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#112

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Sustainable growth for smart cities

With just a few months to go until the United Nations summit on climate change (COP21), taking place this December, all eyes are now on Paris as the international community looks forward to a new, universal climate change agreement – one able to put humanity and the planet on a path to a safer, healthier and more secure future.



Olivier Peyrat, Director-General, AFNOR Group and ISO Vice-President (finance).

ISO/TC 268 is considered by many as a success.

Enter smart cities, central to any solution to global economic, social, energy or environmental challenges. Without a coherent strategy to run cities more efficiently, the global targets on greenhouse gas emissions and the ambitions for sustainable growth cannot be achieved.

Globally, urban areas are home to around half the world's population and generate around 80% of global Gross Domestic Product (GDP). They are responsible for around 70% of global energy consumption and energy-related greenhouse gas emissions. This startling statistic, together with the prospect of uninterrupted growth of towns and cities all over the world, poses the crucial question of sustainable development on an urban level.

Smart cities are necessary to reduce emissions and to handle this rapid urban growth. A number of events are being organized around this theme, from COP21 in Paris to the large world conference on Housing and Sustainable Urban Development in Quito, Ecuador, being held next year.

Standards organizations are bringing confidence to this expanding movement, launching simultaneously all over the world. This is why, in 2012, AFNOR (ISO member for France) proposed the creation of ISO technical committee ISO/TC 268, Sustainable development in communities, for which it subsequently assumed the responsibility of Chair, thanks to the commitment of Mr. Jacques Lair, and secretariat. The culmination of the committee's work is ISO 37101, the management system for the sustainable development of communities, expected to be published by the end of this year.

After only three years in existence, ISO/TC 268 is considered by many as a "success", having achieved genuine legitimacy among the various stakeholders and participants in the field, who were, until recently, reluctant to engage in the standardization process. Take, for instance, the number of ISO member countries involved in the work

of ISO/TC 268, which grew from 27 participants at the time of its inception to 43 participants currently active today – proof of the committee's sustained growth. This increased momentum has also enabled the publication of several standards designed to harmonize and structure the international context.

At the French level, AFNOR's Commission for sustainable and resilient development, which stakes out France's position in the work of ISO/TC 268, recognizes three challenges to achieving sustainable city goals:

- Design, organization and functioning of the city
- Governance and involvement of all interested parties in the sustainable development efforts
- Citizens' quality of life

Cities, as we know them, are faced with a complex challenge – the traditional processes of planning, procuring and financing are not adequate for the needs of smart cities. Taking these factors into account may eventually lead to developing a new economic model, adopting more efficient practices for energy consumption in cities and delivering more accessible services to the citizen.

This development, however, requires the right environment for smart solutions to be effectively adopted and used. This is why these objectives, shared by all those involved in projects for the deployment of intelligent networks (smart energy), can only be achieved in close coordination with the work being carried out by the International Electrotechnical Commission (IEC) and the International Telecommunication Union (ITU).

Cities and local authorities the world over are counting on us to provide a pathway for sustainable growth. Let's work together to bring global citizens the life they deserve and aspire to.

Olivier Peyrat

#hitechstandards global campaign

Nowhere is the power of working together more evident than in social media, where our impact is easily magnified when we join voices. The binding element is often a common “hashtag”, which permeates the conversation. Last June, we chose **#hitechstandards** for a global social media campaign driven by the ISO international community and beyond.

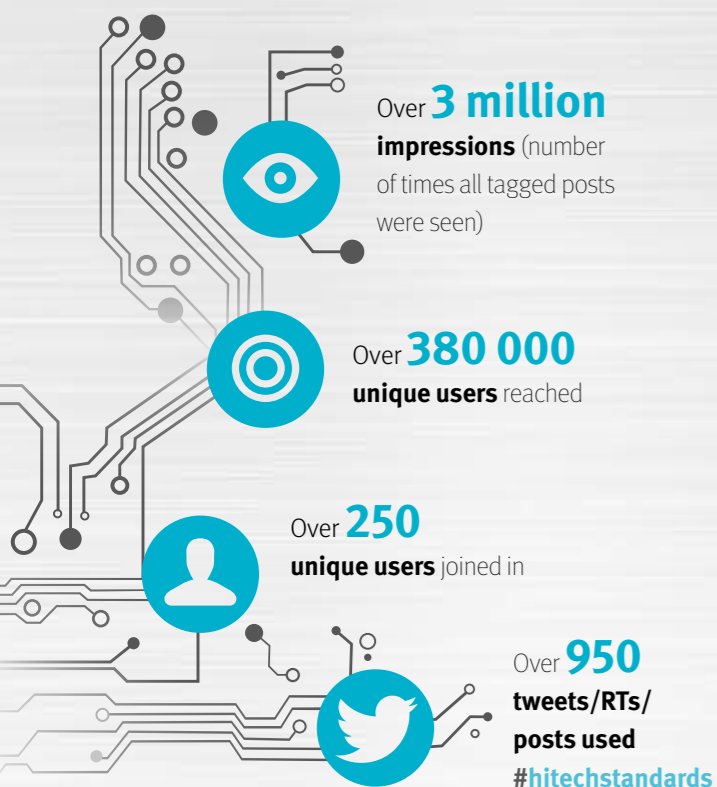
Our common goal – with our members and partners – was to raise awareness of the enabling role of standards for new technologies by focusing on some of the most exciting innovations under development today (robots, drones, additive manufacturing, wearables, etc.).

Over the course of the one-week campaign, everyone posted stories and other content tagged with **#hitechstandards**. Some members like ANSI (USA) and SAC (China) helped create videos or recruit innovative

companies to join our campaign, while others such as AENOR (Spain) were very active in engaging with, and communicating to, their national stakeholders. Others still, such as ABNT (Brazil) and SN (Norway), made content available in their national language. On each new day of the campaign, more and more experts, technical committees and industry joined in. Whether through a Facebook post or a retweet, your contribution counted. Thanks for making our campaign a success!

Participating members and partners

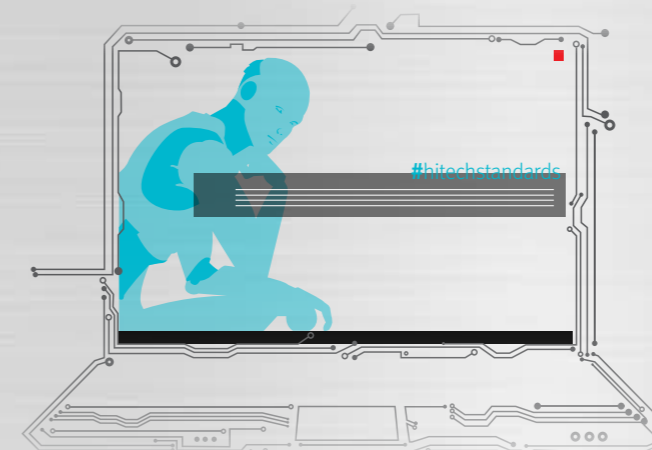
This list may not be exhaustive, apologies if we missed you!



A **tweetchat** made the campaign more engaging and interactive. Scan the QR code to see the highlights!



Missed the campaign? See all posts here <https://tagboard.com/hitechstandards/231170> and keep an eye out for the next campaign on smart cities later this year.



First campaign Website
For the first time, we created a Website for our campaign. Featuring a sleek design and simple navigation, it aggregated existing content in one convenient location. We highlighted the most exciting stories in order to keep it simple and to attract as many visitors as possible. Having a common site not only offered a landing place for the campaign, it was a convenient way to share content with our members and partners.
www.iso.org/hitechstandards



Creating tomorrow's urban landscape



Our cities and the way we work are changing. A future of smart cities will not only affect our working practices, but it will probably change the way we think. Here, we look at some of the ways in which cities are changing today, and how standards can help create tomorrow's urban landscape.



Stockholm is among the models of smart city success.



The highway crosses the Danube River and Danube Island, Vienna's most extensive recreational paradise.

Science fiction loves scaring people with gloomy visions of a dystopian future. Filmmakers this past year seemed especially fond of depicting future catastrophes. And nothing excites a filmmaker's fertile imagination more than painting the cities of the future in images evocative of early Dutch painter Hieronymus Bosch.

Blade Runner's night city, dripping with acid rain and lit only by garish neon, may be the prototype, but each filmmaker, each novelist can find new variations on the theme of nightmare cities. It's hard to find any artist with an optimistic view of the future these days.

Are we condemned to witness disintegrating cities, or is there some hope that we can create urban conglomerations that we would actually like to live in? That is the daunting challenge of "smart cities".

The complexity of smart cities

Though the term has become increasingly familiar, the definition of a "smart city" remains controversial. While the overall goal is generally perceived to be an ideal fusion of sustainability with advanced technology, there is confusion about where the term "smart" fits alongside "sustainable" and "resilient".

Many vital spheres are included in any laundry list of what a smart city should address to improve economic development and the quality of life of its residents. User-friendly transportation and smoothly running road networks, energy efficiency, pollution-free air, clean water

and efficient waste management, an environmentally sensitive setting, and effective measures taken to protect the safety and security of its citizens.

Above and beyond these practicalities, ideals of social equality and community harmony may also be aspirations for good urban living. These factors are part and parcel of the goal of making the lives of people living in those cities more productive and more agreeable.

Getting plugged in

An up-to-date infrastructure is essential to realizing all these objectives, and calls for the implementation of state-of-the-art information and communication technology (ICT). The proverbial "smart city" will therefore have optimal ICT embedded in both public and private sectors to improve professional and private lives.

But ICT must be a servant. A vital servant, but not one to take precedence over other significant players. Too often, ICT is seen as the be-all and end-all of smart cities, which only contributes to alienating other sectors and causing them to disengage from the conversation.

An example of the role ICT will play in the future has been provided by the European Union (EU). The EU has invested heavily in devising a strategy for achieving "smart" urban growth for its metropolitan city-regions, and has accordingly developed a range of programmes under Europe's Digital Agenda.

In 2010, it highlighted its focus on strengthening innovation and investment in ICT to improve public services.

The leading consultancy firm Arup Group Ltd. estimates that the global market for smart urban services will reach USD 400 billion per annum by 2020. Successful examples of smart city technologies and programmes have been implemented in Southampton, in the UK, as well as in Vienna, Amsterdam, Barcelona and Stockholm.

Shifting demographics

The United Nations Population Fund (UNFPA) warns us that we are witnessing the largest wave of urban growth in history. Most of the world's poor live in rural areas. Through migration – both voluntary and refugee – the rural poor are among the main contributors to the rapid increase in urban populations observed in most developing countries.

More than half of the world's population now lives in towns and cities, and by 2030, the UNFPA estimates that this number will swell to about five billion. Much of this urbanization will unfold in Africa and Asia, bringing potentially cataclysmic social, economic and environmental upheavals. Poor migrants face intractable difficulties: unemployment and general insecurity among underprivileged urban inhabitants can lead to devastating increases in crime and civil unrest.

Young people also abandon rural communities in both developing and developed countries, leaving home in droves to seek employment, greater opportunities and sometimes sanctuary in the world's towns and cities. And the needs of an ageing population, notably health care and

mobility, also must be factored in. But this exponential growth, these new considerations, place an enormous burden on already stretched urban resources, adding to the pressures to which “smart cities” need to respond.

Smart Cities Council

As migration to cities grows exponentially, the Smart Cities Council (SCC) can help cities get onto (or back to) the right track, assisting them in coping with the needs of an ever-expanding population base.

The SCC observes the differences between cities and regions around the world. When *ISOfocus* asked SCC Chairman Jesse Berst about the differences in approach across the globe, the answer was categorical: “Many cities in Europe, China and the Middle East are much further down the smart city path. They are aided by large government investments and a much greater sense of urgency. They understand that they are competing with other cities for jobs and talent. And that being a smart, connected, sustainable city gives them a tremendous competitive advantage while greatly improving the lives of their citizens.”

The SCC is a coalition of the world’s foremost smart city practitioners and innovators focused on livability, workability and sustainability. The Council’s goal is to accelerate the growth of smart cities worldwide by providing city leaders with best practices and vendor-neutral guidance on technology, finance, policy and citizen engagement.

Moreover, the SCC hosts the Internet’s most popular independent smart-city Website and is considered the leading reference for smart-city tools. It also organizes events worldwide – forums, workshops and their first Smart Cities Week event in September 2015 in Washington, D.C. The Council is advised by, among others, unbiased, independent experts from academia, climate advocacy groups and development banks. The American National Standards Institute (ANSI), ISO member for the USA, sits on their Advisory Board.

What difficulties does the SCC foresee and how will a transformation into smart cities help? Berst observes: “We’re all familiar with urban challenges such as congestion, crime, pollution and income inequality. We can no longer build our way out of these problems with last-century ‘dumb’ infrastructure. We must tap the power of digital technology.”

Moving from this premise, what expectations does the SCC have and how can standards help? “Cities badly need a way to assess where they are, aim for where they need to be and measure their progress along the way,”



The needs of the ageing population must be taken into account.

**More than 50%
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population now
lives in towns
and cities.**

ISO can help cities
procure more cost-effective
and reliable systems.

says Berst. “Standards fill that need. Equally important, they are the first step toward the holy grail of an interoperable, plug-and-play world where cities can mix and match solutions from different vendors without fear of lock-in or obsolescence or dead-end initiatives.” This is a much needed step forward from the current state of affairs where it is easy to get the impression that obsolescence is built in.

City-needs approach

ISO’s involvement and interest in this timely issue led to the creation of the ISO Technical Management Board’s Smart City Strategic Advisory Group (SAG). *ISOfocus* asked Graham Colclough, Chair of the SAG, about the importance for standards development organizations to coordinate their work.

A recognized thought leader on issues of technology enablement for public services, Colclough recently initiated a survey for the SAG on the topic. “I was keen to take a city-needs-led approach. One must think first from the ultimate consumer’s point of view or one is a fool from the outset.”

In this spirit, the SAG asked 20 countries to enrol half a dozen cities to glean their opinion on certain questions. The analysis of results is still being processed, but it is clear that the SAG’s hypothesis that standards are not of primary interest to city leaders is validated.

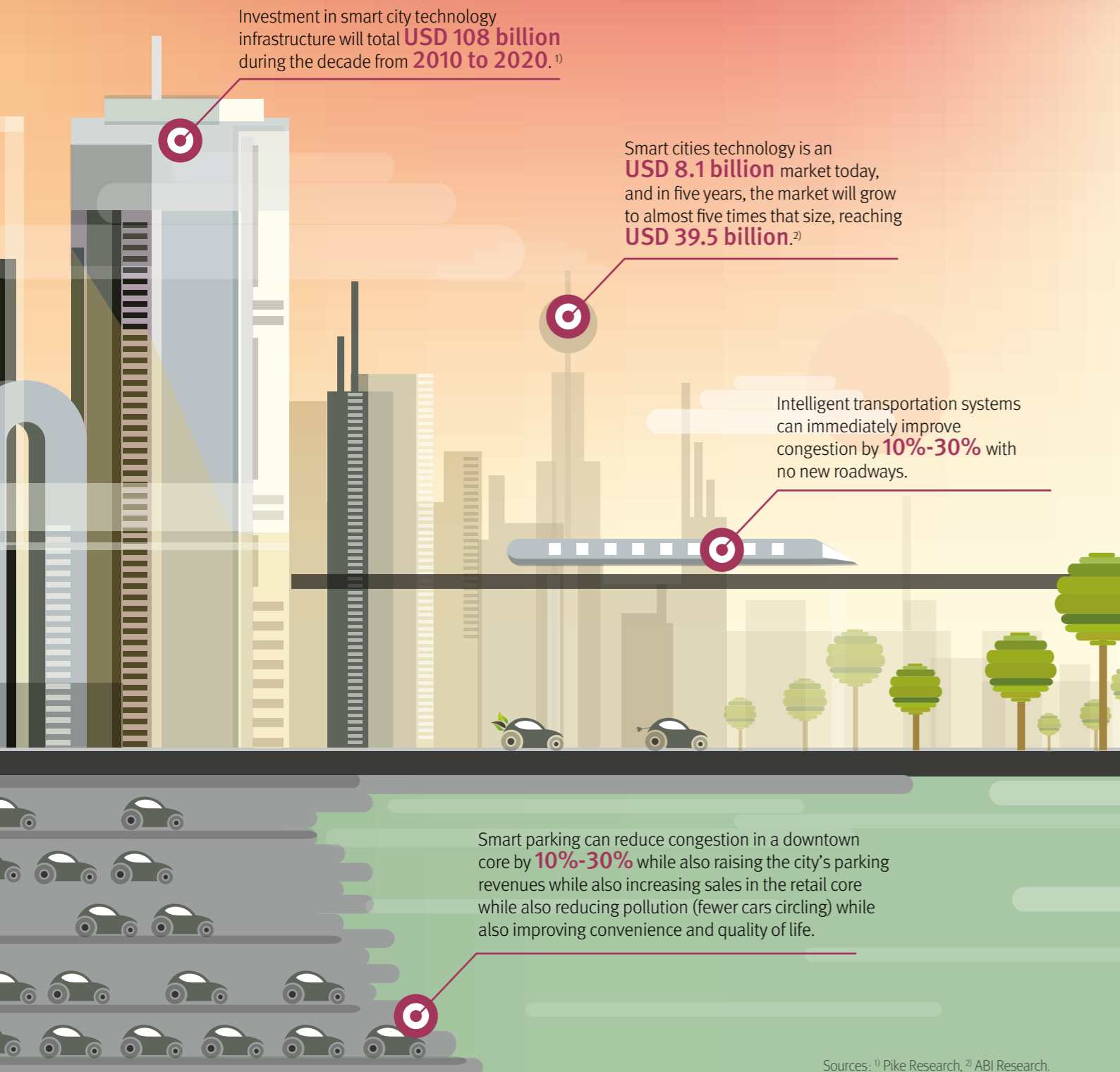
Colclough analyses: “Cities are not aware of materials coming from standards bodies. They think of themselves as unique, so the concept



Test-driving the ultimate city vehicle in Amsterdam.

THE SMART CITY MARKET

Estimates of the smart city market vary widely. The one constant is a universal expectation of substantial growth. New cities will be built and existing ones will be retrofitted to create economic development and improve the lives of citizens.



Sources: ¹⁾ Pike Research, ²⁾ ABI Research.
Additional content provided by Jesse Berst from SCC.

of standardization doesn't fit their line of thinking." Yet, he says, "there are systemic similarities among all cities." Cities seem to view standards as technical details or constraints, not aids to advancement. For the SAG Chair, it is a question of repositioning what standards mean to cities and then repositioning what standardization bodies should be doing together to be more relevant, particularly for cities of modest size.

Bringing cities up to standard

The Association française de normalisation (AFNOR), ISO's member for France, took the initiative of establishing ISO technical committee ISO/TC 268, *Sustainable development in communities*, which it also chairs. It develops a wide range of standards on sustainable development in communities, including standards on indicators for smart cities and for smart infrastructures. The committee's consensus is that sustainable development is the overarching goal, while smartness is one of the means to achieve it. Bernard Leservoisier, Standardization Programme Manager at AFNOR and Secretary of ISO/TC 268, captures it perfectly. Rather than "smart city", he suggests, "it is more accurate to talk about smart infrastructures, smart services, smart systems, smart devices, smart equipment, etc. in a city". "Smartness will help cities become more effective," he continues. "It will help them develop integrated and interconnected strategies or systems that they will be able to monitor on a real-time basis." Of course, this is only possible by resorting to high technology that all cities may not be able to afford or maintain – hence the reluctance of certain developing countries. Besides, since those smart systems will collect a lot of personal data, this raises questions on the ownership and the security of data. On this point, Leservoisier cautions, "Smart solutions may help cities grow more effective, but they will prove disappointing if they are not sustainable." Smart systems must, therefore, be integrated into sustainable development approaches including, for example, good governance, security, financial efficiency, effective management of energy and resources, environmental preservation, and climate change mitigation and resilience, among others.

A guide for managers

To give practical guidance to urban planners, ISO/TC 268 has undertaken the task of drafting ISO 37101, *Sustainable development of communities – Management systems – Requirements with guidance for resilience and smartness*.

While it does not deal with smart cities directly, the standard aims at helping communities develop and implement management systems to improve their performance in sustainable development. Smartness and resilience are considered means, among others, that will help communities – and by extension the towns and cities in which they are located – become more sustainable.

Underscoring the importance of ISO's mission in this domain, Leservoisier states, "ISO has a crucial role to play in fostering harmonization and clarification, and publishing documents that reflect international consensus and become globally relevant." And indeed, the number of standards and reference documents, be they elaborated at the international, regional or national levels, keeps on growing. ISO can, therefore, facilitate the exchange of expertise and best practices, stimulate innovation and help cities procure more cost-effective and reliable systems that meet their genuine needs.

Tomorrowland

Between Hollywood's murky crystal ball and the UNFPA's findings, the cities of the future look potentially very disturbing. You don't have to be one of *Blade Runner's* human replicants to worry that time may be running out. As Colclough points out, "ISO's working definition of smart cities starts with a 'call to arms' to dramatically increase the pace at which cities must address these issues."

So the multidisciplinary "architects" (and standardizers among them) of smart cities have their work cut out for them. The challenges will be endless, the repercussions as yet hard to anticipate, with many unpleasant surprises along the way. But the potential rewards for residents to enjoy a "livable" world full of "livable" cities are nothing short of ensuring a progressive future for humanity. Now, that's smart! MARY RITCHIE



Happy cities for happy people

A future of smart cities promises to make our life easier and more pleasant. Here, as the Convenor of the ISO working group on city indicators, Dr. Patricia McCarney shares her thoughts about the needs of our cities, and why a citizen-centric approach is a smart choice.

Cities are pivotal to the global agenda on energy efficiency.

A smart future for our cities is not just one where information and communication technologies (ICTs) reign; it is one where the use of ICTs creates new services for citizens, enhances or replaces infrastructure and improves economic growth. This “citizen-centric” approach will change how the urban dweller moves, thinks, cooperates and works in ways that will be smart, very smart indeed.

Dr. Patricia McCarney is no novice when it comes to smart cities. She has made the smart city agenda a key element in her career. Today, McCarney is the Convener of working group WG 2 on city indicators within ISO technical committee ISO/TC 268 on sustainable development of communities, President and CEO of the World Council on City Data (WCCD) and Director of the Global Cities Institute (GCI) at the University of Toronto in Canada. Here, she shares with us some of the smart city trends, the challenges, and how standards provide the platform from which smart cities can grow.

ISOfocus: Discussions of smart cities are increasingly a part of urban development aims worldwide. However, despite this celebrated approach, it is still hard to describe what lies behind the labelling phenomenon of the so-called “smart city”. How would you define the concept?

Patricia McCarney: Firstly, thank you for the opportunity to speak about this important global initiative on smart cities and the leading role that ISO is taking in its implementation through the development of a new ISO standard on smart city metrics.

The definition of a smart city is an evolving concept. The ISO Technical Management Board’s Strategic Advisory Group on Smart Cities gives a working definition of a “smart city” as one that: “...increases the pace at which it improves social, economic and environmental sustainability outcomes, responding to challenges such as climate change, rapid population growth and political and economic instability by improving how it engages with society, how it applies collaborative leadership methods, how it works across disciplines and city systems, and how it uses data information and modern technologies in order to provide better services and quality of life to those in, and involved with, the city, now and for the foreseeable future, without unfair disadvantage to others or degradation of the natural environment”.

This definition captures much of the global thinking behind the idea and supports the essential balance between ICTs and quality of city life. It helps broaden the smart cities agenda from a more singular focus on ICT in the early definitional work, to considering how the



Photo: Ben Brook
Dr. Patricia McCarney, Convenor of ISO/TC 268's working group WG 2, City indicators.

Standards
open the door
to innovation.

enormous growth and potential of ICT and the tremendous role of city data and big data can support cities in creating more livable and resource-efficient environments as well as more inclusive prosperity for citizens.

ICT can play a key role in improving more intelligent uses of energy. What are the necessary prerequisites for a smart city to meet the goals of economic and environmental sustainability?

While it is difficult to define an exhaustive list of necessary prerequisites for a smart city to meet the goals of economic and environmental sustainability, there are certainly several cities that are leading the effort. Amsterdam (one of the first cities certified under ISO 37120, *Indicators for city services and quality of life*), for example, defines an ideal smart city as one that focuses on investment in capital and communications infrastructure, which fuels sustainable economic growth and a high quality of life, while efficiently using natural resources. The entire concept of a smart city is constantly evolving, as are the technology, resources and scholarship behind it. The Amsterdam definition, however, seems extremely close to a desired outcome for cities wishing to become smart.

When cities implement ICT solutions for more energy-efficient goals, one of the key prerequisites to effective results is standardized metrics that monitor performance. The stakes are high in cities.

According to the 2015 Energy Productivity and Economic Prosperity Index, residential and commercial buildings account for 31% of the world's energy consumption.

Smarter building design and construction, together with smart metering, sensors for heating and cooling and smart lighting, are all key to more resource-efficient cities.

Coupled with smarter mobility solutions, cities are pivotal to the global agenda on energy efficiency. The work of ISO/TC 268/SC1 on smart community infrastructure is also helping cities to build smarter infrastructure solutions. City data to track performance and build data-informed results requires standardized measurement, a key goal in the new ISO standards being developed by ISO/TC 268/WG 2 specializing in city indicators. Standardized data globally enables cities to exchange and learn from each other.

Could you cite a couple of examples of pioneering cities on smart initiatives? What have been the lessons learned during smart development?

At the Global Cities Institute (GCI) of the University of Toronto at which I serve as Director, and the World Council on City Data (WCCD), which is leading the rollout of ISO 37120, we are seeing many of the WCCD Foundation Cities as leaders on the smart cities agenda. Each of these cities has stepped up to confront the essential challenge of

enhancing the citizen's quality of life, while balancing the need to be environmentally conscious and cost-effective. As for lessons learned, we have certainly gleaned some observations and early results from the adoption of ISO 37120, just in these recent months. Cities are making space for innovation to occur organically. Many of the initial 20 cities that have adopted the standard, have recognized the collection of data as being very integrated into their culture of innovation.

Examples include "innovation hubs" – places in their cities where ideas for things like apps, start-ups, non-traditional dwellings and citizen engagement can be incubated. For example, London has its Urban Innovation Centre, there is a new Dubai Innovation Hub, Boston has an Innovation District, Barcelona the @22 Barcelona Lab, and Los Angeles boasts a Civic Innovation Lab. These city innovation labs leverage public knowledge to identify and solve key local problems using data available from their open data portals. This integration of open city data and innovation is so critical to the smart city agenda going forward.

As I alluded to previously as a requirement for smart cities, each of these cities has taken a "citizen-centric" approach and has used the integration of technology and data to



The stakes are
high in cities.



create new services for citizens, enhance or replace infrastructure and improve economic growth.

How can ISO standards contribute to the work of urban researchers, architects, designers, policy makers, developers, economists, and industry leaders the world over, and, as such, to the success of smart cities?

As smart cities flourish around the world, standards help to create a common language for evaluation by all stakeholders.

The WCCD has revolutionized International Standards for cities with ISO 37120. We have gone a step further in operationalizing this standard and have created a dynamic, highly visual open city data portal (www.dataforcities.org) that allows everyone, from city leaders to high-school students, to analyse their city relative to other cities around the world – fostering a culture of knowledge exchange and direct interaction.

Through this knowledge sharing, a new system is emerging in which cities engage in “para-diplomacy” (that is to say, city-to-city knowledge and partnership exchange) paired with the more traditional idea of “soft-diplomacy” through

person-to-person contact (for example, the Chief Innovation Officer of Boston contacting his or her counterpart in Johannesburg to discuss a new and innovative housing solution). This new ISO standard on indicators for smart cities will thus facilitate the work of urban researchers, architects, designers, policy makers, developers, economists and industry leaders the world over, by building standardized city data that will contribute to the success of smart cities.

It is said that there is no better way of enhancing the life of thousands of millions of people around the world than improving the way in which cities work. How can standards help foster innovation and make people’s life more pleasant?

The tilt towards an urban planet that started in 2007 has led to urbanization becoming a defining phenomenon of the 21st century. By 2050 it is predicted that 70% of the world population will be urbanized. Standards improve the ability of cities to better manage and innovate for the future.

At a micro-level, standards provide requirements for monitoring technical and functional performance. They

By 2050 it is predicted that 70% of the world population will be urbanized.

ensure that technologies used in cities are safe and efficient. Standards also take into account best practices for business and optimal management of resources, which help to reduce environmental impact and improve service delivery to citizens.

International Standards like the ones we are developing in ISO/TC 268 are improving cities by providing a common platform for cities to communicate and exchange knowledge. For example, ISO 37120 provides a set of indicators with consistent and standardized definitions and methodologies so cities can communicate and learn from each other. As more cities are working with the WCCD in adopting ISO 37120, this global dialogue expands and deepens to also inform regional specificity.

This dialogue amongst cities becomes a catalyst for continuous learning and the improved delivery of city services toward better quality of life. Finally, I believe that standards help to identify where service gaps exist and through collaborative engagement with citizens, action groups and the private sector, standards open the door to innovation.

Smart cities get on *their bikes*



Many cities today are plagued by traffic congestion and, in densely populated urban areas, the fastest way of getting around is often on a bicycle. Philippe Legrand, Chair of ISO/TC 149/SC 1, *Cycles and major sub-assemblies*, tells us how standards can help our cities pedal their way back to urban bliss.

A humanistic, people-friendly city is first and foremost an accessible city, where mobility is possible for all. Sadly, big metropolises like New York City, London or Tokyo are often a living mayhem, with throngs of people, congested roads and a polluted atmosphere. Traffic congestion represents a major economic problem because of the many working hours lost each day from sitting in traffic jams and soaring petrol costs. In Mexico City, for example, one of the cities worst afflicted by traffic congestion, the average speed of cars is 4 km/h during rush hour. In our fast-paced societies where every minute counts and time is money, the daily struggle to get through life is leaving people frazzled and exhausted... and in a very bad mood.

So what's the solution? The good old bicycle! A growing number of cities around the world are eager to become bicycle cities, as part of a wider strategy to raise their green profile. A case in point: in Copenhagen, Denmark, for example, the majority of cyclists favour this means of transport to get to their destination quickly, saving the city 90 000 tonnes of CO₂ emissions annually.

The cycle solution

Cities of bicycles are people-oriented cities. Many modern towns around the world recognize that providing space for cycling creates efficient and attractive environments to live, with the benefits that this brings in terms of attractive streetscapes, economic use of land, simplicity of moving around, and healthy lifestyles.

Take the medium-sized city of Annecy, France, where 50% of trips are within a 3 km radius. Over such short distances, biking is the fastest means of transport by miles, getting city dwellers across town in 15 minutes flat... and it provides an ideal source of exercise every day.

In Copenhagen, cyclists save the city 90 000 tonnes of CO₂ emissions annually.



Far from the noise and pollution of motorized traffic, the bicycle brings countless benefits to our stressed-out societies, such as a healthier lifestyle, a pleasant leisure activity and a sustainable environment. Bikes are also affordable for, unlike cars, even the poorest segment of the population can generally afford one.

Cyclists are also flexible as they can quickly shift from being cyclists to being pedestrians. This creates the conditions for people to meet and greet each other around town as well as visit local shops, fostering a sense of community and boosting local trade.

Parking your two-wheeler is easy too. In Annecy, for instance, cyclists can park near their destination, often for free, thanks to over 3500 bike locations provided – although such parking facilities are not possible in all cities.

Pedalling for health

But by far the biggest benefit is our health. Who has never felt those endorphins flowing after a good bike ride? Not only is it good physical exercise, simultaneously working the heart and the muscles, it is also a great way to regain a sense of well-being. Practised regularly, at low speed, cycling gradually improves lung capacity, tones muscle, and relieves stress. And after all this effort, you will sleep better, too!

Pedalling a little each day also reduces the risk of more serious maladies, the likes of cancer, diabetes or cardiovascular disease, and even Parkinson's and Alzheimer's. But how do we get cycling to be a mainstream and desirable mode of transport? And how do we turn our cities into places where riding a bicycle is just an extension of walking?

A dented image

So far, I have only ever heard these questions partially answered. One of the notable obstacles to the development of urban cycling as an efficient mode of transport is undoubtedly the deep-seated belief that “a bike is not for transport, it's a sport”. Big cycling competitions like the Tour de France or the Olympic Games have sealed the sporty image of cycling, which equates in most people's minds to effort and fatigue.

Bicycle theft is also a major scourge that compromises the development of this mode of transport, discouraging regular cyclists to retool and deterring first-time buyers. In fact, a French survey by the scientific research institute IFRESI-CNRS showed that up to 25% of cyclists were put off replacing their bike after theft, and those who did

resorted to cheap second-hand bikes – a “grey” market fuelled in part by thieves.

Despite the obvious challenges, however, the global bicycle industry is expected to reach an estimated USD 65 billion by 2019, driven by the recent enthusiasm for recreational and fitness activity, growing traffic congestion and rising fuel prices. Japan is one of the countries enjoying the boom. In 2010, it sold just shy of 9.5 million bike units for a market estimated at 116.6 billion yen (EUR 1 billion). Similarly, the market for electric bicycles trending in North America and Western Europe as a valuable transit option has shot up 25%.

Boosting the bicycle bug

The key to enabling high levels of cycling is having the right infrastructure, including cycle paths and bicycle parking, but also a number of communication campaigns to promote cycling, educate children and target groups who do not normally cycle. Such initiatives are important in building a bicycle culture in cities where it was once absent. But the desire to move around a city on foot or by bicycle does not come by itself, and must be supported by a people-friendly urban environment

that entices people to walk or cycle. Small wonder then that part of New York City's “PlanNYC for a greener and greater New York” involves a general upgrading of the public environment, including a plan for a comprehensive cycle path network. Naturally, different cities need different strategies, but there are overarching principles that are valid all over the world.

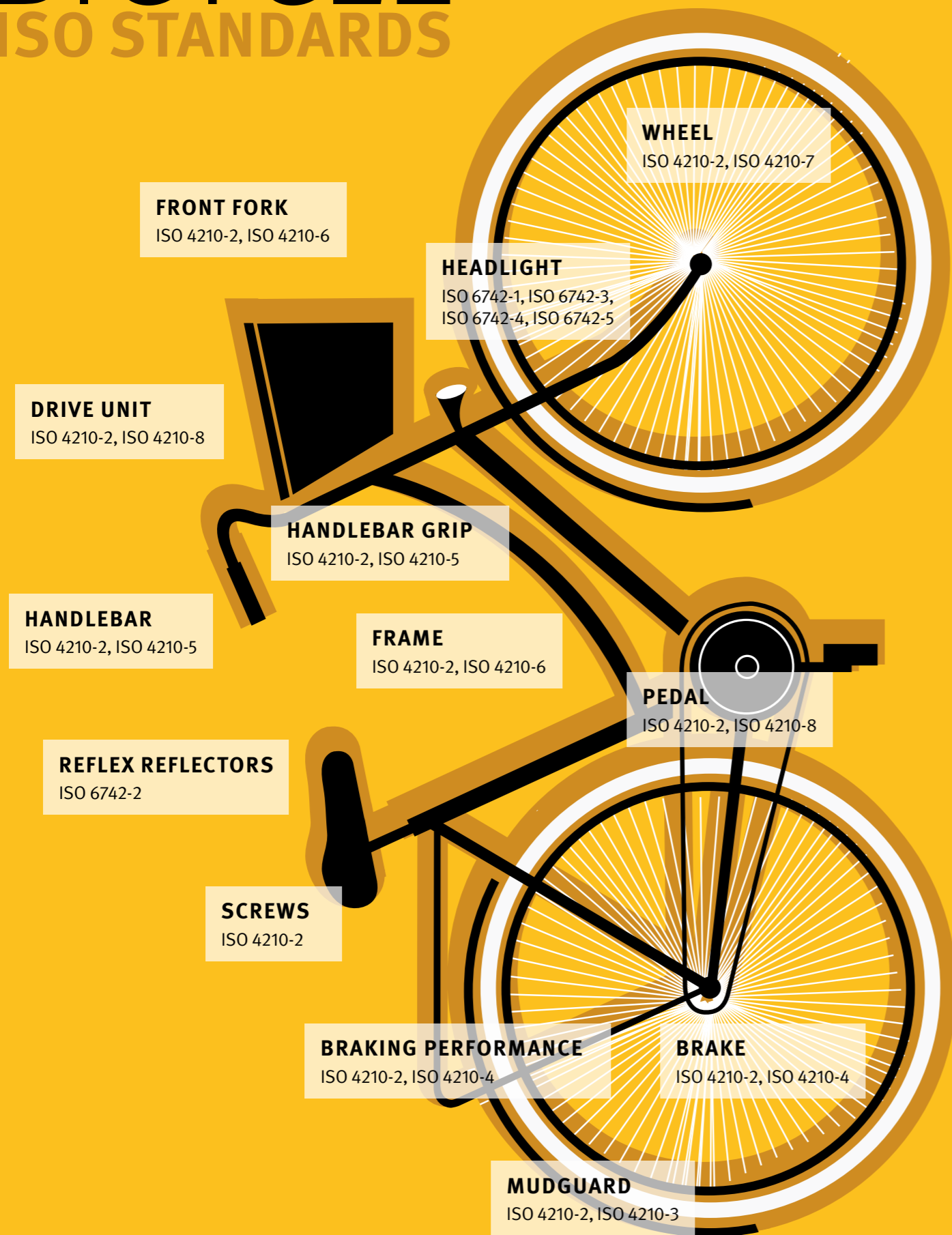
Adequate bicycle parking is also decisive in helping people choose to cycle. Having a bike in a convenient but secure location is the best way to make people use it automatically, particularly for local journeys to shops and other amenities. So far, these are generally located in highly trafficked areas such as transfer points between different modes of transport (train, bus, underground and car parks), but cycle parks are also needed in residential houses and flats, workplaces, shops, schools, public facilities, and entertainment venues.

Cycle parks also raise issues of anti-theft protection. So it must be possible to lock the frame of the bike securely to an immovable object, namely a cycle parking stand. Proper city planning that considers cyclists and builds easy-access bike parks into construction projects from the inception can help to get people back in the saddle.



Station of “Citybikes” in Vienna, a public bike rental scheme that lets visitors see the sights of the capital from the saddle.

BICYCLE ISO STANDARDS



A number of cities worldwide have shown that increasing cycling infrastructure requires carefully selected policies and supporting measures. This is why, in its 2012 report to the French authorities, ISO/TC 149/SC 1 proposed to increase the modal share of cycling by 1% a year to reach 10% in 2020, by changing town planning rules, making cycle networks in and around cities safe and easy to navigate, and improving the quality of bicycles and cycling equipment.

Putting safety first

So what does ISO have to do with bicycle cities? Quite a lot really. Bicycles should be safe, convenient, health-promoting vehicles. In recent years, however, inferior-quality cycles have caused shorter product life and a worrying number of accidents. The emphasis on user safety is therefore particularly strong. Bicycle standards have come a long way since ISO published its first standard on bicycle safety – ISO 4210 – in the 1980s, followed a few years later by ISO 8098 on safety requirements for children’s bicycles. One of the aims of ISO/TC 149/SC 1, the committee that developed the standards, is to focus on safety considerations, specifically avoiding the components for assembled bicycles, which are covered in other standards.

Establishing safety standards is ISO’s contribution to the development of cycling as an efficient mode of transport for sport, leisure and tourism. As the Chair of ISO/TC 149/SC 1, my priority is to drive worldwide consensus to ensure these standards are really being used, and not left “sleeping” at the bottom of a drawer. On a technical level, I also have to keep step with the changing needs of consumers, authorities and the industry... considering the state of the art to make cyclists a permanent feature of our new city landscapes.

MANAGEMENT CHANGES AT THE ISO CENTRAL SECRETARIAT

On 1 August Kevin McKinley took up the role of ISO Acting Secretary-General following the departure of Rob Steele. Kevin joined ISO in 2003 as Deputy Secretary-General and has been responsible for ISO's core standards development work and ISO's strategy and policy activities since then.

On his appointment, Kevin stated: "I would like to extend my thanks to Rob Steele for the energy and dedication he brought to this role. I am very happy to take on this position and I am looking forward to working with all our members and partners to ensure a successful future for our organization."

"This is an important time for ISO as we are developing a new Strategy to take us from 2016 into 2020. My first priority as Acting Secretary-General is to ensure that our organization is fit for the future and works in a way that best serves the needs of all our members and the ISO family as a whole."

Kevin will be supported by Nicolas Fleury as Acting Deputy Secretary-General.



Kevin McKinley is the ISO Acting Secretary-General.



Photo: ISIRI

IRANIAN STUDENTS UNITE FOR STANDARDS

Students are the world's future standards makers and users, so it is essential they know what standards are all about. What better way to do this than through research and lectures, as ISIRI, ISO's member for Iran, discovered. It all started in 2008 when a 12-year-old boy gave a talk on ISO and ISIRI to broad acclaim. The idea caught on and ISIRI decided to focus the discourse on specific aspects of standards. And so the first student conference on standardization, named simply "ISO and ISIRI", opened on 9 May 2015 in Yasooj, Iran, under the theme "Standards – A common language for a safer world".

The lectures, given by 26 students aged 13 to 17, covered everything from food products and water quality to energy management, nanotechnology, civil engineering works, and the safety of roads, toys or lifts. The 700 students who attended the event came out wiser about ISIRI, ISO and all things related to standardization.

Impressed by the speeches of these young Iranians, Mr. Hiroyuki Ohshima, Professor at the Tokyo University of Science, Japan, and Chair of ISO/TC 91 on surface active agents, who was present at the conference, remarked enthusiastically: "The 9 May 2015 was the most exciting day in my life for 70 years."

Watch how a young boy makes a case for standards.



CONNECTING WITH INDUSTRY AT INDONESIA'S ISO DAYS



Photo: BSN

Standards took centre stage at the Indonesia ISO Days, held in Jakarta in the second quarter of 2015. Hosted by BSN, ISO's member for the country, the workshop highlighted the role of standards in the national five-year plan for development, which aims to rank Indonesia in the upper level of medium-income countries.

This enthusiasm for standards is nothing new as Indonesia became a member of ISO in 1955, exactly ten years after the country's independence, a reminder that its founding fathers realized quite early on that standardization is an important mechanism for national prosperity. The era of globalization has changed the landscape of competition and standardization is key to helping Indonesian companies compete fairly on the international market. Yet, as Dr. Bambang Prasetya, Director-General of BSN, explained, the benefits of standards come not only from their implementation but also from effective participation in the development process.

The one-day event was followed by a visit to the Pt Wika Beton industrial plant, a leader in preformed concrete structures, on the outskirts of Jakarta, where participants had the chance to see first-hand the advantages that standards can bring to an organization. Connecting with industry in such a way is important. To be heard, standardizers need to talk the language of business, using simple messages about how standards help increase sales, lower costs and increase profitability.

SIX CHEERS FOR POLISH STANDARDS !

Polish Standardization Day was celebrated for the sixth time on 20 May 2015 under the banner "Quality management systems. What standardization has to do with it". Established in 2010, this special Day contributes to raising the profile of standards throughout the country and beyond.

On this occasion, PKN, ISO's member for Poland, organized a conference in the Ministry of Economy of the Republic of Poland based around the revision of the world-famous ISO 9001 for quality management systems – a meeting which received much attention from government representatives, entrepreneurs, academia, trade, and consumer associations.

Now firmly etched in PKN's events calendar, this Day is an opportunity to honour all persons and entities associated with standardization. So this year, for the first time, PKN handed out its new award – the Standardization Compass. This unique distinction may be given out to private citizens, legal persons and unincorporated bodies of national and foreign origin in recognition for their work in facilitating the standardization process and furthering the cause of voluntary standards.



Photo: PKN

Lighting up our world



Light and lighting

ISO/TC 274 applies to lighting in specific cases, complementing the work of the International Commission on Illumination (CIE). 16 joint ISO/CIE standards have already been published.

Since **Thomas Edison**'s incandescent light bulb in the **1880s**, artificial light has become of primary importance to human activity.

Optics and photonics

ISO/TC 172 develops for example standards for laser systems for medical application. Did you know "laser" means **Light Amplification by Stimulated Emission of Radiation**?

Fireworks

ISO/TC 264 reduces accidents, ensures the protection of employees and promotes the international fireworks trade.



■ China	40 million cartons of fireworks used
■ United States	8.5 million cartons used
■ European Union	9.5 million cartons used
■ Other countries	12 million cartons used

By 2020, LED lighting will represent

60%

of the lighting market

UNESCO celebrates 2015 as the International Year of Light. Light in all its forms, from sunbeams to lasers, to photographic devices, illuminates our daily lives, and plays a vital role in the development of today's technological world. Whether natural or artificial, here's what you should really know about light.

The **speed of light** in vacuum is exactly **299 792 458 m/s**

Solar energy

ISO/TC 180 deals with development, testing, installation and servicing of equipment and systems related to solar energy.

Solar photovoltaic systems

+ Solar thermal electricity

= **6 billion tonnes of CO₂ saved/year**



It takes **sunlight** an average of **8 min and 20 s** to travel from the Sun to the Earth.

Sea foam reflects **25%** of UV radiations

Snow reflects **80%** of UV radiations

Sand reflects **15%** of UV radiations

Cosmetics
ISO/TC 217 develops sun protection test methods to safeguard the skin from the damage of the sun.

66 000 deaths occur annually from **melanoma and other skin cancers**.

Photography

ISO/TC 42 applies to still picture imaging, both chemical and electronic.



From the **daguerreotype**, invented by **Louis Daguerre** in **1839**, to the smartphone, the principle of photography is to create images through the action of light.

Quantities and units

ISO/TC 12 develops units and symbols for use within the different fields of science and technology such as light and other electromagnetic radiation.



champions sustainable business with ISO 26000

In its quest to become the world's most sustainable retailer, Marks & Spencer has set a high standard for environmental sustainability and is influencing disruptive change throughout the industry.

Back in the days when free-range eggs were something of an oddity and disposable plastic bags clogged our landfills, Marks & Spencer (M&S) quietly carried the flag for sustainability. Long before it became a world concern, the leading UK retailer had been offering great value, high-quality clothing, food and home products responsibly sourced from around 2000 suppliers globally. But by the early 21st century, things had reached the point where, without drastic action, it would be hard to imagine a decent future for forthcoming generations. So in 2006, M&S took a long, hard look at its ethical and sustainable activities and set out to move them up a gear, while gathering shoppers' support behind them. Enter "Plan A", which has become the core of the company's business strategy – with "overwhelmingly positive" results, according to the brand itself. For all its successes, Plan A still needed to go one step further to win customers over. Shoppers, assailed by headlines over the source of their products, like the idea that they don't have to worry if their strawberries are ethically grown or workers are treated well in factories supplying M&S. So in 2013, the company turned to ISO 26000 for guidance on how to promote

respect and fair practices through its supply chain. Fiona Sadler, Head of Ethical Trading at M&S, tells us why moving to social responsibility is a win-win proposition for all involved.

No Plan B

Working with suppliers in 70 countries and some two million workers across 2000 factories and 20 000 farms, M&S is most definitely "supply chain dependent". This means that being a fair partner is central to the retailer's strategy, and ethical behaviour and environmental standards are essential to the future of the business.

The company wanted to go beyond the expectations of employees, customers and stakeholders by collaborating with suppliers to create a fair workplace and step up environmental performance. In 2006, it decided to put sustainability at the heart of its business, from sourcing products to relationships with suppliers, shoppers and the wider world. Behind the initiative is the goal that, by 2020, all M&S products will have at least one sustainable element – an ambitious plan demanding concrete targets, robust measurement and transparent reporting.

To succeed, it would have to change the attitudes of every one of its 25 million shoppers. In 2006, its first campaign, “Look Behind the Label”, drew attention to the various ethical and environmentally friendly initiatives adopted by the company in the production and sourcing of its products. This earned them widespread approval, particularly among opinion formers and the ethically-aware. But preaching to the converted was not enough. They needed to get people to actually “do” something. Hence the next stage was about engaging commitment. And so “Plan A” was born, launching in 2007, with 100 commitments in five pillars – climate change, waste, sustainable raw materials, fair partnership and health – to dramatically increase its environmental sustainability across the entire value chain. Backed by an extensive audit scheme, Plan A – thus named by then CEO, Stuart Rose, on the premise that there was no Plan B – has brought fundamental changes in the way M&S does business with suppliers as well as helping it to maintain high levels of customer trust and employee engagement.

A fair partner

The brand received many accolades, yet Plan A still fell short of making the public see “green” as the desirable option. This was not helped by issues of food and labour sourcing making headlines around that time, such as the horsemeat scandal or the Rana Plaza disaster in 2013, where a garment manufacture in Bangladesh collapsed killing over a thousand workers. Although M&S had no link to these tragedies, they still posed uncomfortable questions about the human cost of affordable fashion and food.

M&S turns to ISO 26000 to promote fair practices through its supply chain.



Photo: M&S



Photo: M&S

Some two million workers across 2 000 factories benefit from M&S's ethical behaviour.

By introducing ISO 26000 to its largest suppliers, M&S ensures their allegiance to more ethical standards.

As a major garment retailer, M&S faces challenges in responsibly sourcing materials from its suppliers in South Asia, mainly from India, Sri Lanka and Bangladesh. Yet, suppliers from these countries account for close to 80% of its footprint. What's more, the company regards the achievement of human potential as the foundation of environmental and social sustainability for present and future generations. Hence ISO 26000, *Guidance on social responsibility*, became their tool of choice to support the ambitious goals of Plan A. After careful consideration, ten of the biggest clothing manufacturers for M&S in India, Sri Lanka and Bangladesh – that account for 60% of the supplies – were invited to integrate the standard's principles of social and environmental sustainability into their business strategy. Of the ten, nine agreed to participate on a voluntary basis, bearing part of the cost for the programme themselves.

Out for the long haul

Work kicked off with a three-day capacity-building workshop in New Delhi for the nine top suppliers, where company CEO, Mark Bolland, introduced the concept, highlighting its importance for the successful implementation of Plan A. Each company dispatched



Keeping the communication channels open between M&S and its suppliers.

two representatives who received information and training on ISO 26000, the expectations of the project, cost approximation and sundry information.

The scheme involved a gap analysis using a self-evaluation tool, an assessment by CSR Company International, an action plan based on the principles of ISO 26000, and a scorecard for implementing the agreed actions in the day-by-day running of the factories from management level to the “shop floor”.

Nine-months after the first workshop, an audit of the participating companies was undertaken to check that every aspect was being applied consistently and correctly. If results were positive, the supplier would be granted the M&S “Golden Status Supplier”, whereupon regular audits could be dropped in favour of occasional random checks.

Leading with others

As a multinational retailer, M&S relies heavily on its suppliers for quality source materials.

This means it is responsible for tracking “till the last mile” of the supply chain and checking the source of the raw materials and the labour conditions prevailing in its suppliers’ organization. By introducing ISO 26000 to its largest suppliers, M&S ensures their allegiance to more ethical standards. And by adopting ISO 26000 voluntarily, suppliers undertake to conduct their business in a more transparent and accountable manner, which will help them fit in the M&S sustainability framework set out under Plan A.

The truth is, supply-chain complexity cannot be handled only with audits; it must be based on mutual trust between supplier and buyer. To borrow Bolland’s own words, the ability to “lead with others” – by treating suppliers as partners and setting clear limits – is key to delivering sector-wide change.

Lastly, the project must be championed by senior management to cement the commitment of partners and employees and impel its initiatives across the organization, driving long-term benefits.

A leading UK retailer

Founded in 1884, Marks & Spencer (M&S) is a leading UK-based multinational retailer, headquartered in the City of Westminster, London. The company specializes in selling clothing, homeware and luxury food products. With branches in 54 countries as well as home and over 85 000 employees, the retailer boasts an annual turnover of over 10 billion pounds* and a net profit of 458 million pounds. M&S is listed on the London Stock Exchange and is a constituent of the FTSE 100 index.

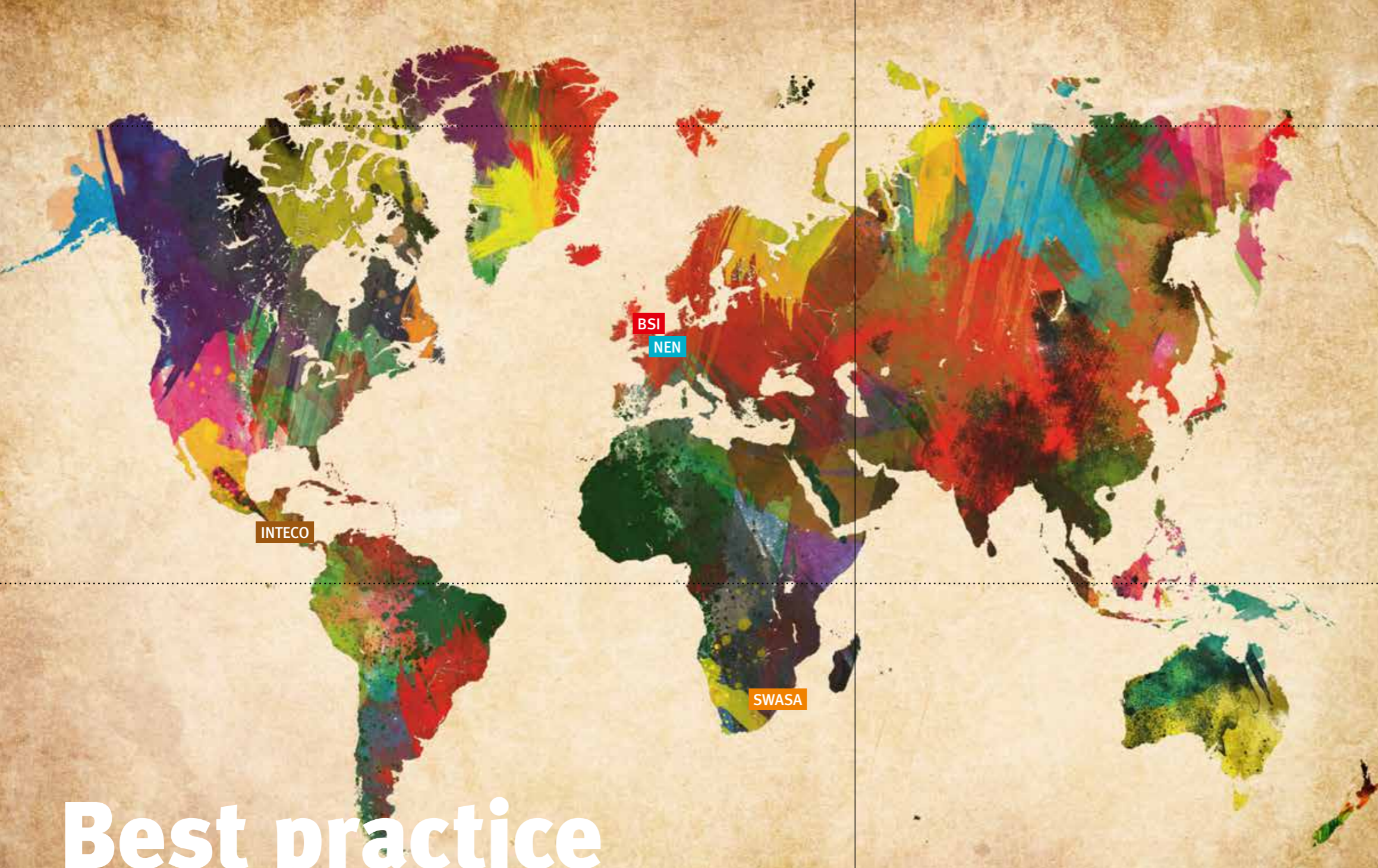
*March 2013

The onward journey

Plan A made demonstrable business sense. With the above-mentioned strategy, M&S has 60% of its supplier purchases covered under its sustainability management framework. Had it tried to cover almost 100% of its suppliers, the sheer complexity of the project would have certainly worked against it. M&S is conducting a trial with its nine most important suppliers. Based on the success of the project, further partners may be included.

Seven years on, if there is one overarching lesson to be learned from Plan A and the journey into social responsibility, it is one of humility. Even multinationals cannot change the world alone; they need to work with their partners. Now, with its suppliers firmly behind it, M&S is ready for the next leg of its journey: Plan A 2020.





Best practice in ISO member excellence

National standards bodies that are members of ISO are part of an international team. Here, ISO members from Costa Rica, the Netherlands, the United Kingdom and Swaziland share their best practice to help others in the ISO team better manage their national projects and programmes.

A major focus for members is to deliver the message of the importance of engaging in the standards development process.

With the globalization of trade and many other issues, the need for ISO members to better communicate the benefits of standards and develop their outreach has significantly increased. A major focus for members is to deliver the message to industry, academia, business and civil society of the importance of engaging in the standards development process and encouraging the use of the resulting technical standards.

Here, we profile a number of members who are working hard to achieve excellence in areas such as :

- Engaging SMEs
- Linking standards and education
- Developing and proposing new standardization ideas
- Building relations with stakeholders
- Leading and managing organizations

Building a stronger ISO community

Being an ISO member is an important strategic move in most countries of the world. As a successful member-driven organization, sharing best practices is one of the most important components within the ISO family. The success of most projects, whether handled by one member or across the world ISO team, depends upon a set of crucial collaborative and cooperative skills and techniques. Interestingly enough, though, more member contributions and sharing is still needed.

“Supporting ISO members to share ideas and best practice is key,” says Pamela Tarif, Head of Membership at ISO Central Secretariat. “Posting slides, videos, documents, flyers on ISO Connect – the Website for the ISO community – is one way we do this. But we can support members in other ways too to showcase good ideas: in member WebEx meetings, *ISOfocus* articles, and at ISO events.”

Costa Rica (INTECO)

MEMBER EXCELLENCE

*Mauricio Céspedes
from Costa Rica
(INTECO)*



Photo: INTECO

INTECO's path for 2020 is focused on standardization and on producing standards that benefit society through their practical use. Our objective is to increase our standards catalogue by nearly 200%, without bypassing our processes which are based on international best practice. By highlighting practical examples of standards, we hope to increase the interest of all stakeholders while, at the same time, ensuring their uptake by government by at least 15%.

Our goal is to achieve 3 000 standards by 2020. This means that we must invest more than USD 1 million in the standardization process. Not only do we have to ensure this will not be in vain, but also that it will generate a real benefit to society. In Costa Rica, for example, many products purchased by the state, or subcontract services, are not based on technical standards. The outcome is substandard-quality products, inadequate services and poor facilities, just to name a few. This, in turn, results in wasteful spending of public money and is detrimental to consumers.

To overcome these challenges, we must change in many ways. INTECO is now investing in technological development that allows us to be more efficient. Since last year, we have been using ISOLutions to help manage our standardization process. Now we are looking for a customer relationship management software to better manage our certification process. Several important agreements have been signed with public bodies in order to increase the use of standards, especially in procurement processes for both services and products. We have also increased the number of staff in the standardization department in order to better coordinate the work of our technical committees, in the hope of increasing participation at the international level.

The challenge now is to meet our goal of tripling our standards portfolio (with less than five years to go). And while this poses a great challenge, we're convinced that by forging ahead, we will discover new things and develop new and improved ways of working.

*Peter Maas from
the Netherlands (NEN)*



Photo: NEN

Innovation is about continual renewal, staying relevant to current customers and attracting new ones. Innovations can be big or small, on a micro-level or even a global level. For consumers, businesses, governments and yes, even for standardization institutes, innovation matters a lot.

Our experts and standards users are more demanding than ever as technology shapes their way of doing business. In order to improve our innovation capabilities and stimulate creative thinking, NEN conceived NENnovation, a well-funded flexible "vehicle" where cross-functional teams and external partners can explore new products and services that have strategic or long-term importance.

Some promising projects are:

- **NENcrowd**, our crowdfunding platform where parties can fund standardization activities based on their interest/investment possibilities and select rewards accordingly
- **Standard Committee 3.0**, which covers trends of digitalization like online consensus building, decision making and information sharing
- **Regelhulp ISO 26000**, our first digital application that brings implementation of standards to a whole new level – the individual user level

Take, for instance, the Regelhulp ISO 26000 project. In collaboration with the Dutch Federation of Rubber and Plastics Industry (NRK), we identified over 400 unique measures that organizations could "pick up" to implement ISO 26000 in their business and manufacturing sector. An online company dossier enables organizations to schedule and manage their selected measures. What's more, it conveniently enables information sharing and compliance management with Dutch government agencies and relevant stakeholders.

Based on user feedback, we have spent a lot of time fine-tuning Regelhulp ISO 26000 to improve functionality and user experience. It's really important to keep things simple, efficient and effective. Today, more than a hundred organizations are connected and our ambassador base is growing – a great success! The goal now is 1) to connect other sectors/industries and 2) to create similar tools for other subjects like, for example, the ISO management standards.

MEMBER EXCELLENCE

The Netherlands (NEN)

Scott Steedman from the United Kingdom (BSI)



Photo: BSI

United Kingdom (BSI)

BSI is known for its credo – “making excellence a habit” – displayed on all our publications and throughout our offices. Focusing on excellence drives our engagement with government, stakeholders and customers, our thinking about the role of standards in a changing world, and the behaviours and values of our staff.

As a private sector body, BSI reaches out to government with well-defined messages on the role of standards in society, and clearly explains the differences between regulations, schemes and standards. Crucially, we show how voluntary consensus-based standards can work for government, rather than being “regulation by the back door”. Our message has hit home: the Prime Minister sent our “Ministers’ Handbook” to all UK government ministers.

BSI’s approach to stakeholder engagement is strategic. We organize events and roadshows, and meetings with senior figures. Subscribing members have access to a dedicated enquiry line, and our accounts teams work with customers to understand their needs. But BSI’s focus on excellence in customer service also makes business sense:

our public funding is very low, and sales of standards and services support our activities. A few examples illustrate our focus on excellence. We are enhancing consensus building in standards development with initiatives such as public committee meetings. Last year, we launched the BSI’s Standards Makers’ awards, recognizing the contributions of our volunteer committee experts. We are keen to attract the next generation of standards makers and have organized special events for younger professionals. We are investing in the development of our products through a dedicated PAS (Publicly Available Specification) delivery team and through “value-added” digital services. Finally, we bring to life “making excellence a habit” through our people. Drawing on previous experience with our Sales Academy, we have extended the concept and introduced the Standards Makers’ Academy, a staff competency framework and training scheme. Our senior leadership programmes sit alongside a thriving coaching initiative. At year end, when staff review performance, they think about how their own “excellence behaviours” support BSI’s values and vision.

MEMBER EXCELLENCE



If you would like to promote your best-practice story among other ISO members, contact Pamela Tarif, Head of Membership, ISO Central Secretariat at tarif@iso.org

Photo: SWASA



Lomkhosi Mkonta from Swaziland (SWASA)

Swaziland (SWASA)

MEMBER EXCELLENCE

Over the past year, the Swaziland Standards Authority (SWASA) has achieved remarkable milestones. This has been made possible thanks to continued government support and collaborative partnerships.

Two memoranda of understanding were signed – the first with the Swaziland Environment Authority in the interest of furthering the use of standards, and the second with the University of Swaziland (UNISWA). The latter includes the presence of faculty staff in standards development, quality management systems training for final-year students prior to joining the job market, and, most importantly, the new SWASA metrology laboratory on the university premises. What’s more, a recently concluded agreement with the Ministry of Agriculture has enabled SWASA to commission its new food science laboratory.

Together, these three collaborations are designed to extend SWASA’s reach in both the public and private sectors. They help maximize a return on investment by reducing government red tape and, in so doing, allow the consolidation of related functions. All of these developments will be used in the imminent review of the SWASA Founding Act.

Focus has been placed on the development of a training centre for personnel. Created to bolster its expertise in preparation for accreditation, the centre now spearheads an introduction to standards and quality principles in formal learning structures.

Finally, a major step taken by the Swazi government was the allocation of land for SWASA’s offices and conformity assessment facilities. This is in line with the Swaziland Development Index, which states that no efforts will be spared in supporting the work of SWASA.

ISO PRESIDENT TALKS INNOVATION AT INNOPROM-2015

The ISO Strategy 2016-2020 and innovation were key features of a speech presented by ISO President Dr. Zhang Xiaogang at this year's INNOPROM in Ekaterinburg, Russia, in July 2015. Organized under the patronage of the Russian Ministry for Industry and Trade, the international trade fair featured 150 events in four days including an open session on "The best practices of using International Standards for Development of Industrial Production. Prospects for International Standardization". Opened by Alexander Shokhin, the President of the Russian Union of Industrialists and Entrepreneurs, it featured speakers from ISO, IEC, Rosstandart, CENELEC, AQSIQ, CNCA, as well as ISO members from Brazil, China and India.

The session was an opportunity for Dr. Zhang Xiaogang to share information about the development process of the ISO Strategy 2016-2020, as well as how and why standards support innovation. He also went on to explain how:

- Through its members, ISO develops high-quality and market-relevant standards
- ISO standards promote innovation
- ISO cooperates with other organizations to support innovation
- An innovative world needs harmonized standards

INNOPROM is Russia's main International Industrial Trade Fair, which has taken place annually in Ekaterinburg since 2010. Industrial efficiency was high on this year's agenda, which brought together more than 52 000 visitors, up 14% on the figure for 2014 (when 46 000 visitors attended).



Photo: INNOPROM



Photo: NEN

GOING FOR GAS AT GAS2015

More than 200 participants from all over the world flocked to Rotterdam, the Netherlands, last June for the eighth International Gas Analysis Symposium & Exhibition (GAS2015), a unique event on calibration gases, equipment and optimization of industrial processes.

Co-hosted by NEN, the ISO member for the country, and ISO/TC 158, *Analysis of gases*, the three-day event staged a fascinating programme of almost 70 scientific lectures and some 40 poster presentations under the four banners of "natural gas and biogas", "metrology, standardization and certification", "analytical applications", and "health,

safety and the environment". Rob Wessel, Chair of ISO/TC 158, wrapped up the event with Best Lecture and Best Poster awards.

ISO/TC 158 develops standards, for use by metrological institutes and calibration gas suppliers, on the preparation and use of calibration gases to facilitate traceable and comparable measurements. Calibration gas mixtures are an exact science, where small measurement deviations can have major consequences in terms of health, safety or money. Setting safe boundaries, ISO/TC 158's growing portfolio contains some 25 deliverables, with new standards and revisions in preparation.

FOUR-TIME PARALYMPIC WINNER CHAMPIONS ACCESSIBILITY

Does having a disability mean that you can't realize your dreams? Four-time Paralympic champion proves that the answer is a definitive "No" in this new ISO documentary.

My way – the story of Jean-Yves Le Meur follows the extraordinary French Paralympic champion Jean-Yves Le Meur as he improbably, heroically overcomes a tragic accident. Through trial and error, tears and laughter, this incredible man learns to overcome his suffering, by finding solace in his love of sports.

"Living with a disability has opened more doors and more experiences than if I was an able-bodied person," says Le Meur. "I have won 17 times French ski-sit championships, and won 2 World Cups, and took part in 4 Para-Olympics Games representing the French national team."

"Through all these experiences over the past 20 years, I have met a lot of people and discovered a lot of beautiful things. But most of all, life is beautiful... and it's even more beautiful when it's accessible."



To learn more about Le Meur's triumph over tragedy, watch the new ISO documentary by scanning the QR code.



WORLD FAMOUS IN SWITZERLAND

ISO's work on standards touches everyone in every country, including Switzerland where its central secretariat is based.

As part of celebrations to mark the 200th anniversary of Geneva's entry into the Confederation of Switzerland, ISO joined a number of other Geneva-based international organizations in being featured in the travelling exhibition "Geneva meets the Swiss".

In addition to the history and attractions of Geneva, the exhibition demonstrated, through a "day in the life" display, how the work of international organizations in Geneva impacts the everyday lives of the Swiss people.

With more than 20 000 standards, the hardest task for ISO was choosing which ones to highlight. The exhibition stopped at 45 towns and cities in the 26 cantons of Switzerland, offering a number of presentations and events along the way.

25 YEARS OF INFORMATION SECURITY

Earlier this year, the world's leading experts in information security and privacy gathered in Kuching, Sarawak, on the beautiful island of Borneo to celebrate the 25th anniversary of ISO/IEC JTC 1/SC 27 on IT security techniques.

"Taking part in the journey is more important than the destination", said Prof. Edward Humphreys, Convener of ISO/IEC JTC 1/SC 27's working group WG 1. In its 25 years of existence, the subcommittee has taken on the challenges of the digital world to deliver both management and technical standards that address the information security and privacy risks facing business, governments and citizens around the globe. And delivered, they have, with the all-time best-selling information security management standards ISO/IEC 27001 and ISO/IEC 27002.

So what of the future? The world is getting bigger in terms of Big Data technology and smaller in terms of the Internet of Things. The world is also getting smarter with smart objects, services, applications, buildings, cities and infrastructure. These "big, small and smart" things and their underlying technologies are all good candidates for future international standardization.



Her story has the makings of a Hollywood hit – triumph over adversity. Now, the ISO/DIN essay winner Ester Williams opens up about her hardship-filled childhood, the pride of buying the family home, the role hard work has played in her career – and the standards campaign she’s championing.

Introducing **Jamaica’s** newest export



I watched my parents toil through the weekends with a pan jerk chicken business to support us.



Photo : Ester Williams

When I walk through the door of the meeting room to greet Ester, I see that she has a smile that lights up the room. After only a few minutes, she tells me about her childhood, her family, her ambitions, and the road to success, quickly putting me at ease with her beaming smile. I discover soon enough, however, that Ester’s cheerfulness is her coping mechanism – concealing insecurities and misfortunes. Ester Williams is the winner of the 2014 ISO/DIN essay contest for young standardizers in developing countries¹⁾. Her essay and video on the theme of “Sustainable energy future”, according to Dr. Torsten Bahke, Director of DIN, captured the urgency of our current situation as well as eloquently describing the situation in Jamaica and how standards truly can have a positive impact.

1) Held every two years and sponsored by ISO member, DIN, the German institute for standardization, the award encourages young professionals in developing countries to engage in international standardization and raises awareness of the importance of standards in promoting safe and sustainable economic development.

From humble beginnings

She is clever and charismatic, of course – the kind of young woman you assume had it easy. Then you hear her story. Born in a Jamaican community riddled with violence, at only three-months old, she saw her father abandon the family. She grew up in an environment where there was a lot of quarrelling, with little or no money to support the extended 16-person family – or, as the Jamaicans call it, “the big yard”.

She admits that it was incredibly hard for her mom to raise her with little support from the father. But it was even harder to have her father return after a long absence. I ask Ester how it felt to have her dad back after more than ten years, and to discover that her mother was pregnant with her youngest sister. With no hesitation, she replies, “I was depressed, and heart-broken. I left home crying, went to work crying, came home crying – thinking to myself ‘another child’.”

She doesn’t hold any grudges, though, against her parents. “At first I felt hurt, but after a while I accepted my reality, changed my mindset and focused on how I can give back.”

A self-motivated woman

At school, Ester majored in finance and minored in international business, hoping one day to secure a position in the banking and finance industry. When I ask her why she later decided to pursue business, she clasps her hands and laughs, “to travel the world and make history!”

She affirms she’s not all about triumph over adversity: “I like to be busy. I like to learn. I want to enjoy work – feel fulfilled and challenged!” And yet Ester forms an “against all odds” arc to rival any. Which bring us on to teenage Ester, a time she admits “was harder than most”. “Money was scarce – virtually non-existent. I watched my parents toil through the weekends with a pan jerk chicken business to support us.”



A proud Ester at her university graduation ceremony.

I want to enjoy work
– feel fulfilled
and challenged!



Ester flourishes at the Bureau of Standards Jamaica (BSJ).

Adult Ester, of course, started to enjoy a different experience. At the young age of 22, she got her big break at the Bureau of Standards Jamaica (BSJ) as a cashier. But rather than spending her hard-earned cash, the young woman started to save. Two years later, with 320 000 Jamaican dollars (JAD) down, she bought a JAD 3.2 million house for her family. “For me to buy our family home was the best present. I knew it was going to be rough, but I knew I had to do it. It is a homey-feeling house. I love it! Felt so grown up!”

When asked about her accomplishments and impact on her family, Ester says that it was only normal. This experience gave her impetus to work harder. After only a few years at BSJ, she decided to go back to school to pursue her master’s degree. Juggling classes and a career was not easy, but it paid off when she was transferred and promoted to the Standards Division in 2010. “Being a fast learner and eager to work, I learned the ropes on how to manage meetings, write minutes, as well as take charge.”

Championing standards

Ester has grown not only to develop standards but to promote their importance and benefits. Today, she is a Standards Development & Certification Officer – quite a step up from her time as a cashier. But that’s not all. Her self-motivating trait has unearthed her passion to write short stories and create videos to proclaim BSJ’s vision and mission. Just a few months ago, she was awarded second place to the BSJ Employee of the Year 2013-2014. A committed activist, Ester has long campaigned for higher education and young people. In the future, it is her ultimate goal for people to once again appreciate the “Art of Standardization”, especially in developing countries like Jamaica. “With the rapid development of technology, young people especially are lacking in interest. “It is therefore my mission – locally and globally – to break the ‘silence’ until the world realizes that standards are all around us – we use them every day!!!”

And what about her future plans? “I’m very open-minded about my career,” says Ester. “I would like to cement my career in standardization. I have the experience, so why not further it. Maybe an international career is just around the corner,” she laughs.

And the work shows no sign of letting up. The young professional is on another crusade – or maybe Ester is just the same old Ester – she has her eyes set on another Master’s Degree in Standardization, Social Regulation and Sustainable Development at the University of Geneva, a challenge she says “will only make me stronger”.

Beyond getting by

As we conclude our discussion, often spattered with dreams of the future, the 30-year-old Ester

is passionate and proud – about her family and her country – without a trace of bitterness from her childhood hardships. At least that’s what I think ; for her part, she insists she’s “just getting by”.

As we say goodbye, Ester hands me a keychain with the Jamaican flag and the expression “hey mon” on it, and gives me the widest and brightest smile ever. I smile back for the first time realizing that, for Ester, no hardship is too immense and no challenge too ambitious.

When I get back to my desk, my colleagues ask me if she is as warm and bubbly in person as she is in her winning video. Yes, I say, probably the most charming young woman I have ever met. And is she smart, they ask. The truth? Ester Williams is beyond smart ; she’s even stronger than she looks. ELIZABETH GASIOROWSKI-DENIS

For me, to buy
our family home
was the best present.

