspun Corp. Ltd., tells us what is in the company's quality pipeline.



Quest for quality

Welspun is a technology & system-driven company, so quality management must be embedded into our business for sustainability. From the moment we established our first line pipe manufacturing facility in the state of Gujarat, India, in 1996, ISO 9001 has offered strategic support. We formulated a combined integrated quality management system for both ISO 9001 and the American Petroleum Institute’s API Specification Q1. Initially, we excluded the design and service requirements in accordance with the scope of ISO 9001; but then we found the API Specification Q1 required us to comply with the design clause as well.

As a self-respecting enterprise, we stand by our core values of Commitment, Trust, Speed, Customer Care, Discipline, Adaptability, Employee Development, Integrity, Ethics, Quality and Innovation – and getting things right first time, every time. We therefore owed it to ourselves to make the right decisions. At first, we had no trouble drafting a single quality manual for both standards. But we had two certification agencies involved in the accreditation of our facility – one for ISO 9001 and the other for API Specification Q1.

The ISO solution

The results were not long in coming. ISO 9001 helped us establish our corporate quality management system (QMS) globally throughout our facilities in India, Saudi Arabia and the USA. Within months, our state-of-the-art pipe manufacturing plant in Dahej, Gujarat, garnered the approval of many Fortune 100 oil and gas companies. We were on the road to success!

Since engaging with standards, we have received a number of awards, both nationally and internationally, for the excellence of our quality system and manufacturing plants. Today, we are proud to say that all our facilities are accredited to ISO 9001, ISO 14001, ISO/TS 29001, and ISO/IEC 17025 for the testing facilities, among other standards. The ISO certifications have created the framework in which to expand our business globally, making us the biggest manufacturer of large-diameter line pipes in the world – a badge we wear with pride.

ISO 9001 has helped us harness the vision that lies at the heart of our business. So that we truly can “emerge as a global leader, serve with passion,

grow @ speed, innovate with quality and excel with ethics” to meet our stakeholders’ highest expectations. Our quality objectives are defined around these values and can be quantified according to SMART criteria (specific, measurable, achievable, realistic and timely).

Keeping up the good work

Building on our successes, we recently embarked on a new journey using a quality tool called “7S”, instead of the usual “5S”, a methodology that describes in words – all beginning with “s” – how to organize an orderly workplace for efficiency and effectiveness. Basically, we added two more “s’s” (sustainability and spirit) to our “5S” panoply. This tool is working miracles in one of our manufactures in Anjar, India, and we now hope to scale the initiative across all our facilities globally.

At Welspun, quality control is not just about certifying the final product. Instead, it refers to continuously monitoring each stage of the production cycle to, ultimately, get a premium product. Our quest for continual improvement means we regularly calibrate or validate our corporate quality management system, appointing experienced, internationally recognized quality management professionals to “diagnose” the gaps in our existing system. This helps us to improve or harmonize our quality management system across all our facilities.

Welspun’s
experience
is truly unique.

Welspun uses the JCO forming process, which has gained recognition in recent years as one of the most cost-effective and flexible processes for producing high-quality tubes.



Photo: Welspun Corp. Ltd.

About pipelines

Welspun Corp. Ltd. is the flagship company of Welspun Group and a global giant in large-diameter line pipes. The company has supplied millions of pipes distributing the crude oil, refined products and natural gas that sustain our human lifestyle, which is no mean feat. Just for the record, getting steel tube to the other side of the planet involves:

- Approx. 5 000 km of 4" to 56" diameter pipe shipped, weighing over 1 million metric tonnes
- Approx. 100 vessels sailing from India to the three continents
- Over 50 000 truckloads of pipe
- Over 1 200 barge loads
- Over 5 000 rail cars
- Serving multiple ports
- Serving inland destinations
- Multiple stockpile locations handled



Photo: Welspun Corp., Ltd.

Welspun uses submerged arc welding (SAW) – a welding process that can deliver high deposition rates and deep penetration at a very rapid pace. Here, the interior of Welspun’s SAW.

We have also set up monthly quality forums, chaired by senior management, to review our processes and the quality performance of our products. At plant level, managers keep an even closer eye on things, reviewing quality performance on a weekly basis in presence of all shop floor supervisors. Finally, we organize a cross-company quality technical meeting where our employees can share best practices with their peers, which helps us standardize processes throughout all our facilities.

Going digital

Welspun’s experience on implementing ISO 9001 and other management systems is truly unique. Staff on the shop floor use these systems online, through a suite of quality modules in our

Enterprise Resource Planning (ERP) software, and we have created an Intranet share folder across all our facilities outlining our QHSE programme for quality, health and safety at work. What’s more, all our standard operating procedures (SOPs), including document control, are maintained digitally on our ERP system. Customers and third-party auditors can also access this Intranet when auditing our facilities. We wanted a state-of-the-art digital quality and health & safety management system to eliminate the waste and cost of paper. Now, with terminals provided at each workstation, digital documents are always close at hand – whatever your role within the company. And it’s not only the system documents you will find there... standards and other technical documents are available on the Intranet for all to see.

Nothing to hide

This degree of quality can only be obtained through mutual transparency and expecting the best from your partners. We require certification to ISO 9001 for all vendors involved in our supply chain and monitor their quality system periodically.

Conversely, our facilities are vetted and approved by a string of international oil and gas companies – including big names like TCPL, Total, Shell, Exxon, BP, Chevron, GASCO, Spectra Energy, Enterprise, Enbridge, Petronas, Petrobras, Saudi Aramco – and they continue to be audited regularly by new clients from across the globe. We take the observations from these audits very seriously and implement any “corrections” by drawing up an action plan for the immediate and long term. Our clients also run regular project-specific audits, which help us to calibrate our system on a routine basis.

Daring to commit

Our quest for continual improvement means that upgrading to the new ISO 9001:2015 will be easy. It’s all part of the process, as they say. The revised version takes a risk-based approach, which was sorely lacking in the existing one. We have already organized some “insight into new ISO” workshops, led by none other than Dr. Nigel Croft, Chair of ISO/TC 176/SC 2 on quality systems, who trained employees at our facilities all over the world.

The new standard should help minimize our business risk although risk is already covered in our present system in two broad areas: delivery and product quality. Risk is assessed at contract stage when purchasing the steel for a project. Steel is our major cost, so controlling the quality of the steel and other key raw materials is our main priority and adheres to very strict specifications. With support from the top, we will be rolling out an improved risk management system across all our manufacturing plants. We are already taking action to implement the new ISO 9001 requirements and, with the API audit of our Anjar facility in full swing, our existing QMS documentation is under revision.

I feel sure that all global organizations will profit from upgrading to ISO 9001:2015. And if I may venture a suggestion, employee training should be the focus of attention for all companies transitioning to the new standard, in order to embed the benefits at the zero ground level. Although this may seem like a big investment in time and money, it’s well worth the trouble. I, myself, dare to commit! ■ T.S. KATHAYAT



Photo: Welspun Corp., Ltd.

Technology advancements have helped to boost the performance of the SAW process, and meet increased productivity goals. Here, the exterior of Welspun’s SAW.

ISO 9001 has helped us harness the vision that lies at the heart of our business.

A TASTE OF STANDARDS

AT MILAN EXPO 2015

ISO, represented by its member for Italy (UNI), joined 16 international Geneva-based organizations in Milan, Italy, on 19 September 2015, for a collective presentation of how each contributes to solving the world's food concerns. The food talks took place at the Swiss Pavilion at Expo Milano 2015, the Universal Exhibition that runs from May to October around the theme "Feeding the Planet, Energy for Life".

The event helped the public apprehend the world of food from the perspective of human rights, health, trade, the environment, intellectual property, innovation and, crucially, standards, which underpin all these important areas.

On behalf of ISO, Alberto Monteverdi, Head of Communication at UNI, extolled the many benefits of International Standards in the realm of food. He highlighted: "More than 1 000 ISO standards, from food safety



management to the detection of salmonella in food or safe packaging, promote the quality and safety of food, as well as the efficiency of the food supply chain from farm to fork, and help prevent diseases, detect bacteria and manage risk."

Summarizing the work done in common by international organizations in Geneva, Sami Kanaan, Administrative Councillor for Culture and Sport and former Mayor of the City of Geneva, concluded: "Geneva is very proud to be an international city!"



WORKPLACE SAFETY STANDARD GETS EXPERT TREATMENT

More than 2.3 million people die each year as a result of work-related activities, not to mention a further 300 million who sustain non-fatal accidents*. To bring these figures down, ISO is developing its first standard for occupational health and safety management, aimed at helping organizations prevent such incidents and improve employee health and well-being. ISO 45001, which sets requirements for occupational health and safety management systems, recently came a step closer to publication following a successful Committee Draft consultation. ISO/PC 283, the technical committee leading the project, held an important

meeting in Geneva, Switzerland, in late September. The week-long meeting, was officially opened by senior figures from ISO and ILO who welcomed the 110 experts in the field from all over the world. The group helped propel the document to Draft International Standard (DIS) stage, the public enquiry consultation and a key stage in a standard's development.

Learn more about ISO 45001 and the experts behind the standard in our interview with David Smith, Chair of ISO/PC 283, on page 40.

* Source: ILO

IT'S AN ACCESSIBLE WORLD!

According to UN statistics, an estimated one billion people are living with disabilities around the world, facing barriers to mainstream services – mobility, employment and education – that most of us take for granted. People with disabilities can have difficulty accessing buildings, transportation and even the most basic information and communication technologies like telephones, television and the Internet.

Held on 3 December, the UN International Day of Persons with Disabilities recognizes the right of people with disabilities to participate in society on an equal footing. This year's edition harnesses that core belief under the theme "Inclusion matters: access and empowerment of people of all abilities". ISO standards are an important tool for enabling the inclusion of people with disabilities. Covering everything from the physical environment to information technology, to more specific issues such as mobility devices, they give manufacturers, service providers and policy makers the guidelines and specifications on how to develop products and services that are accessible to all. What's more, a set of guidelines for standards developers, known as ISO/IEC Guide 71, ensures accessibility issues are taken into account when developing or revising standards, helping disabled citizens finally claim their rightful place in society.

ISO SURVEY STATES ITS STATS FOR 2014

The economy changes and we must change with it. But this doesn't seem to dent the appeal and relevance of ISO's management systems standards, as confirmed by the 2014 ISO Survey of Certifications, which gives a worldwide panorama of certifications to these fundamental standards. Interest is such, in fact, that a newcomer – ISO 22301 for business continuity – has been included in the annual survey, bringing the sum total to eight standards instead of the usual seven.

The latest edition of the survey indicates three strong performers:

- Energy management (ISO 50001, still flourishing with 40%)
- Food management (ISO 22000, with a respectable 14%), and
- The automotive sector (ISO/TS 16949), whose 8% growth reflects the market's recent, but ongoing, recovery

Bearing out a trend that began a few years ago, the global share of certificates to ISO 9001 (quality management) and ISO 14001 (environmental management) has stabilized, with ISO 9001 showing a small 1% growth while ISO 14001 picked up slightly from last year with an honourable 7%.



For more information, scan the QR code.



CROWDSOURCING REINVENTS STANDARDIZATION

First of its kind, NENCrowd is a reward-based B2B crowdfunding platform aimed at attracting wider interest to standardization work. The brainchild of NEN, ISO member for the Netherlands, "NENCrowd was designed to reach, captivate and involve a large audience for NEN projects," says Emiel Verhoeff, New Business, Relations & Innovation Manager at NEN. The platform offers interested parties a means to custom manage their involvement and financial contribution to projects, while determining the extent of their commitment.

To address the need of a variety of stakeholders, NENCrowd lets them choose between different "types of involvement" (rewards) to join, for instance, a standards committee as a follower, supporter or member. NENCrowd also facilitates the entire process of promoting, informing, inquiring, captivating, participating, billing and, of course, social media sharing. "Thinking innovatively about the needs and engagement of a broader group of stakeholders, as well as about financial support, results in some very interesting business model ideas," says Verhoeff. "Moreover, the response measuring system of NENCrowd is a great tool to transparently visualize the level of commitment of stakeholders. This is crucial to assess important success factors of new projects before starting them."

NENCrowd is still in an early phase. More projects are needed to tailor the rewards for each type of project to real customer needs, and to benefit from lessons learned. So feel free to visit www.NENCrowd.nl and share your feedback. It's crowdsourcing, after all!



Photo: NEN



Achieving
environmental
focus with
ISO 14001:2015

Our impact on the environment is increasing, there's no denying that. And we need to better understand and manage our impact. Responding to our planet's ecological challenges, the revision of ISO 14001 supports organizations in reducing their environmental impact and understanding the effect the environment has on their business.



ISO 14001:2015 is hot off the press – the world's favourite International Standard for environmental management has been brought firmly into the 21st century. This is an important step forward for a critical environmental standard, one that covers all environmental challenges – water, air, soil, waste, biodiversity, ecosystem services, climate challenges, etc. – in one standard and helps organizations to manage them in a holistic manner. For a world continuing to face environmental challenges, this is excellent news. Doing one's bit to protect the world has gone from buzz word to strategic business imperative in recent years. And as society and the planet grapples with issues such as natural disasters, deforestation, overpopulation, climate mitigation and adaptation, etc., companies are continuing to recognize the need to manage their environmental challenges and contribute towards finding solutions to the issues facing us all. "The standard looks very different," says Susan Briggs, Convenor of the working group responsible for the revision of ISO 14001, who has extensive experience implementing environmental management systems, "but primarily, from a technical point of view, the real changes come from the increased focus on sustainable development. We want to not only prevent pollution, but we want to protect the environment from harm and degradation, so we have incorporated that thinking into the standard."

For any organization using or thinking of using ISO 14001 as well as the approximately 300 000 organizations worldwide that are certified to the standard, the revision poses questions like: What are the changes involved? And what must be taken into consideration in the future?

Moving forward

ISO 14001 was first published in 1996, though the need for an international environmental standard dates back to the 1992 Earth Summit in Rio, which put sustainable development squarely on the political agenda. "In its almost 20 years' existence, ISO 14001 has been hailed as the world's most successful environmental standard, its acclaim being attributed both to its accessibility (it applies in equal measure to heavy industry, service and public sectors, and SMEs) and to its ability to help companies deliver business and environmental improvements, cut costs and improve compliance management," comments Anne-Marie Warris, Chair of the subcommittee with responsibility for ISO 14001. The current version of the standard dates back to 2004. Life has moved on since then. "[...] the whole awareness of environmental issues, including water availability/use and climate challenges, has come a long way," says Anne-Marie, and it was time to "look at how ISO 14001 can continue to be relevant for modern organizations as they deal with the environmental challenges we all face." Moreover, ISO 14001 has not been immune to criticism over the years. Yet many believed there was still plenty of opportunity for increasing the standard's uptake, though a more strategic approach was needed. What motivated the standard's revision? Initially, work was carried out to identify the future challenges of environmental management, the outcome of which was a number of themes such as "being part of sustainability and social responsibility", "the link to strategic business management", "considering environmental impacts in the value/supply chain", etc. Secondly, it was decided that the revision should use ISO's new common framework for management systems; and thirdly, the revision was informed by the outcome of the survey carried out in 2012/2013. The survey focused on two main areas, namely the extent to which ISO 14001 should address or strengthen attention to future challenges for environmental management and the perceived value of the ISO 14001 standard for both business management and environmental



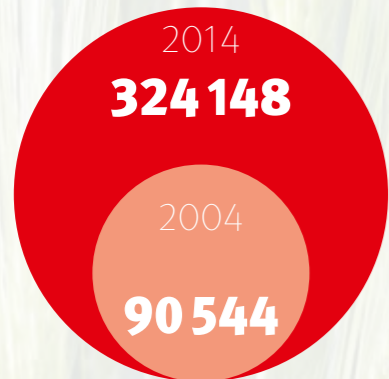
The standard provides a framework for a holistic, strategic approach.

ISO 14001 is 20 years old



By end of December 2013, there were more than **300 000** certifications in **171** countries.

The **recognition** gained by **ISO 14001** in almost **20 years** is **incredible**



In the last 10 years, the number of ISO 14001 certificates has increased by **258%**.

Work done during the revision process



ISO/TC 207/SC 1, Environmental management systems, is in charge of the development and revision of ISO 14001.

Revision process and transitioning to the new version



Discover the video



See the tweetchat

management. This gave the impetus to what needed to be changed, explains Maiko Okuno of Mitsubishi UFJ Research and Consulting, one of the experts involved in analysing the survey responses, who took part in the revision of ISO 14001.

Hence the new edition takes into account the latest changes in environmental management practices, and reflects the increasingly complex, demanding and dynamic environment in which modern-day organizations operate.

Benefits from using ISO 14001

Achieving accredited certification to ISO 14001 certainly delivers commercial value to an organization, including reduced greenhouse gas emissions and streamlined waste management, as well as providing a better handle on business risk and competitive advantage. So it's commercially good for business as well as helping the environment.

Antonio Burgueño, Quality and CSR Director of FCC Construction, a Spanish construction company based in Barcelona, is full of praise: "ISO 14001 has brought us a number of benefits, namely consistency and structure in our processes with third parties and across our organization globally."

"It has also helped us to improve our environmental impact significantly. In 2014 alone, we cut our carbon emissions by more than 23 tonnes, our dust production by more than 20 tonnes and we reused 116 m³ of water," he said. "That is in addition to the more than 6 million m³ of surplus clean rubble that we reused or recycled instead of sending to landfill."

In fact, companies report as the dual motivation for implementing the standard the desire to enhance their public image coupled with a general commitment to protecting the environment. "Without a certified management system, we would not be able to win business from many of our customers," concludes Bob Cutler, General Manager, Oil Testing, at ALcontrol, one of the world's leading environment and food testing companies that provides analytical services to organizations around the world.

Reaching out

The new version of ISO 14001 aims to reach out to SMEs. Amarjit Kaur, a Malaysian national expert from SHEMSI Sdn Bhd, participating in the revision, explains, "Small and medium-sized companies are a bit intimidated by the term 'sustainability', but by getting them to

think about the concepts of protecting the environment and life-cycle perspective, they will already be on the path to sustainability without even realizing it."

With a stronger focus on performance and outcomes, the new edition should help companies, including SMEs, achieve measurable environmental improvement.

Better strategic fit

There are a number of key changes in the standard. Bringing environmental management to the Boardroom and bringing the Boardroom strategic focus to environmental management is one most noticeable for CEOs and other senior directors. They now have real reason for getting involved in this important area for their business as it links with their activities and concerns. Amarjit Kaur considers bringing environmental performance into the strategic day-to-day business of the organization as possibly the most important change. "I commend that," she says passionately, "I hope that with this new approach – by making it more explicit – the environment will be one of those core agendas in meetings discussing strategy and directions of the organization."

With the focus firmly on the Boardroom a new clause has been added assigning specific responsibilities for those in leadership roles, which also puts them more in control of their organizational strategies. Management is about processes, but leadership is about behaviour. Good leaders establish unity of purpose and direction within the organization, sustaining an internal corporate culture in which people can become fully involved in achieving the organization's objectives. This involvement of leaders will help optimize the performance of the organization's environmental management system, making it more sustainable, cutting costs and helping to preserve the world's resources for future generations.

Environment – your impact and its effect on you

Continuing on the theme of business focus, companies are required to look at their unique context and identify the effect the environment is having on their business. It involves taking new factors into account that are specific to the organization's context, such as climate volatility, adaptation to change in the environment and resource availability. This is a big leap forward as the effect of the environment on the organization was previously not included in the scope of the standard.



Solar panels provide an alternative form of electricity.

Clearly, protecting the environment remains a key ethos of ISO 14001 as does the duty of the organization to commit to proactive initiatives to safeguard the environment from harm and degradation. This can include issues such as the sustainable use of resources, preserving the local biodiversity and ecosystems, and taking measures to prevent pollution.

The concept of “context” also means companies have to consider other issues not obviously related to narrow environmental concerns, but which can have detrimental effects on its business, like the competitive landscape in which they operate, technology and even cultural factors. Focusing both inward and outward can help organizations to leverage opportunities that could benefit both the organization and the environment.

Life-cycle perspective

The concept of life-cycle perspective emerges in this version of the standard, which requires organizations to take a broader view and deal with their environmental issues in a more holistic way. The idea, says Susan Briggs, involves “looking at the performance, not just of the operations of the organization, but of the products they create and their use and final disposal”. Life-cycle perspective does not require a detailed life-cycle assessment but it means organizations needs to think about the life-cycle stages that can be controlled or influenced by the organization, this can include raw-material acquisition, design, production, transportation/delivery, use, end-of-life treatment and final disposal. What the life-cycle stages are will vary from product to product and from service to service.



Experts of ISO/TC 207/SC1's working group WG 5, who worked on the ISO 14001 revision, at a meeting in London where the standard was finalized before the FDIS vote.

Common framework

The latest revision of the standard follows ISO's common framework for management system standards which provides an overarching skeleton for management systems, including the core text, common terms and core definitions. This new framework is known as Annex SL by experts, as a reference to the ISO/IEC Directives where it can be found, or as the “High-Level Structure”. It is designed to benefit users and enhance consistency between the different management standards, making it much easier to implement multiple management systems as well as link with common business systems.

So is it more prescriptive or not ?

The above implies the standard is more prescriptive as compared to the 2004 edition. But is it? “For all its new ‘requirements’, ” comments Amarjit Kaur, “ISO 14001 provides more flexibility for organizations in the way they address the requirements than in earlier versions and places more emphasis on improving environmental performance. It provides a framework for a holistic, strategic approach to the organization's environmental policy, plans and actions – allowing companies to set it within the specific context of their organization.”

Rite of passage

Anne-Marie Warris is confident the new edition will be a key asset to organizations, predicting that “ISO 14001 will become the tool of choice for organizations to integrate environmental issues, and dependencies such as water use, into business strategic thinking, actions and plans.”

Following the release of ISO 14001:2015, those organizations certified to the 2004 edition have three years to demonstrate they meet the requirement in the 2015 edition. As Anne-Marie concludes with a note of optimism: “Change looks really scary, but it's just a question of starting in one corner and getting on with it.” ■

ISO 14001 will become the tool of choice for organizations to integrate environmental issues.





IBM leverages **ISO 14001** for sustainable business

A meaningful, systematic approach to environmental management has made IBM one of the world's most environmentally conscious companies. The globally integrated IT company leverages ISO 14001 for a comprehensive corporate policy on environmental affairs. Here, Wayne Balta, IBM's VP of Corporate Environmental Affairs and Product Safety, tells us more.

With nearly 380 000 employees and serving clients in more than 175 countries, IBM is the world's largest technology services company. And according to this year's *Computer Business Review*, IBM is also one of the greenest tech companies in the USA.

IBM has a long track record of environmental leadership. Already back in 1971, the company was an avid champion for environmental responsibility with the issuance of its corporate environmental policy, and it has sustained its commitment ever since. In 2012,

43 data centres in 19 countries in the European Union were awarded "Participant" status in Data Centre Energy Efficiency based on the EU Code of Conduct for Energy Efficient Data Centres. This honour represents the largest portfolio of data centres from a single company to receive this recognition to date. Over the past five years, IBM has spent over USD 80 million in capital and USD 463.6 million in operating expense to manage its global environmental programmes.

Over the past five years, IBM spent USD 463.6 million in expense for its global environmental programmes.



Photo: IBM Research - Zurich

Wayne Balta, IBM's Vice-President of Corporate Environmental Affairs and Product Safety.

Applied to its operations globally, IBM leverages ISO 14001 to foster common practices and solutions, continual improvement and worldwide consistency. The result is a more effective and efficient environmental management system (EMS), no matter where in the world the company does business. Here, Wayne Balta, IBM's VP of Corporate Environmental Affairs and Product Safety, explains the company's EMS, the value of ISO 14001, and how environmental policies contribute to IBM's success.

ISOfocus: IBM is often quoted in the press, commenting on the usefulness of environmental management systems. What is the strategic importance of ISO 14001?

Wayne Balta: IBM's corporate environmental policy commits the company to environmental leadership in all of its business activities. Our global EMS provides the framework needed to sustain such leadership and achieve our environmental goals in a systematic and consistent manner, no matter where we operate in the world. This methodical approach to environmental affairs management ensures IBM proactively focuses on controlling the environmental intersections of its operations and continually improves its performance.

IBM formalized its environmental programmes and commitment to leadership with the issuance of its Corporate Policy on IBM's Environmental Responsibilities in 1971. Implementing and securing a single worldwide registration* to ISO 14001 provided an opportunity for us to further examine our long-standing management system, and to leverage the standard as an impetus to enhance our EMS.

The ISO 14001 process has helped IBM maintain environmental leadership, while transforming itself from a vertically integrated systems manufacturer, to a provider of high-value innovations and services with strategic imperatives involving cloud computing, analytics, mobile, social and security technologies. As IBM's business has changed over the years, so too has our global EMS as it continually identifies and controls our environmental intersections involving new business opportunities.

* In North America, "registration" is commonly used to refer to "certification", which is the term used by ISO and its standards.



Photo: IBM Research - Zurich (unauthorized use not permitted)

Scientists at IBM Research, Zurich, Switzerland, are collaborating with external partners on a project that might potentially enable cloud data centres of the future to cool themselves using their own waste heat. An adsorption heat exchanger (seen above) will convert heat to cool air using vapour, water and silica gel.

IBM was awarded the first single worldwide ISO 14001 registration, encompassing product development and manufacturing. How has this evolved over time?

IBM was the first major global corporation to earn a single worldwide ISO 14001 registration – less than a year after the standard's publication. In truth, implementation was perhaps a less daunting task for us than for some companies, since we have had a strong, centralized EMS in place for over 25 years and it already contained most elements of the standard. The scope of our initial global ISO 14001 registration covered our product development and manufacturing operations.

Since 1997, our global EMS has continued to evolve to remain relevant to our transforming business while serving the needs of our clients. In addition to product development and manufacturing, our global ISO 14001 registration today includes our chemical-using research locations, several country organizations covering non-manufacturing locations, and various business functions such as our Supply Chain and Global Asset Recovery Services operations. We have also updated our global EMS to address environmental opportunities and challenges in connection with our services business.

The ISO 14001 process has helped IBM maintain environmental leadership.



Photo : IBM Research – Zurich

Using IBM's Measurement and Management Technology (MMT), this self-propelled MMT robot generates a heat map that helps pinpoint, diagnose and remedy data centre trouble spots and energy inefficiencies.

How has ISO 14001 helped IBM identify, and systematically reduce, any harmful effects it may have on the environment? Have you any facts or figures that you could share with our readers?

IBM has a history of environmental commitment and accomplishments that dates back well before the implementation of ISO 14001, so it would be inaccurate to say the ISO 14001 standard has been solely responsible for the company's environmental performance and results. That said, the rigour and discipline required to maintain IBM's worldwide registration to ISO 14001 have contributed to our successes and achievements.

In the 18 years since achieving its initial registration, IBM's businesses have evolved as technology has changed at a breathtaking pace. What has not changed is our commitment to environmental leadership and producing demonstrable results that substantiate our commitment.

We believe it is our global EMS, underpinned by ISO 14001, that has enabled our sustained performance and achievements. Here are some examples:

- **Transparency:** 2015 marks the 25th consecutive year in which IBM has published its voluntary annual Corporate Environmental Report. In 1990, a quarter century ago, IBM became one of the first corporations to publicly report on its environmental programmes and performance. We have never stopped or interrupted this practice since then.
- **Energy and climate:** Between 1990 and 2014, our conservation efforts avoided 6.8 million MWh of energy consumption and an associated 4.2 million metric tonnes of CO₂ emissions. During 2014, IBM achieved energy conservation savings equal to 6.7% of its total energy use. Our purchases of renewable electricity (not counting what comes within the standard mix of grid power) made up 14.2% of our consumption on a global basis.
- **Product stewardship:** Between 1995 and 2014, IBM collected and processed more than 2 billion pounds of end-of-life IT products worldwide. Nearly 97% of the quantity we processed during 2014 was reused, resold or recycled.
- **Supply chain:** During 2010, IBM communicated a new requirement to all of its global suppliers for them to implement a management system that addressed the environmental intersections of their businesses, set goals and disclosed results. We also asked our suppliers to cascade the same requirements to their suppliers.

Our experience and results also inform the development of solutions and services for our clients. Most of our clients' challenges are not solely environmental in nature, but in addressing these obstacles, we often improved the efficiency and environmental performance of their operations. This understanding motivates IBM to take an integrated approach in order to develop solutions that are responsive to its customers' business needs while also advancing sustainability.

How would you describe IBM's experience in implementing and using ISO 14001 (i.e. challenges, tips, tools, facts, figures, etc.)?

We leveraged ISO 14001 to areas where we could improve the effectiveness of our system and further incorporate environmental considerations throughout the business. Implementing the standard enabled us to further integrate IBM's existing procedures and processes under a common corporate-wide framework, thus improving the efficiency and effectiveness of our environmental programmes.

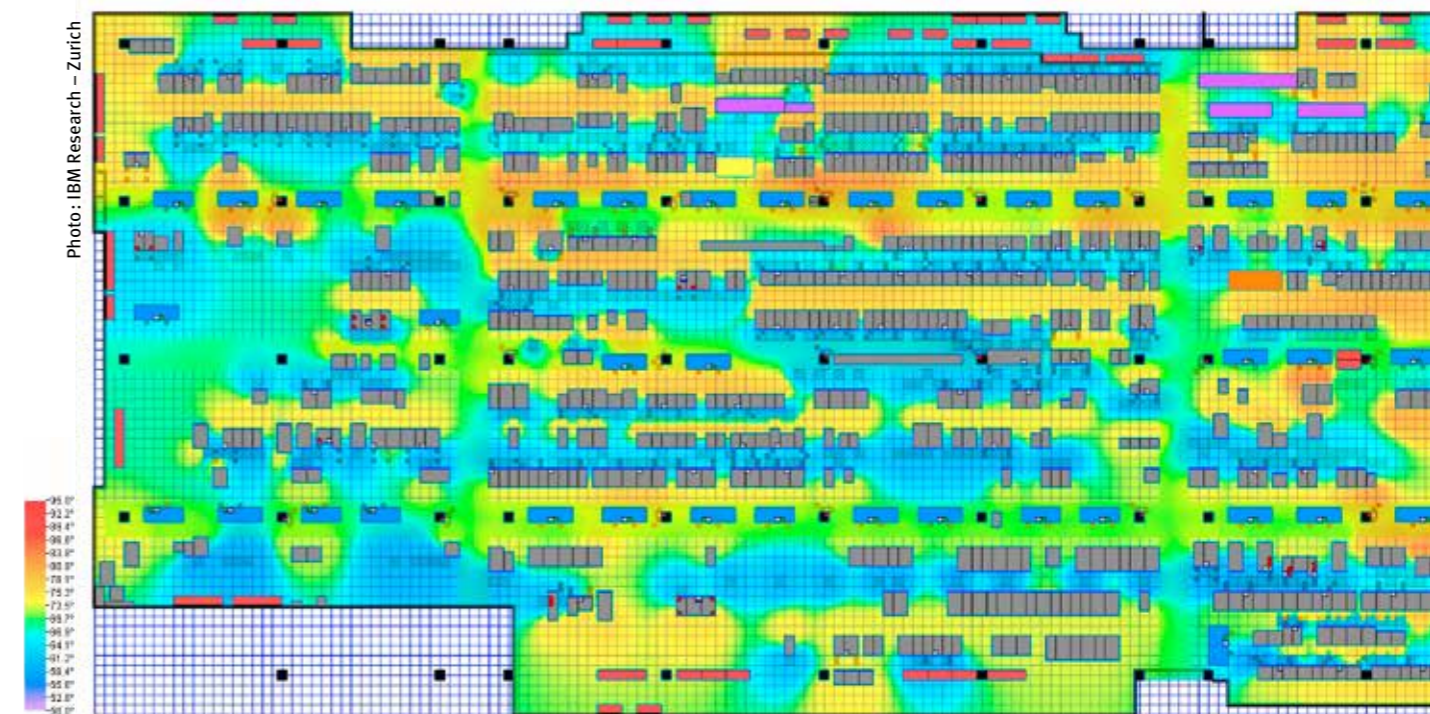
Achieving our initial global certification within a year of the release of the standard provided us with

an opportunity to demonstrate IBM's commitment to environmental leadership and continual improvement. In this sense, our experience was very positive. But we don't rest on our laurels – we are constantly asking ourselves whether our management system is suitable, adequate and effective.

What are your hopes and aspirations for the newly revised ISO 14001? Any predictions on how it will be received and used by IBM?

IBM participated in the revision process of the 2015 version of ISO 14001. We wanted to share our expertise in EMS and felt that we could contribute toward ensuring the standard remained practical, effective and executable.

We are currently performing a gap analysis to identify any areas of substantive difference between our existing management system and ISO 14001:2015. At this point, we do not expect any significant changes to our current EMS will be required in order to conform to the new standard. But one thing is certain, though it is still unknown how prevalent ISO 14001:2015 will become, it is our intent to continue with our single global registration. ■



A thermal profile of an existing data centre created using the MMT Robot identifies possibilities for cooling efficiencies and smarter energy use.

Having *our say*

With ISO 9001:2015 and ISO 14001:2015, ISO members fulfilled their claim to regularly evaluate standards with regard to their adequacy, relevance and timeliness. Here, ISO's member from Argentina, shares its experience in the 2015 revisions of these two important standards.

MEMBER EXCELLENCE

Argentina (IRAM)

As with any ISO standard, there was ample opportunity for stakeholder input in the revision of ISO 9001 and ISO 14001. Stakeholder dialogue is the cornerstone of ISO's approach to international standards development based on a double level of consensus: amongst stakeholders and across countries. The process of updating and revising the two key, globally recognized quality and environmental management system standards was no exception.

At IRAM, Argentina's national standards body and ISO member for the country, the revision of ISO 9001 and ISO 14001 underwent much discussion among national stakeholders before being filtered into the national mirror committees. Here, Osvaldo D. Petroni, Standardization Director at IRAM, describes how the process unfolded, and its impact thus far.

ISOfocus: With the updates and revision of ISO 9001 and ISO 14001 now complete, how would you describe the extent of IRAM's involvement in the process?

Osvaldo D. Petroni: Stakeholder input was essential to ensure the success of the revisions. This was

no simple task, given the number of stakeholders we wanted to consult. Nevertheless, for IRAM, our objective was to give everyone a chance to view and comment on the draft standards during their development.

Like other ISO member countries, we were committed to the stakeholder process and in providing ample opportunity for input. We dialogued with new and existing stakeholders in the public and private sectors – particularly customers, industry and members of civil society – as well as with our own experts to collectively address our business needs. The results of these discussions were then filtered into the work of our national mirror committees who reviewed and commented on the draft standards during their development.

How did IRAM handle the dissemination efforts throughout the different stages of the revisions?

The elaboration process has involved numerous actors, representing various stakeholders with diverse points of view. Some hurdles stood in the



Osvaldo D. Petroni from Argentina (IRAM).

Photo: IRAM

Our engagements were completely transparent.

way, not least that of squaring the different views on the way forward. For this reason, we relied on an open, documented and iterative production process.

In every interaction with stakeholders – public, private, academic and civil – we developed a common platform to gain a better understanding of the issues involved. We made several dissemination activities, including the IRAM Website, to deepen our engagement with key stakeholders and to ensure we were meeting key expectations related to the relevant stages of development. The outcomes of our engagements were completely transparent, premised on open dialogue and meaningful action.

What was the role of the Spanish Translation Task Force that IRAM participated in?

Spanish-speaking countries were eagerly awaiting the simultaneous publication of the new versions into Spanish. And having the standards available in Spanish was considered key to their successful uptake, not only in Argentina but in some 20 Spanish-speaking countries around the world.

To this end, the ISO Spanish Translation Task Force (STTF) completed the translation into Spanish of the Final Draft International Standards this past July. It was no easy task with 11 countries – including Argentina – taking part in the meetings with the STTF in order to reach a consensus on these translations. But the end result has been most positive!

What guidance and support does IRAM offer to make the transition to the new versions?

At IRAM, we try to make certain our customers keep on top of the latest developments. For this reason, we organize seminars and workshops across Argentina to help our national stakeholders understand and meet the new requirements of ISO 9001:2015 and ISO 14001:2015. Training courses are also being organized by IRAM – 64 courses related to quality management and 49 courses related to environmental management – and we are updating their contents to the new editions to ensure a smooth transition from the previous versions of ISO 9001 and/or ISO 14001. In all such training, we hire only relevant and highly-skilled trainers, and the feedback thus far has been favourable.

What are your expectations for the uptake of the new editions?

ISO 9001 and ISO 14001 have benefitted millions of organizations worldwide. In Argentina, as in the rest of the world, these are the most popular standards. Thousands of organizations in Argentina have already implemented and certified their QMS and EMS* with these standards.

One thing is for certain, the new editions will undoubtedly be rising, for one very simple reason – they aim to address the key issues business will face over the next decade and beyond. ■

* QMS: Quality Management System
EMS: Environmental Management System



Healthy soils for a healthy life

Our soils are in danger from expanding cities, deforestation, unsustainable land use, pollution, overgrazing and climate change, all of which compromise sustainable agriculture, food security and the provision of ecosystem services. To draw attention to their plight, the United Nations has declared 2015 the International Year of Soils, and 5 December World Soil Day*. Discover the work of ISO's technical committees to improve the quality of soils.

* Declared by the United Nations (UN) and implemented by the UN Food and Agriculture Organization (FAO). FAO has 39 liaisons with ISO technical committees and subcommittees.

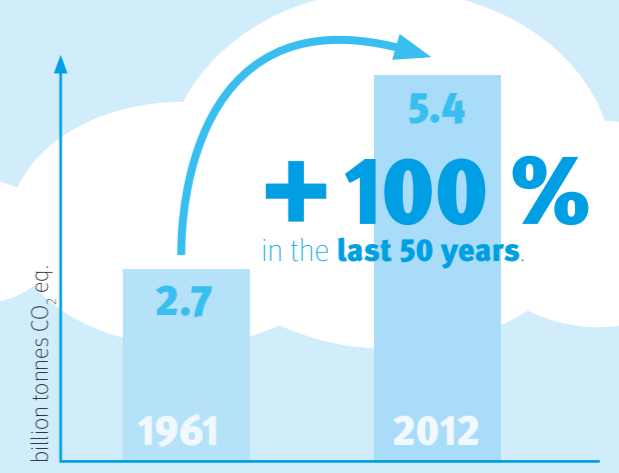


Soils **store and filter water**, improving our resilience to floods and droughts

Of the estimated **1.4 billion hectares** of crop land worldwide, **≈ 80 %** are rain-fed and account for about **60 %** of global agricultural output.

- ISO/TC 147, *Water quality*
- ISO/TC 282, *Water re-use*
- ISO/TC 275, *Sludge recovery, recycling, treatment and disposal*
- **293 standards published or in development**

Soils **help combat and adapt to climate change** by playing a key role in the carbon cycle



Global emissions from agriculture (crops & livestock) continue to increase.

- ISO/TC 146, *Air quality*
- **155 standards published**



Healthy soils are **the basis for healthy food production**



95% of our food is directly or indirectly produced on our soils

- ISO/TC 34, *Food products*
- **824 standards published**

Soils **support our planet's biodiversity** and they host a quarter of the total

Over **1000** species of invertebrates can be found in **1m²** of forest soil



- ISO/TC 190, *Soil quality*
- ISO/TC 23, *Tractors and machinery for agriculture and forestry*
- **515 standards published**

Soils are **the foundation for vegetation** which is cultivated or managed for feed, fibre, fuel and medicinal products



26% of the earth's terrestrial surface is occupied by grazing

- ISO/TC 134, *Fertilizers and soil conditioners*
- ISO/TC 238, *Solid biofuels*
- ISO/TC 255, *Biogas*
- **52 standards published or under development**

Soil is a **non-renewable resource**. Its preservation is essential for food security and our sustainable future



Sustainable soil management could produce up to **58 %** more food

- ISO/TC 207, *Environmental management*
- ISO/TC 81, *Common names for pesticides and other agrochemicals*
- **44 standards published**



Why the world needs **ISO 45001** for workplace safety

Whether you are an employee, a manager or a business owner, you share a common goal – you don't want anyone to get hurt on the job. Here, David Smith, Chair of the committee developing ISO 45001 for occupational health and safety (OHS), tells us how the standard will reduce risks and create better working conditions around the world.

For more information about ISO 45001, watch David Smith in our ISO video.



Every 15 seconds a worker dies from a work-related accident or disease, and 153 people experience a work-related injury. These represent an enormous burden for organizations and society as a whole, costing over 2.3 million deaths a year, not to mention the more than 300 million non-fatal accidents*. But with robust and effective processes in place, many incidents can be prevented. This is where the future ISO 45001 on occupational health and safety comes in. Designed to help organizations of all sizes and industries put in place a safe working environment for their employees, ISO 45001 is expected to reduce workplace injuries and illnesses around the world.

Given that this new management systems standard will become part of the business norm, regardless of whether organizations choose to adopt it or not, it's important for companies to stay abreast of the latest developments. David Smith, Chair of the ISO committee developing ISO 45001 (ISO/PC 283), tells us how the standard will bring safety to the front line.

ISOfocus: How will ISO 45001 enable organizations to put an occupational health and safety (OHS) management system in place?

David Smith: Of the 2.3 million work-related deaths a year, the majority (2 million) are a result of ill health and disease. People in this category often suffer prolonged illness from long-term exposure to risks. These cases should not be ignored by placing the focus on accidents, which are more visible and generally result in immediate action.

According to the World Congress on Safety and Health at Work, there are 860 000 occupational accidents every day, with consequences in terms of injuries. The direct or indirect cost of occupational illness and accidents at work is estimated at USD 2.8 trillion worldwide.

Businesses need to ensure they manage all their risks to survive and to thrive. OHS is a key aspect, which every business has to manage proactively. Apart from the devastating impact on people, poor OHS management can have many negative effects on organizations, such as the loss of key employees, business interruption, claims, insurance premiums, regulatory action, reputational damage, loss of investors and, ultimately, the loss of business.

How will ISO 45001 function with other ISO standards? How will this impact end users in concrete terms?

The development of the new OHS standard is timely because it coincides with the recent publication of newly revised ISO 9001 (quality management) and ISO 14001 (environmental management) standards, which use a common risk-based framework.

* Source: ILO



David Smith, Chair of ISO/PC 283, the committee developing ISO 45001 for occupational health and safety.

more traditional compliance approach. It advocates taking a preventative angle to OHS in order to identify what activities and processes could harm those working on behalf of the organization and others (i.e. visitors, members of the public, etc.) and to meet any legal compliance requirements. The standard does not deal with products and how they should be used or maintained. The focus is the workplace. There is a need to identify the hazards at work in order to eliminate or minimize those that pose a significant risk.

In this fast, innovative world, there is a need to be proactive and anticipate action rather than wait for regulations/codes of practice to be developed, which may come after many have suffered injury.

The majority of organizations are either small or medium enterprises. Standards need to be applicable to them, as well as to large and complex organizations, something that the nearly 100 experts drafting ISO 45001 have taken into account. The simple risk-based approach in ISO 45001 should be easy for SMEs to adopt, and is consistent with the approach used in OHSAS 18001 (which had some 90 000 certified subscribers in 2011).

You have been collaborating closely with other organizations in the development of ISO 45001. What has been the added value of these collaborations and how will end users of ISO 45001 throughout the world benefit?

Occupational health and safety management systems are not new, and although a number of countries have their individual standards, such as the USA and Australia, the only true international documents are the ILO Guidelines on OSH Management Systems (ILO-OSH 2001) and OHSAS 18001, *Occupational Health and Safety Management Systems – Requirements* (developed by the British Standards Institution).

The development of ISO 45001 enjoys input from all these groups involved in standards around the world and safety practitioner bodies such as the Institution of Occupational Health and Safety (IOSH), the American Society of Safety Engineers (ASSE) and the American Industrial Hygiene Association (AIHA).

With much experience in this field, the ILO has provided input on those aspects of their standards that are relevant and essential for effective OHS management: the importance of top management involvement and the essential role of workers in participating in the OHS management system's development and operation. Wherever possible, compromises have been made to

ensure that there is no conflict with existing standards that are already widely adopted.

What will the new ISO 45001 mean for users of OHSAS 18001?

It is hoped that the users of standards such as OHSAS 18001 and the ILO-OSH Guidelines will adopt ISO 45001 as it does not conflict with these documents and enhances the opportunity for integrating OHS management into the overall business processes.

The benefits of adopting ISO 45001, apart from it being a new consensus standard, is that it will naturally align to the formal management approaches adopted for other business risks in the suite of ISO management systems standards. This should be of benefit to SMEs when trying to manage multiple requirement standards.

Unlike ISO 9001 and ISO 14001, there is no formal transition process from existing ISO standards, but efforts are being made to help organizations with the transition from OHSAS 18001 to ISO 45001.

What are your hopes and aspirations for ISO 45001? Any predictions on how it will be received by the international community upon publication?

The publication of ISO 45001 should give increased credibility to the management of OHS. It will hopefully

receive the endorsement given to ISO 9001 and ISO 14001 by the business community. Large organizations will want to be assured that those organizations that operate under their control have good OHS management systems in place – very much as they seek assurance on quality in today's world. If this is the case, the adoption of the standard should quickly exceed 100 000 users within three years of its publication.

The success of this development is due to the hard-working members in the ISO/PC 283 committee and its dedicated working group of approximately 100 members from around the world. This work has been led by Convenor Kristian Glaesel of Denmark and his task group leaders, with excellent secretarial support from Charles Corrie (UK), Ludvig Hubendick (Sweden) and Peace Ababo (Rwanda). Hopefully, the standard will be completed next year if the draft – known as the DIS – is received positively when published in Jan/Feb 2016.

Wide adoption of the standard should reduce the horror stories in the media of poor OHS management leading to loss of life, injury and large-scale disasters, as seen in the factory building collapse in Bangladesh or the chemical explosion in China. Such events emphasize the need to consider the workers and those, including the community, who might be affected by the organization's activities. ■

The commonalities among the standards should enable organizations to integrate them more easily into their business processes – one of the key requirements in all three standards.

The standard follows a simple Plan-Do-Check-Act (PDCA) model, which provides a framework for organizations to plan what they need to put in place in order to minimize the risk of harm. The measures should address concerns that can lead to long-term health issues and absence from work, as well as those that give rise to accidents. For example, many suffer from psychosocial risk (e.g. stress), which is believed to be one of the biggest problems of the modern age and, apart from the misery caused to workers and their families, is a huge cost to society.

The standard requires that top management take ownership and demonstrate commitment through leadership to ensure that workers have the appropriate skills and that effective controls are put in place in the “Do” phase. It recognizes the value of worker involvement and worker consultations to develop and apply better OHS practices. The “Check” phase identifies all the key elements that should be addressed in order to ensure the system is working, and determines opportunities for improvement in the “Act” phase.

What will be different about ISO 45001 versus other OHS standards? How will its adoption impact small and medium-sized enterprises (SMEs)?

The risk-based approach to managing OHS contained in ISO 45001 is not new, nor does it conflict with the

There is a need
to be proactive
and anticipate
action.





Building a better future

There was clear support for international standardization from government and industry at ISO's General Assembly in Korea in September 2015. In a fast-paced technological world, much of the debate focused on how ISO can rise to the challenge of this brand new era with the help of the new ISO Strategy 2016-2020.



The President of the Republic of Korea, her Excellency Park Geun-hye, speaking via video message.



His Excellency Yoon Sang-jick, the Korean Minister of Trade, Industry and Energy.

Since its foundation in 1947, ISO has made a vast contribution to global economic growth and quality of life, according to the President of the Republic of Korea, her Excellency Park Geun-hye. These words were given at the opening ceremony of the 38th ISO General Assembly (GA), held in Seoul, Korea, during which her Excellency welcomed participants via a video message.

She pointed out that in today's era of innovation where technology and products are evolved at a much faster pace, the importance of ISO is increasingly growing and international standardization must keep up with the rate of technical progress. However, she added, it is also essential to refine the International Standards that may impede such innovation.

Invoking the ISO slogan, which served as the event's motto, "Great things happen when the world agrees", the Korean President concluded, "My wish is that the ISO GA Seoul will be a great opportunity to contribute not only to International Standards but to global economic growth in the future."

The importance of ISO standards was also recognized by his Excellency Yoon Sang-jick, the Korean Minister of Trade, Industry and Energy. "As you well know, it is not too much to say that today's global market is being played by International Standards," he said during his opening words.

Indeed, for the Minister, globalization is a major driving force behind the growing need for International Standards. "Global markets are becoming a single market, where we can make online purchases from the other side of the world with a single click," he said, adding that in such an environment, countries must embrace International Standards or they risk being isolated from the global economy. "In this sense, International Standards are the key to forming an international market without boundaries and facilitating trade between countries," he said.

The Korean Minister went on to deal with the role of International Standards in technology-driven industries. "Countries around the world," he said, "are devoting all their energy to the development of cutting-edge technologies, including driverless cars and drones." However, since technical regulations and standards are not always established in time with new technology, it could become an obstacle for products to enter markets.

Mr. Sang-jick underlined the need to keep up with technological development. "I would like to ask you to make every effort to make flexible and timely standardization policies. I truly believe that ISO will take a pivotal role for the prosperity of the world leading technological development," he said.



Dr. Koo Ja-Kyun, CEO and Chairman of LS Industrial Systems.

“The world we are living in today is changing at an unprecedented pace.”

ISO and the digital era

New technologies and the fast pace of development were also highlighted as drivers behind the need for International Standards by the keynote speaker for the event, Dr. Koo Ja-Kyun, CEO and Chairman of LS Industrial Systems (LSIS), a leading Korean energy and engineering company.

“The world we are living in today is changing at an unprecedented pace,” he said, highlighting that the way we live and work has been revolutionized by the extensive digitalization of our life in the last 20 years, and the widespread use of smartphones in recent years. For Dr. Koo, developments such as the Internet of Things, where devices not usually associated with surfing the Web are connected at all times, are leading to another paradigm shift. “In this era, boundaries between technologies we once thought clear will become obscure and new convergences between different technologies, solutions and industries will take place,” he said, forcing an ever greater recognition of the importance of International Standards.

On this point, the CEO and Chairman of LSIS shared his aspirations: “I hope ISO, as it has always been, will continue to play a pivotal role in leading the global efforts for standardization and help businesses and institutions to rise to the challenges of the times, such as climate change, and fully embrace the upcoming era of the Internet of Things, big data and convergence.”

IT security experts win top honours

The group of experts that develops International Standards for IT security techniques were awarded the Lawrence D. Eicher Award for excellence in technical work, during the GA week. The distinction recognizes the significant contribution of an ISO technical committee or subcommittee to the development of International Standards.

According to ISO President Dr. Zhang Xiaogang, joint technical committee ISO/IEC JTC1, *Information technology*, subcommittee SC 27, *IT security techniques*, was chosen “for its world-leading experts, world-class standards and excellence in promotion and consultation”.

The subcommittee develops standards that address the information security risks facing organizations today, including the well-known ISO/IEC 27001, the management system standard for information security. Speaking during the awards ceremony, ISO Acting Secretary-General Kevin McKinley said, “ISO/IEC 27001 has become a common language for organizations to protect their information and

is now a leading standard for international certification in information security.”

Mr. McKinley commended the efforts the committee had made to ensure strong ties with industry stakeholders, conducting seminars for local businesses, at the same time as its working group meetings, to exchange and gain feedback on future needs for standardization. He also celebrated the committee’s work in forming relationships with other industry and standards organizations, which ensures the presence of world-leading expertise within the committee and avoids reinventing the wheel.

This is the second time that a joint ISO/IEC committee or subcommittee has won the award and highlights the importance of working together to drive standards forward.

The Lawrence D. Eicher Leadership Award was developed in 2002 to acknowledge excellence and innovation in technical work as a tribute to ISO’s late Secretary-General, who served from 1986 to 2002.



Walter Fumy and Krystyna Passia receiving their award from ISO President Dr. Zhang Xiaogang, accompanied by Elisabeth Stampfl-Blaha, ISO Vice-President for technical management, (far right) and Kevin McKinley, ISO Acting Secretary-General (far left).



Participants at the ISO General Assembly.



Kevin McKinley, Acting Secretary-General of ISO.

ISO Strategy 2016-2020

Ensuring that ISO and its members can answer the needs of this era of globalization and rapid technological change was a high priority during the week, where the new strategy of the organization was finalized. The ISO Strategy 2016-2020 was debated during a panel discussion where the needs and expectations of various stakeholders were shared.

Markus Reigl from German electronics group Siemens was part of the panel and shared his views on what the industry needed from ISO over the next five years. Perhaps not surprisingly, being able to cope with technological developments featured prominently on his list. The technological revolution, he noted, and in particular the convergence of technologies linked to widespread Internet connectivity, means that the traditional vertical way of managing standardization no longer works.

Reigl also said the industry supported efforts to strengthen national member bodies as the model helps ensure the right stakeholders are present at the table.

The need for strong national members was also highlighted by the CEO for Standards Australia, Dr. Bronwyn Evans, who said: “ISO is the ISO members, all of us here are ISO, and it is up to all of us to ensure that the new strategy is implemented in our own economies and markets as well as in the broader communities.”

The strengthening of national member bodies was also a focus of the breakout sessions, where participants were invited to exchange best practice on a number of topics including how to get the most out of ISO membership, communicating the value of standards, and how to ensure a wide spread of stakeholders in the standards development process.

Strengthening developing country matters

Helping national standards bodies in developing countries realize the full potential of international standardization was the focus of a one-day meeting at the start of the GA week. One of the primary goals was to finalize the development of the next Action Plan for Developing Countries, which outlines ISO’s activities with regard to developing countries in the period 2016-2020.

The meeting was held in the style of lively discussions with several group discussions (in the form of breakout sessions). The aim of discussions was to identify the views and recommendations of all stakeholders on the next Action Plan for Developing Countries. The programme included four parallel breakout sessions on:

- Desired results of the ISO Action Plan 2016-2020
- Identification of the types of activities of the ISO Action Plan 2016-2020
- Needs assessment and implementation of the ISO Action Plan 2016-2020
- Monitoring and evaluation of the ISO Action Plan 2016-2020

The importance of developing country input was also underlined by ISO Acting Secretary-General Kevin McKinley. With their participation, he said, we can enable all our members to play fully their role of national gateway to international standardization and also increase the involvement of developing countries in the content and implementation of the next ISO Action Plan.

The keynote speech at the meeting, given by Dr. Ranyee Chiang of the Global Alliance for Clean Cookstoves and Chair of ISO/TC 285, highlighted the very real impact that standards are having on developing countries.

Dr. Chiang explained that cooking on open fires and traditional stoves, as is the case for 40% of the world’s population, comes at a cost – a cost in the region of 4 million deaths a year, the consumption of 500 million tonnes of non-renewable wood, and greenhouse gas emissions equivalent to 170 million passenger vehicles.

ISO technical committee ISO/TC 285 was created in 2013 to develop standards on this subject and Dr. Chiang emphasized the importance of having “the right people” at the table when creating these solutions.

The work on clean cookstoves highlights the impact standards can have on everyday life, but it also underlines some of the challenges national standards bodies in developing countries may experience. For this reason, one of the major objectives of DEVCO’s work is to help developing countries participate more actively and build their standardization capacity, a point underlined by DEVCO Chair Dr. Lalith Senaweera. ■ KATIE BIRD



Ranyee Chiang, Chair of ISO/TC 285.

Cooking on open fires and traditional stoves costs 4 million deaths a year.

