

WITNESS

Everyone needs standards

BY SAM KNIGHT

Few people give much thought to standards, yet from the GSM mobile phone system to the ISBN code they make the world go round. I visited Geneva, home to the world's main standardisation body, to learn more about this engine of globalisation



The freight container, allowing easy transportation of goods around the world, is one of the triumphs of standardisation

The International Organisation for Standardisation (ISO) is housed in a bland office on a quiet street in Geneva. Since it was formed in 1947, it has produced guidelines for pretty much every aspect of human life you can think of and a lot more besides. Its work is absolutely vital, and yet almost universally overlooked. Standards touch your life wherever you are standing: in your clothes, your bathroom, the road signs that you read. They are a kind of pedant's potion that makes the world go round.

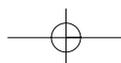
I visited the ISO's headquarters last autumn, during the organisation's three-day general assembly. Pieces of 60th anniversary birthday cake lay half-eaten on desks. Aware that I was in the spiritual birthplace of such standards as the ATM machine, the ISBN number and the A and B system of paper sizes, I asked the head of communications, Roger Frost, if there

was a single room where all the world's standards are kept. "This is where we keep the gold," Frost said as he led me into an underground room where the organisation's 16,455 standards are held on a hard disk the size of a video recorder. He told me never to reveal the location. "We've never had a terrorist threat, as such," he said. "But you never know." Standards had never struck me as a potential terrorist target. In fact, before I went to Geneva, they had never struck me much at all. But despite being a rather abstract thing to blow up, they satisfy two requirements of terrorist targets: they are marks of civilisation, and they are an intrinsic part of the global economy.

A standard is an agreed way of doing things. Metrology — the science of measurement — is a prime example. Trade and industrialisation would be impossible without common scales for mass, size and volume. "We need a ton of steel": how could you communicate this without a

commonly agreed measurement? Standardisers are often asked to explain their work, and most delegates I spoke to at the ISO's general assembly turned out to have a way of describing it to people they met at parties. Lars Flink, the chief executive of the Swedish Standards Institute, sought to explain the benefits of standards to me in terms of priests' feet. He said that measurements in Sweden used to be made according to the size of the local vicar's foot. "It was okay if you stayed within your village, but if the other priests were bigger or smaller, it made it very difficult to trade between villages."

Standardised measurements paved the way for things like standardised railway gauges and machine parts. The ISO's first technical committee was set up to write international guidelines for screw threads, whose differing sizes added an estimated £ 25m (roughly £ 750m today) to the cost of the Allied effort in the second world war. Since then, victories for standardisation have included the credit card, the



qwerty keyboard and the GSM system that supports mobile phones. The freight container (ISO 668) is a classic standard. Its design was agreed by hundreds of trade associations during a series of ISO meetings from 1957 to 1967 and, once confirmed and published, enabled transport companies and container manufacturers around the world to order from the same set of specifications. Lorries could be built in America to carry containers manufactured in Korea. Having an international standard enables companies and countries unfamiliar with each other to join new markets and trade with confidence. In 2005, the department of trade and industry found that standards are worth £ 2.5bn a year to the British economy. In global terms, they are priceless.

But agreeing on standards is not always straightforward. The trade associations that negotiated the dimensions of the freight container all wanted a universal standard, but had different views on what it should be. The ability of the ISO to shape a whole industry makes it the object of determined lobbying by big corporations and powerful countries. Over the last year, for instance, the ISO has been the forum for a bloody battle between Microsoft and dozens of open-source software companies backed by IBM. Microsoft wants its office software document format to become a global standard; the other side argues that there already is one—the OpenDocument format—which Microsoft refused to join.

Standards can have implications that reach far beyond the technical. Decisions about power specifications, hygiene or a new piece of computer hardware may have profound consequences for global energy consumption, public health and technological change. Although standards are voluntary, once they are widely adopted you don't want to be on the wrong side of them. "Standards are made with you, without you or against you," Fabio Tobón, a veteran standardiser from Colombia, told me. "In everything in life, there is a struggle to impose your way of doing things, and standards are the same."

Orchestrating this process makes the ISO a hugely important body. Although it is a membership body of mostly private national standards organisations, it has consultative status with dozens of UN agencies and its guidelines are frequently incorporated into national and EU legislation. ISO standards are used to settle World Trade Organisation disputes. The ISO's secretary-general, Alan Bryden,

Iran chairs the technical committee on women's cosmetics

likes to describe his organisation as "the engine room of globalisation." On the second day of the general assembly, Jonathan Koppell, a professor at Yale's school of management, told the audience: "If globalisation truly means the breaking down of national boundaries, the harmonisation of rules and regulations, then the bottle-throwing protesters we often see at G7 or WTO meetings might more properly have found themselves here."

Standardisers tend to be very proud of their work, but dread talking about it with strangers. Not all are happy about labouring in obscurity. John Ndanusa Akanya, director general of the Standards Organisation of Nigeria, said: "People do not know the effort. They just sit in the jumbo jet without a thought for the technical committees that have worked from morning until night to help it to fly. But this is my fate. I like to see things right... My wife knows this: everything in the fridge and deep freeze is labelled." But others thought it right that standardisation should have a low profile. Richard Westlake, the chair of Standards New Zealand, said: "The paradox of standards is that when they are working properly, they are invisible. The last thing you want is people to be thinking about standards all the time."

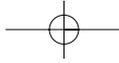
The ISO itself seems similarly confused. In some ways it is a bewilderingly open organisation. On its website you can find exhaustive documents from its more than 700 technical committees and sub-committees, and the names, addresses and email addresses of those taking part. Yet for such a large enterprise, it keeps a low profile. Frost admitted that, after he started his job as head of communications 15 years ago, it was three months before a journalist called. And although the ISO let me into its building while the general assembly was taking place, I was not allowed into most of the sessions, and had to interview delegates in the lobby or when they stepped outside for a cigarette.

Standardisation in its modern form emerged as industrialisation reached full flower in Europe and the US in the first years of the 20th century. Before national standards bodies were

established, companies formed private membership groups to settle questions such as how to measure electricity or whether there should be uniform sizes for pieces of steel. The British Engineering Standards Committee, the forerunner of the British Standards Institute, was founded in 1901 to regulate girders. In the US, the American Society for Testing and Materials (now ASTM International and a rival of the ISO) was formed in 1898 to stop railway lines from breaking.

The father of international standardisation was Charles Le Maistre, born the seventh son of a Jersey parson in 1874. He travelled the world persuading national standards bodies and chambers of commerce of the need to agree international specifications for timber and textiles and machine parts. In the 1920s, Le Maistre founded the International Electrotechnical Commission and the International Federation of the National Standardising Associations, the parents of the ISO. A memorial book with the text of a eulogy for Le Maistre, delivered after his death in 1953 by fellow standardiser Percy Dunsheath, is preserved in the British Library. It paints a picture of a choir singer and lover of travel literature whose bouts of depression did not hinder his abilities as the ultimate gentleman negotiator. A speech given by Le Maistre to the Empire Club of Canada in 1932 also revealed him to be the forerunner of today's underappreciated standardiser. "The trouble," he said of the standards that supported radio networks, "is that housewives have taken it for granted, and they have not the ghost of a notion of the tremendous amount of time and money and trouble expended before that was possible."

Standardisation was taken over by governments during the second world war. The Allies formed the standards co-ordinating committee (the London office was run by Le Maistre) to better align their defence industries. But when it was agreed that international standards should form part of the postwar global architecture, the model that Le Maistre had developed—private consensus-building by companies—was chosen as the basis of the International Organisation for Standardisation. The headquarters was a villa on the Route de Malagnou—a Geneva highway of museums and psychoanalysts—where the first standards were printed and left to dry on the roof. The ISO's official history, written for its 50th anniversary in 1997, depicts the early days as a kind of springtime gathering of



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boffins. "Ah, Salt was funny!" recalled Roger Maréchal, one of the ISO's first employees, of a former colleague. "On some mornings he came in, said hello to everybody, went in his office, locked the door, and left through the window!"

The ISO's first standard, published in 1951, enshrined 20°C as a reference temperature at which the length and volume of things should be measured. By the 1960s, dozens of standards were being produced each year. One of the ISO's biggest hits, the International Standard Book Numbering code (ISBN), was adopted in 1970. In the 1970s, standardisation started to spread beyond the confines of industry and into services. ISO 9000, which governs quality management, was published in 1987 and is now the most widely known international standard in business, having created an industry of certification and consultants around itself. On any one day, eight ISO technical committees will be meeting somewhere in the world, made up of some of the estimated 100,000 people loaned by their companies to help draw up standards. The body's marketing materials call it "Planet ISO."

The resulting standards read like a bizarre encyclopedia of human activity. It is stunning to discover that around 100 people from a dozen countries spent three years (the average time it takes to write an ISO standard) drawing up guidelines for "Fresh pineapples: storage and transport" or dental vocabulary. Standardisers bring order to cork, skis and footsies. The ISO catalogue suggests an aesthetic impulse to make the world regular and comprehensible. What else to make of ISO 9949 (parts 1, 2 and 3) on "Urine absorbing aids," or ISO 8041 on the "Human response to vibration," or the cryptic ISO 10145, "End mills with brazed helical hardmetal tips"?

At the general assembly, delegates from every continent recounted their personal faith in the project. "Standards are the infrastructure of science and experience," said Mohammad Nazemi Ardakani, leader of the Iranian delegation. "All things that humans have invented and used, we can standardise." When I asked Hope Kabirisi, an adviser to President Museveni of Uganda, whether standardisers should rule the world, she replied: "It would be a beautiful world, wouldn't it?" John Ndanusa Akanya of Nigeria described the goal of meeting ISO guidelines as a kind of holy grail: "Standardisation is a journey that has no destination. I am sure God cre-

On any one day, eight technical committees will be meeting somewhere

ated it this way so we would have no rest."

In fact, I encountered only one delegate who was anything other than a devout believer. Eldar Kazakbev, from Kyrgyzstan, was slouched on a sofa under the stairs while the rest of the assembly was in full swing. "Maybe standards are not so interesting," he said, before softening and admitting that it was probably his own fault. He was in the wrong job. "I studied history. I was not born for standardisation."

It was hard, in Geneva, to imagine standards ever being controversial. The two adjectives I heard most often to describe them were "democratic" and "market-driven." Standards, after all, are voluntary, so the proof of a good standard is whether people choose to take it up or not. But it was clear from talking to those not sitting at the ISO's top table that things are a little bit more complicated than that.

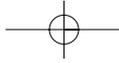
The ISO prides itself on its commitment to consensus. Once a standard is drafted by a technical committee, it is put to a vote of the entire membership. Each country has one vote, and for a standard to win approval, it must gain the support of two thirds of the countries that participated in its writing. It must also avoid a blocking vote of 25 per cent of the total membership of the organisation. With developing countries making up 127 of its 157 members, the ISO claims that its standards, despite being mostly written by the world's biggest companies and economies, can never be imposed on those without the means to take part in the process, on account of the blocking vote. In any case, the organisation says, poorer countries are increasingly taking part in the writing of standards. Bryden, the secretary-general, listed the emergence of China, India and Fiji in the fields of textile, steel and mineral water standards respectively as proof of the ISO's changing face. The Iranian delegation described its chairing of the technical committee on women's cosmetics as Iran's greatest achievement in standardisation.

But the fact remains that standardisation is an expensive game to play and richer western countries tend to dominate. Howard Mason, a BAE Systems

executive and chairman of an ISO sub-committee that deals with industrial data, told me that a single standard his team developed had cost \$10m. Meetings of technical committees around the world, typically numbering hundreds of people and taking place three times a year, are normally subsidised by companies and national standards bodies interested in the eventual standard. The ISO does not pay experts for their travel or time, so the cost of their attendance is borne by their employers. The result is that standardisation is typically done by those that can pay for it: 73 per cent of the ISO's technical committees are chaired by the standards bodies of the G8 economies. Include Scandinavia, Switzerland and Australia and the number rises to 85 per cent. Simply sending a delegate to a standardisation meeting can be prohibitively expensive for standards bodies from poor countries. When I asked Ghadhanfar Al Rafeek, of Iraq's Central Organisation for Standardisation and Quality Control, how the general assembly was going, he said: "The hotel is expensive. The meals are expensive. The ticket to Geneva is so expensive. The ISO has to think about the expedition costs for developing countries. We are always meeting in these high-level cities." Contrast that with Olivier Peyrat, director general of AFNOR, the French standards organisation, who said that "in a very conservative manner" he estimates that France pays around €100m a year to take part in international standardisation. "The payback is huge but you need to be able to do this kind of investment first," he said.

But Richard Westlake from New Zealand rejected the idea of rich-world domination: "The conspiracy theorists say this is captured by the G8s, but another way to look at it is to say that the rest of the world gets to freeload off their hard work and expertise. Once an ISO standard is developed, you're free to use it just for the cost of the document." Olivier Peyrat, discussing the way standardisation helps fledgling companies enter new markets, described it as "a kind of Marshall plan." An Indonesian bolt-maker, for instance, no longer has to send sales staff to Singapore to convince them his products are worth buying; he can just meet the ISO standard. "If you measure all the wisdom that is contained in standards, the access they may provide to a new player in a given industry, the price is ridiculous. We should be ashamed of such a low price."





The debate over who controls and who benefits from standardisation is likely to intensify as the ISO continues its march into the "human aspect." New standards in fields such as environmental management, food safety and corporate social responsibility are prompting questions about whether a process devised to determine the standard size of a ball bearing should be used to come up with rules with obvious social consequences.

Either way, both sides agree that the guinea pig is ISO 26000. This is the organisation's attempt to write, by the end of 2009, an overarching standard for what it calls "social responsibility." Recognising the sensitivity of the subject—corporate social responsibility, or "CSR," is a field already crowded with numerous other "fair trade" standards bodies—the ISO has designed a one-off process aimed at bringing new voices into the negotiations, including trade unions, consumers and charities. But according to those taking part in the talks, the result is a sprawling committee of nearly 500 delegates, beset by disagreements about whether the standard should be enforceable, or at least certifiable. Many fear the resulting document will be too hedged by compromise to be of any use.

Dwight Justice, of the International Trade Union Confederation, sits on the chairman's advisory group for ISO 26000. He told me that talks on the standard had run into problems as soon as they began in 2005 and had been dominated by "the CSR industry." "The problem is that the ISO is moving into areas closely connected to public policy, but it does not have the process or the experi-

ence. It doesn't understand it," he said.

Sceptics say the project to construct "Planet ISO" demonstrates the inherent limits of standardisation. The things that make standards attractive—the fact that they are voluntary, and drawn up consensually—only remain so when there is no advantage to be gained from disobeying them, when everyone only has reasons (normally profit-related) to conform. But the problem with standards governing labour rights or environmental management is that there may be powerful, albeit short-term, commercial incentives for breaking them. And that is when you need rules and sanctions, and all the messy business of legislation, representation and accountability. An optimistic reading of the attempt to write standards like ISO 26000 is that the organisation's 60 years of experience will enable it to support legislation and find what it calls "a golden middle way" between what others see as diverging interests. But critics say the ISO is only capable of writing rules that its members want to obey.

The organisation is not helped by the fact that standardisation is a competitive business, and that if needs be, people can get their standards from someone else. Although the ISO is the world's most significant writer of standards, it is a private membership organisation and only remains successful by dint of hard work. It has to stay attractive: 59 per cent of the ISO's budget derives from membership fees and 34 per cent from selling its standards (its current bestseller, on greenhouse gases, costs £ 50.49). The ISO sits at the top of a pyramid of standardising

bodies all jostling to write popular, profitable guidelines, and the very existence of that competition creates its own pressures. "There is nothing wrong with competition. It's just what the implications may be," said Yale's Jonathan Koppell. "Just as we worry that countries will relax their environmental standards to lure businesses, we fear that standards are going to get more generous to attract consumers of standards. We should be nervous about what it means."

Standardisers are fond of wondering what would happen if standards went wrong or disappeared. The promotional materials for last year's World Standards day, on 14th October, said: "A world without standards would soon grind to a halt. Transport and trade would seize up. The internet would simply not function. Hundreds of thousands of systems dependent on information and communication technologies would falter or fail." Jim Thomas, the president of ASTM International, a US-based competitor to the ISO, said: "We are writing standards for water and for air. If we didn't do it, who would? The government. Governments would do everything. But we see the government as just another member." Bryden, the ISO's secretary-general, addressed the question by expanding his "engine of globalisation" analogy. "If everything is going well, if the ship is sailing and the sun is shining, then you are out on deck, you do not go down to the engine room," he said. "But when something goes wrong then you go downstairs. When people go into the engine room of a big ship for the first time, they are normally quite amazed." ■

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