How multinational corporations benefit from international standardization

MNCs and SMEs and the IEC

case studies

International Electrotechnical Commission

the WTO and the IEC

The World Trade Organization's "Agreement on Technical Barriers to Trade" makes standardization and the assessment of conformity to standards an important part of the global trade agenda, and cites the IEC as one of the major partners in establishing standards for trade. All signatories to the TBT Agreement are required to participate in, and promote in an active manner, international standardization.

Since the middle of the 20th century, growth rates in international trade and investment have exceeded those of domestic economies. Because international barriers to trade still remain, solutions for overcoming these barriers is an issue that both multinational corporations (MNCs) and small-to medium-sized enterprises (SMEs) must address. One strategy they can use is being involved in international standardization.

How does that work?

The IEC offers a forum in which formal communication networks that cross international borders may be easily developed, where companies can network within a vibrant community of customers, manufacturers, technical experts and government representatives. From this networking come distinct advantages.

There are many different reasons for MNCs and SMEs to be involved with the IEC and its standards, and each company has its instructive anecdote. But, time and again, six basic reasons tied to strategic marketing advantages come to the fore.

Building acceptance in global markets: governments around the world require evidence of manufacturing to standards when specifying contracts, just as purchasers require products to be built to certain, standardized specifications. By using IEC standards, you meet those requirements. By being involved in IEC work, you help to set those requirements.

Influencing the content of standards: standards are the compromise result of competing interests. Your presence means your interests are represented. This also applies in reverse: by being present, you can counter unfavourable bias.

Developing anticipatory intelligence: you can acquire information that enables you to anticipate, before other stakeholders, circumstances that have not yet widely manifested themselves.

Using customer networks: you can identify consumer needs and conceive new products through networking with user representatives on standards committees and this may enhance the market success of new products.

Saving time and money: one of the goals of standardization is to make design and manufacturing simpler, cleaner, surer. By using standards, you don't need to reinvent the wheel every time. Instead, you can focus your efforts on adding something new to the wheel – something that will improve the quality of life and that will contribute to technological progress.

Improving safety and quality: nobody today can pretend to know all there is about a certain technology. Within IEC working groups you will encounter ideas some of which will be new and valuable, others which may help you to avoid making costly mistakes.

An additional advantage applies to SMEs:

Recognition: because IEC technical committees and subcommittees consist of people from both large and small companies, the small companies are therefore seen to be players of equal weight with the big ones. This enhances industry and peer recognition, and thus creates the potential for future opportunities.

Schneider Electric
market leadership

Schneider Electric is one of the world's largest companies in its field, focusing on electrical distribution and industrial automation. It is headquartered in Paris, France, and is present in 130 countries around the world. The company says that in those areas where they are not the market leader, participating in the IEC standardization process allows them to compete on an equal footing with those who are.

Schneider Electric says that without IEC standards it would probably be forced to shorten its long-term planning. The company would become more reactive than strategic and its costs would rise. Their approach at present is to have a common platform for development for the entire operations and to minimize local adaptation needs. When the company brings out a new product, they seek to introduce it quickly into the greatest number of countries. They don't want to have to spread out this introduction over several years or have to revisit the whole internal architecture of the product just because of local conditions. International standards clearly help Schneider Electric to overcome this sort of problem.

During the past 20-30 years with the IEC, Schneider Electric says, it really came to an understanding of what the client wants. This has helped develop business, not only for itself but for all similar companies, as well as to put those who are today's leaders into that position. Claude Ricaud, Schneider Electric's Vice-president for Research & Development, says: "For those who are not yet involved in standardization, if they want to create real value for their clients – if they want to become market leader – they should understand the contribution that standardization will make in bringing value to the client. That is the essential point."

In Schneider Electric's field, IEC standards offer a kind of seal of approval that gives customers faith in a product's longevity in the market. "Why would someone be the first to introduce a new technology into the power grid? It's because they know that one day it will be standardized. Because of that, they are prepared to invest in helping the architecture of the network to evolve. So, ultimately, the IEC helps to contribute to technological evolution – to innovation – and this is a very important role."

Claude Ricaud
Vice-president for Research & Development

Standards Australia
technology transfer

Standards Australia, the national standards organization in Australia, was founded in 1922 but its most significant development has taken place in the past 15 to 20 years. In 1999 the original 'association' status was abandoned, and the organization was incorporated as an Australian company, becoming Standards Australia International Limited. The growth and development over the past two decades have led to an organization with annual revenues of about ASD 80 million.

"International standards bring enormous benefits to the domestic economy," says Ross Wraight, who is Group Chief executive. Most people think of international standards in terms of trade but I see them first as a transfer of technology to the domestic environment and the domestic industry. The Australian industry can rely on them and doesn't have to invent new forms of technology, because these are available through the international standardization process. Moreover, the standards are maintained and updated as technologies evolve, and are always current with the latest technologies."

"I see international standards first as a transfer of technology to the domestic environment and the domestic industry."

Ross Wraight
Group Chief Executive
Standards Australia International Limited

Australia is also a major research and development centre. Many of the world's large corporations have research centres in the country because of the technical skills the Australians possess and the very cost-effective nature of the Australian economy. So there are other benefits that flow back into Australia through its investment in technology. "You can't be in the electrotechnological sphere," Wraight says, "you can't have a developed economy unless you start to participate in international standardization, the IEC in particular."

Haier Group
broadening markets

Haier Group says that by applying IEC International Standards it became China's largest manufacturer of electrical appliances for household use and began to enter new export markets. Its roster of products includes, but is not limited to, refrigerators, freezers, air conditioners, dishwashers, laundry products, small appliances, electronics, and televisions. The name Haier represents more than 11 000 products, 69 product lines and 36 000 stores employing more than 30 000 people in more than 160 countries.

"When we began to export our refrigerators into the European market, the local distributors thought that Chinese products could not be sold in the German market because they did not comply with IEC standards. So the distributors did not want to accept them. However, we knew that our products had been entirely manufactured in conformity with IEC standards. So we made a proposal to them: we took a lot of similar products made in Germany and put them together with ours, tearing off the brand name labels. And the distributors were asked to look and choose among them. If they could distinguish which ones were fabricated in China, we would give up. The result was that they did not find any difference and we penetrated the German market".

"Haier's success and development today are also due to our directly applying IEC standards in an innovative way."

Yu Zida
Divisional Director R&D Promotion
Haier Group
China

Siemens
participation as a strategic decision

Siemens is one of the biggest electrotechnical companies in the world, with 450 000 employees and some 500 factories in 190 countries. Founded in 1847 by Werner von Siemens, the inventor of the pointed telegraph, the company today encompasses a number of businesses in various areas of electrotechnology, including communications and information technology. Its annual turnover, which increases by roughly 10% every year, is 160 billion dollars.

Guido Guertler says that the IEC is the most important standards organization for Siemens, whose policy is very clear on this specific point: the company, unlike many others, doesn't write its own standards. Indeed, after deciding some 30 years ago that participation in IEC standardization work was the best way of dealing with the issue, Siemens is today heavily engaged in all the technical committees that are directly related to its business sectors. Through its participation, Siemens can ensure that all the company's requirements are met while the technologies developed in IEC projects can have an influence on product development at Siemens. The situation is thus beneficial to both.

"Participating in IEC work is a strategic decision," Guertler says. "There are a number of reasons for that. One is to get early knowledge of the content of future standards that will have to be used, when designing and manufacturing the company's products, to meet markets requirements. At the end of the manufacturing process, these products need to go through conformity assessment or testing against the standards before they are delivered to the markets."

"The IEC, for Siemens, is the most important international standards organization."

Guido Guertler
General Manager
Corporate Function
Standardization and Regulation
Siemens

Mitsubishi Electric

one product, one test

Mitsubishi Electric Sales Canada Inc. (MESCA), a subsidiary of Mitsubishi Electric (MELCO) in Japan, employs about 80 people and had sales revenues of approximately CD$ 230 million in 2000. MELCO manufactures VCRs, display monitors, printers, cellular phones, semiconductors, air conditioners and home electrical appliances

"For several years," Ban says, "Mitsubishi Electric Singapore have been selling electric fans manufactured in Thailand. However, they had a problem getting their product to the market on a timely manner. They always seemed to lag behind their major competitor, who seemed to be able to get products to market ahead of them. Eventually, they found out that some of their competitors were having their products tested elsewhere. That's when our Asian office came to us and we suggested the IEC approach using the CB Scheme through CSA International, the product testing and certification branch of the Canadian Standards Association. The products manufactured in Thailand were tested and approved in Canada in a matter of weeks. We then sent the CSA-issued CB report to our Singapore office and, using this report, they were able to obtain the local certification within two to three weeks. This means that we are now competing at the same level as our competitor and we have substantially increased our share of this particular market."

Thanks to the IECEE CB Scheme, "we have substantially increased our share of this particular market."

John Ban
Product Safety Division
Mitsubishi Electric Sales Canada Inc.
Canada

Kelvin Hughes
type testing

Kelvin Hughes is the naval and marine division of Smiths Industries Aerospace. It manufactures navigation aids, such as radar and electronic chart display information systems. The company employs 480 people and has revenues of about GBP 60 million (USD 94 million).

IEC standards help Kelvin Hughes to keep manufacturing costs down through type tests, which account for five percent of the company's budget. A typical type test for one of their products, done in an independent testing lab, costs about GBP 100 000 and takes up several weeks of man-hours per test with two of Kelvin Hughes's own engineers present throughout. If they had to type test for every country they sell into (potentially 20 to 30, but more realistically five or six), the costs in both money and labour become enormous. But because other countries accept the test to IEC standards, it only has to be done once.

"Without exception, our customers require us to show evidence of testing and the standards that we're measured against are IEC standards."

David Pickles
Marketing Director

Rockwell Automation

product development

Rockwell Automation, a business of Rockwell, headquartered in Milwaukee, USA, provides complete automation through its solutions to make manufacturing more productive. It employs 25 000 people and had 1999 sales of about USD $4.4 billion.

Until the early 1980s Rockwell Automation focused almost exclusively on the North American market. The company knew that the prevailing standards used outside North America were IEC and that, to serve its customers in the best way, it needed the economies of scale that addressing this broader market provided. Responding to this, the company reoriented itself toward the global market and, as a result, became involved in IEC standardization. "Today," says Pip Pearce, who is the company's vice president of global standards promotion, "there's no product development in our company that doesn't take account of IEC standards."

> "There's no question in my mind that the IEC, providing it extends its global reach and doesn't get hijacked into a regional role, can be worth millions of dollars to companies like Rockwell Automation and we are banking on it."
>
> Pip Pearce
> Vice President of Global Standards Promotion

Rockwell has about 500 employees contributing one way or another to standardization, and about 10 percent of these are directly involved in preparing IEC standards. This is an effort that goes right to the top of the company. Pearce sums up this contribution neatly when he says: "I wonder how many other companies can say that their president is a convenor of an IEC working group?" Keith Nosbusch, president of control systems for Rockwell Automation, is convenor of WG 3 of IEC subcommittee 17B (Low-voltage switchgear and controlgear).

When it comes to product development, Pearce says, the IEC gives Rockwell Automation one set of conditions against which the company's designers can concentrate their efforts. When looking at the cost and time it takes to get a significant product to market, he says some products can cost hundreds of millions of dollars in capital equipment to get into manufacturing. "If you didn't have a standard base from which you could say 'before you do anything else, design to that', you'd probably double your time to market and you'd probably miss requirements half the time."

Beko Elektronik

new markets

"If you are not using standards, either you are doing something illegal or you will not be successful on a global scale."

Aydin Çubukçu
President

Beko Elektronik is a Turkish manufacturer of television sets whose principal competitors are Hitachi and Toshiba in Japan, and Thomson and Grundig in Europe. They are Europe's sixth-largest manufacturer of television sets. Beko's 1998 revenues were nearly USD 400 million. The company has roughly 1 750 employees worldwide, 39% of the Turkish market and in 1998 exported one million TV sets to 50 countries around the world. Export-driven revenues for 1999 were roughly USD 200 million.

In 1994 Beko brought in a team from Germany to help them with safety questions related to electrostatic discharge (ESD). Three months later, the plant had been entirely retooled according to this question. At first, this might not seem significant. But Beko's customers often send their technical people to visit the production facilities to ensure that the factory meets certain requirements, including those concerning ESD.

Among the standards the German team insisted on for Beko were IEC 61340-5: Electrostatics, IEC 60801-2: Electromagnetic compatibility for industrial-process measurement and control equipment: Part-2: Electrostatic discharge requirements and the European standard EN 100015: Basic Specification: Protection of Electrostatic Sensitive Devices.

Beko's television sets are built 100 percent to standards and the company says that without standards, they might have been able to sell to a certain extent in Turkey, but could not imagine Europe accepting Beko products if they didn't adhere to international standards.

Beko President Aydin Çubukçu puts a direct figure to the value of international standards to his company. "If you consider that we exported USD 147,5 million worth of TV sets last year, and about USD 100 million went to Europe with the rest going to countries where standards may be seen as being less important, then you can easily measure the value of standards in terms of exports."

Harting KGaA
innovation

Harting KGaA is a family-owned company based in Espelkamp, Germany, south of Bremen. With revenues of DM 460 (USD 247 million) in 1998 and a staff of 2 200 in 24 countries around the world, the company is a leading supplier of connectors to the factory automation industry, particularly machine tools, and the transportation industry.

Dietmar Harting says that participation in IEC standardization means early involvement, which represents a business advantage. It offers him a second source for information concerning market development because the IEC now keeps better pace with the market and is more aware of market developments. It also gives him direct contact with leading customers.

The company works on the forefront of technological innovation and it created a VME bus connector that was subsequently standardized by the IEC. This connector was a third alternative to two competing products - one already standardized by the IEC and another that was an American product - which incorporated both of them.

"We saw an opportunity and moved on it," Harting says. "We believed that, because of our involvement in the IEC, we stood a good chance of having our product standardized and that's the way it subsequently turned out. But if the IEC didn't exist, we wouldn't have gone ahead developing the connector, taking the investment risk, without definite orders from clients which would ensure that we'd make money."

"You get the best information when you are in a partnership with your customers and the IEC offers a place for that partnership."

Dietmar Harting
General Partner

the IEC

Founded in 1906, the International Electrotechnical Commission prepares and publishes international standards for all electrical, electronic and related technologies. This mandate embraces all electrotechnologies, including electronics, magnetics and electromagnetics, electroacoustics, telecommunication, and energy production and distribution. It also addresses associated general disciplines such as terminology and symbols, measurement and performance, dependability, design and development, and safety and the environment.

The Commission's objectives are to:

- meet the requirements of the global market efficiently;
- ensure primacy and maximum world-wide use of its standards and conformity assessment schemes;
- assess and improve the quality of products and services covered by its standards;
- establish the conditions for the interoperability of complex systems;
- increase the efficiency of industrial processes;
- contribute to the improvement of human health and safety;
- contribute to the protection of the environment

For further information

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