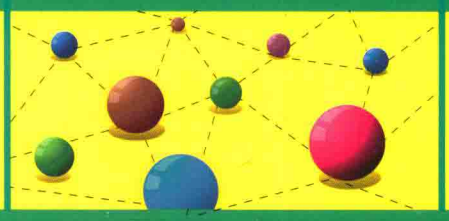
STANDARDIZATION
AND
GOVERNANCE

标准化与治理

（第二辑）

主编　侯俊军



湖南大学出版社

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内 容 简 介

本书围绕着“标准化与治理”主题，邀请国内外专家学者提交了23篇相关论文，从标准治理的知识体系、理论机制、实践经验、操作案例等方面进行深入地分析。本书适合于标准化与治理方面的专家学者、政府官员、企事业单位人员阅读。

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BIAOZHUNHUA YU ZHILI（DI-ERJI）

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序言（一）[①]

张晓刚

非常高兴代表国际标准化组织（ISO）参加第二届“标准化与治理”国际学术研讨会。首先请允许我代表ISO及全体成员，衷心地祝贺第二届“标准化与治理”国际学术研讨会顺利地召开！感谢各位专家学者长期以来对ISO国际标准化活动的积极参与和大力支持！对近年来各位专家学者在国际标准化事业发展和理论研究上所取得的成绩表示赞赏和钦佩！

从1947年发展至今，ISO已走过了整整70个年头。从当初包括中国在内的仅仅25个成员，已发展壮大到现在的163个成员，成为全球最大、最权威的综合性国际标准化组织。ISO标准已成为国际经贸活动的重要规则，被誉为国际贸易的“通行证”，在减少国际贸易壁垒和经贸摩擦，以至推动建立国际经济贸易新秩序等方面发挥着重要作用，ISO将在应对全球机遇和挑战中扮演更加重要的角色。

标准要在国际市场发挥更大、更好的作用，必须加强治理。从标准的需求与供给、标准的制定、标准的实施，到标准的利益相关者、标准的显性制度与隐性制度、标准的教育与文化，再到标准在市场中的角色演进等，都是标准化治理的重要内容，都需要认真深入的学术研究。当今世界是一个市场和技术都在不断发展的伟大时代，这给标准化事业的发展带来了伟大的机遇，也为标准化的理论研究提供了伟大的机遇。

中国是一个十分重视标准化工作的国家。为全面提升标准化工作，中国政府发布了《国家标准化体系建设发展规划（2016—2020年）》，并且结合“一带一路”倡议，制定了《标准联通“一带一路”行动计划（2015—2017）》，充分发挥标准化在推进“一带一路”建设中的基础和支撑作用；创新性地在中国政府奖项中设置了“中国标准创新贡献奖”，从2006年以来连续评选；在质量强国战略的引领下，各地方政府开展了质量强省、质量强市等工作，很多省市也制定了标准化发展战略。可以说，标准化工作在中国风生水起，深入人心。

2017年5月份，我受邀出席了“一带一路”国际合作高峰论坛，并主持了“加强政策沟通和发展战略对接”平行会议。亲身感受到了与会各国对中国主张的认可。我能够以标准化工作者的身份主持会议，足见中国标准化工作的国际影响力。此外，在国际标准化工作方面，中国在ISO治理和战略、政策制定等各重大事务中，充分展现了更加

① 序言为ISO主席张晓刚博士2017年10月27日在第二届“标准化与治理”国际学术研讨会上的讲话

积极、更高水平的参与，作出了更多、更高质量的贡献。可以说，中国在 ISO 的持续发展中扮演着越来越重要的角色。

今天，来自政府、高校、标准化机构和企业的专家学者齐聚湖南大学，共同研究标准化治理的实践与理论。这是一个具有重要意义的工作，ISO 对此十分关注。我了解到中国正在修订《标准化法》，即将实施国家标准化战略，持续推进标准化体系结构性改革，推进“标准化+”战略行动，提高标准化科学管理水平，我认为这些都是很好的质量发展举措。我希望中国标准化工作不断取得新的进步，在国家现代治理中发挥更大的作用。中国作为全球第二大经济体和最大的发展中国家，ISO 各方面的工作无疑需要中国的参与和贡献，需要中国专家学者的参与和贡献。我希望中国和中国的专家学者一如既往地积极参与 ISO 国际标准化活动，创新工作机制，推动企业发挥更大作用，更加注重国际标准的应用推广，加快国际标准化人才队伍建设，进一步加强与 ISO 及和各成员的标准化实践合作，与 ISO 一道携手推动 ISO 成为最成功的国际标准化组织。同时，ISO 也将一如既往地为包括中国在内的所有 ISO 成员提供更加广阔的发展机遇。

祝愿中国政府带领国内各有关方面，推动标准化事业不断发展，并在未来国际标准化工作中不断取得佳绩，为 ISO 国际标准化工作作出更大的贡献！

序言（二）

欧阳彪[①]

习近平总书记系列重要讲话是马列主义、毛泽东思想与当代世情、国情、党情高度结合的产物，也是深度传承的理论结晶，以巨大的民族抱负开启了实现中国梦治国理政的伟大实践，以巨大的理论担当开辟了中国特色社会主义政治经济学理论探索的崭新境界，以巨大的政治勇气科学地回答了我们党在新的历史转折时期“旗怎么举、队怎么带、路怎么走”等新长征的重大历史命题，既形成了十八大以来党的理论成果，也奠定了十九大党的思想基础；既是一座丰富的理论宝库，又是一座崇高的思想丰碑，具有划时代的世界意义、当代意义、中国意义。学习系列讲话使我们更加增强“四个自信”，更加树牢“四个意识”，更加拥戴以习近平总书记为核心的党中央，更加坚定地维护党中央权威，更加自觉地在思想上、政治上、理论上、行动上践行习近平总书记系列重要讲话精神。

学习这些系列重要讲话，基础在学、重点在悟、关键在做。结合质监工作，就是要深入学习习近平总书记关于质量发展的一系列新思想、新论断、新战略，忠实地学思践悟好习近平总书记的新型质量观，扎实推动湖南我省创新引领、开放崛起战略落实到质量引领、质量崛起上来。

一、思想上必须深化质量认知

习总书记科学论断经济的新常态和发展的大逻辑，深刻地指出要“切实把推动发展的立足点转到质量和效益上来”，鲜明地强调“以提高质量和效益为中心”，表明我国正处于质量发展的新阶段，也指明了我国质量发展阶段的新要求，是我国经济社会发展总思路和总战略的重大转变。这就要求我们：一要有强烈的质量意识。大到内政外交，小到衣食住行，质量问题无时不有、无处不在。必须在发展的方向目标、任务重点、政策举措上牢固地确立起质量路线和质量方针，树立起“质量第一”“质量优先”“质量为重”的强烈意识，要真正用质量武装头脑。二要有强烈的质量思维。21 世纪是质量的世纪，质量时代当有质量思维。应当从质量的高度谋划发展大局，从质量的维度创新治理工作，从质量的角度检验执政能力，对待发展中的矛盾和问题，要善于拿起质量这把“手术刀”解剖麻雀。三要有强烈的质量导向。从很大程度上讲，中国梦就是强国

① 欧阳彪，湖南省质量技术监督局党组书记，局长

梦，强国梦就是质量梦。应当大力实施质量强省战略，善于运用质量调控的指挥棒，制订质量发展的规划纲要，建立质量考评的指标体系，真正推动质量发展的入轨、上路、定型。四要有强烈的质量底线。习近平总书记带着对人民群众健康安全的深切关注，强调“能不能在食品安全上给老百姓一个满意的交代，是对我们执政能力的重大考验”，必须真正建立起质量安全观，加强质量安全监管，严守质量安全底线，防范质量安全问题。

二、政治上必须增强质量自觉

习近平总书记多次指出：党中央确定推动供给侧结构性改革是相当长一个时期发展的主题主线。在阐释新常态9个趋势性变化时就指出，“个性化、多样化消费渐成主流，保证产品质量安全、通过创新供给激活需求的重要性显著上升”“过去主要是数量扩张和价格竞争，现在正逐步转向质量型、差异化为主的竞争”。在阐述供给侧结构性改革时强调，“在适度扩大总需求的同时，要着力提高供给体系的质量和效率”，辩证地指出了质量与改革、发展、稳定的内在联系、核心要义和必然逻辑。这就要求我们：一要高度重视质量政治。习近平总书记对严厉打击“地条钢”的批示深刻表明，讲质量就是讲政治，讲质量就是讲大局，讲质量就是讲核心，讲质量就是讲看齐。要更加自觉地执行中央“三去一降一补”的重大决策，真正把供给侧结构性改革落准、落细、落实到提质增效上来。二要高度重视质量政策。我国仍处于社会主义初级阶段，市场机制不够成熟，质量监管体系特别是质量法律法规和监管制度不够完善，不少领域还是空白。基于此，应当全力以赴推进质量法治建设，加强质量立法，加快形成充分发挥市场决定性作用的体制机制，全面建立起计量、标准、认证认可、检验检测的技术法规体系，不断推动质量治理体系和治理能力的法制化进程。三要高度重视质量政绩。数量经济时代，我们在抓投资、抓招商、抓规模很有办法；质量经济时代，如何在新常态下实现质量升级的经验还不多。当前要着力解决好质量治理的知识短板、能力危机、本领恐慌的问题，这也是当前“不作为、不敢作为、不善于作为”的客观原因，要将科学的政绩观体现到提质增效、转型升级上来。

三、理论上必须探索质量规律

习近平总书记指出：坚持质量效益与速度规模相统一，以质量为转型升级之本，把质量创新作为发展新动力；坚持宏观的经济整体质量与微观的产品服务质量“双提高”，以质量提升促进经济转型；坚持经济发展质量与政治文化社会生态建设质量相同步，五大建设都要讲质量，实现更高质量、更有效率、更可持续的发展，等等。习近平总书记的质量观是中国特色社会主义理论的重要组成部分。这就要求我们：必须学习和应用质量规律，切实增强做好质量工作的预见性、自觉性、创造性。一是探索质量发展的规律，核心就是把握主要矛盾的主、次两方的变化，看到不断满足人民群众日益增长的物质文化的质量需要，已经上升为主要矛盾的主要方面，务必突出“质量提升”主题。二是探索质量运行的规律，核心就是把握市场均衡的供、需两侧趋向，看到供给侧不平衡已经成为影响发展不平衡的基本面，务必在优化质量供给上下硬功，真正提升供

给质量和供给水平。三是探索质量管理的规律，核心就是把握宏观调控的政府、市场两手的运用，看到市场的决定性作用未能充分发挥，务必确保市场运行的质量和环境，让质量创新的市场主体真正动起来、活起来。

四、行动上必须开展质量斗争

习近平总书记指出："我们正在进行具有许多新的历史特点的伟大斗争"，要求"推动中国制造向中国创造转变、中国速度向中国质量转变、中国产品向中国品牌转变"。实现这"三大转变"，就要求我们开展一场深入而持久的质量斗争：

一要与传统的增长方式作斗争。中央强调"稳中求进"，"稳"就是数量速度要稳，"进"就是质量效益要进。在经济发展的新常态下，务必彻底告别一味追求 GDP 的增长方式，破除"重数量轻质量"的思维定势，切实将经济发展从规模数量型转到质量效益型的轨道上来，同时用质量的"升级"来对冲速度的"放缓"。

二要与传统的生产方式作斗争。任何事物都有一个由量变到质变的过程。过去重产量、重产能、重产值，只求"产得出"，生产凭经验传承，靠火候判断。现在"以质取胜"已成为时代的鲜明特征，要实现"多快"模式向"好省"模式的转变，必须用仪器来检测，用标准来规范。习近平总书记指出："标准是质量的基础，标准决定质量，有什么样的标准就有什么样的质量，只有高标准才有高质量"。他在致 39 届 ISO 大会贺信中指出："标准助推创新发展，标准引领时代进步"。要充分认识到内需不足、出口不畅，关键还是质量不优，务必向落后的生产方式开刀，树立企业家精神和工匠精神，大力开展"增品种、提品质、创品牌"战略行动，加强计量、标准、认证认可、检验检测四大质量技术基础，引导企业踏质量之石、留质量之痕，真正形成供给侧的质量新动能，真正构建标准、技术、品牌、服务的质量新优势。

三要与传统的生活方式作斗争。随着经济发展水平的提升，人民群众日益追求高品质、有尊严的生活。习近平总书记多次提到的中国消费者到国外购买"马桶盖""电饭煲"的问题也说明，幸福感的核心就是质量的获得感。坚持人民立场就必然要满足老百姓的质量诉求，大力提高产品质量、工程质量、服务质量、环境质量，让老百姓真正吃上安全的食品，喝上放心的水，呼吸干净的空气，让质量获得感"在家门口升级"。

四要与传统的管理方式作斗争。以前是生产型的管理，不习惯于市场调查和需求分析。在新常态下，必须破除"重产量轻质量"的思想，把思路调整到质量型供给上来。要用习近平总书记的新型质量观武装头脑、指导实践，培养一大批懂质量管理、懂技术贸易、懂竞争规则的新型质量领导集体和新型质量管理人才。强化质量宣传和质量培训，不断提高劳动者的质量素质和质量水平，使重视质量、精益求精、追求卓越成为人民普遍的行为准则和工作范式，共同推动湖南迈向质量时代。

我作为一名共产党员、一名质量工作者，提出如下建议：

一、召开全国性质量工作大会。这是对世界、对人民的宣誓，也是领航质量时代、开启质量长征的新标志，表明中国作为负责任大国的质量决心，为全球治理贡献中国的质量方案。

二、建立国家质量促进法，进一步完善我国质量法制体系，全面调整政府、企业、

社会三者的质量关系，着力实现“依法治质”，真正推动中国制造、到中国智造、到中国质造的“三级跳”。

三、实施最严格的质量管理政策。质量是“产”出来的，也是“管”出来的。要抓住质量管理的“牛鼻子”，坚持源头治理、标本兼治，把质量安全构筑在最严谨的标准、最严格的监管、最严厉的处罚、最严肃的问责之上。

目 次

The Industrial Standardization Movement and the World Outside Europe and North America

Craig N. Murphy Jo Anne Yates

We have recently completed a history of industrial standardization over the last century and a half.[①] This paper explores one of the themes we touched on, but did not thoroughly discuss: the (perhaps surprisingly) limited Eurocentrism of the international industrial standardization movement that originated in Europe and the United States in the late 1880s and early 1890s. The current industrial standard setting system began as the project of a movement of primarily white professionals—similar, in that way, to the contemporaneous peace, free trade, and women's suffrage movements, but unlike these other movements, the standardization movement was never included elements that were explicitly racist or even Eurocentric. In this paper we discuss a key even in the first wave of this movement, the Tokyo World Engineering Congress in 1929, and the way in which, after World War II, the standardizers who revived the movement engaged the developing world, highlighting the work of Olle Sturén, the longest-serving head of the International Organization for Standardization (ISO). We then illustrate how his history helps explain (1) the relative legitimacy of ISO standards, including the newer social and environmental standards, throughout the developing world and (2) why the newstandardization organizations that manage the Internet and the Web devote so much effort to diversifying the overwhelmingly European/North American, white, and male community currently involved in standard setting in this field. Finally, we use this longer history to contextualize the different approaches to industrial standard setting that have been adopted by different rising industrial powers over the last generation when the standardization movement became truly global.

The Early Standardization Movement

The current network of global, regional, and national standardization bodies linked to

① Jo Anne Yates and Craig N. Murphy, Standards Bearers, under contract with Johns Hopkins University Press.

the ISO and the IEC (International Electrotechnical Commission) had its origins in international and local cooperation among engineers in the new leading sectors of the late 19th century. From the beginning, the industrial standardizers conceived of themselves as something more than just a community of professionals. They call themselves a "movement." Comfort Adams, the first chair of the US national standards body (now known as the American National Standards Institute, ANSI) summarized the movement's purpose this way: "Progress of civilization depends to a large degree on successful standardization in many fields and on the cooperation necessary to develop standards." ① At a March 1919 symposium on "The Engineer as Citizen," Adams's colleague, Spencer Miller, vice president of the American Society of Mechanical Engineers, proclaimed:

> The engineer is assuming an ever-larger position in public life, and, in spite of himself, he is at the very center of life. The more we realize this great truth, the more seriously do we contemplate our responsibilities. This thought fills some with pride and others with humility. Eliminate the engineer from the world and civilization would soon pass through other 'Dark Ages' comparable with savagery and barbarism. It is clear, therefore, that we, individually and collectively, should make every possible effort to mold [the] public in the right direction, especially at presentto counteract the propaganda of those stirring up class hatred. ②

responsibility for the continuation of the civilization that their own work had created. Promoting standardization was a primary way to do this, but, when Miller and Adams spoke about the standardization movement, they understood standardization as only one part of their larger civilizing mission as engineers. Winton Higgins, a historian of the Australian national standards body and of the recent adoption of the engineers' methods by social and environmental standardizers, writes that the pre- first world war "scientific management" movement was the first of manyengineering civilizational movements linked to standards:

> But in the war's aftermath, in the a spirit of internationalism, engineering associations in the foremost countries of the second industrial revolution... generated enormous enthusiasm around optimising the application of mass-production principles... They and progressive industrialists mobilised in several evangelising 'movements', at first the 'standardisation movement' and the broader 'rationalisation movement', and in the second half of the twenties, the

① Comfort A. Adams, "National Standards Movement—Its Evolution and Future," in Dickson Reck, ed., National Standards in a Modern Economy (New York: Harper & Brothers, 1956)

② Quoted in "Items of Interest: The Engineer as a Citizen," Proceedings of the American Society of Civil Engineers 45, no. 4, April 1919, 420.

'simplified practice' movement... The movements themselves made no bones about being on a mission.①

By 1919, the standardizers were at the forefront of all these movements for three reasons: ①They were the first to clearly have a practical impact; ②they had built ongoing international associations; ③and they had links to other effective progressive movements that involved middle-class professionals as well as the (at the time, more typical) working-class movements that aimed to prevent industrial society from sinking into barbarism.

At the epicenter of the early standardization movement was a rather unassuming man, Charles le Maistre, a British electrical engineer who was in the administration of the first national standard setting body (what is now BSI, the British Standards Institution), from its beginning in 1901. Le Maistre was also Secretary General of IEC from its beginning in 1904 until shortly before his death in 1953. He is pictured below at the 1911 IEC meeting: the dapper young man with a mustache standing in the front row third from the right.

INTERNATIONAL ELECTROTECHNICAL COMMISSION, TURIN, 1911.

Most days, Le Maistre sat in close proximity with the leaders of other progressive movements. When le Maistre's French colleague, André Lange, eulogized the father of international standardization in 1955, Lange declaimed, "It was from London, at 28 Victoria Street in the City of Westminster... that the influence of Charles le Maistre radiated for more than 40 years throughout the world."② During the same years, this was also the address of the British Labour Party,③ the Cobden Club (the main free trade movement or-

① Winton Higgins. Engine of Change: Standards Australia since 1922 (Blackheath, Australia: Brandl & Schlesinger, 2005), 39-40.

② André Lange, Charles Le Maistre. His Work, The IEC. The 1st Charles Le Maistre Memorial Lecture. (Geneva: International Electrotechnical Commission, 1955), 3.

③ Conrad Noel, The Labour Party: What It Is and What It Wants (London: T. Fisher Unwin, 1906), 176.

ganization in the UK),[①] the International Free Trade League (the peace movement with which H. G. Wells was connected), and many other social movement organizations.[②] A 1913 French chronicler of "L'Angelterre radical" described 28 Victoria Street as a well-known building "where associations—industrial and trade, political and charitable—all set up their offices and hold their meetings."[③] The radicalism of many of the building's occupants, at least in the eyes of some of the powers that be, led to a 1917 police raid to seize "enemy propaganda." In fact, the only politically radical leaflets seized were copies of "A Reasonable Man's Peace," by H. G. Wells. When questioned in Parliament, the Home Secretary admitted, "The large quantity of documents seized on the occasion of these raids may have included some not connected with enemy propaganda."[④] Perhaps published technical standards were among these latter documents, but, of course, the police might also have found Le Maistre's correspondence with the head of the German national standards body, Waldemar Hellmich.

The wartime Home Secretary and the detectives at Scotland Yard were not the only ones who mistook the work done at 28 Victoria Street as a threat to the existing order. In 1904, the same year electrical engineers conceived the IEC, the American economist and social theorist Thorstein Veblen began developing a theory that suggested the potential radicalism of professional engineers, including those involved in standardization. In The Theory of Business Enterprise, Veblen argued that, for the modern businessman "an unsophisticated productive efficiency" was never "the prime element of business success."[⑤] The businessman's concern was to dominate markets, something often achieved through technical inefficiency. According to Veblen, in order to dominate markets, the businessman has to prevent "predation" by other firms. The productive work of "making possible and putting into evidence" these opportunities for "predation" was, in Veblen's words, that of "the inventors, engineers, experts, or whatever name may be applied to the comprehensive class that does the intellectual work involved in the modern industry," and this work was something quite distasteful to the "man of pecuniary affairs."[⑥] Veblen stood on the side of the efficiency and inventiveness of the engineers against the established

① "Cobden Club," Liberal Yearbook, Second Year (London: The Liberal Publication Department, 1906), 14.

② See the address on the cover of H. G. Wells, A Reasonable Man's Peace (London: International Free Trade League, 1917).

③ Jacques Bardoux, L'Angleterre radical: essai de psychologie sociale 1906-1913 (Paris: Librairie Félix Alcan, 1913), 77-78.

④ "Police Raids (Enemy Propaganda)," House of Commons Debate, November 26, 1917, Hansard, vol. 99 cc. 1628-30, accessed September 4, 2017, http://hansard.millbanksystems.com/commons/1917/nov/26/police-raids-enemy-propaganda.

⑤ Thorstein Veblen, The Theory of Business Enterprise (New York: Charles Scribner's Sons, 1904), 23.

⑥ Veblen, Theory of Business Enterprise, 36.

businessmen who preferred stagnation and inefficiency if it helped maintain their profit. In 1919, as the war ended and fears of a post-war recession began, he published a series of articles in the Dial magazine making a case for the revolutionary potential of men like Comfort Adams and Spencer Miller who called on engineers to save civilization. Veblen republished the essays as a book, *The Engineers and the Price System.*①

In October 1919 IEC plenary, the first held since the war began, the president, Maurice Leblanc of France, gave his version of the argument Veblen was making. As the official English language summary of his key note address reported:

> Competition rendered it necessary for men to spend the greater portion of their time and energy in disputing their prey (the client) instead of in production. That was why commercial services in the industry had assumed an importance immeasurably greater than that of technical services. Increased production was the watchword of to-day. With the sources of labour greatly reduced, first of all and, unfortunately, because the larger portion had been massacred... it was necessary, he said, to replace labour more and more by machinery...

From henceforth only productive work would be deemed honorable, and any trade which enriched him who plied it in making money pass from the pockets of others into his own without any resultant benefit to the community, would be despised, it not prohibited... It must be admitted that the directing principle of all humanity had been complete egotism—egotism in the individual, in society, and in the State—and the application of this principle had ended in the greatest catastrophe of all time. The only thing that could now save the world would be altruism, in other words, the evangelical spirit.

However, he had faith in the future, for he was convinced that, under the influence of imperious necessity, evolution in the right direction would take place rapidly, whilst only [the] productive world would be held in honor, and we should render each other mutual aid instead of destroying each other. He fervently hoped that in a very few years from now we should all become richer in every way and at the same time better and happier.

He said that standardization in all its domain was preeminently the democratic reform of production. It was particularly necessary today, for it was incumbent upon all to ensure the maximum production with the minimum labor. ②

The Crest of the First Wave

The first wave of the international standardization movement grew throughout the

① Thorstein Veblen, The Engineers and the Price System (New York: B. W. Huebsch, Inc., 1921).

② IEC, "Publication 33: Fourth Plenary Meeting, London, October 1919," 8-10, IEC Records.

1920s, but receded after the start of the Great Depression. The 1920s were when national standards bodies were founded in most of the then industrialized countries.

Table 1: National Standardization Bodies and Date Founded①

Great Britain 1901	Italy 1921	France 1926
Netherlands 1916	Australia 1922	Romania 1928
Germany 1917	Czechoslovakia 1922	China 1931
Switzerland 1918	Sweden 1922	New Zealand 1932
United States 1918	Norway 1923	Greece 1933
Belgium 1919	Poland 1923	Argentina 1935
Canada 1919	Finland 1924	Latvia 1939
Austria 1920	Spain 1924	Uruguay 1939
Japan 1920	USSR 1925	Brazil 1940
Hungary 1921	Denmark 1926	Mexico 1943

In the late 1920s the various national bodies also established the first global-level body for industrial standardization in all fields, the International Federation of the National Standardizing Associations, officially abbreviated as ISA. (IEC, which continues today, was only concerned with issues addressed by electrical engineers; the earliest international standards organization was concerned with testing materials, but it did not survive World War I.②)

① A list of members of the International Federation of the National Standardizing Associations (ISA) in 1940 can be found in ISA, Bulletin No. 29: Universal Decimal Classification, November 1940 found in the Swiss Federal Archives, E2001D#1000/1553#286* Huber-Ruf, Alfred, Ing., Bern, 1940-1945 (Dossier), Topic "Organization, Standards, Rationalization." Unless otherwise indicated below, the dates of foundation are taken from Robert A. Brady, Industrial Standardization (New York: National Industrial Conference Board, 1929), pp. 122-23. The names of additional bodies appear in "Anniversary Messages from Other Countries," Industrial Standardization, 14, no. 12 (December, 1943), 333. Information on the bodies for which Brady does not provide a founding date can be obtained by following the links on "ISO Members," http://www.iso.org/iso/home/about/iso_members.htm. Lino Camprubi, Engineers and the Making of the Francoist Regime (Cambridge, MA: MIT Press), 147 reports that the Spanish Normalization Association was founded in 1924, citing a 1935 book of DIN standards translated to Spanish; we have used this date. Two additional members of ISA in 1940 were listed, Latvia and Greece. The webpage of the Greek body reports that, in 1933, the government created a four-member Greek Committee of Standardization, accessed September 4, 2017, http://www.elot.gr/502_ENU_HTML.aspx. The Latvian body became a member of ISA in July 1939 according to announcement in Industrial Standardization and Commercial Standards Monthly 10, no. 9, (September 1939) 241, one year before the Soviet invasion and incorporation of the country into the Soviet Union. China established a Committee of Industrial Standards in late 1931; it went dormant due to the war with Japan. In 1943, the Committee was revived to serve as the Chinese member of international standards. With communist revolution in 1949, that body appears to have gone dormant and a new central government body was established in 1957 and quickly gained membership in the IEC. MU Rongping and WU Zhouliang, "The Role of Standards in National Technology Policy in China," no date, 2-3, part of the course materials for Strategic Standardization (CMGT 564) in the graduate program for Engineering Management, Catholic University, Washington, DC, http://www.strategicstandards.com/Perspectives.html and WANG Ping, "A Brief History of Standards and Standardization Organizations: A Chinese Perspective, East-West Center Working Papers, Economics Series No. 117, April 2011.

② Yates and Murphy, Standards Bearers, ch. 2.