

ISO 14000: an agnostic's report from the front line

by Charles J. Corbett and David A. Kirsch



Myths, folk tales and legends – like ones according to which the earth was flat, or that there was ‘an end to the earth’ – exist in every culture. And that includes business culture! According to the authors, a number of myths already shroud ISO 14000. This study, which while not taking them to the ends of the earth took them to three continents, allows them to pinpoint five major ISO 14000 myths – which they demolish. While ISO 14000 myths, if left unchallenged, can no doubt have harmful effects, myths in the sense that this word normally conveys enrich our cultures and provide a visual theme for this business myth-busting article.

In brief

Three years after the official release of the first ISO 14000 environmental management system standards, well over 10 000 organizations worldwide have already achieved certification to ISO 14001, a total which is increasing rapidly. By comparison, ISO 9000, the quality management predecessor to ISO 14000, was officially released 13 years ago and has since attracted over 300 000 registrations worldwide. By almost every measure, the USA is lagging behind in ISO 14000 certification: in GDP-adjusted terms, the US is sandwiched between considerably less developed economies like Ecuador and Pakistan, and well behind Egypt and Slovenia.

The question is – as the manager of a US-based firm, should you care? If your company is operating smoothly and profitably, in compliance with all local and national environmental laws – admittedly some of the most aggressive and progressive anywhere – why would that not be enough? What do you really need to know about ISO 14000? In this article, we most definitely do not intend to argue against, or in favour of ISO 14000 certification; instead, we provide “an agnostic’s report from the front line”, based upon interviews with numerous companies, auditors, government bodies and other parties across the world.

We provide a framework for thinking about ISO 14000, rather than a list of simple justifications for or against seeking certification. To do so, we review five common misconceptions about ISO 14000, explore the evidentiary basis for these “myths”, and suggest possible directions in which ISO 14000 might evolve. Throughout, we emphasize the operational and strategic impacts of ISO 14000 more than the environmental ones.

Introduction

Although ISO 14000 was officially released in October 1996, considerable confusion still exists as to what it is exactly. It has been mistaken for the catalogue number of a new electronic component, and for ultra-fast photographic film; others are closer to the mark when they think of it as “5 000 more than ISO 9000” and, therefore, presumably better. It is, in fact, a new series of global standards for environmental management, analogous to the widely used ISO 9000 quality management standards, but with several fundamental differences.

The ISO 9000 series was published in 1987, in an attempt to avoid suppliers from having to comply with many different, and sometimes conflicting, sets of customer quality requirements. By the end of 1999, over 300 000 firms worldwide had achieved ISO 9000 certification, and new

registrations currently run at over 60 000 per year. The US alone accounts for over 20 000 registrations, with 5 000 more each year¹⁾.

Despite this global embrace of ISO 9000, reactions to ISO 14000 have differed remarkably between countries. Figure 1 (page 7) shows the current numbers of ISO 9000 and ISO 14000 registrations by country, corrected for GDP. Denmark and Sweden form one extreme, supposedly due to the strongly proactive attitudes towards environmental issues in these countries. An interesting case is Japan, where sentiment is widespread that its late start with ISO 9000 caused significant economic distress, resulting in a concerted rush for ISO 9000 certification in the early 1990's and a stunning rate of adoption of ISO 14000 at present.

You might ask: "Why would I care about ISO 14000 at all?" There are several reasons why you should, even if your company does not have severe environmental impacts

At the other extreme we find the US, where ISO 9000 is now accepted by many – for better or for worse – as a fact of life, but where ISO 14000 is still regarded with suspicion²⁾. Some of this suspicion can perhaps be traced back to the traditional regulatory style of the US Environmental Protection Agency (as compared to the more collaborative and incentive-based approach prevalent in the European Union, for example), leading to the fear of liability exposure if external ISO 14000 auditors are required to share their audit reports with the EPA.

The immediate question is: which view is the right one? In this article, we provide an unbiased view of the pro's and con's of ISO 14000, by separating truth from fiction in the various myths that have become entrenched in ISO

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14000 folklore. We do not wish to argue in favour of, or against ISO 14000, but instead we take an "agnostic" standpoint and provide a report from the "certification front line" based upon interviews with numerous companies, auditors, government bodies and other parties in a wide range of countries across the world.

To help practitioners assess the potential relevance of ISO 14000, we review five common misconceptions about ISO 14000, explore the truths and untruths underlying these myths, and suggest possible directions in which ISO 14000 might evolve. But first, let us briefly explain exactly what ISO 14000 is and how one becomes certified.

ISO 9000 and ISO 14000 are just the forerunners of a wave of future standards

What is ISO 14000?

Like ISO 9000 – a family of global, voluntary quality management system standards – ISO 14000 is a family of global, voluntary environmental management system standards, the first of which were released by ISO in October 1996. These first standards, ISO 14001 and ISO 14004, deal with environmental management systems (EMS). ISO 14001 is the standard against which organizations may have their EMS audited and "certified", or "registered" by an independent ("third

1) See International Organization for Standardization, *The ISO Survey of ISO 9000 and ISO 14000 Certificates: Eighth Cycle*, Geneva, 1999.

The correspondence between ISO 9000 and ISO 14000 is explored in more detail in Corbett, C.J. and D.A. Kirsch, "International Diffusion of ISO 14000 Certification", manuscript under revision for *Production and Operations Management*, The Anderson School at UCLA, January 2000.

2) For a wide range of views on environmental management in general and ISO 14000 more specifically, see US-AEP, *Global Environmental Management: Candid Views of Fortune 500 Companies*, 1997.

party”) body as conforming to the standard’s requirements. Other standards in the family deal with areas such as environmental auditing, life cycle assessment, environmental labelling and environmental performance evaluation.

ISO, the International Organization for Standardization, based in Geneva, Switzerland, was founded in London in 1947. It is composed of some 130 national member organizations, each the principal national standards institute in its country. Through ISO, these national member organizations establish technical committees that actually develop the standards. For a general overview of ISO 14000 practice, see Marcus and Willig (1997)³.

ISO 14000 is a business issue, not a purely environmental one, and too important to relegate entirely to the environmental, health and safety, or quality department

Firms that wish to have their EMS certified as conforming to ISO 14000, however, do not apply to ISO, which does not carry out ISO 9000 or ISO 14000 certification. In fact, the registrars carry out their certification activities independently of ISO. However, they are in many cases approved – or, in ISO parlance, “accredited” – by one or more national accreditation bodies. ISO itself does not control the activities of either accreditation or certification bodies, although it does develop voluntary standards and guides for these organizations with the aim of promoting best practice internationally and ensuring consistency and coherence of such activities worldwide.

Although ISO does not carry out either accreditation or certification, some of its national members include certification among their activities, and some act as national accreditation body of their country. At least one acts as

the national accreditation body, while also offering certification services. The implications of this organic structure are multiple and are perhaps best illustrated by negation.

- ISO 14000 certification does *not* attest to the environmental attributes of a product; it states only that the certified firm has successfully demonstrated a functioning and documented environmental management system (EMS) to an accredited third-party registrar.
- ISO 14000 certification does *not* represent that the certified organization is in compliance with any specific local or international environmental regulation; it implies only that the firm or organization has a system in place which will ensure compliance with all relevant environmental regulations.
- ISO 14000 certification does *not* mean that any local or national government has actually inspected or approved the company’s environmental operations; as noted, the ISO 14000 system is entirely voluntary and non-governmental.

In practice, the certification process – from initial consultation with a prospective registrar to final certification audit – can last from two to 12 months and cost anywhere from USD 10 000 up depending on size of firm, extent of environmental impact associated with its operations, and sophistication of its existing EMS.

The important point to bear in mind about the foregoing is that the ISO 14000 system is an organic one whose growth and operation is not governed by any single party. Like all ISO standards, ISO 9000 and ISO 14000 are voluntary and they therefore succeed or fail in response to the perceived value that they offer. In the absence of customer demand for audits and certification, the entire ISO 9000/ISO 14000 certification system would fade away. However, at present there appears little likelihood of that happening, based on current rates of ISO 9000 and ISO 14000 certification. Clearly, ISO’s two families of management system standards are creating value for someone (beyond just the auditors and consultants). The question that follows is – is ISO 14000 valuable for you and your company?

The folklore of ISO 14000

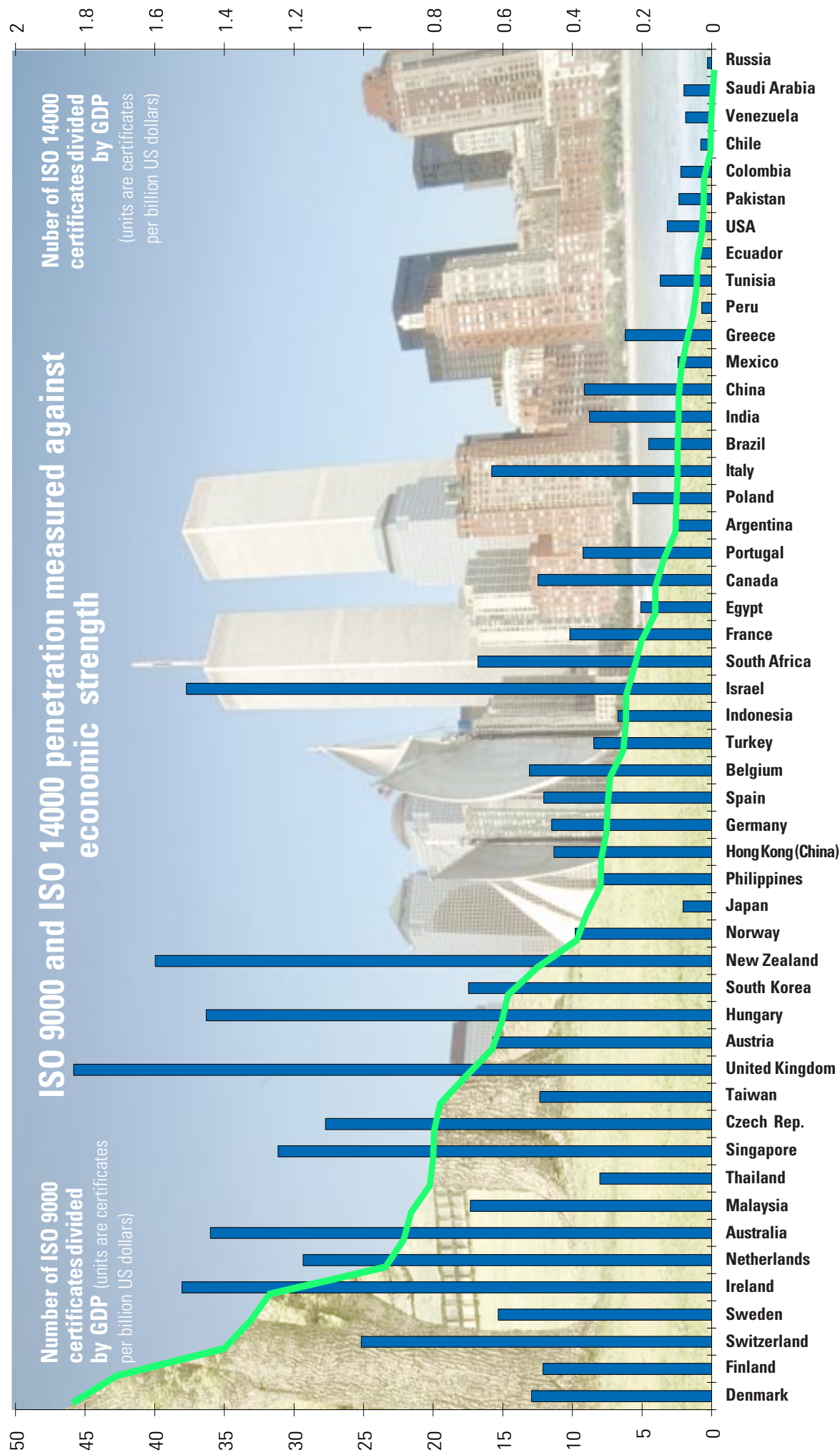
In light of the observation that literally millions of managers and employees worldwide have been involved in ISO 9000 and ISO 14000 implementations, it comes as no surprise that between them they have generated an extensive “folklore” surrounding these standards. Webster’s dictionary defines “folklore” as a “body of customs, legends, beliefs, and superstitions passed on by oral tradition, including folk tales, dances, songs and medicine”. Much of this applies to the world of ISO stand-

Many of the firmly held beliefs about ISO 9000 and ISO 14000 turn out to be myths, generally consisting of a kernel of truth concealed beneath dense layers of fiction

ards too (with the possible exception of the song-and-dance component). Upon closer inspection, many of the firmly held beliefs about ISO 9000 and ISO 14000 turn out to be myths, generally consisting of a kernel of truth concealed beneath dense layers of fiction⁴. Below, we review the five most common myths we encountered, containing successively weaker arguments against certification:

3) Marcus, P.A. and J.P. Willig (eds.), *Moving Ahead with ISO 14000: Improving Environmental Management and Advancing Sustainable Development*, John Wiley & Sons, New York, 1997.

4) Little formal research exists examining the motivations for seeking ISO 9000; an exception is Anderson, S.W., J.D. Daly and M.F. Johnson, “Why Firms Seek ISO 9000 Certification: Regulatory Compliance or Competitive Advantage?” *Production and Operations Management*, Vol. 8, No. 1, Spring 1999, pp. 28-43. The exact relationships between ISO 9000 and ISO 14000 are not yet well understood; the authors have explored these issues in Corbett and Kirsch, op.cit.



This graph shows the number of ISO 9000 and ISO 14000 certificates awarded by country, corrected for Gross Domestic Product (GDP). This chart is adapted from data from The ISO Survey of ISO 9000 and ISO 14000 Certificates: Eighth Cycle (1998).

The figures on the left are number of ISO 9000 certificates divided by GDP, those on the right are number of ISO 14000 certificates divided by GDP. The units are certificates per billion US dollars. The bars represent each country's

number of ISO 9000 certificates, divided by GDP, so should be read against the left scale. The line is the number of ISO 14000 certificates divided by GDP, so should be read against the right scale.

The point of the graph is twofold. Firstly, the line shows how the "relative" number of ISO 14000 certificates ("relative", because divided by GDP) varies dramatically. Countries like Denmark, Finland, Switzerland are high up, meaning they have relatively high ISO 14000 certification counts. Countries to

the right, Russia, Saudi Arabia, Venezuela, USA, have relatively low counts. Secondly, a comparison of the line with the bars shows which countries are relatively more active with respect to ISO 14000 than they are to ISO 9000, shown by a big gap between the bar and the line. For example, Denmark and Finland have far more ISO 14000 certificates than the current number of ISO 9000 certificates would lead one to predict. Conversely, the United Kingdom and Israel have far less ISO 14000 certificates than their current number of ISO 9000 certificates would lead one to expect.

1. "ISO 14000 is irrelevant for us as it's strictly an environmental standard."
2. "Getting certified is a pain and eats resources."
3. "It's a waste of time as there are no benefits."
4. "The standard is meaningless because foreign competitors get it more easily than we do."
5. "We'll get it, but only because we export to Europe."

Our aim is not to convince anyone to seek ISO 14000 certification; rather, we hope that by the end of this article, readers will be able to arrive at a more well-informed judgement about the potential value (or lack thereof) of ISO 14000 to them, their suppliers, and their customers.



ness standard" to suggest that standards like ISO 9000 and ISO 14000 are emerging norms for many successful enterprises. They are, in some contexts, becoming qualifying criteria for doing business. Several government agencies, including federal and provincial bodies in the US and Canada, have made ISO 9000 and sometimes also ISO 14000 certification a precondition for contractors' bids to be considered.

In terms of this discussion, the reality behind Myth 1 suggests that every manager should ask himself or herself the following question: under what circumstances would we get ISO 14000? What development in the business climate should I look for as a signal that it is time to act? And should we wait for that signal, or should we anticipate it? Responding to this question leads naturally to Myth 2.

Myth 1

ISO 14000 is a strictly environmental standard

Myth: *Only firms with severe environmental impacts, or those that wish to project an image of environmental leadership need care about ISO 14000.*

Myth 1 might be restated as the "ISO 14000 is irrelevant to me and my business" myth. Surely, the reasoning goes, if EMS standards were important to me, I would already know all about ISO 14000 and have decided to seek it. Our business has nothing to do with environment; therefore, we do not need to bother with environmental management standards. For instance, a BankAmerica executive interviewed by the US-Asia Environmental Partnership stated that ISO 14000 "sounds like a lot of trouble, and who cares?" Monsanto, while an active participant in the chemical industry's Responsible Care programme, admits to "honest skepticism as to who is driving ISO 14001."⁵

As always, there is a kernel of truth behind this myth. Companies for whom environment is an important and recurring issue are indeed among the early adopters of

the new standard. But, as already noted in the introduction, the underlying reality is that ISO 14000 is not an environmental standard, or, more accurately, *not solely* an environmental standard. Rather, ISO 14000 is a broader business standard intended to help certified firms integrate, gain control over, and ultimately improve overall, company-wide environmental performance.

When we say that ISO 14000 is a business standard, rather than an environmental standard, we mean the following: the costs and benefits of seeking ISO 14000 should be evaluated in the same way and according to the same criteria as any other decision about business process management. In fact, most of the reasons generally cited for seeking certification are more business-oriented, or organizational in nature, rather than environmental. Although gaining control over and improving environmental performance is one obvious motivation, others we encountered include cost reduction, marketing advantage, improved relations with authorities and communities, capturing and formalizing organizational knowledge, and employee motivation.

Below, under Myth 3, we explore the benefits of certification in more depth, and conclude that many of the benefits are not directly tied to the environment – ISO 14000 is not a social and environmental welfare programme. But we also use the term "busi-

Myth 2

ISO 14000 is a pain

Myth: *Obtaining ISO 14000 certification is a major, resource-intensive undertaking.*

Reality: for managers who either lived through ISO 9000 certification, or have heard stories from colleagues who did, Myth 2 may seem reasonable. However, *none* of the companies we interviewed felt that the ISO 14000 certification procedure was excessively expensive or onerous. In fact, to our amazement, one company even told us that they enjoyed the audit and were appreciative of the input and guidance that the auditors were able to offer. But even if we dismiss this one report as non-representative and admit that there is undoubtedly some selection bias at work since we were (by definition) only able to speak to lead adopters of ISO 14000, the general finding was quite robust. *From small, single-site operations to large multinationals, companies on four continents reported no problems with the ISO 14000 certification process.* As we probed deeper

⁵ See US-AEP, *Global Environmental Management: Candid Views of Fortune 500 Companies*, 1997.

into this phenomenon, we uncovered several additional findings that may help to explain this peculiar observation.

Many of the same companies that were enthusiastic about ISO 14000 readily admitted that when they first sought ISO 9000 certification, the process had indeed been expensive, complicated and drawn-out. Receiving ISO 9000 required, often for the first time, that companies gather, standardize and document practices that had previously been spread throughout their organization, or not formalized at all. But once the procedures and documentation had been put in place for monitoring quality, it was relatively easy to expand these same protocols to include monitoring and reporting of environmental practices. The framework was already in place, and both internal and external participants knew approximately what to expect from the ISO 14000 audit process.

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Similarly, because ISO 9000 was the first process standard developed within the ISO framework, the certification infrastructure itself was experiencing growing pains during its early years. Not only the companies seeking certification, but also the auditors themselves were less experienced and uncertain about what to look for with ISO 9000 than they now seem with ISO 14000. In this respect, the experience of the companies that enjoyed their audit may be more common than one would initially expect.

Several auditors with whom we spoke emphasized that the auditor's role was that of a "ruler, not a knife", and that the audit itself should be "a beauty pageant, not a dentist's appointment." In other



words, auditors actually aim to help companies through the certification process. Moreover, auditors noted that systems did not need to be perfect to merit certification and that, in general, nonconformances (i.e. failed elements of the audit) tended to be document-related and relatively easy to remedy.

The case of one electronics facility in Silicon Valley is particularly instructive with respect both to the similarities and the differences between ISO 9000 and ISO 14000. With ISO 9000, the company had engaged eight different ISO 9000 registrars to audit and certify different product lines and business units of company operations, resulting in a bevy of auditors crawling across a 8 500-person facility, each with slightly different requirements for reporting and documentation.

The result was near chaos and a considerable extra work load for the local quality team. However, the company learned its lesson for ISO 14000 and engaged a single registrar to certify all its facilities worldwide. According to a local manager of environmental programmes, the firm saved up to 30 % in direct audit and certification costs by actively managing the registrar selection and certification processes. The company realized further efficiencies in implementation due to the fact that both the internal teams and the auditors were able to build upon procedures that had been put into place for ISO 9000.

This pattern was observed across many different facilities. Most companies that seek ISO 14000 already have ISO 9000 and are able to extend their existing management systems to integrate the new standard. In practice, the principles and techniques involved in environmental management differ little from those required for quality management: Plan, Do, Check, Act. According to representatives at China Steel in Kaohsiung, Taiwan, the management systems required to oversee the desired temperature in their giant smelters are closely related to those for managing the opacity of their smokestack emissions. Nevertheless, even if one accepts the argument that the pain involved in ISO 14000 is often exaggerated, certification without benefits would still be a waste of time, leading us to Myth 3.

3 Myth

There are no benefits to ISO 14000 certification

Myth: *ISO 14000 certification does not lead to either financial benefits or environmental improvements.*

It is still too early to quantitatively assess benefits arising from ISO 14000 certification, but an interesting range of benefits has already been reported. We discuss the external benefits first, then several types of internal benefits (organizational, financial and environmental).

1. External relations with government and the public

Regulatory relief was thought to be an important benefit of ISO 14000⁶. As a result of the fact that certified firms have performed internal environmental evaluations, established an environmental management system, and been audited by a third-party registrar, these firms – the argument goes – have demonstrated their commitment to comply with all applica-

6) See, for instance, R. Begley, "Is ISO 14000 Worth It?", *Journal of Business Strategy*, September/October 1996, 17:5, 50-55.

ble environmental regulations and strive towards continuous improvement. Accordingly, such firms require less intensive and less intrusive monitoring.

In theory, reduced surveillance of certified firms should also liberate scarce monitoring and enforcement resources to focus on those firms that have not shown evidence of commitment to improving environmental performance.

have offered to relax environmental surveillance in recognition of ISO 14000 certification. In Mexico, local regulators actually turned to the environmental staff at the local Philips site to learn about ISO 14000, while in the Netherlands, the Ministry of Environment is promoting a "license on outlines" scheme giving certified firms one single high-level permit rather than requiring separate permits for each type of emission.

tional context and balance of organizational power in any given country or region. There are benefits from regulatory relief to be had, but one must identify relevant political and institutional stakeholders and evaluate who stands to win and lose from the granting of regulatory relief for ISO 14000 certification.

In the Dutch case, the national agency is moving ahead with regulatory relief, but local authorities that issue permits often do not have the knowledge or the incentives to participate and they feel bypassed. The opposite is the case in Japan: the federal EPA opposes regulatory relief, but has only 800 employees. Virtually all issuing of permits takes place at the prefectural level, which is experimenting with reforms such as reduced audit frequencies. Even when, as in the US, no explicit regulatory relief is given, Philips staff explained that the documen-



The authors' ISO 14000 'myth-busting' is based on interviews with numerous companies, auditors, government bodies and other parties in a wide range of countries around the world. Here, they are pictured during a visit to China Steel, in Taiwan. From left: Charles Corbett, China Steel Vice President Samuel Lee, and David Kirsch.

In practice, however, some national environmental regulatory institutions such as the Environmental Protection Agency, in the United States, and its Japanese counterpart have reserved judgement on ISO 14000. Born and bred in the era of compliance and enforcement, established institutions have been hesitant to make tangible commitments to roll back regulatory oversight.

However, by contrast, national ministries in Mexico, the Netherlands, and Brazil – to name three – have made unofficial commitments to regulatory reform. Other local regulatory institutions – for example, prefectures in Japan –

Faster granting of permits – whether as a direct result of regulatory relief, or as an indirect function of improving relations with regulators through the ISO 14000 process – seems widespread. ISO 14000 certification can be an effective signal of commitment, but it is not the only way to achieve this. Based on their long-standing relations with authorities, an Exxon facility in the Netherlands was granted a "license on outlines" without actually having ISO 14000 certification.

Trying to reap such external benefits from certification, yet remaining outside the "official" certification scheme (i.e., pursuing so-called "ISO 14000-like" or "ISO 14000-ready" status) strikes us as viable only for a handful of highly advanced firms, and then only for a limited period of time. For most others, regulators and other stakeholders will expect firms to back up their commitments through the formal certification process.

The extent of regulatory relief will depend largely on the institu-

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tation required by ISO 14000 makes it easier to demonstrate compliance.

A related group of reported benefits concerns the public image of the firm. Several firms in Brazil found that improved public image was one of the greatest benefits of ISO 14000. When Formosa Plastics Corp. in Livingston, New Jersey, USA, achieved ISO 14000 certification after having incurred negative publicity resulting from numerous problems in the 1980's, the company felt it had received the recognition it deserved for the improvements it had made⁷⁾.

In Taiwan, the former state-owned industrial giant China Steel received ISO 14000 for its hot and cold rolling mills both to

set a high environmental standard for the Taiwanese steel industry, but also to minimize the potential risks associated with environmental mistakes.

China Petroleum Corp. – a sister firm – has suffered both negative publicity and repeated plant closures due to refinery fires and other incidents throughout the 1990's⁸). China Steel executives hope that ISO 14000 certification and the commitment to environmental management that it represents will make such incidents less likely to occur, and also that it will buy a certain amount of good will from the public should such a dis-

aster befall the company. Obviously, there are no guarantees: bad things do happen to good companies, but if ISO 14000 can help minimize the risk of such accidents (see below) and convince external stakeholders, such as community organizations, unions, shareholders, and insurers, that the company has made efforts, in good faith, to minimize such risks – so much the better.

Around the world, many firms are using ISO 14000 as part of a proactive environmental communications strategy. In this context, a US interviewee described ISO 14000 as an excellent “stage on which to showcase changes in environmental performance”. The certification can provide a framework for effective communication about environmental management, with enhanced credibility due to the third-party audits.

2. Organizational learning.

A second, more internal group of benefits falls under the general category of organizational learning. For several companies, the

Almost all companies reported that the first step – identification of environmental impacts or, in ISO 14000 parlance, “aspects” – was the most difficult part of the certification process, but often also the most revealing. Following the dictum that, “If it’s challenging, it must be valuable”, companies like Philips Electronics and IBM in the US and Sony in Japan reported that the identification of environmental impacts yielded important insights into the interconnections among different areas of corporate operations.

Formosa Plastics, having sought ISO 14000 in a public relations-oriented move, experienced the unexpected benefit of “helpful housekeeping,” leading to a 25 % reduction in manuals

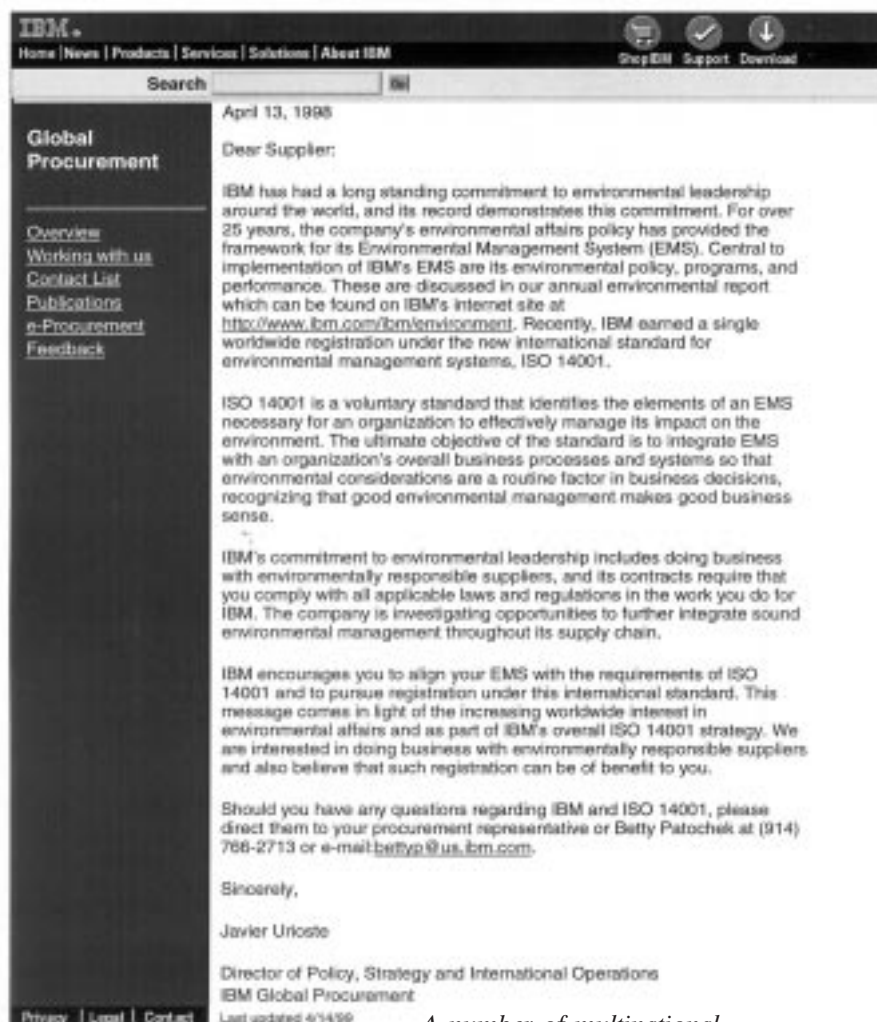
Standards like ISO 9000 and ISO 14000 are emerging norms for many successful enterprises. They are, in some contexts, becoming standard requirements for doing business

Meanwhile, in Japan, representatives from Sony and IBM pointed out that the first firm to be certified in a given industrial sector or region tended to receive favourable publicity, whereas subsequent recipients did not. The search for first-certification advantage has become so extreme in Japan that even public sector institutions like city governments

aster befall the company. Obviously, there are no guarantees: bad things do happen to good companies, but if ISO 14000 can help minimize the risk of such accidents (see below) and convince external stakeholders, such as community organizations, unions, shareholders, and insurers, that the company has made efforts, in good faith, to minimize such risks – so much the better.

7) Litsikas, M., “U.S. Perspective Varies on ISO 14000”, *Quality*, December 1997, 36:12, 28-33.

8) “An explosion at Chinese Petroleum Corp. gas line”, *Oil and Gas Journal*, 95:38, September 22, 1997, 43A.



ISO 14000 certification process was the impetus for them to identify the full range of their environmental impacts. Previous environmental management activities had looked only at individual pieces of company operations, whereas ISO 14000 explicitly requires a more comprehensive approach.

A number of multinational corporations like Sony and IBM are encouraging suppliers on the path to ISO 14000. This letter from IBM to its suppliers encourages them to align with ISO 14001 requirements and to pursue registration. The letter is posted on IBM's Web site at the following address: <http://www.ibm.com/ibm/Procurement/html/supplier.html>

by discarding obsolete and incorrect documentation⁹⁾. A Brazilian site discovered previously unknown and unmonitored uses of mercury and CFC's. In the Netherlands, Philips further reported that the exercise helped distribute responsibility for environmental management throughout the organization instead of tasking existing environment, health and safety staff with more work.

From small, single-site operations to large multinationals, companies on four continents reported no problems with the ISO 14000 certification process

Training – another ISO 14000 requirement – was also frequently cited as a benefit. Almost all companies mentioned training benefits of one kind or another, and several executives were frankly surprised by the level of enthusiasm with which the training sessions were received and by the broader boost to corporate morale that this training produced. At Dole Foods International, for example, the push for ISO 14000 certification of their Costa Rican banana plantations was spearheaded by local workers, in partnership with the American site manager, resulting in improved morale as well as the first reported certification for an agricultural facility worldwide.

Philips in Mexico reported similar benefits, as did OPP Petrochemicals in Brazil. Additionally, companies that have adopted ISO 14000 at the corporate level have thereby encouraged the diffusion of best practices across sites and throughout areas of the firm.

Further organizational benefits concern future, rather than current operations. ISO 14000, unlike its ISO 9000 predecessor, explicitly calls for firms to aim for continuous improvement of their environmental management system (although the Year 2000 revisions will bring ISO 9000 into line with its successor in this respect).

At Sony and IBM, for example, the inclusion of continuous improvement in the standard served to highlight the importance of corporate environmental management practices. Several companies also welcomed the “discipline of ISO 14000” as a way of enforcing rigour and control over functioning, but poorly coordinated activities.

The external reference – “We need to do this for ISO 14000” – helps focus the attention of a wide range of participants and stimulates healthy competition within and between internal business units. Finally, formalizing existing procedures reduces a company's dependence on the few key individuals who are typically responsible for all aspects of environmental management.

Most companies that seek ISO 14000 already have ISO 9000 and are able to extend their existing management systems to embrace the new standard

3. Financial and environmental benefits

The foregoing categories of benefits are in addition to presumed, but as yet unmeasurable operational and marketing benefits of ISO 14000. These might include: increase in market share as customers seek suppliers who can offer this certification; improved operating margins as ISO 14000 trims costs associated with waste processing and removal, and even lower costs of capital as lenders begin to view ISO 14000 as an indication of lower risk. Several companies did report having improved competitiveness and reduced costs, but were unable to quantify these benefits.

9) Litsikas, M., op.cit.

It is worth noting that beyond documentation of practices, several companies did report actual environmental, as opposed to operational benefits as a result of ISO 14000 certification. Internal and external audits helped avoid environmental crises by identifying problems ranging from irregular calibration of environmental monitoring equipment to wasteful and hazardous uses of heavy metals and CFC's.

Viewed independently, the benefits discussed so far might not warrant seeking ISO 14000 certification, but taken together, it is clear that firms are using the certi-

In practice, the principles and techniques involved in environmental management differ little from those required for achieving quality

fication process and the corresponding visibility to their benefit. A European electronics company executive found that ISO 14000 helped the firm move towards “crisis prevention” and away from traditional “crisis management.” And a competitor noted that ISO 14000 was allowing the division to collect valuable operating data about environmental management that would, in turn, inform future resource allocation decisions.

Most importantly, companies like Sony and IBM – while encouraging suppliers to evaluate the potential benefits of seeking ISO 14000 certification for themselves – also participate in multiple and complex supply chains and are preparing for the time when their own business customers may require ISO 14000 certification.

To date, no company that we have spoken to regretted seeking ISO 14000. Everybody seems happy with the move, although the inevitable sample bias suggests that we should not read too much into these findings. Financial studies, however, reveal no penalty

for being “green”, and while the cost of getting ISO 14000 certification is limited, the cost of not having it is likely to grow over time in much the same way as the last house on the block without a home alarm sign on the front lawn is practically inviting would-be burglars¹⁰⁾!

Governments, non-governmental organizations, consumers and, consequently, firms and their employees are often genuinely motivated to improve their environmental performance and eager to find a framework to help them do so, particularly as they have little, if any, history of environmental management. ISO 14000 is then perceived as a ready-made

often thought and in a way that is more a function of their political systems¹¹⁾.

In Taiwan, for instance, the Bureau of Commodity Inspection and Quarantine did originally pay 50 % of certification costs for all firms seeking ISO 9000. Now, the Industrial Development Bureau is contributing 40-60 % of ISO

Myth 4

the ‘Asian ISO 9000 and 14000 certificate printing press’

Myth: *ISO 9000 and ISO 14000 are not truly global standards as the requirements for certification are less strict in some export-driven Asian nations and emerging economies than in many Western economies.*

A commonly heard criticism of ISO 9000 is that the standard is not really meaningful as too much emphasis is placed on the piece of paper attesting conformity to requirements, rather than on the underlying management principles. This accusation is primarily aimed at Asia (though sometimes at emerging markets in general), where it is supposedly easier for companies to achieve certification than it is in the West. This would be due to a combination of government intervention in the form of subsidies to cover registration costs and other programmes, and to local registrars applying a less strict interpretation of the standards.

Though the traditional kernel of truth may, as always, be present with respect to government intervention, it has not been found that certification requirements are less strict, and neither accusation stands up to careful scrutiny. While it is true that many (Asian) companies feel pressure to obtain registration and display a logo to advertise the fact, it would be unfair to infer an absence of environmental motivations. In fact, in many developing economies, awareness of environmental issues has accelerated in recent years due to the combined effects of improved standards of living and increasingly visible signs of environmental strain.



framework around which to structure a new environmental management system, rather than as a norm against which to benchmark an existing EMS.

The situation with ISO 9000 in these same countries was often quite different: the certificate was seen as pointless or – as Sony in Japan suggested – as counter-productive where it conflicted with long-established and well-functioning quality management systems. The principles behind ISO 14000 filled a vacuum and consequently met with less resistance. This use of ISO 14000 as a guideline for EMS development is similar to the way many thousands of firms in the US use the guidelines for the Malcolm Baldrige quality award for internal purposes to help structure their quality management system.

“If certain governments are encouraging and subsidizing ISO 14000 certification to enhance export competitiveness”, the argument goes, “surely, the certificate loses much of its value?” Government involvement in ISO 14000 may be more pronounced in some Asian countries than in the US, but on a more limited scale than

14000 preparation costs for a maximum of 50 SME’s per year, for demonstration projects only, in order to showcase the environmental benefits smaller companies can reap. To qualify, such

10) Three papers studying the impact of environmental management on firm performance are Cohen, M.A., S.A. Fenn and S. Konar, “Environmental and Financial Performance: Are They Related?” manuscript, Vanderbilt University, 1997; Klassen, R.D. and C. McLaughlin, “The Impact of Environmental Management on Firm Performance,” *Management Science*, 42, 1996, 8, 1199-1214; and Konar, S. and M.A. Cohen, “Does the Market Value Environmental Performance,” manuscript, Vanderbilt University, 1997.

11) It has been argued (see N. Roht-Arriaza, “Environmental Management Systems and Environmental Protection: Can ISO 14001 Be Useful Within the Context of APEC?”, *Journal of Environment and Development*, September 1997, 63, 292-316) that, especially in the Asia-Pacific region, ISO 14000 alone will not lead to improvement in environmental performance, but only when combined with government regulation and public pressure.

demonstration projects must involve working closely with an environmental consulting firm before actually seeking certification itself.

Regulatory relief is also less prevalent than is sometimes believed: the Japanese EPA does not relax regulation for certified firms (though local environmental agencies sometimes do), and, overall, the mix of government involvement in pilot studies and the limited extent of regulatory relief on offer (if any) does not sound radically different in Asia than in Europe or even the US¹².

The best way to improve environmental compliance is to improve environmental management

The last accusation, that the standards are applied less strictly in Asia than in the West, is hard to prove or disprove. We do not know to what extent the accusation may have been justified for ISO 9000, but our discussions with certified companies, registrars, accreditation bodies and government agencies did not yield any evidence to support it in the case of ISO 14000.

Many registrations in emerging markets are awarded by local branches of Western auditors such as LRQA, BVQI, DNV, BSI, SGS, and others, who are supposed to apply the same criteria in their audits worldwide. This global consistency is audited as part of the accreditation process. For example, while the Brazilian employees of Houston, Texas-based registrar ABS (American Bureau of Shipping) were auditing an OPP facility in Sao Paulo, a representative from the Dutch accreditation

body RvA (Raad voor Accreditatie) was present to witness the audit. Regional registrars often choose European accreditation (EDF in Taiwan chose the British UKAS accreditation) to demonstrate their commitment to maintaining high standards.

Finally, we did hear the term "drive-by audits" used to describe the superficial nature of some audits in Asia, but it was, in fact, a local registrar levelling the accusation at a Western counterpart. A Taiwanese auditor admitted to making first-time certification less daunting in order to draw firms into the ISO 14000 system, but then to be very demanding with respect to the continuous improvement requirement. Certification, according to this view, should be "easy to get, but hard to keep".

Additional support for the belief that registration standards are not being relaxed in Asia comes from a Taiwanese auditor's statement that firms typically spend USD 20 000-50 000 on capital improvements in order to pass the certification audit. This is in contrast to our US interviewees, who reported only very modest process changes and no capital investments at all. All this suggests that ISO 14000 is being administered in largely the same way worldwide and that claims of existence of an Asian printing press for ISO 14000 certificates are largely exaggerated.

Around the world, many firms are using ISO 14000 as part of a proactive environmental communications strategy

12) For an overview of ISO 14000 trends and infrastructure in Asia, see AET, *Environmental Management in Asia: A Guide to ISO 14001*, 1997; that report is summarized in D. Tanner, "Updates and Trends on ISO 14000 Implementation in Asia", *Corporate Environmental Strategy*, Spring 1998, 5:3, 71-76.

5 Myth

ISO 14000 is a 'passport to Europe'

Myth: *in order for companies that currently market their products in the European Union to continue to do so they will need to get ISO 14000 certification.*

There is a strong perception, especially in the US and the Asia-Pacific region, that ISO's management system standards were invented by Europeans for Europeans. The most hostile version of this myth links ISO 14000 to the creation of trade barriers intended to protect local markets from low-price, non-certified foreign producers. Certification is supposedly a requirement for doing business within the European Union (EU). The truth is, ISO 14000 was not developed by Europeans alone, it is not only Europeans who are interested in it, and ISO standards are less likely to erect trade barriers than to level the playing field.

For several companies, the ISO 14000 certification process was the impetus for them to identify the full range of their environmental impacts

The International Organization for Standardization, though its Central Secretariat is in Switzerland, is a federation of national member bodies from around the world. The ISO 9000 and ISO 14000 standards are developed and maintained by technical committees comprising national delegations from all ISO member countries that wish to participate. Both ISO/TC 176, which is responsible for the ISO 9000 family, and ISO/TC 207, which is responsible for the ISO 14000 family, comprise participating delegations from some 60 countries, in-

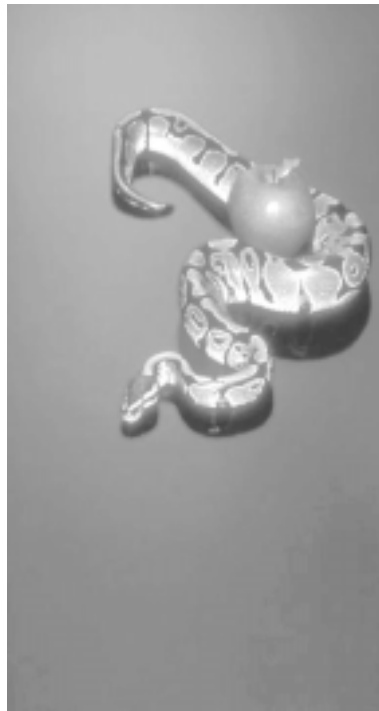
cluding the US. The ISO 9000 series is partly based on the British Standard 5750, which in turn was inspired by the quality standards of the US Department of Defense (MIL-Q9858) from the late 1950's. The US representatives play an active role in the development of the ISO 14000 family, including chairing one of TC 207's six subcommittees – on environmental performance evaluation.

Almost all companies mentioned training benefits of one kind or another, and several executives were frankly surprised by the level of enthusiasm the training sessions created

Although adoption of ISO 9000 initially took off in Europe, by now, many customers outside the EU, notably in Japan, are requiring it of their suppliers. One European electronics manufacturing facility acknowledged that its interest in ISO 14000 was sparked when a Nokia audit team inquired about its environmental management system. Soon after, a German and a Japanese customer asked the same question. Within Motorola, sites in England and France were the first to be certified, in anticipation of customer demand, but US sites were planning to follow¹³. And some US firms are also pushing suppliers to get certified, as the letter from IBM in the box on page 11 shows.

The wide acceptance and strength of the conviction that ISO management systems standards are trade barriers (whether deliberate or not) is quite remarkable. The ISO 14000 series was in fact introduced to level the global playing field, to prevent firms from exploiting lax environmental enforcement in some countries to compete unfairly with firms facing stricter regimes.

Sometimes, what looks like an ISO 14000-related trade barrier turns out, on closer inspection, to



be part of a larger political context; for instance, when European organizations started inquiring about ISO 14000 certification for banana growers in 1997-98, this was just part of a larger trade dispute that erupted in early 1999. The practical implication is that one has to accept that non-tariff trade barriers will always exist, sometimes in the name of environmental protection. Taking a proactive stance to ISO 14000 certification can, in fact, help diminish the exposure to such politically induced barriers and gives lobbyists additional ammunition to reduce such barriers.

At this time of writing, ISO 14000 is not a national requirement for trade in any country that we know of. Based upon the wording of the standard, it is difficult, if not impossible, for the standard to be applied differentially to domestic and foreign firms, so it is unclear how national governments in either the EU or Japan would be able to use ISO 14000 as an effective non-tariff barrier to trade, even if they wanted to do so.

It is also not clear how an individual company would find it in its own shareholders' interest to enforce ISO 14000 requirements selectively upon foreign, but not upon domestic suppliers, and we found no evidence to suggest that any European, Japanese, or American companies were contemplating such targeted action. What is more, in spite of the widely shared concern among for-

eign – especially Asian – exporters about the potential barrier posed by ISO 14000 requirements, we did not find documented instances in which companies based in export-oriented countries lost business opportunities because they lacked certification.

We attribute the fear of non-tariff environment-based barriers to trade to two possible sources. Firstly, many companies – especially in Japan and Taiwan – did experience considerable business disruption as a result of ISO 9000. Many Japanese companies were justifiably proud of their achievements in the realm of quality and therefore slow to acknowledge and adopt ISO 9000 and found themselves obliged to document their quality system practices at short notice.

Formalizing existing procedures reduces a company's dependence on the few key individuals who are typically responsible for all aspects of environmental management

Domestic registrars, accreditation bodies, and the other components of the ISO 9000 certification infrastructure were underdeveloped, and the resulting certification "panic" left a legacy of watchfulness and fear of possible non-tariff trade regulation. Indeed, with ISO 9000 now established as a near *de facto* standard for international business, the high absolute and relative number of ISO 14000 certifications in Japan, Taiwan, and South Korea can be attributed, at least in part, to the legacy of their experience with ISO 9000. This phenomenon is not limited to Asian countries; there is a strong correlation between export-propensity, measured by exports as a share of GDP, and ISO 14000 certification¹⁴.

13) Litsikas (1997), op.cit.

14) See Corbett and Kirsch (1999), op.cit.

Secondly, we discovered, at least in Taiwan, that government regulators were actively touting the threat of ISO 14000-based trade requirements as a means to encourage adoption of the new standard and thereby improve environmental performance of domestic industry. We conclude that fear of possible requirements is driving firm-level behaviour, but that there is no indication of national action.

To summarize, it is certainly true that ISO 9000 has become a passport for global trade in some industries, but not one that is used selectively against non-European firms. The global push for ISO 14000 is coming from local industry leaders, regardless of nationality, and they are exerting their influence over suppliers worldwide.

*No company that we
have spoken to
regretted seeking ISO
14000*

Conclusions

We have gone to some length to demonstrate that many prevailing beliefs about ISO 14000 are not supported by actual events on the ground. In contrast to prevailing mythology, ISO 14000 is not solely an environmental standard. Getting certification is not excessively onerous, especially if a company has already received certification to ISO 9000. There are benefits to certification, even if many of them are intangible, or difficult to measure thus far. There are sound reasons why companies in Asian countries are adopting ISO 14000 more rapidly than firms in the United States, and high Asian certification levels are not, by any means, *prima facie* evidence of an inferior or inadequate certification process. Finally, ISO 14000 is evolving to be much more than a "passport to Europe". Some firms expect that certification to ISO 14000 may soon become as essential for conducting international business as ISO 9000 – a veritable "passport to anywhere." Indeed, if all of the myths discussed above were wholly untrue, one would be hard

Acknowledgements

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pressed to justify *not* seeking certification to the new standard.

Here's the rub: like most myths, there is at least anecdotal evidence to support each of them. The mythology of ISO 14000 is not entirely wrong, but reality is more complicated than any single myth. The range of motivations, participants, and activities propelling the ISO 14000 system cannot easily be distilled into simple anecdotal truisms, and in the span of three years, we have not yet accumulated sufficient experience with the standard to be able to specify and test rigorous operational hypotheses about its impacts.

In the interim, what attitude should practitioners take towards ISO 14000? We suggest the following set of starting points.

Do not take any single ISO 14000 myth as the whole truth. The logical chain motivating ISO 14000 certification is more complex than can be explained by any one collection of anecdotal evi-

dence. Over time, ISO 14000 is becoming more and more of a general business standard, much like ISO 9000 before it. Thus, on first pass, ask if ISO 9000 is, or was, an issue for your company? If you answer in the affirmative, you may well decide that you need, at a minimum, to be "ISO 14000 ready," for the same reasons as for ISO 9000.

*While the cost of
getting ISO 14000
certification is
limited, the cost of not
having it is likely to
grow over time*

Are sound environmental management and a well-informed perspective on ISO 14000 both relevant for general managers? We would argue: yes, definitely, but do not treat them as synonymous. Rather, think of ISO 14000 as a business issue: assess the various types of benefits it can yield, internal and external, hard and soft. Make a realistic estimate of the resources needed, taking into consideration that much of the painful groundwork has already been done for ISO 9000. And then decide whether this is the right time to prepare for certification, or whether it is better to wait.

Do not make the mistake, though, of confusing ISO 14000 with a signal of environmental leadership: companies that have it are not necessarily leaders (though early adopters are more likely to be), and certification may make sense for very other than environmental reasons. In addition, do not make the mistake of thinking: "Our environmental impacts are already so heavily regulated, ISO 14000 is not going to change anything". Even in those cases where that belief is true, it misses the point: the reasons for certification lie elsewhere. Remember the Japanese attitude that ISO 9000 was irrelevant for them as their quality management practices were far superior to anything prescribed by ISO 9000? When Japanese firms started adopting ISO 9000 wholesale, it was often less for quality-related reasons than in response to customer pressure.

For companies with operations in less developed countries, ISO 14000 takes on additional meaning. For obvious reasons, The Coca-Cola Company takes great care to protect global brand equity, and therefore encourages franchisees worldwide to adopt proactive environmental practices. Despite the fact that the company has not yet received (and may not need) ISO 14000 certification for its US operations, Brazilian bottler Panamco SPAL is already certified and has experienced clear benefits in terms of community relations and regulatory relief; a Taiwanese Coke bottler has also followed suit. Even if certification may seem relatively pointless in the home country, the internal and external benefits to offshore sites are often far greater. In such cases,



choice is clear: either you take a narrow functional perspective on each of them ("ISO 9000 is just about quality", "ISO 14000 just about environment", etc.) and fight them all the way if they do not seem immediately relevant; or you accept these standards as a fact of business life. You focus on the similarities between them, rather than the differences, and get adept at adapting to new standards quickly and painlessly.

Q

Some firms expect that certification to ISO 14000 may soon become as essential for conducting international business as ISO 9000

Based upon the wording of the standard, it is difficult, if not impossible, for the standard to be applied differentially to domestic and foreign firms

the certification decision should be made on a global basis, where home-country certification may be called for simply to send the right signal to offshore facilities¹⁵⁾.

Finally, just as ISO 14000 certification will normally be less painful than ISO 9000 was, it will also help make companies even better prepared for the host of other standards to be unleashed in future. The proliferation of management system standards shows no sign of slowing. The

15) For more discussion on the relationships between home and host country standards, see e.g. Dennis A. Rondinelli and Gyula Vastag, "International environmental standards and corporate policies: An integrative framework." *California Management Review*, v39, n1 (Fall 1996):106-122.

