



Science and Technology Policy Infrastructure Guidelines and References

Version 1.0
August 2004

Office of Technology Policy
Technology Administration
United States Department of Commerce



Science and Technology Policy Infrastructure Guidelines and References

Version 1.0

Section I
August 2004

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ken.ferguson@technology.gov***

Science and Technology Policy
Infrastructure Guidelines and References

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Science & Technology (S&T) Policy Infrastructure

Guidelines and References

Introduction

This reference guide is intended to assist Science and Technology (S&T) policy makers, planners and business professionals in formulating S&T policy that will enable greater commercial S&T activities and more productive relationships between public and private sector S&T entities. The Office of Technology Policy (OTP) of the Technology Administration in the U.S. Department of Commerce hopes that this reference tool will provide valuable insight into key S&T policy issues, and also facilitate communications between S&T policymakers and their counterparts abroad.

The methodology used to compile the listings in this document consisted of conducting Internet research as well as contacting regional experts for their assistance. Also, the information was collected through consultation with relevant S&T organizations and publications. For the selected S&T topics, OTP obtained contributions from specialists in the S&T field, who generously provided their expertise and insight.

For convenience, this document is divided into three sections. The first section of the document, the S&T Topics section, focuses on Intellectual Property Rights (IPR), U.S. Technology Transfer Laws, Standards and Measurements, Information Technology (IT), and Incubators. These subject areas are considered to be essential in developing an S&T policy infrastructure that will stimulate commercial S&T growth, innovative public/private partnerships and entrepreneurship. Following a brief discussion of each topic, selected contact listings are also provided. At the end of the section, there are also listings for related websites and related publications.

The second section of this document contains extensive contact information for S&T organizations, trade associations, government agencies, and other related entities. These listings have been organized alphabetically by region and country as well as by the type of organization (i.e. Academia, Government, Non-governmental Organizations, and Private Sector) and name of the organization.

The last section of this document contains standards publications provided by the National Institute for Standards and Technology (NIST). These resources cover such topics as standards, conformity assessment, and laboratory metrology.

This version of the manual is by no means definitive and in the future there will be periodic updates to include additional listings and topics as necessary.

Should you have any questions or comments about this reference manual, please contact Ken Ferguson, Chief of International Technology Programs at (202) 482-6351, fax (202) 501-6849, or by email at ken.ferguson@technology.gov.

Science and Technology (S&T) Topics

This section contains background information as well as links to organizations related to the following S&T issues:

- Intellectual Property Rights (IPR)
- U.S. Technology Transfer Laws
- Standards & Measurements
- Information Technology (IT)
- Incubators

Intellectual Property Rights (IPR)

Introduction

Effective intellectual property protection is a key element to economic growth because it provides for strong incentives for both domestic and foreign investment in developing new technologies and new consumer goods. Intellectual property is the generic term for patents, trademarks, copyrights, geographical indications, plant variety protection, and related laws, all of which grant certain rights to those who invent new ideas and products. These laws are important for not only industrialized countries, but also for emerging countries as well, because they provide the engine for advancement.

Specifically, intellectual property protection guarantees a period of exclusivity to the individuals or companies that invest their money, time and energy in inventing new pharmaceutical products and information technology, in creating music and television programs and breeding new plant varieties, among other innovative activities which help to ensure that those individuals or companies can recoup their investment and profit from their investment. Intellectual property benefits not only the innovator, but also the consumer and the recipient of technology transfer. The consumer gains as well, because only with patent protection will new pharmaceutical products be developed to cure new diseases. Only with plant variety protection will commercial breeding programs be established to develop stronger, more desiccant-resistant, disease-resistant plants. Only with copyright protection will film, music, literary and computer software industries grow to bring more educational, entertaining and eye-opening products to the marketplace. And only with trademark protection will the consumer have more variety and higher-quality goods and services with recognizable names and associated accountability for consistent quality.

Finally, intellectual property is an essential element of any technology transfer program. Without strong intellectual property protection to guarantee rights, no patent owner would agree to share its advancements with developing countries.

IPR and National Innovation Policy

Technological innovation drives long-run national economic growth (Romer, 1986, 1990). Contemporary economic growth theory explains that economic development depends on technology change: Technology stasis leads to economic stagnation; technology progress leads to economic growth (Grossman and Helpman, 1991). “It is the spectacular and historically unprecedented growth rates of the industrialized market economies—the growth rates of their productivity and their per capita incomes—that, above all, set them apart from all alternative economic systems. Average growth rates for about one and a half *millennia* before the Industrial Revolution are estimated to have been approximately zero...”—eighteenth century elites in England had more-or-less the same per capita income as their counterparts had in third century Rome (Baumol, 2003:3, 14).

Practical, useful knowledge into the eighteenth century tends to be “unsystematic and informal, often uncodified and passed on vertically from master to apprentice or horizontally between agents. ...The true question of the Industrial Revolution is not why it took place at all but why it was sustained beyond, say, 1820. ...Much of the likelihood that knowledge will be transmitted depends on the social organization of knowledge, storage technology, and who controls access to it” (Mokyr, 2002:30, 31, 8). The explanation lies in the successive improvements over the course of the nineteenth and twentieth centuries in techniques to organize and transfer technology and useful knowledge within and across societies, that technology and useful knowledge cumulated, and that the capacity to manage technology and useful knowledge became institutionalized into societal life and practice.

In our era, national comparative advantages are measured by how technology institutions manage and apply technology and practical knowledge (Ziegler, 1995). Yet, technologies and practical knowledge do not necessarily cross national boundaries easily and organizational capabilities may be especially slow to enter some countries: “Best practice is more fraught with difficulty than the acquisition of technologies” (Kogut, 1991:39). The absorptive capacities of organizations in developing countries, their capacities for organizational learning and for the integration of know-how into routines and practices, vary considerably but tend to be poor (Keller, 1996). A World Bank symposium (1994) cautions that the acquisition of technology is the most important and difficult challenge faced by developing countries. A World Bank report (1996) recommends that a “National Knowledge System” model aimed at

building the institutions that help create and sustain innovation, imitation, and knowledge networks guide the strategies of developing country policymakers. The 1998 *World Development Report* of the Bank, which concerned the “knowledge and development”, emphasizes, “poor countries—and poor people—differ from rich ones not only because they have less capital but because they have less knowledge.” Developing countries, if they are to acquire knowledge, must establish the *institutional, organizational* foundations for technological innovation.

The economics of institutions explain that 19th century U.S. and German institutions favored productive activity while 20th century developing country institutions afforded re-distributive and even predatory activity (North, 1990). The notion of the “national innovation system” focuses analysis on “the cluster of institutions, policies, and practices that determine an industry or nation’s capacity to generate and apply innovations” (Nelson, 1993; Steil, Victor, and Nelson, 2002). Post-industrial countries, e.g., Germany, France, Japan, and the United States, possess distinctive national innovation systems that owe to long-established patterns of political economy.

Germany’s corporatist, co-determinist model produced remarkable post-war catch-up and sector-leading, world-class firms in, especially, craft-oriented industries due to cooperative management-labor relations, long-term oriented management and corporate governance; dependable *Mittelstand* SME supplier networks; patient, bank-financed investment; and facilitating regulatory and export policy environments (Kreile, 1978; Herrigel, 1996). Nevertheless, Germans did not lead technology innovation in the 1990s, despite considerable scientific potential (Siebert and Stolpe, 2002). France’s “national champions” and “technology mission” model paired government-forced firm mergers with mission-directed technology systems, planning-oriented regulation, import and direct investment protectionism, and subsidy-laden organizations (Zysman, 1978). The technology missions were all more-or-less failures, the champions have largely been globally uncompetitive, and the whole system tends toward fragmentation and inflexibility (Messerlin, 2002).

The Japanese model, once called “capitalist developmental corporatism but perhaps better described now as “capitalist stagnation corporatism,” was quite successful for quite some time at industrial, technological catch-up. The Japanese government, in partnership with Japanese *keiretsu* groups and banks, targeted key industries with subsidies, technology licenses, patent pools, R&D consortia, government procurement, import and direct investment protectionism, and export promotion (Johnson, 1982; Okimoto, 1989; Calder, 1993). The Japanese model produced the world’s most efficient automobile and electronics makers but everything else is almost unbelievably inefficient: Markets are highly concentrated and stagnant (Posen, 2002); government at all levels is ponderous and stifling (Lincoln, 2001).

The American liberal-regulatory political economy has proved superior to the versions of corporatist political economy established in Europe and Japan with respect to creating technological innovation, introducing it into the marketplace, encouraging sector-leading high-tech firms, and producing higher economic growth. U.S. technological leadership owes to several identifiable strengths, including public financing of basic research through private universities and public laboratories; strong patent rights that have encouraged the commercialization of basic technologies into the marketplace; easily established start-up enterprises; adaptable, flexible organizations; flexible labor markets, MBA-educated, professional managers; and risk-taking, innovative financial markets (Chandler, 1977; Fligstein, 2002). Americans led innovation in computers and software, the Internet, composites, and materials, drugs, crops, and foods, and biotechnology (Gordon, 2002).

Whether born of revolution (Mexico in 1917), de-colonization (India in 1947), or civil war (China in 1949), developing countries in the 20th century typically adopted state-led models of development, investing public resources into establishing state-owned enterprises to lead industrialization and energy creation—Mexico by the 1930s, India and China by the 1950s. These new regimes, led by Cardenas, Nehru, and Mao as well as Ataturk and Nasser, mistrusted their own business interests as much as they mistrusted multinational business enterprises, identified high barriers to entry in mining, energy, and steel as compelling rationales for public enterprise, and seem genuinely to have believed that state-owned enterprises would achieve national goals (Waterbury, 1993). The developing countries adopted an import-substitution industrialization model of economic development, thereby rejecting the liberal, GATT-based, free trade and open investment regime institutionalized after World War II (Biersteker, 1987; Haggard, 1990).

Nevertheless, whether the measure is growth rates, current account balances, or income distribution, the ISI strategy performed poorly. ISI failed because it depended on markets that were too small or too poor to provide economies of scale, on demand conditions that were too isolated to produce globally competitive industries, and typically resulted in inefficient production of bad products by insulated state-owned and private enterprises.

Resource abundance, thought in the 1950s to be a good thing for development if a country had it, is now understood to result in weak political and governmental institutions (Ross, 1999) and these institutions have become appreciated as absolutely key to development (Clague, 1997). “Whatever the form of government, economic progress tends to occur in societies in which there are clear incentives to produce, invest, and engage in mutually advantageous trade. By contrast, societies in which predation is the norm... are unlikely to be productive” (Olson, 1997). The conditions for economic growth in developing countries today remain essentially no different from the conditions that led to economic growth in 19th century Germany and United States and 20th century

Japan: It's all about the institutions and in particular about the "establishment of such a set of property rights [that] allow individuals in highly complex interdependent situations to be able to have confidence in their dealings with individuals of whom they have no personal knowledge..." (North, 1989).

Korean economic development owes to the internalization of imitative technology into large firms by American-educated engineers, through study of foreign products, tours of foreign plants, the licensing of foreign technologies, and by the acquisition of small, often American firms with specialized technologies (Amsden, 1989; Kim, 1997). Since the 1997 Asian financial crisis, Korean policy has encouraged foreign direct investment. Taiwanese economic development, though similar to the Korean model, has long encouraged SMEs, entrepreneurship, technology licensing, and FDI (Simon, 1992).

IPR, Trade and Foreign Direct Investment

Proponents of the "trade dependency" thesis of the 1950s and 1960s argued that the world economy was structured to ensure that the poor developing countries of the South were burdened with trade and foreign direct investment dependence on the rich countries of the North: Multinational business enterprises from the North invested in and sold manufactured goods to the South, exploiting and exporting commodities, aided and abetted by their colonial and neo-colonial governments and their international trade and investment rules (Prebisch, 1959). According to the new "knowledge dependency" thesis MNEs, exploit their North-South knowledge advantages through intellectual property policy-derived monopolies, again aided and abetted by their governments and international trade agreements such as TRIPS (Abbott, 1998; Barton, 2001; Reichman, 1996/97). "The monopoly rights granted by IPRs were regarded as an instrument to avoid further catching-up based on imitative paths of industrialization, that is, as a tool to freeze the comparative advantages that had so far ensured U.S. technological supremacy" (Correa, 2000).

However, are IPRs and MNEs the instruments of *knowledge dependency* or *knowledge development*?

Effective market economies encourage the creation of private business enterprises and force them to innovate or perish by establishing competitive marketplaces in which "the prime weapon of competition is not price but innovation" (Baumol, 2002:ix). Firms exist to organize for the purpose of innovation and they find their marketplace advantages in doing it better than their competitors (Conner and Prahalad, 1996; Grant, 1996). Measured by technological indicators such as R&D expenditures and patents, MNEs based in the North dominate innovation and own much of the world stock of technology (Patel and Pavitt, 1991). What these firms have is technology and organizational know-how with respect to product R&D, process R&D, operations and supply-

chain logistics, and distribution and marketing (Kogut and Zander, 1992). What these firms do, their activities of foreign direct investment, licensing and collaborative relationships, and trade, is critical to technology transfer and economic growth in the world economy (Kogut and Zander, 1996).

International trade in goods and services is a fundamental mechanism in cross-border technology transfer; indeed, it may be thought of as international trade in information. Economic growth rates have long been historically higher in the North than in the South because of the North's more rapid rates of technology and knowledge acquisition and diffusion and much higher rates of international trade among the countries of the North means that the economic growth gaps grow. International trade, international collaborative relationships, and foreign direct investment are closely interrelated and complementary. A study that matches patent citation data with trade data supports the proposition that trade flows encourage knowledge flows (Sjoholm, 1996). Perhaps one-half of U.S. and even more of European productivity growth derives from foreign technology (Eaton and Kortum, 1997) acquired through trade, license, and direct investment (including joint-equity venture and wholly-owned subsidiary). It turns out that the gains from free trade and open investment are much more than efficient resource use and improved consumer welfare; they are technology transfers and knowledge spillovers and enhanced economic growth.

Several studies suggest that these patterns of technology and knowledge acquisition and diffusion likely hold for developing countries as well. In general, trade between North and South contributes to innovative capacities in the South (Krugman, 1979). A World Bank study finds that, comparing the East Asian countries with the countries of Latin America, the Asian countries show larger flows of trade, foreign direct investment, and licensing behavior and suggests that this provides possible reasons for their relatively stronger technological growth (Dahlman, 1994). Another World Bank study, of 77 developing countries done over 20 years, finds that when a developing country's productivity is larger the greater is its foreign R&D investment, the more open it is to trade with the industrial countries, and the more educated is its labor force (Coe, Helpman, and Hoffmeister, 1997). Another study similarly finds that trade, license, and direct investment activities of MNEs decisively contribute technology and managerial know-how to developing countries (Pack and Saggi, 1997).

Weak IPRs discourage precisely the kind of technology-intensive, organizational know-how-diffusing activities of business enterprises based in the North, which are most desired by the up-and-coming business enterprises in the developing and transitioning countries in the South and the East. In the late 1980s and early 1990s, while TRIPS negotiations were being conducted in the Uruguay Round, research sponsored by international governmental organizations started to demonstrate with systematically gathered evidence what anecdotal evidence had been saying for years: weak intellectual property protection discourages foreign direct investment in certain industry sectors,

especially pharmaceuticals, fine (including agricultural) chemicals, and information technologies. An UNCTAD study (1986) found that direct investment in new technology areas such as computer software, semiconductors, and biotechnology was influenced by IPRs. An OECD study (1987) found weak IPRs to be significant barriers to international technology licensing. A study by UNCTNC (1989) found that weak IPRs reduced computer software direct investment; a study by UNCTNC (1990) found that weak IPRs reduced pharmaceutical investment. The World Bank has through the years conducted some important research regarding IP, trade, and direct investment. Survey research by the Bank's IFC found that, with variations by sector, country, and technology, at least 25% of American, German, and Japanese high-tech firms refused to direct invest or joint venture in developing countries with weak IPR (Mansfield, 1995) and their later study confirmed with actual FDI data the survey findings (Lee and Mansfield, 1996). An Institute for International Economics study of World Bank data concluded that weak IPRs reduce flows of all these commercial activities, regardless of levels of national economic development (Maskus, 2000).

Weak IP regimes create appropriability problems for holders of technology and managerial know-how (Teece, 1986). A patent provides incentives to innovate technologies under circumstances when the costs of new product and process innovation are high while the costs of product imitation (or out-right theft) are low, a circumstance in law and economics known as the appropriability problem (Kitch, 1977; Dam, 1994). Invention is expensive and costs must be recouped if the R&D investment is to take place. If others can appropriate the innovation, calling it their own without having made the investment of time, energy, and resources, then a potential innovator may determine that the regular incentives of market opportunity are insufficient to tolerate a free-riding competitor. Government intervenes by providing rights of patent to the inventor.

The international treaty regarding industrial property, the Paris Convention, since its origins in the 19th century obligated national treatment but not minimum patent protection standards. The Paris Convention as well as most other intellectual property agreements are administered by the World Intellectual Property Organization, an agency of the United Nations. The 1994 GATT Agreement regarding Trade-Related Aspects of Intellectual Property Rights, the so-called TRIPS Agreement, establishes minimum standards of intellectual property protection under the law and authority of the WTO.

TRIPS obligates WTO members to provide for product and process patents, that is, exclusive rights to make, use, sell, import, assign or transfer by license, for a minimum 20-year patent term "in all fields of technology." TRIPS also establishes public international law obligations regarding trade secrets, plant variety protections, semiconductor mask technologies, industrial designs, and trademarks. Many developing country policymakers maintain that they agreed to TRIPS reluctantly and only because it was "linkage bargain" deal associated with

the creation of the WTO and reformed international trade dispute settlement procedures. Opposition notwithstanding, since the agreement establishing the WTO requires member states to accept all WTO agreements, most developing countries are or will be over time party to the TRIPS Agreement. However, TRIPS includes the important caveat that middle-level developing countries were to be given 5-year implementation periods and least-developed countries were to be given 10-year implementation periods in addition to the 1-year period provided to WTO members in general. These implementation periods have subsequently been extended by the Doha Declaration of ministers at the WTO (Charnovitz, 2002).

Nevertheless, despite the widespread opposition to TRIPS and to IPRs among developing country policymakers and despite the appeal of the knowledge dependency thesis, IPRs promote technology transfer and managerial know-how flows by encouraging MNE trade and foreign direct investment. The knowledge dependency thesis, like the trade dependency thesis before it, misunderstands how commercial organizational capacities and economies are built through knowledge acquisition and diffusion. Effective IPRs are vital tools of knowledge development.

Intellectual Property Rights Contact Listings

Asia & Oceania

Australian Department of Foreign Affairs and Trade

Type of Organization: Government Ministry

Area: Economics and Business

Description:

The Department of Foreign Affairs and Trade aims to advance the interests of Australia and Australians internationally. Its goal is to enhance Australia's security, contribute to growth in Australia's economy, employment and standard of living, assist Australian travelers and Australians overseas, strengthen global cooperation in ways that advance Australia's interests, and foster public understanding of Australia's foreign and trade policy and project a positive image of Australia internationally.

Address:

Australian Department of Foreign Affairs and Trade

R.G. Casey Building

John McEwen Crescent

Barton, ACT, 0221 AUSTRALIA

Phone: +61 2 6261 1111

Fax: +61 2 6261 3111

Website: <http://www.dfat.gov.au/>

Chinese Ministry of Commerce (MOFCOM)

Type of Organization: Government Ministry

Area: Economics and Business

Description:

The Chinese Ministry of Commerce (MOFCOM) formulates and enforces trade in technology policies and regulations as well as policies encouraging the export of technology. It also regulates the import of technology and equipment and international bidding, controls the export of technology under state export restriction and the export and re-export of imported technology. In addition, MOFCOM drafts and implements state export control policies and issue nonproliferation-related export licenses.

Address:

No.2 Dong Chang'an Avenue

Beijing CHINA

Contact Person: Mr. Jijian Lu - Director, Department of Science and Technology

Phone: 86-10-65197357

Fax: 86-10-65197926

Email: dstdiv6@moftec.gov.cn

Website: <http://www.mofcom.gov.cn/>

Chinese Ministry of Science and Technology

Type of Organization: Government Ministry

Area: Science and Technology Policy

Description:

The Ministry of Science and Technology (MOST) is the central government agency in China responsible for the nation's science and technology activities.

Address:

15 B. Fuxing Road

Beijing 100862 CHINA

Contact Person: Mr. Xin Li - Program Officer, Department of International Cooperation

Phone: 86-10-68512648

Fax: 86-10-68512594

Email: lix@mail.most.gov.cn

Website: <http://www.most.gov.cn/>

Intellectual Property Office – Business Services Branch, New Zealand Ministry of Economic Development

Type of Organization: Government Agency

Area: Intellectual Property Rights

Address:

Intellectual Property Office

Ministry of Economic Development

33 Bowen Street

PO Box 1473

Wellington NEW ZEALAND

Phone: +64-4-472 0030

Fax: +64-4-473 4638

Email: info@med.govt.nz

Website: <http://www.iponz.govt.nz/>

Japanese Ministry of Economy, Trade and Industry

Type of Organization: Government Agency

Area: Economics and Business

Contact Person: Hiroshi Seto - Director, Industrial Science Technology Policy and Environment Bureau

Phone: +81-3-3501-1619

Fax: +81-3-3501-6942

Email: tateishi-hiroshi@meti.go.jp

Website: <http://www.meti.go.jp/english/index.html>

Europe

European Communities Trademark Association

Type of Organization: Professional Association

Area:

Description:

ECTA acts as an informed spokesman on all problems relating to the protection and use of trade marks and industrial designs in the European Union and has established close links with the OHIM - Office for Harmonization in the Internal Market (Trade Marks and Designs) located in Alicante (Spain), as well as with the World Intellectual Property Organization and other non-governmental organizations in the intellectual property field.

Address:

ECTA Secretariat

Bisschoppenhoflaan 286

Box 5

Deurne-Antwerpen B-2100 BELGIUM

Phone: 32/3-326 47 23

Fax: 32/3-326 76 13

Email: ecta@ecta.org

Website: <http://www.ecta.org/>

European Patent Office (EPO)

Type of Organization: Inter-governmental body

Area: Economics & Business

Description:

The European Patent Office (EPO) grants European patents for the contracting states to the European Patent Convention (EPC), which was signed in Munich on 5 October 1973 and entered into force on 7 October 1977. It is the executive arm of the European Patent Organization, an intergovernmental body set up under the EPC, whose members are the EPC contracting states. The mission of the EPO is to support innovation, competitiveness and economic growth for the benefit of the citizens of Europe. Its task is to grant European patents for inventions, on the basis of a centralized procedure. By filing a single application in one of the three official languages (English, French and German) it is possible to obtain patent protection in some or all of the EPC contracting states.

Address:

European Patent Office (EPO)

D-80298 München

Erhardtstr. 27

Munich D-80331 GERMANY

Phone: (+49-89) 2399-0

Fax: (+49-89) 2399-4560

Website: <http://www.european-patent-office.org/>

IPR Help desk

Type of Organization: European Commission Project

Area: Intellectual Property Rights

Description:

The Intellectual Property Rights Help desk is the first line assistance providing support for current and potential EU-RTD contractors with Intellectual Property issues. Established by DG Enterprise in 1998, the IPR-Help desk is a free service currently delivered as an accompanying measure by a consortium of partners from Belgium, Germany, Spain and the United Kingdom. The main objectives of the current phase of the IPR-Helpdesk service are to: provide first line IP related assistance to current and potential EU-RTD contractors; raise awareness of the importance of protecting and exploiting Europe's IPR assets. Special attention is given to developments arising from EU-funded R&D projects under FP6 and the European Research Area initiatives of the European Commission; assist European researchers in such projects with IP issues, as well as potential future applicants to EU-funded research programs; support such researchers in understanding how, where and why to access the assistance necessary to register, protect and exploit their IPR.

Address:

President Building
106 Avenue Louise
Brussels B-1050 BELGIUM

Phone: + 32 2 649 53 33

Fax: + 32 2 647 59 34

Email: ipr-helpdesk@ua.es

Website: www.ipr-helpdesk.org

The International Association for the Protection of Intellectual Property (AIPPI)

Type of Organization: International Organization

Area: Intellectual Property

Description:

The International Association for the Protection of Intellectual Property (AIPPI) is the world's leading international organization dedicated to the development and improvement of intellectual property. It currently has over 8000 Members representing more than 100 countries. The objective of AIPPI is to improve and promote the protection of intellectual property on both an international and national basis. It pursues this objective by working for the development, expansion and improvement of international and regional treaties and agreements and also of national laws relating to intellectual property. It operates by conducting studies of existing national laws and proposes measures to achieve harmonization of these laws on an international basis.

Address:

AIPPI General Secretariat
Tödistrasse 16
P.O. Box
Zurich 8027 SWITZERLAND

Phone: +41 1 280 58 80
Fax: +41 1 280 58 85
Email: mail@aippi.org
Website: <http://www.aippi.org/>

Middle East

Arab Society for Intellectual Property (ASIP)

Description:

The Arab Society for Intellectual Property (ASIP) was established in Munich, Germany as a private Arab regional society. It seeks to encourage scientific research in the field of intellectual property as well as to encourage scientific research and professional training related to international new developments in the field of intellectual property.

Contact Person: Mohammad. J. Shalabi - Society Manager

Email: info@aspip.org

Website: <http://www.aspip.org/>

Abu-Ghazaleh Intellectual Property (AGIP)

Description:

Abu-Ghazaleh Intellectual Property (AGIP) promotes the importance of IP protection throughout the Arab countries. AGIP provides assistance and support to governmental committees and officials charged with revising and drafting new laws and regulations for the enforcement of intellectual property rights. It aims to ensure adequate methods of protection for intellectual property rights.

Address:

AGIP

P.O. Box: 921100

Amman 11192 JORDAN

Contact Person: Mr. Charles Shaban

Phone: (962-6) 5 100 900

Fax: (962-6) 5 100 901

Email: agip@tagi.com

Website: <http://www.agip.com/>

Jordanian Intellectual Property Association

Type of Organization: Non-governmental organization

Area: Intellectual Property

Description:

The Jordanian Intellectual Property Association (JIPA) is a voluntary non-profit organization established in 1998 to protect intellectual creativity and to enhance its outcome in Jordan so that the country can enhance its cultural and economic status.

Address:

JIPA
Al Madena Al Munawra St.
Amman JORDAN
Contact Person: Rana Diab - Executive Director
Phone: 06 551 5007, 06 553 9155
Fax: 06 551 5007
Email: jipa@nets.com.jo
Website: <http://www.taleemi.net/jipa/>

Licensing Executives Society - Arab Countries (LESARAB)

Type of Organization: Professional Association

Area: Technology Development and Transfer

Description:

The Licensing Executives Society - Arab Countries is a member of Licensing Executives Society International (LESI), which has a worldwide membership of over 7,500 members representing 60 countries. It is a professional society engaged in the development, education and transfer of technology.

Address:

LESARAB

P.O. Box 921100

Amman 11192 JORDAN

Contact Person: Mr. Khaled Abu Osbeh - General Secretary

Fax: (962-6) 566 4372

Email: les@lesarab.org

Website: <http://www.lesarab.org/>

Patent Office of the Cooperation Council for the Arab States of the Gulf (GCC Patent Office)

Type of Organization: Regional organization

Area: Intellectual Property Rights

Description:

The GCC Patent Office, among other activities, encourages scientific and technical research, facilitates movement of technology, and boosts economic growth in the Gulf region. It also activates trade and industry markets by introducing quality products as well as contributes to the industrial and agronomic growth in the region publishing creative, innovative, and inventive ideas and securing their protection. Finally, the GCC Patent Office attracts foreign investment to the region by offering property right protection for foreign investors.

Address:

GCC Patent Office

P O Box 340227

Riyadh 11333 SAUDI ARABIA

Phone: (9661) 482 9378, 482 0136

Fax: (9661) 482 9600

Website: <http://www.gulf-patent-office.org.sa/>

Talal Abu-Ghazaleh Organization (TAG Organization)

Type of Organization: Professional Service Firm

Area: Intellectual Property Rights (IPR), Information Technologies (IT)

Description:

Talal Abu-Ghazaleh Organization is the largest Arab group of professional service firms in the fields of accounting, management consulting, training, intellectual property, legal services, information technology, capacity building, credit information and legal translation.

Address:

TAG Organization

PO Box: 921100

Amman 11192 JORDAN

Phone: (962-6) 5 100 900

Fax: (962-6) 569 6284

Email: tagco@tagi.com

Website: <http://www.tagi.com/>

North America

American Intellectual Property Law Association (AIPLA)

Type of Organization: Professional Association

Area: Intellectual Property Rights

Description:

AIPLA was formed in 1897 to maintain a high standard of professional ethics, to aid in the improvement in laws relating to intellectual property and in their proper interpretation by the courts, and to provide legal education to the public and to its members on intellectual property issues. The American Intellectual Property Law Association (AIPLA) is a national bar association constituted primarily of lawyers in private and corporate practice, in government service, and in the academic community, with more than 15,000 members. The AIPLA represents a wide and diverse spectrum of individuals, companies and institutions involved directly or indirectly in the practice of patent, trademark, copyright, and unfair competition law, as well as other fields of law affecting intellectual property. AIPLA members represent both owners and users of intellectual property.

Address:

2001 Jefferson Davis Highway

Suite 203

Arlington, VA 22202 USA

Phone: (703) 415-0780

Fax: (703) 415-0786

Email: aipla@aipla.org

Website: <http://www.aipla.org/>

International Intellectual Property Institute (IPI)

Type of Organization: Non-profit organization

Area: Intellectual Property

Description:

The International Intellectual Property Institute (IPI) is an international development organization and think tank dedicated to promoting sustainable economic growth in all countries through the use of healthy intellectual property systems. As intellectual assets and creativity increasingly drive economies, the Institute is empowering policymakers, creators and businesspeople with the tools to thrive in the global, knowledge-based economy. We are working to build constituencies, which understand that the knowledge capital of a nation is a critical source for investment, technology transfer, improved health and the creation of national wealth.

Address:

906 Pennsylvania Ave., SE
Washington, DC 20003 USA

Contact Person: Eric Garduño - Projects Coordinator

Email: Egarduno@iipi.org

Phone: (202) 544-6610

Email: info@iipi.org

Website: <http://www.iipi.org/>

Licensing Executives Society International (LESI)

Type of Organization:

Area: Intellectual Property

Description:

The Licensing Executives Society International (LESI) is an association of 30 national and regional societies, each composed of men and women who have an interest in the transfer of technology, or licensing of intellectual property rights - from technical know how and patented inventions to software, copyright and trade marks.

Address:

LES USA and Canada, Inc
1800 Diagonal Road
Suite 280
Alexandria VA 22314-2840 USA

Contact Person: Ken Schoppmann

Phone: 703-836-3106

Fax: 703-836-3106

Email: admin@lesi.org

Website: <http://lesi.org/>

United States Council for International Business (USCIB)

Type of Organization: Business Association

Area: Economics and Business

Description:

Founded in 1945 to promote free trade and help represent business in the newly formed United Nations, USCIB has built a global network of industry affiliations and a reputation for reliable policy advice. This network enables USCIB members to bring their collective views to bear on regulatory issues and business practices around the world.

Address:

USCIB
1212 Avenue of the Americas
New York, NY 10036 USA

Contact Person: Kimberly Halamar - Manager, European Union, China and Economies in Transition

Phone: 212-703-5091

Fax: 212-575-0327

Email: khalamar@uscib.org

Website: <http://www.uscib.org/>

United States Patent and Trademark Office - U.S. Department of Commerce

Type of Organization: Governmental Agency

Area: Patents and Trademarks

Description:

The United States Patent and Trademark Office (USPTO) promotes the progress of science and the useful arts by securing for limited times to inventors the exclusive right to their respective discoveries. The USPTO is a federal agency in the Department of Commerce.

Address:

U.S. Patent and Trademark Office
USPTO Contact Center (UCC)
Crystal Plaza 3, Room 2C02
P.O. Box 1450
Alexandria, VA 22313-1450 USA

Contact Person: Linda Lourie - Attorney-Advisor, Office of International Relations

Phone: 703-305-9300

Fax: 703-305-8885

Email: Linda.Lourie@uspto.gov

Website: <http://www.uspto.gov>

For additional listings of industrial property offices from around the world, please refer to the "Useful Links" website from the GCC Patent Office. It is accessible from the following website:

http://www.gulf-patent-office.org.sa/about_GCCframe.htm

For additional listings on public organizations related to IPR and licensing, or to view additional Licensing Executives Society International (LESI) Chapters from around the world, please refer to the following website from LESI. It contains a

search engine for public organizations as well as LESI Chapters and is available at:

<http://www.lesi.org/level1/links-fr.htm>

For additional websites on Intellectual Property, please refer to the “Related Intellectual Property Websites” site from Abu-Ghazaleh Intellectual Property (AGIP). This site contains additional listings for associations, organizations, and institutes related to Intellectual Property. It is available at:

<http://www.agip.com/links.htm>

Laws Relating to the Transfer of U.S. Government Technology by Universities and Small Business Firms

Technology transfer of government-sponsored research to the private sector in the United States is affected by a number of laws and regulations. In particular, there are two laws, which cover technology funded or created by the U.S. Government: the Bayh-Dole and the Federal Technology Transfer Acts. Both laws are supplemented by regulations issued by the Department of Commerce. In a May 2003 report, President Bush's Council of Advisors on Science and Technology concluded that these laws dramatically improved the nation's ability for moving ideas from research and development to the marketplace and into commerce.

Government Contractor Inventions

The Bayh-Dole Act, Public Law 96-517, has been in effect since 1980 and is generally regarded as successfully stimulating the commercialization of technology created by universities and small business firms with funding from the U.S. Government. Bayh-Dole is not the official name of the law but a popular one, which derives its name from its principal sponsors in the Senate: Birch Bayh and Robert Dole.

The law allows universities and small businesses to own their inventions made with government funds. Previously, the Government owned those inventions although the contractors could request rights. The handling of inventions on a case-by-case basis inhibited the commercialization of federally funded inventions because of the delay in submitting and approving such requests.

One of the reasons for the new law was that according to a study by the Harbridge House, Inc. in 1968, the commercialization rate for inventions by universities was much higher (25%) than by the Government (5%). Also, by giving universities the first option in their inventions, universities could enter into research agreements with private industry without worrying about conflict of rights with federal funding. Within a year of the passage of Bayh-Dole, several universities entered into million dollar multi-year research arrangements with large companies. Of course, the rights in inventions would not be as important without the substantial amount of federal funds to basic research (approximately \$50 billion annually).

Bayh-Dole established a uniform Government patent policy and was the first law, which gave contractors rights to their inventions. The Department of Energy, its predecessor agencies and the National Aeronautics and Space

Administration (NASA) took title to their contractor inventions but permitted waiver on a class or individual basis. Other agencies operated under policies signed by Presidents Kennedy and Nixon in 1963 and 1971, which allowed Department of Defense (DoD) contractors to own their inventions but not contractors to the Department of Health and Human Services (HHS). Although the presidential patent policies were both termed "uniform," they resulted in different practices throughout government and was dependent on agency missions.

The policy for university inventions started to evolve prior to Bayh-Dole when HHS in 1968 and the Nation Science Foundation (NSF) in 1973 entered into Institutional Patent Agreements (IPA's) which allowed universities that had a technology transfer program to own their inventions. Some of the restrictions imposed by IPA's were later codified into Bayh-Dole, such as the prohibition on assignment of inventions and the length of any exclusive license term. The limitation on the exclusive term was removed in 1984.

There are other restrictions in Bayh-Dole, which impose duties on university and small business contractors. For example, they are required to give the Government a worldwide paid-up license in their inventions. This does not mean the Government gets to use the invention for free but rather it does not have to pay royalties when buying from a patent owner's licensee. The Government also has the right to "march-in" or requires the contractor to license others if it is not commercializing the invention within a reasonable time or for health and safety reasons. This right is very controversial but has never been exercised although one agency conducted an investigation into whether march-in should be initiated. Bayh-Dole imposes another requirement that any invention exclusively licensed in the U.S. must be substantially manufactured in the United States. Although it is not clear what "substantial manufacture" means, the domestic manufacture requirement has not posed any major problem. It is noted that the law allows the funding federal agency to waive the requirement under certain circumstances and a few agencies have granted such waivers.

In February 1983, President Reagan extended the rights in Bayh-Dole to all contractors and this was recognized in the 1984 amendment to Bayh-Dole and later in Executive Order 12591 in 1987. The patent rights are set forth in the Department of Commerce regulation in 37 CFR Part 401 and in Parts 27 and 52 of the Federal Acquisition Regulation. However, the Reagan policy did not affect large contractors to NASA and Energy because the Executive Order did not amend their statutes. Accordingly, those contractors had to request rights under the agency waiver procedures.

The number of inventions reported, patent applications filed, patents obtained, licenses granted and royalties received increased dramatically over the years following passage of the Bayh-Dole legislation. At the beginning, most universities did not have an in-house patent program but used companies like the

Research Corporation (RC) to market their inventions. Because RC did not charge for its services but split the royalties with the universities, it had to be very selective (about 5%) in what inventions it patented. As a result, in the early 1980s, many university inventions were not commercialized or turned back to the inventing professor. Some professors were, of course, very interested in their inventions but generally had little experience and resources for commercialization.

Although Bayh-Dole contributed to the increase in the commercialization of federally funded inventions, there were two other events, which also played a role. One was a Supreme Court decision in 1980 holding that microorganisms were patentable subject matter. This facilitated the patenting and licensing of biotechnology. A great deal of university inventions, producing millions of dollars in royalties, relate to biotechnology. The other was the creation of the Court of Appeals for the Federal Circuit in 1982. This court instead of the regional circuit courts, where previously many patents were found to be invalid, hears appeals from patent suits. A single appeals court added to the stability of patent law since review by the Supreme Court was rare.

Government Employee Inventions

As part of Bayh-Dole, there was authority for the federal government to patent and license their inventions made in Government labs by Government employees. Prior to this law, except for NASA and Energy which had individual statutory authority, there was only a regulation which authorized licensing and this was successfully challenged in the D.C. district court in 1974 although it was overruled the next year by the Circuit Court on procedural grounds. The regulation now appears in 37 CFR Part 404

The growth in the number of licenses by the Government was gradual until the Federal Technology Transfer Act of 1986, Public Law 99-502, which allowed agencies to keep their royalties instead of sending them to the U.S. Treasury. This Act also required the agencies to share at least 15% with the inventors who are allowed to keep the first \$2,000 although there is an annual total cap of \$150,000 for all inventions per employee. In contrast, Bayh-Dole requires universities to share royalties but does not specify an amount or have a cap. Most universities share 33% with their inventors and agencies generally 25%. There is also a domestic manufacturing requirement for licensing Government-owned inventions, which applies to both exclusive and nonexclusive licenses. The Bayh-Dole Act provides the federal agencies with unique authority by allowing their licensees to enforce the patent. This is important because the Department of Justice, which is the only agency authorized to represent the U.S. Government in court, has limited staff.

Ownership in Government employee inventions is determined by the employing agency in accordance with Executive Order 10096 signed by Harry Truman in 1950 and 37 CFR Part 501, a Department of Commerce regulation. The constitutionality of the Executive Order has been sustained by two circuit courts. The focus of the determination is on the relationship of the invention to the employees' duties and if Government resources were used in making the invention. If the employee does not like the agency determination because of the Government's rights of ownership or license, he or she can appeal to the Technology Administration of the Department of Commerce. There are usually only several appeals a year.

Statistics

The Department of Commerce and the Association of University Technology Managers (AUTM) each year publish reports on technology transfer activities for the government laboratories and the universities, respectively. These statistics for federal laboratories and universities provide evidence to the effectiveness of U.S. technology transfer laws.

For 2001 with the amount of research funds being comparable, there were reported 4,000 and 11,400 inventions; 1,600 and 3,200 patents; 580 and 3,300 new licenses; and \$71 million and over \$827 million in license income. Thus, universities make almost three times as many inventions, get twice as many patents and make more than ten times as much income than federal laboratories. The numbers for universities as reported in the 2002 AUTM survey showed a continuing increase: 14.8% in inventions, 13.6% in patent applications, 15.2% in licenses and 11.9% in license income. It should be noted that even with the dramatic increase in royalties over the years, only a small percentage of universities actually recover more than their expenses. In addition, about 60% of the total Government annual royalties come from NIH, which indicates the importance of biotechnology.

An International Model

In 2002, the Organization for Economic Co-operation and Development (OECD) conducted a study of government inventions throughout the world. Thirteen countries participated including Australia, Belgium, Denmark, Germany, Italy, Japan, South Korea, the Netherlands, Norway, Russia, Spain, Switzerland and the United States. The results of the study were published in a 2003 report entitled *Turning Science into Business: Patenting and Licensing at Public Research Organizations*. The multinational group discussed the value of the Bayh-Dole Act. Japan and South Korea, as well as a number of European countries, have adopted laws like Bayh-Dole. These countries' adoption of

similar legislation to Bayh-Dole reiterates the need for to have effective patenting, licensing and enforcement legislation regarding technology transfer.

Intellectual Property Rights (IPR) and International Technology Transfer

Human capital and mobile labor markets have long been understood to be critical factors in innovation and economic growth. Nevertheless, it is the institutional, organizational characteristics of human capital that turn innovative potential into actuality. Science and technology are valued more by some religions, philosophies, and ideologies than others and it is the social organization of these ideas which pass on to the successive generations the commitment to the values of autonomy, diversity, and experiment characteristic of innovative societies (Skolnikoff, 1993). Science progresses or retards depending on the institutions—education and research organizations, publication outlets, and societal value of scientists (Huff, 1993).

A world technological leader during Europe “Dark Ages,” China from the advent of the Ming Dynasty in the 14th century declined technologically because education was organized for the examination system, organizational structures were strictly hierarchical, and Confucian thought valued social harmony over deliberative debate (Baum, 1982). A world scientific center from the 8th to the 14th centuries, the Arab Middle East declined scientifically because education was loosely organized, professional networks of philosopher-scientists were discouraged by Koranic law, and Islamic thought valued interpretation of dogma over human reason and the questioning of authority (Huff, 1993).

By contrast, science advanced in Europe because of the establishment of royal societies and universities, scholarly journals, individual and group autonomy conferred by Church-state rivalry, and the re-emphasized value placed on observation and experiment (Cohen, 1994). Science and technology grew together in Western Europe and North America, the outcome of markets, culture, government, and societal institutions (Cardwell, 1995). The German chemical industry eclipsed that of the French in the nineteenth century in part due to research in German universities; the American chemical makers in the 20th century matched—and ultimately surpassed—the German companies due to the establishment of chemical engineering departments at MIT and the universities at Delaware, Illinois, Michigan, Minnesota, Pennsylvania, and Wisconsin (Mowery and Rosenberg, 1998).

That the Germans have largely been unable in our contemporary era to leverage science and technology research conducted at their world-class Max Planck Institutes reveals fundamental problems in German institutions. The ideology of “social partnership” that characterizes so much of German institutional life does not extend to its universities and research centers and this is how Max Planck himself would have wanted it: He favored pure science for its

own sake and discouraged cooperation with industry and commercialization of technologies (Siebert and Stolpe, 2002).

American universities have become the intellectual centers for high-technology knowledge clusters in certain geographic spaces, the Silicon Valley phenomenon. Before there was Silicon Valley, there was MIT and the beginning of the Cambridge/Boston Route 128 high-tech corridor (Saxenian, 1994). MIT's engineering school dean encouraged government grants and partnerships with industry and thereby established the MIT Model for the American research university. The Stanford Model encourages not just big-firm collaborations (as did the MIT Model) but small-firm, low-budget, project-based collaborations with academia, start-up enterprises, very mobile labor markets, and informal know-how transfer through dense social networks (Saxenian, 1994). The universities contribute not only the innovative ideas but also the human talent, including both the students and the professors, who advise companies, take leaves of absence to start-up or work for companies, or leave academia entirely. Small high-innovation firms especially benefit from the technology and useful knowledge spillovers provided by the local social networks (Almeida and Kogut, 1997). Foreign high-tech companies deliberately seek these geographic knowledge clusters for direct investment and joint venture (Almeida, 1996).

Social networks—it has been called social capital—are key assets for organizations and individuals in technology clusters, though they are difficult to measure and value quantitatively (Lin, 2001). People who bridge across particular networks or communities can be especially valuable to organizations (Granovetter, 1982, 1985). “Exchange” under this type of economic ordering, though still transactional and utility maximizing, is relational and trust-oriented (Lin, 2001). Networks of people that cross-conventional organizational boundaries may be becoming a dominant organizational structure in the U.S. marketplace, challenging the vertically and horizontally integrated firm, and its logic may lead the rest of the world in a similar direction (DiMaggio, 2001).

Nevertheless, the business enterprise remains the preeminent organizational form in the contemporary economy. Firms may be thought of as know-how institutions, but they are much more than depositories of discrete facts. Firms are deeply embedded with technology and practical knowledge, possessing the organizational capabilities to turn information and know-how into commercially viable products and services. Economists have begun to theorize the very existence of the firm as due to its information processing capabilities (Demsetz, 1988). Business enterprises exist because they organize knowledge better than their competitors (Kogut and Zander, 1992; Conner and Prahalad, 1996; Grant, 1996). “At the heart of this theory is the idea that the primary role of the firm, and the essence of organizational capability, is the *integration of knowledge*, ...the flexible integration across multiple knowledge bases” (Grant, 1996:375). The collective knowledge, know-how, and learning maintained by the

organization, its so-called “core competency,” is difficult for a competing organization to replicate (Prahalad and Hamel, 1990).

Technology may be made *explicit*, that is, it may be codified. What was “known” was for much of human history passed down and around orally, a rather inefficient communication technique. “All this changed with a revolution in a small town in southern Germany. The revolution transformed knowledge from being idiosyncratic and local to being standardized and universal” (Pysenson, 1999:212). By 1500 some 8 million books had been printed and the technology would later be employed to distribute treatises, manuals, guidebooks, and reference works. Technology has come to be disseminated through journal articles, patent claims, and blueprints. Benjamin Franklin’s lending-library has, however, finally been eclipsed in our time by databases, web-sites, and the Internet in the institutionalization of knowledge dissemination.

Yet, as important as explicit knowledge is economically, the technology that matters most in the contemporary world economy is *tacit* knowledge (Polyani, 1966). Tacit know-how and know-why is not written down anywhere but is found in the “heads” of people. Tacit knowledge—contextual, content-laden, and data-rich—becomes embedded in complex, organizational routines that define organizational capabilities and evolution (Nelson and Winter, 1982). “Tacit knowledge is closely associated with production tasks, and raises the more interesting and complex questions regarding its transfer both within and between organizations” (Grant, 1996:377). Tacit knowledge provides the “cutting-edge” competitive advantage under economic circumstances of quick and inexpensive access to explicit technology and codified practical knowledge.

Tacit knowledge explains why organizations and social networks matter so much to economic success. Tacit knowledge also explains why direct investment, joint ventures, licensing, and trade matter so much to international technology transfer.

Silicon Valley and the Boston Route 128 Corridor are the most famous technology clusters, but other economically important technology clusters in the United States include Seattle (the University of Washington), San Diego (University of California at San Diego, Salk Institute), Austin (University of Texas), Atlanta (Emory University Georgia Tech University, University of Georgia), Research Triangle, North Carolina (Duke University, University of North Carolina, Chapel Hill, North Carolina State University), Northern Virginia/Southern Maryland (Virginia Tech University, National Institutes of Health, University of Maryland, Johns Hopkins University), and New York City (Columbia University, New York University, Rockefeller University).

Technology Transfer Contact Listings

Technology Transfer Legal Organizations

European Patent Office (EPO)

Type of Organization:

Area: Patents and Trademarks

Address:

European Patent Office (EPO)

D-80298 München

Erhardtstr. 27

München D-80331 GERMANY

Phone: +49-89 2399-0

Fax: +49-89 2399-4560

Website: www.epo.org

Jordanian Intellectual Property Association

Type of Organization: Non-governmental organization

Area: Intellectual Property

Description:

The Jordanian Intellectual Property Association (JIPA) is a voluntary non-profit organization established in 1998 to protect intellectual creativity and to enhance its outcome in Jordan so that the country can enhance its cultural and economic status.

Address:

JIPA

Al Madena Al Munawra St.

Amman JORDAN

Contact Person: Rana Diab - Executive Director

Phone: 06 551 5007, 06 553 9155

Fax: 06 551 5007

Email: jipa@nets.com.jo

Website: <http://www.taleemi.net/jipa/>

Office of Technology Policy -Technology Administration – U.S. Department of Commerce

Type of Organization: Government agency

Area: Science and Technology Policy

Description:

The Technology Administration's Office of Technology Policy (TA/OTP) has a dynamic selection of initiatives to support its mission and goals. OTP's programs involve promoting innovation, encouraging entrepreneurship and tech-led economic development, improving infrastructure, as well as empowering people through education and technology.

Address:

Office of Technology Policy
U.S. Department of Commerce
1401 Constitution Avenue, N.W.
Washington, D.C. 20230 USA
Contact Person: John H. Raubitschek – Patent Counsel
Phone: 202-482-8010
Fax: 202-482-0253
Email: Jraubits@doc.gov
Website: <http://www.technology.gov/OTPolicy/default.htm>

United States Patent and Trademark Office - U.S. Department of Commerce

Type of Organization: Governmental Agency

Area: Patents and Trademarks

Description:

The United States Patent and Trademark Office (USPTO) promotes the progress of science and the useful arts by securing for limited times to inventors the exclusive right to their respective discoveries. The USPTO is a federal agency in the Department of Commerce.

Address:

U.S. Patent and Trademark Office
USPTO Contact Center (UCC)
Crystal Plaza 3, Room 2C02
P.O. Box 1450
Alexandria, VA 22313-1450 USA
Contact Person: Linda Lourie - Attorney-Advisor, Office of International Relations
Phone: 703-305-9300
Fax: 703-305-8885
Email: Linda.Lourie@uspto.gov
Website: <http://www.uspto.gov>

World Intellectual Property Rights Organization (WIPO) – United Nations

Type of Organization: International Organization

Area: Intellectual Property Rights

Description:

WIPO is one of the 16 specialized agencies of the United Nations system of organizations. It administers 23 international treaties dealing with different aspects of intellectual property protection. The Organization counts 179 nations as members state.

Address:

WIPO
PO Box 18
CH-1211 Geneva 20 SWITZERLAND
Phone: +41-22 338 9111
Fax: +41-22 733 54 28

Website: <http://www.wipo.int/>

Technology Transfer Organizations

Asia & Oceania

Australian Department of Education, Science and Training

Type of Organization: Government Agency

Area: Scientific Development and Education

Description:

DEST provides national leadership and works in collaboration with the States and Territories, industry, other agencies and the community in support of the Government's objectives. It develops and implements policies to ensure the continuing relevance of education, science and training to contemporary needs and the growing requirement for lifelong learning.

Address:

Department of Education, Science and Training
PO Box 9880

Canberra City 2601 AUSTRALIA

Contact Person: Mr. Stephen Trengove-Jones - Manager, International S&T
Policy and Programs

Phone: +61 2 6240 8972

Fax: +61 2 6123 6067

Email: stephen.trengove-jones@dest.gov.au

Website: <http://www.detya.gov.au/>

Brunei Ministry of Education

Type of Organization: Governmental scientific institution

Area: Scientific Development and Education

Description:

The Ministry of Education seeks to provide education to Brunei citizens through the implementation and improvement of a quality, unique and balanced system of education for the development of perfect individuals who are valuable to their religion, nation and race.

Address:

The Ministry of Education

Old Airport BB3510

Bandar Seri Begawan, BRUNEI DARUSSALAM

Website: <http://www.moe.gov.bn/>

Brunei Ministry of Industry and Primary Resources

Type of Organization: Governmental scientific institution

Area: Economics and Business

Description:

The Ministry of Industry and Primary Resources serves as the focal organization to actively promote, facilitate, and accelerate economic diversification with particular emphasis on the development of productive industries for the well being of Brunei Darussalam. The Ministry also encourages and assists local and foreign entrepreneurs, businessmen and investors to participate in ventures to produce goods and services for export and local markets and to satisfy national food security and employment needs while upholding the principles of sustainable development.

Address:

Policy and Administration Division
Ministry of Industry and Primary Resources
Jalan Menteri Besar
Bandar Seri Begawan BB3910
Negara BRUNEI DARUSSALAM

Contact Person: Dato Haji Abdul Rahman Taib - Minister of Industry and Primary Resources

Phone: 673-02-382822

Fax: 673-02-382807

Website: <http://www.industry.gov.bn/>

Center of the International Cooperation for Computerization (CICC) -
International Information Technology Laboratory (ITL)

Type of Organization: Development Agency

Area: IT Development

Description:

CICC was established in June 1983 to cooperate and assist developing countries in the introduction of computers and information technology, and to promote computerization thereby for their economic and social development.

Address:

Mita 43-Mori Building
15F, 3-13-16 Mita, Minato-ku
Tokyo 108-0073 JAPAN

Contact Person:

Phone: +81-3-5283-0811

Fax: +81-3-5283-0808

Email: info@net.cicc.or.jp

Website: <http://www.cicc.or.jp/>

Chinese Ministry of Commerce (MOFCOM)

Type of Organization: Government Ministry

Area: Economics and Business

Description:

The Chinese Ministry of Commerce (MOFCOM) formulates and enforces trade in technology policies and regulations as well as policies encouraging the export of technology. It also regulates the import of technology and equipment and international bidding, controls the export of technology under state export

restriction and the export and re-export of imported technology. In addition, MOFCOM drafts and implements state export control policies and issue nonproliferation-related export licenses.

Address:

No.2 Dong Chang'an Avenue
Beijing CHINA

Contact Person: Mr. Jijian Lu - Director, Department of Science and Technology

Phone: 86-10-65197357

Fax: 86-10-65197926

Email: dstdiv6@moftec.gov.cn

Website: <http://www.mofcom.gov.cn/>

Chinese Ministry of Science and Technology (MOST)

Type of Organization: Government Ministry

Area: Science and Technology Policy

Description:

The Ministry of Science and Technology (MOST) is the central government agency in China responsible for the nation's science and technology activities.

Address:

15 B. Fuxing Road
Beijing 100862 CHINA

Contact Person: Mr. Xin Li - Program Officer, Department of International Cooperation

Phone: 86-10-68512648

Fax: 86-10-68512594

Email: lix@mail.most.gov.cn

Website: <http://www.most.gov.cn/>

Commerce, Industry, and Technology Bureau

Type of Organization: Government ministry

Area: Science and Technology Policy

Description:

The Commerce, Industry and Technology Bureau fosters a business-friendly environment and attract investment to Hong Kong and looks to maintain Hong Kong's position as the premier digital city and telecommunications hub of Asia. It promotes high-value added, creative and high technology activities in Hong Kong, leveraging on the very strong services and manufacturing sectors in Hong Kong and in the Pearl River Delta (PRD) respectively.

Contact: Communications and Technology Branch

Address:

1/F - 2/F Murray Building
Garden Road Central HONG KONG

Phone: (852) 2189 2222

Fax: (852) 2827 6646

Email: ctbenq@citb.gov.hk

Contact: Commerce and Industry Branch

Address:

Level 29
One Pacific Place
88 Queensway HONG KONG

Phone: (852) 29187500

Fax: (852) 28401621

Email: cibenq@citb.gov.hk

Website: <http://www.info.gov.hk/citb/>

Innovation and Technology Commission

Type of Organization:

Area: Science and Technology Policy

Description:

The Innovation and Technology Commission promotes and supports applied research and development, and technology transfer and application as well as fosters an innovation and technology culture in the community, and promote technological entrepreneurship. This agency also facilitates the provision of infrastructure and development of human resources to support innovation and technology in addition to formulating, developing and implementing the Government's policies, programs and measures to promote innovation and technology.

Address:

20/F Wu Chung House
213 Queen's Road East
Wanchai HONG KONG

Contact Person: Ms Doris Chiu - Senior Executive Officer

Phone: (852) 27372502

Fax: (852) 23750715

Email: dwychiu@itc.gov.hk

Website: <http://www.info.gov.hk/itc/>

Institute of Technology Brunei

Type of Organization: Research and training institution

Area: Scientific Development and Education

Description:

The primary objective of the Institute of Technology Brunei is to cater for a range of interests in technical and commercial education. In order to meet this objective, the Institute continually seeks close links with employers in both the public and private sectors with the purpose of determining their training needs and the appropriateness of the courses provided. Related to this objective is the Institute's goal to train men and women to be professionally competent, inspired and dedicated towards personal growth and service to the nation.

Address:

Institut Teknologi Brunei
P.O. Box 2909
Bandar Seri Begawan BS8611 BRUNEI DARUSSALAM

Contact Person: Dr. Faqir Gul - Head of the School of Engineering
Phone: +673 2461020
Fax: +673 2461035
Email: faqirgul@itb.edu.bn
Website: <http://www.itb.edu.bn/>

Japan External Trade Organization (JETRO)
Type of Organization: Government trade agency
Area: Economic Development
Description:

A worldwide network comprising JETRO Headquarters Tokyo, JETRO Osaka, IDE, and 36 branches throughout Japan and 77 overseas backs JETRO. It helps Japanese enterprises, particularly small and medium-size enterprises, build stronger business ties in ASEAN countries and the rest of East Asia, as well as promotes foreign direct investment in Japan, including greater inflows of capital, technologies, know-how and intellectual assets.

Address:
2-5, Toranomom 2-chome
Minato-ku
Tokyo 105-8466 JAPAN
Phone: + 81-3-3582-5511
Fax: + 81-3-3587-0219
Website: <http://www.jetro.go.jp/top/index.html>

Japanese Ministry of Economy, Trade and Industry
Type of Organization: Government Agency
Area: Economics and Business
Contact Person: Hiroshi Seto - Director, Industrial Science Technology Policy and Environment Bureau
Phone: +81-3-3501-1619
Fax: +81-3-3501-6942
Email: tateishi-hiroshi@meti.go.jp
Website: <http://www.meti.go.jp/english/index.html>

Malaysian Ministry of Science, Technology and Environment (MOSTI)
Type of Organization: Government ministry
Area: Science and Technology Policy
Address:
Kementerian Sains, Teknologi dan Inovasi (MOSTI)
Aras 1-7, Blok C5
Pusat Pentadbiran Kerajaan Persekutuan
62662 Putrajaya, Wilayah Persekutuan MALAYSIA
Contact Person: Mr. Mohd Akbar Mahbat - Director, International Affairs Division
Phone: 60-3-8885 8037
Fax: 60-3-8889 2977

Email: akbar@moste.gov.my

Website: <http://www.moste.gov.my>

New Zealand Ministry of Research, Science and Technology (MoRST)

Type of Organization: Government ministry

Area: Science and Technology Policy

Description:

The Ministry of Research, Science & Technology (MoRST) is a New Zealand government department, which develops research and innovation policies and manages the publicly funded part of the RS&T system on behalf of the Government.

Address:

PO Box 5336

Wellington, NEW ZEALAND

Contact Person: Mr. Mark Holman - Senior Advisor

Phone: +64-4-9172931

Fax: +64-4-4711284

Email: mark.holman@morst.govt.nz

Website: <http://www.morst.govt.nz/>

South Korean Ministry of Science and Technology

Type of Organization: Government ministry

Area: Science and Technology Policy

Description:

The Ministry of Science and Technology (MOST) is provides central direction, leadership, and coordination of all science and technology activities in the country. It also formulates S&T policies, programs, and projects including technology cooperation and atomic energy in support of national development priorities.

Address:

Government Complex-Gwacheon

Gwacheon City, Gyeonggi-Do 427-715 SOUTH KOREA

Contact Person: Dr. Un Woo Lee - Director of Asia, Africa and Multilateral Cooperation Division

Phone: 82-2-5037666/7

Fax: 82-2-5040169

Email: deptc27@most.go.kr

Website: <http://www.most.go.kr/>

The Philippines Department of Science and Technology (DOST)

Type of Organization: Government agency

Area: Science and Technology Policy

Description:

The Department of Science and Technology (DOST) provides central direction, leadership, and coordination of all science and technology activities in the

Philippines as well as formulates S&T policies, programs, and projects in support of national development priorities.

Address:

DOST Bldg.

Gen. Santos Ave.

Bicutan, Taguig, Metro Manila, 1631 PHILIPPINES

Contact: International Technology Cooperation Unit (ITCU)

Phone: (0632) 838-8376

Fax: (0632) 837-8376

Email: ellen@dost.gov.ph

Contact Person: Dr. Maripaz L. Perez – Assistant Secretary for Technology Transfer

Phone: (0632) 837-2071

Fax: (0632) 837-2940

Email: mlp@dost.gov.ph

Contact Person: Dr. Rogelio A. Panlasigui

Phone: (0632) 837-2071

Fax: (0632) 837-2945

Email: ftdp@dost.gov.ph

Website: <http://www.dost.gov.ph/>

Europe

Applied Industrial Research Trading Organisations (AIRTO)

Type of Organization: Association of Technology Companies

Area: Technology Transfer

Description:

Applied Industrial Research Trading Organisations (AIRTO) is the largest community of techno-business consultants and contract research organizations in Europe. AIRTO seeks to encourage technology transfer and exploitation by helping to develop and support government and private sector initiatives. It also works to ensure that small and medium-sized companies as well as larger enterprises can share in the UK's wealth of research and technology expertise.

Address:

AIRTO Ltd.

C/O CCFRA

Station Road

Chipping Campden

Glos. GL55 6LD UNITED KINGDOM

Contact Person: Professor Richard Brook - President

Phone: +44 (0) 1386 842247

Fax: +44 (0) 1386 842010

Email: airto@campden.co.uk

Website: <http://www.airto.co.uk/>

Association of European Science & Technology Transfer Professionals (ASTP)

Type of Organization: Non-profit Association

Area: Technology Transfer

Description:

The purpose of the Association of European Science and Technology Transfer Professionals (ASTP) is to provide hands-on meetings for beginning, as well as experienced Technology Transfer Organizations, to organize a social opportunity for networking and informational exchanges. ASTP organizes meetings with presentations and discussions throughout the year. These meetings are held within Europe and consist of an Annual Conference, in the spring, a two-day Hands-on Course, as well as one-day Workshops on specific subjects.

Address:

ASTP

Koninginnegracht 22

The Hague 2415 AB THE NETHERLANDS

Contact Person: Claar-els van Delft - Secretary of the Board

Phone: +31 70 392 6374

Fax: +31 70 392 6375

Email: secretary@astp.net

Website: www.astp.net

Association for Technology Implementation in Europe (TAFTIE)

Type of Organization: European Technology Network

Area: Science & Technology Policy

Description:

The Association for Technology Implementation in Europe (TAFTIE), is a group of 15 organizations from 14 countries, in which national technological innovation organizations can co-operate with and learn from one another. TAFTIE also assists their customers in forming international partnerships as well as encourages international co-operation between its member organizations.

Address:

TAFTIE

Prisma Consultancy B.V.

Joanne Goede

Gasthuisstraat 34

Heukelum 4161 CC THE NETHERLANDS

Contact Person: Ben Giesen

Phone: +31 70 373 50 00

Fax: +31 70 373 51 00

Email: b.j.m.giesen@senter.nl

Website: www.taftie.org

Austrian Federal Ministry for Education, Science, and Culture

Type of Organization: Governmental scientific institution

Area: Science & Technology Policy

Address:

Federal Ministry for Education, Science and Culture
Minoritenplatz 5
Vienna A –1014 AUSTRIA
Contact Person: Mag. Barbara Weitgruber - Director General for Scientific
Research and International Science Affairs
Phone: +43-1-53 120-0
Fax: +43-1-53 120-3099
Email: ministerium@bmbwk.gv.at
Website: <http://www.bmbwk.gv.at/fremdsprachig/index.xml>

British Office of Science and Technology (OST)

Type of Organization: Governmental agency

Area: Science & Technology Policy

Description:

The Office of Science and Technology (OST) supports science, engineering, and technology and their uses to benefit society and the economy. OST provides advice to Ministers across Government on science issues, as well as improving the flow of people and ideas between the science and engineering base and users. It also sustains and improves the science and engineering base among other tasks.

Address:

Office of Science and Technology

1 Victoria Street

London SW1H 0ET UNITED KINGDOM

Contact Person: Ken Hall - International S&T Relations

Phone: +44-020-72156436

Email: ken.hall@dti.gsi.gov.uk

Website: http://www.ost.gov.uk/index_v4.htm

Czech Ministry of Industry and Trade

Type of Organization: Government Ministry

Area: Economics and Business

Description:

The Ministry of Industry and Trade co-ordinates the foreign trade policy of the Czech Republic in relation to individual states, concludes bilateral and multilateral business and economic contracts including commodity contracts, and executes commercial cooperation with EC, EFTA, GATT and other international organizations and integration groups. It also controls and administers activities associated with license regime application within the sphere of economic relations abroad, investigates the dumping of imported products and takes measures to protect against the import of such products, and controls hall marking and precious metals testing.

Address:

Ministry of Industry and Trade

Na Františku 32

110 15 Prague 1 CZECH REPUBLIC

Contact Person:**Phone:** +420-224-851111**Email:** mpo@mpo.cz**Website:** <http://www.mpo.cz/>

Danish Ministry of Science and Technology Innovation

Type of Organization: Government-affiliated research body**Area:** Science & Technology Policy**Description:**

The Ministry of Science, Technology and Innovation promotes the interaction of trade and industry as well the establishment of centers of research and education. It also has the mission to strengthen Danish coordination in pursuance of industry and research policy.

Address:

Ministry of Science and Technology Innovation

Bredgade 43

Copenhagen DK-1260 DENMARK

Contact Person: Sune Rahn - Head of Department of Telecommunications

Policy and International ICT Policy

Phone: +45-3392-9700**Fax:** +45-3332-3501**Email:** sra@vtu.dk**Website:** www.fsk.dk

Danish Technological Institute

Type of Organization: Non-profit organization**Area:** Science and Technology Policy**Description:**

Danish Technological Institute is an independent, not-for-profit institution approved by the Danish authorities to provide technological services to business and the community. The Danish Technological Institute occupies a crucial position at the point where research, business, and the community converge. The Institute's mission is to promote growth by improving interaction and encourage synergy between these three areas.

Address:

Danish Technological Institute

Gregersensvej

Postboks 141

Taastrup DK-2630 DENMARK

Contact Person: Torben Colding**Phone:** +45-72-202000**Fax:** +45-72-202019**Email:** torben.colding@teknologisk.dk**Website:** <http://www.teknologisk.dk/>

European Association for Technology Transfer Innovation and Industrial Information (TII)

Type of Organization: European Professional Association

Area: Technology Transfer and Innovation

Description:

The European Association for the Transfer of Technologies, Innovation and Industrial Information (TII) is one of the longest-standing, voluntary, independent associations representing the innovation support and technology transfer professions in Europe. TII is the European Association of professionals working in technology transfer and innovation support and offers its members services in four main areas of information and meetings, networking, technology transfer facilitation, and professional development.

Address:

TII

3 rue Aldringen

L-1118 LUXEMBOURG

Contact Person: Christine Robinson - Secretary General

Phone: +352-46-30351

Fax: +352-46-2185

Email: tii@tii.org

Website: www.tii.org

Finnish National Technology Agency (Tekes)

Type of Organization: Governmental scientific institution

Area: Science & Technology Policy

Description:

The National Technology Agency (Tekes) is the main public financing and expert organization for research and technological development in Finland. Tekes promotes the competitiveness of Finnish industry and the service sector by assisting in the creation of world-class technology and technological know-how.

Address:

Tekes

Meritullinkatu 10

P.O. Box 29

FIN-00023

Suomi FINLAND

Contact Person: Mr. Kari Komulainen - Head of Unit

Phone: +358-1052151

Fax: +358-9-6949196

Email: Kari.Komulainen@tekes.fi

Website: <http://www.tekes.fi/eng/>

German Technical Cooperation (GTZ)

Type of Organization: International Organization

Area: Sustainable Development

Description:

The Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH is an international cooperation enterprise for sustainable development with worldwide operations. GTZ's aim is to improve the living conditions and perspectives of people in developing and transition countries.

Address:

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
Dag-Hammarskjöld-Weg 1-5
Eschborn 65760 GERMANY

Contact Person:

Phone: +49-0-6196-790

Fax: +49-0-6196-791115

Website: <http://www.gtz.de/>

Greek General Secretariat for Research and Technology - Greek Ministry of Development

Type of Organization: Government-affiliated research body

Area: Science & Technology Policy

Description:

The General Secretariat for Research and Technology of the Ministry of Development supports the research activities of both the country's scientific research institutes and those of its productive industry. It also promotes the transfer and dissemination of advanced technologies throughout the country's productive sector as well as promotes cooperation with other countries and international organizations on research and technology issues.

Address:

General Secretariat for Research and Technology
14-18 Mesogeion Av.
Athens 115 27 GREECE

Phone: +3-210-7458000

Website: <http://www.gsrt.gr/>

Malta Council for Science and Technology (MCST)

Type of Organization: Government-affiliated research body

Area: Scientific Development and Education

Description:

The Malta Council for Science and Technology (MCST) is the national advisory body to Malta's government on science and technology policy. The MCST is responsible for identifying and addressing major science and technology challenges and issues of strategic importance for Malta. MCST also encourages investments and capacity building in science and research, with a view to promoting a culture for science, technology and innovation across the public, private and education sectors.

Address:

Malta Council for Science and Technology
Villa Bighi
CSP 12

Kalkara MALTA

Contact Person: Anthea Frendo

Phone: +356-23602141

Fax: +356-21660341

Email: anthea.frendo@mcst.org.mt

Website: <http://www.mcst.org.mt/>

Science Alliance

Type of Organization: Non-governmental organization

Area: Science and Technology Policy

Description:

Science Alliance is an intermediary organization that stimulates collaboration and knowledge-transfer between universities and external parties. Its organization of this collaboration adds value for both parties in relation to content and finance. Science Alliance joins parties in three different ways: programming and organizing meetings, brokerage activities, research and consultancy on the co-operation of universities with third parties.

Address:

Science Alliance,

Koninginnegracht 22

The Hague 2514 AB THE NETHERLANDS

Contact Person: Frank Zwetsloot - Managing Director

Phone: +31-70-3588060

Fax: +31-70-3584475

Email: f.zwetsloot@science-alliance.nl

Website: www.science-alliance.nl

Swedish National Post and Telecom Agency (PTS)

Type of Organization: Government agency

Area: Telecommunications

Description:

PTS is the authority that monitors the electronic communications and post sectors in Sweden.

Address:

Post- och telestyrelsen

Box 5398

Stockholm 102 49 SWEDEN

Phone: +46 8 678 55 00

Email: pts@pts.se

Website: <http://www.pts.se>

Swiss Science Agency

Type of Organization: Government-affiliated research body

Area: Science & Technology Policy

Description:

The Swiss Science Agency consists of the State Secretariat, the Federal Office for Education and Science, and the Swiss Space Office. It prepares decisions for a coherent policy in the areas of science, research and higher education and also works towards a coordinated university and research policy and ensures sufficient consideration of the position of the Confederation in the coordinating bodies. The organization also maintains contacts with international partners and further develops international relations particularly within the EU framework as well as supervises international co-operation and inter-departmental co-ordination in the field of space.

Address:

Swiss Science Agency

Hallwylstrasse 4

Bern 3003 SWITZERLAND

Contact Person: Claudio Fischer – Head, International Activities

Phone: +41-031-3226836

Fax: +41-031-3226492

Email: claudio.fischer@gwf.admin.ch

Website: <http://www.gwf-gsr.ch/>

The British Council

Type of Organization: Government Agency

Area: Scientific Development and Education

Description:

The British Council is the UK's international organization for educational opportunities and cultural relations. It is represented in 110 countries worldwide and seeks to not only strengthen the educational cooperation between the UK and other countries but also to build appreciation of the UK's creativity and scientific innovation among people overseas, and to strengthen their engagement with the diversity of UK culture. In addition, the British Council seeks to enhance awareness of the UK's democratic values and processes, and to work in partnership with other countries to strengthen good governance and human rights. Its activities and research cover, but are not limited to, English, education, the arts, science, governance, and information exchange.

Address:

British Council

10 Spring Gardens

London SW1A 2BN UNITED KINGDOM

Phone: +44-0-161-9577755

Fax: +44-0-161-9577762

Email: general.enquiries@britishcouncil.org

Website: <http://www.britcoun.org/>

The Netherlands Organization for Applied Scientific Research (TNO)

Type of Organization: Think-tank

Area: Scientific Development and Education

Description:

The Netherlands Organization for Applied Scientific Research (TNO) is a knowledge organization for companies, government bodies and public organizations. It provides contract research and specialist consultancy, grant licenses for patents and specialist software, as well as tests and certifies products and services. TNO also issues an independent evaluation of quality and sets up new companies to market innovations. The organization is active in five core areas that are: quality of life, defense and public safety, advanced products, processes and systems, natural and built environment and ICT and services.

Address:

TNO

Postbus 6050

Delft NL-2600 JA THE NETHERLANDS

Contact Person: June Vasconcellos - Media Relations

Phone: +31-15-269-6900

Fax: +31-15-261-2403

Email: infodesk@tno.nl

Website: <http://www.tno.nl/homepage.html>

United Kingdom Foreign and Commonwealth Office (FCO)

Type of Organization: Governmental Agency

Area: Economics and Business

Description:

The Foreign and Commonwealth Office (FCO) is responsible for the conduct of business with other governments and international organizations, for the protection of British citizens abroad, and for promoting the UK, its commercial and other interests across the world.

Address:

Foreign & Commonwealth Office

King Charles, Street

London SW1A 2AH UNITED KINGDOM

Contact Person:

Phone: +44-020-7008-1500 (General Enquiries)

Website: <http://www.fco.gov.uk>

Middle East

Academy of Scientific Research and Technology (ASRT)

Type of Organization: Governmental Scientific Institution

Area: Science & Technology Policy

Description:

ASRT is the main body for the promotion and coordination of science and technology activities in Egypt. Its vision is to mobilize and direct the national scientific and technological capacities towards achieving national prosperity and development. ASRT's mission is to promote the progress of science and

technology, strengthen linkages between S&T bodies, and integrate science and technology with the fabric of the Egyptian society.

Address:

ASRT
101 Kasr Al-Aini St.
P.O. Box 11516
Cairo EGYPT

Contact Person: Prof. Dr. Fayez Rifai - President

Phone: 202-7921286/7

Fax: 202-7921270

Email: asrt@sti.sci.eg

Website: www.asrt.sci.eg

Arab Knowledge Management Society (AKMS)

Type of Organization: Non-profit organization

Area: Science & Technology Policy

Description:

The Arab Knowledge Management Society (AKMS) is a non-profit organization that was established in 1988. AKMS aims at utilizing modern management and technology to successfully develop Arab potential by reinforcing the social and economic knowledge attained from various institutional resources.

Address:

The Arab Knowledge Management Society
P.O.B 921100
Amman 11192 JORDAN
Contact Person: Mr. Muhsen Al-Aini - Deputy Chairman

Phone: +962-6-5664371

Fax: +962-6-5696284

Email: akms@akms.org

Website: <http://www.akms.org/>

King Abdulaziz City for Science & Technology (KACST)

Type of Organization: Government-affiliated research body

Area: Scientific Development and Education

Description:

King Abdulaziz City for Science & Technology (KACST), established in 1977, is an independent scientific organization of the Saudi Arabian Government. KACST promotes of science & technology in the Kingdom by coordinating and cooperating with various universities, agencies and institutions concerned with research and technology, and encouraging Saudi experts to undertake research that will help promote the development and evolution of the society.

Address:

KACST
Prince Abdullah Bin Abdulaziz Road
Post Box 6086
Riyadh 11442 SAUDI ARABIA

Contact Person: Dr. M. Al-Tarabzouni - Technology Directorate
Phone: +966-1-4883555
Fax: +966-1-4883756
Email: mtrabzon@kacst.edu.sa
Website: <http://www.kacst.edu.sa/>

Licensing Executives Society - Arab Countries (LESARAB)

Type of Organization: Professional Association

Area: Technology Development and Transfer

Description:

The Licensing Executives Society - Arab Countries is a member of Licensing Executives Society International (LESI), which has a worldwide membership of over 7,500 members representing 60 countries. It is a professional society engaged in the development, education and transfer of technology.

Address:

LESARAB

P.O. Box 921100

Amman 11192 JORDAN

Contact Person: Mr. Khaled Abu Osbeh - General Secretary

Fax: +962-6-5664372

Email: les@lesarab.org

Website: <http://www.lesarab.org/>

Saudi Society for Technology Development and Transfer

Type of Organization: Professional Association

Area: Technology Transfer

Description:

SSTDT is a scientific and professional society established on the 10th of April 2001 with headquarters at King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia. Its goal is to promote awareness and enhance professionalism about technology transfer, development, and innovation to foster sustainable economical growth in Saudi Arabia.

Address:

SSTDT

KFUPM

P.O. Box 5078

Dhahran 31261 SAUDI ARABIA

Contact Person:

Phone: (03) 860-1564

Fax: (03) 860-1565

Email: sstdt@kfupm.edu.sa

Website: <http://www.sstdt.org.sa/>

North America

American Association for the Advancement of Science (AAAS)

Type of Organization: International Non-Profit Organization

Area: Scientific Development and Education

Description:

The American Association for the Advancement of Science (AAAS) is an international non-profit organization founded in 1848. In addition to supporting a wide range of science oriented programs such as encouraging the growth of science in the developing world and exploring issues of science, ethics, and law, AAAS advocates excellence in science and strong support for basic research. AAAS is the leading private sector scientific organization. It enrolls over 143,000 scientists, engineers, science educators, policymakers, and others interested in science and technology. AAAS is the world's largest federation of scientific and engineering societies.

Address:

AAAS

1200 New York Avenue NW

Washington, DC 20005 USA

Contact Person: Shere Abbott - Chief International Officer

Phone: 202-326-6400

Fax: 202-289-4958

Email: sabbott@aaas.org

Website: <http://www.aaas.org/>

American Society of Agronomy

Type of Organization: Professional Association

Area: Sustainable Development

Description:

Founded in 1907, the American Society of Agronomy (ASA) is dedicated to the development of agriculture enabled by science, in harmony with environmental and human values. The Society supports scientific, educational, and professional activities to enhance communication and technology transfer among agronomists and those in related disciplines on topics of local, regional, national, and international significance.

Address:

ASA

677 South Segoe Rd.

Madison, WI 53711 USA

Contact Person: Dr. John J. Nicholaides, III - Executive Vice President

Phone: 608-273-8080

Fax: 608-273-2021

Website: <http://www.agronomy.org>

Association of University Technology Managers (AUTM)

Type of Organization: Non-profit organization

Area: Technology Transfer

Description:

AUTM is a nonprofit association with membership of more than 3,200 technology managers and business executives who manage intellectual property. AUTM's members represent over 300 universities, research institutions, teaching hospitals and a similar number of companies and government organizations.

Address:

Association of University Technology Managers

60 Revere Drive, Suite 500

Northbrook, IL 60062 USA

Contact Person: Ann Hammersla - President

Phone: (847) 559-0846

Fax: (847) 480-9282

Email: autm@autm.net

Website: <http://www.autm.net/>

Center for Technology, Policy, and Industrial Development (CTPID) -

Massachusetts Institute of Technology

Type of Organization: Research and training institution

Area: Scientific Development and Education

Description:

The Center for Technology, Policy, and Industrial Development (CTPID) works to create productive partnerships between academia, government, and industry to support global economic growth and to advance policies that preserve the environment and benefit society at large. Its mission is to develop new knowledge, advanced technological strategies, and innovative partnerships that address global industrial and policy issues and to provide an enriched environment for MIT faculty and students to pursue their intellectual interests. Current programs at CTPID address industrial issues in the aerospace, automotive, business and environment, materials systems, mobility, telecommunications, and technology and law sectors.

Address:

CTPID

E40-207

1 Amherst Street

Cambridge, MA 02139 USA

Contact Person: Fred Moavenzadeh - Director

Phone: 617-253-8973

Fax: 617-253-7140

Email: ctpidcom@mit.edu

Website: <http://web.mit.edu/afs/athena/org/c/ctpid/www/>

Council for Entrepreneurial Development, North Carolina (CEDNC)

Type of Organization: Non-profit organization

Area: Economics and Business

Description:

The Council for Entrepreneurial Development (CED) was founded in 1984 to stimulate the creation and growth of high impact companies in the greater Research Triangle area. CED achieves its mission by providing programs and services in four major areas: education, capital formation, mentoring, and communications. Through these efforts, CED provides entrepreneurs with the knowledge and skills that ensure their success and at the same time heightens awareness of the contribution that entrepreneurial companies make to our communities and our economy.

Address:

CED

P.O. Box 13353

Research Triangle Park, NC 27709 USA

Contact Person: Lisa Rowe-Ralls - Vice President, Strategic Planning & External Affairs

Phone: 919-549-7500

Fax: 919-549-7405

Email: lrralls@cednc.org

Website: <http://www.cednc.org>

Federal Partners in Technology Transfer (FPTT) - Canada

Type of Organization: Governmental Network

Area: Technology Transfer

Description:

FPTT is an established network of federal public servants working together to enhance their professional capacity and to ensure the expeditious transfer of the value created in Canadian federal laboratories. Its website provides information on technologies, business opportunities, expertise, facilities, programs and services of federal labs in addition to technology transfer and intellectual property management information, tools and internet resources. FPTT's site also has resources on legislation and policies related to intellectual property, federal and provincial assistance programs in Canada, links to other organizations involved in technology transfer world wide, and updates on upcoming events, conferences and seminars.

Address:

Federal Partners in Technology Transfer

1200 Montreal Road

Bldg. M-55

Ottawa, Ontario K1A 0R6 CANADA

Contact Person:

Phone: 613-998-5244

Fax: 613-998-8768

Email: fptt@fptt-pftt.gc.ca

Website: http://www.fppt-pftt.gc.ca/main_e.shtml

Foreign Agricultural Service - U.S. Department of Agriculture

Type of Organization: Governmental Agency

Area: Science & Technology Policy

Description:

The Foreign Agricultural Service (FAS) of the U.S. Department of Agriculture (USDA) works to improve foreign market access for U.S. products. FAS operates programs designed to build new markets and improve the competitive position of U.S. agriculture in the global marketplace.

Address:

USDA/FAS

1400 Independence Ave, NW

Stop 1084

Washington, D.C. 20250-1084 USA

Contact Person: Carol Kramer-LeBlanc - Director, Research and Scientific Exchange Division

Phone: 202-690-4872

Fax: 202-690-0892

Website: <http://www.fas.usda.gov/>

Innovation, Creativity & Capital (IC²) Institute - University of Texas at Austin

Type of Organization: Research and training institution

Area: Science & Technology Policy

Description:

IC² (Innovation, Creativity & Capital) Institute is an international, transdisciplinary "Think and Do" tank devoted to solving unstructured problems to accelerate wealth & job creation and shared prosperity at home and abroad. It is also a research unit of The University of Texas at Austin, which is focused on knowledge exploration, dissemination, and application, across a broad range of academic and applied areas. IC² Institute's research are published and disseminated through IC²'s varied educational programs, conferences & workshops, and publications in addition to its participation in national and international projects.

Address:

IC² Institute

The University of Texas at Austin

2815 San Gabriel

Austin, Texas 78705 USA

Contact Person: Alex Cavalli - Deputy Director

Phone: 512-475-8900

Fax: 512-475-8901

Email: alex@icc.utexas.edu

Website: <http://www.ic2.org/index.php>

John E. Fogarty International Center for Advanced Study in the Health Sciences -
National Institutes of Health - U.S. Department of Health and Human Services

Type of Organization: Government-affiliated research body

Area: International Science

Description:

The Fogarty International Center (FIC) is the international component of the National Institutes of Health (NIH). It promotes and supports scientific discovery internationally and mobilizes resources to reduce disparities in global health, among other international projects.

Address:

Fogarty International Center
National Institutes of Health
Building 31, Room B2C29
31 Center Drive MSC 2220
Bethesda, MD 20892-2220 USA

Contact Person: Minerva Rojo - Director, Office of International Relations

Phone: 301-496-2075

Fax: 301-594-1211

Email: Rojom@mail.nih.gov

Website: <http://www.fic.nih.gov/>

National Institute of Standards and Technology (NIST) - U.S. Department of
Commerce

Type of Organization: Governmental Agency

Area: Standards & Metrics

Description:

The National Institute for Standards & Technology (NIST) is a non-regulatory federal agency within the U.S. Commerce Department's Technology Administration. NIST's mission is to develop and promote measurement, standards, and technology to enhance productivity, facilitate trade, and improve the quality of life.

Address:

NIST
100 Bureau Drive, Stop 3460
Gaithersburg, MD 20899-3460 USA

Contact Person: Dr. Claire M. Saundry - Chief, Office of International Affairs

Phone: 301-975-2386

Fax: 301-975-3530

Email: claire.saundry@nist.gov

Website: <http://www.nist.gov>

National Science Foundation (NSF)

Type of Organization: National Research Organization

Area: Scientific Development and Education

Description:

The National Science Foundation (NSF) is an independent agency of the U.S. Government whose activities include fostering the interchange of scientific information among scientists and engineers in the United States and foreign countries. It also supports activities designed to increase the participation of women and minorities and others under-represented in science and technology.

Address:

NSF

4201 Wilson Boulevard
Arlington, Virginia 22230 USA

Contact Person: Dr. Osman Shinaishin, Ph.D. - Senior Program Manager,
Office of International Science and Engineering

Phone: 703-292-8707

Fax: 703-292-9176

Email: oshinai@nsf.gov

Website: <http://www.nsf.gov/>

Office of International Affairs - U.S. Department of the Interior

Type of Organization: Governmental Agency

Area: Conservation

Description:

The U.S. Department of the Interior (DOI) conducts international activities as part of its mission as the primary conservation agency of the United States. It does so by meeting DOI's Congressionally mandated international activities, meets U.S. Treaty obligations, and supports U.S. foreign policy objectives. Examples of DOI international activities are providing technical assistance and scientific advice on wildlife, water and other natural resources, coordinating park management, and addressing environmental hazards.

Address:

Office of International Affairs
Department of the Interior
1849 C Street, N.W.
Washington DC 20240 USA

Contact Person: Kathryn Washburn - Director, Office of International Affairs

Phone: 202-208-3295

Email: kwashburn@ios.doi.gov

Website: <http://www.doi.gov/intl/>

Office of Science Policy - Environmental Protection Agency

Type of Organization: Governmental Agency

Area: Environmental and Scientific Policy

Description:

The Office of Science Policy (OSP) in the Environmental Protection Agency's (EPA's) Office of Research and Development (ORD) integrates and communicates scientific information generated by or for ORD's laboratories and centers, as well as ORD's expert advice on the use of scientific information. EPA and the scientific community at large use this information to ensure that EPA's

decisions and environmental policies are informed by sound science. OSP plays a vital role by providing expert advice and evaluation on the use of scientific knowledge and science policy to support sound science in the Agency. OSP accomplishes this mission by leading efforts in science integration, coordination and communication across ORD, and between ORD and the Agency's programs, regions, and external parties.

Address:

USEPA
Office of Science Policy
1300 Pennsylvania Ave. NW MC 8104R
Washington, DC 20460 USA

Phone: 202-564-6752

Fax: 202-565-2911

Website: <http://www.epa.gov/osp/>

Office of Science and Technology Policy - Executive Office of the President

Type of Organization: Governmental Agency

Area: Science & Technology Policy

Description:

The Office of Science and Technology Policy (OSTP) serves as a source of scientific and technological analysis and judgment for the President with respect to major policies, plans, and programs of the Federal Government. It advises the President and others within the Executive Office of the President on the impacts of science and technology on domestic and international affairs. OSTP leads an interagency effort to develop and implement sound science and technology policies and budgets, and works with the private sector to ensure Federal investments in science and technology contribute to economic prosperity, environmental quality, and national security. Additionally, OSTP builds strong partnerships among Federal, State, and local governments, other countries, and the scientific community and evaluates the scale, quality, and effectiveness of the Federal effort in science and technology.

Address:

Office of Science and Technology Policy
Executive Office of the President
Washington, DC 20502 USA

Contact Person: Science Division

Phone: 202-456-6130

Fax: 202-456-6027

Contact Person: Technology Division

Phone: 202-456-6046

Fax: 202-456-6021

Email: info@ostp.gov

Website: <http://www.ostp.gov/>

Office of Technology Policy - U.S. Department of Commerce

Type of Organization: Governmental Agency

Area: Science & Technology Policy

Description:

The Technology Administration's Office of Technology Policy (TA/OTP) has a dynamic selection of initiatives to support its mission and goals. OTP's programs involve promoting innovation, encouraging entrepreneurship and tech-led economic development, improving infrastructure, as well as empowering people through education and technology.

Address:

Office of Technology Policy
U.S. Department of Commerce
1401 Constitution Avenue, N.W.
Washington, D.C. 20230 USA

Contact Person: Ken Ferguson – Chief, International Technology Programs

Phone: (202) 482-6351

Fax: (202) 501-6849

Email: ken.ferguson@technology.gov

Website: <http://www.technology.gov/OTPolicy/default.htm>

Robert C. Byrd National Technology Transfer Center

Type of Organization: Government-affiliated organization

Area: Technology Transfer

Description:

The National Technology Transfer Center (NTTC) is a full-service technology-management center, providing access to federal technology information, knowledge management and digital learning services, technology assessment, technology marketing, assistance in finding strategic partners, and electronic-business development services. The NTTC fosters relationships with federal clients, showcases technologies and facilitates partnerships between clients and U.S. industry. NTTC does not provide information on federal technologies to foreign entities unless they are 51 percent U.S. owned or have a substantial manufacturing presence in the U.S. NTTC will, however, provide technology management and professional development services to these markets.

Address:

The National Technology Transfer Center
Wheeling Jesuit University
316 Washington Ave.
Wheeling, WV 26003 USA

Phone: 1-800-678-6882

Fax: 304-243-2523

Website: <http://www.nttc.edu/>

State Science and Technology Institute

Type of Organization: Research Organization

Area: Science & Technology Policy

Description:

SSTI is a national non-profit organization dedicated to improving government-industry programs that encourage economic growth through the application of science and technology. The Institute also works to advance cooperation between the states and federal cooperative technology programs for more effective economic development.

Address:

State Science and Technology Institute
5039 Pine Creek Drive
Westerville, OH 43081 USA

Contact Person: Heidi Findley - Policy Analyst

Phone: 614-901-1690

Fax: 614-901-1696

Email: findley@ssti.org

Website: <http://www.ssti.org/>

Technology Administration - U.S. Department of Commerce

Type of Organization: Governmental Agency

Area: Science & Technology Policy

Description:

The Technology Administration (TA) serves as the focal point for policies and programs that will permit the U.S. private sector to utilize science and technology to improve its international competitiveness. This mission helps expand economic growth and jobs through the development and promotion of the use of civilian technology. It is part of the U.S. Department of Commerce and consists of the National Institute of Standards and Technology (NIST), the Office of Technology Policy (OTP), and the National Technical Information Service (NTIS).

Address:

The Technology Administration
U.S. Department of Commerce
1401 Constitution Avenue, N.W.
Washington, D.C. 20230 USA

Contact Person: Ken Ferguson – Chief, International Technology Programs

Phone: (202) 482-6351

Fax: (202) 219-3310

Email: ken.ferguson@technology.gov

Website: www.technology.gov

Measurements and Standards

Introduction

Metrology is the science of measurements and measurements impact nearly every aspect of daily life. Almost all fields of human activity rely significantly on measurement and metrology, including the following illustrative fields of use:

- Manufacturing and other industries
- Trade and commerce
- Health and safety
- Environmental protection
- Science
- Communications and transport
- Enforcement of government regulations
- Generation and distribution of energy
- Surveying and navigation
- Military services.

Today, as the development of more sophisticated technology is accelerating, so is the need for a wide range of new and complex measurements. Examples are the measurement requirements in information technology, in micro engineering and nanotechnology, in the characterization of new materials, and in high-speed dynamic processes. Similarly, the increasing use of complex measurements in fields such as medicine, biotechnology, food and drug evaluation, and environmental protection has demonstrated the urgent need for more advanced metrology in chemistry and biology as well as in the more traditional fields of physics and engineering.

Government-financed metrology programs directly contribute to the economy and well being of a country. Figures from studies conducted by such organizations as the National Institute for Standards and Technology (United States), Department of Trade and Industry (United Kingdom), National Research Council (Canada), and the European Commission (European Union) reflect the impact of metrology on a national economy. For example, measurement and measurement-related operations have been estimated to account for between 3% and 6% of the GDP of industrialized countries. Other studies find that in developed countries about 15% of the GDP is measurement-related.

Measurements and Standards as an Economic Development Tool

In addition to contributing to the well being of a nation's economy, measurements and standards are also vital to a nation's technological capabilities and its long-term economic competitiveness. Governments are becoming increasingly aware of the economic and social advantages of having effective national, regional, global measurement system(s) in place and, in particular, of the importance of such a system as a tool of industrial competitiveness. There seems little doubt therefore that national measurement systems, whether structured formally or otherwise, will continue indefinitely to serve as the basic building blocks of the world system, and it is important to consider them in their own right.

For example, for a nation to effectively implement its trade agreements under the WTO, the nation should have an internationally recognized system of comparable and traceable measurements. International accreditation agreements are one amongst many tools for creating confidence in the competence of measurement and testing laboratories. They are based on internationally recognized and accepted standards that the measurement and test results carried out to the accepted standards or guidelines are conducted with a level of competence that the results may be reliable, traceable and comparable. This requires the existence of an international network of national metrology laboratories, with demonstrated ability, competence, and peer recognition in which trading partners can have confidence, and to which all the industrial and other measurement; calibration and testing laboratories can refer. Also, many companies are engaged in international trade, international co-manufacture of products has become commonplace, military defense arrangements often involve groups of nations, environmental pollution problems often extend beyond national boundaries, and so on.

Analyses carried out in the recent past show that investments by governments of developed industrialized countries vary from between 20×10^{-6} to 70×10^{-6} of the GDP of a country. In general, it can be observed that countries investing at least 60×10^{-6} of GDP are able to achieve more advanced development than those, which have invested only 15×10^{-6} of its GDP in metrology. Examples can be found in the United States, Singapore, and the Republic of Korea. In some of the rapidly developing countries and economies in the Asia-Pacific region expenditure reached as high as 100×10^{-6} of the GDP. This means that on the average there is a leverage factor of about 1000 to 2000 between the government investments and the measurement-related industrial production of a country. Although it is not easily and directly quantifiable, the social impact of metrology in areas like climate change and quality of life should nevertheless not be neglected.

Furthermore, in order to enlarge and strengthen the export possibilities for products from developing countries and to allow them to measure and test

products that they import, it is crucial that confidence be established in measurement and test results carried out in these countries. It has to be remarked here that often it may not be feasible for every country have its own fully equipped National Measurement Institute (NMI) capable of making every measurement, and international cooperation with neighboring countries may well lead to sharing costly measurement standards facilities, provided that the legislative and regulatory requirements of the participating nations would recognize and support such collaborations. As such, the Regional Metrology Organizations have an important role to play in supporting and coordinating metrological activities in and amongst developing and developed states and economies.

For additional information on metrology and its role in economic development, please refer to *Evolving Needs For Metrology in Trade, Industry, and society and the Role of the BIPM* from the International Committee on Weights and Measures (CIPM). It is available at: <http://www1.bipm.org/en/publications/official>

Measurements and Standards Contact Listings

Europe

Comité International des Poids et Mesures (CIPM) *International Committee for Weights and Measures*

Type of Organization: Intergovernmental organization

Area: Standards and Measurements

Description:

The International Committee for Weights and Measures (CIPM) is made up of eighteen individuals, each from a different Member State. Its principal task is to ensure worldwide uniformity in units of measurement and it does this by direct action or by submitting proposals.

Address:

Pavillon de Breteuil

F-92312

Sevres Cedex FRANCE

Phone: +33 1 45 07 70 70

Fax: +33 1 45 34 20 21

Website: <http://www1.bipm.org/>

European Telecommunications Standards Institute (ETSI)

Type of Organization: Non-governmental Organization

Area: Standards & Metrics

Description:

The European Telecommunications Standards Institute (ETSI) is an independent, non-profit organization, whose mission is to produce telecommunications standards for today and for the future. ETSI unites 688 members from 55 countries, and brings together manufacturers, network operators and service providers, administrations, research bodies and users - providing a forum in which all key players can contribute.

Address:

ETSI Secretariat

650 route des Lucioles

06921 Sophia-Antipolis Cedex FRANCE

Phone: +33 (0)4 92 94 42 00

Fax: +33 (0)4 93 65 47 16

Email: helpdesk@etsi.org

Website: <http://www.etsi.org/>

Food Standards Agency (FSA)

Type of Organization: Governmental Agency

Area: Food Standards & Technology

Description:

The Food Standards Agency (FSA) is an independent food safety watchdog set up by an Act of Parliament in 2000 to protect the public's health and consumer interests in relation to food. The FSA provides advice and information to the public and Government on food safety from farm to fork, nutrition and diet. It also protects consumers through effective food enforcement and monitoring.

Address:

Food Standards Agency

Aviation House

125 Kingsway

London WC2B 6NH, UNITED KINGDOM

Contact Person: Simon Renn – European Union and International Affairs

Phone: 020 7276 8161

Email: helpline@foodstandards.gsi.gov.uk

Website: <http://www.foodstandards.gov.uk/>

International Organization for Standardization (ISO)

Type of Organization: Non-governmental Organization

Area: Standards & Measurements

Description:

ISO is a non-governmental organization that is a network of the national standards institutes of 148 countries, on the basis of one member per country, with a Central Secretariat in Geneva, Switzerland, that coordinates the system. ISO is able to act as a bridging organization in which a consensus can be reached on solutions that meet both the requirements of business and the broader needs of society, such as the needs of stakeholder groups like consumers and users.

Address:

International Organization for Standardization (ISO)

1 rue de Varembé

Case postale 56

CH-1211 Geneva 20 SWITZERLAND

Phone: +41 22 749 01 11

Fax: +41 22 733 34 30

Website: <http://www.iso.org/>

Institute for Reference Materials and Measurements (IRMM) - European Commission, Joint Research Centre

Type of Organization: Standards and Measurements

Area: Standards and Metrics

Description:

The Institute for Reference Materials and Measurements (IRMM) is a Metrology Institute that is overseen by the European Commission. The mission of the IRMM is to promote a common European measurement system in support of EU policies.

Address:

Institute for Reference Materials and Measurements

Retieseweg
B-2440 Geel, Belgium
Contact Person: Dr. Doris Florian
Phone: +32(0) 14 571-272
Fax: +32(0) 14 584-273
Email: doris.florian@cec.eu.int
Website: <http://irmm.jrc.cec.eu.int/>

Institute of Physics (IOP)
Type of Organization: Professional Association
Area: Science & Physics Research
Description:

The Institute of Physics (IOP) is an international professional body and learned society that was established to promote the advancement and dissemination of physics. Membership in the Institute is open to professionals from around the world and it is a major force in scientific publishing and electronic dissemination of physics. The Institute also sets professional standards for physicists and awards professional qualifications; it also promotes physics through scientific conferences, education and science policy advice.

Address:

Institute of Physics
76 Portland Place
London W1B 1NT, UNITED KINGDOM
Contact Person: Dr. Peter Melville - Director, International & Business
Phone: +44 (0) 20 7470 4800
Fax: +44 (0) 20 7470 4848
Email: peter.melville@iop.org
Website: <http://www.iop.org/>

Qualifications and Curriculum Authority (QCA)
Type of Organization: Government agency
Area: Education and Standards Agency
Description:

The Qualifications and Curriculum Authority (QCA) is a non-departmental public body, sponsored by the Department for Education and Skills (DfES). QCA develops and maintains the national curriculum and associated assessments; and credits and monitors qualifications in colleges and at work. It leads developments in curriculum, assessments, examinations and qualifications.

Address:

QCA
83 Piccadilly
London W1J 8QA, UNITED KINGDOM
Contact Person:
Phone: +44 (0) 20 7509 5555 (Switchboard)
Fax: +44 (0) 20 7509 6666
Email: infol@qca.org.uk

Website: <http://www.qca.org.uk/index.html>

Middle East

Jordan Institution for Standards and Metrology (JISM)

Type of Organization: Governmental Agency

Area: Standards and Metrics

Description:

Jordan Institution for Standards and Metrology (JISM) plays a proactive role as a regulatory entity that aims to protect the interests, health and safety of citizens and environment and to enhance the competitiveness of Jordanian products in the global markets, hence, contributing to the development of national economy of Jordan in keeping with the national objectives and contributes to achieving them within the defined priorities.

Address:

JISM

P.O. box 941287

Amman- 11194 JORDAN

Contact Person: E. Salem Quhaiwy - Standardization Department

Phone: 962 –6- 5680139

Fax: 962-6- 5681099

Email: jism@nic.net.jo

Website: <http://www.jism.gov.jo/>

Jordan Numbering Association (EAN Jordan)

Type of Organization: Non-profit Association

Area: Standards and Metrics

Description:

EAN Jordan is the official Jordanian body to administer the EAN numbering and bar-coding system of item identification in Jordan.

Address:

EAN Jordan

P.O. Box 962565

Amman 11190 JORDAN

Phone: +962 6 5620039

Fax: +962 6 5684568

Email: ean@jedco.gov.jo

Website: <http://www.ean.jedco.gov.jo/>

Jordanian Ministry of Water and Irrigation (MWI)

Type of Organization: Governmental Agency

Area: Water Conservation and Technology

Description:

The Ministry of Water and Irrigation (MWI) is the official body responsible for the overall monitoring of the water sector, water supply and wastewater system and

the related projects, planning and management, the formulation of national water strategies and policies, research and development, information systems and procurement of financial resources. Its role also includes the provision of centralized water-related data, standardization and consolidation of data.

Address:

Ministry of Water and Irrigation (MWI)
P.O. BOX 2412
5012 Amman JORDAN

Contact Person: Eng. Sa'ad Bakri - MWI Secretary General

Phone: +962 6 5652265

Website: <http://www.mwi.gov.jo/>

Royal Scientific Society

Type of Organization: National scientific institution

Area: Scientific Research and Development

Description:

The RSS is a not-for-profit national research and development institution. Carries out joint research projects as well as cooperating with agencies focused on setting national technical standards and specifications.

Contact Person: Professor Sa'ad Hijazi - President

Email: hijazi@rss.gov.jo

Website: <http://www.rss.gov.jo/>

Saudi Arabian Standards Organization

Type of Organization: Governmental Agency

Area: Standards and Measurements

Description:

The Saudi Arabian Standards Organization (SASO) is the sole standardization body in the Kingdom of Saudi Arabia and is entrusted with all activities relating to standards and measurements. These include formulating and approving national standards for all commodities and products as well as standards concerned with metrology, calibration, marking and identification of commodities and products, methods of sampling, inspection and testing.

Address:

P.O. Box 3437
Riyadh 11471 SAUDI ARABIA

Email: enquires@saso.org.sa

Phone: + 966 14520000

Fax: + 966 14520086

Website: <http://www.saso.org.sa/>

North America

American Association of University Professors

Type of Organization: Professional Association

Area: University Education

Description:

The mission of the American Association of University Professors (AAUP) is to advance academic freedom and shared governance, to define fundamental professional values and standards for higher education, and to ensure higher education's contribution to the common good. Founded in 1915, the AAUP has helped to shape American higher education by developing the standards and procedures that maintain quality in education and academic freedom in this country's colleges and universities.

Address:

AAUP

1012 14th St., N.W.

Suite 500

Washington, DC 20005 USA

Contact Person: Dr. Mary Burgan - General Secretary

Phone: (202) 737-5900

Fax: (202) 737-5526

Website: <http://www.aaup.org>

American National Standards Institute (ANSI)

Type of Organization: Non-profit organization

Area: Standards & Metrics

Description:

The American National Standards Institute (ANSI) is a private, non-profit organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system. The Institute's mission is to enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and safeguarding their integrity.

Address:

American National Standards Institute (ANSI)

1819 L Street, NW

6th floor

Washington, DC 20036 USA

Contact Person: Gary Kushnier - Vice President, International Policy

Phone: 202.293.8020

Fax: 202.293.9287

Website: <http://www.ansi.org/>

American Society for Quality

Type of Organization: Professional Association

Area: Quality and Standards

Description:

The American Society for Quality (ASQ) is the world's leading authority on quality since 1946. The 104,000-member professional association creates better workplaces and communities worldwide by advancing learning, quality improvement, and knowledge exchange to improve business results. By making quality a global priority, an organizational imperative, and a personal ethic, ASQ becomes the community for everyone who seeks technology, concepts, or tools to improve themselves and their world.

Address:

ASQ
600 N. Plankinton Avenue
Milwaukee, WI 53203 USA

Contact Person: Dr. H. James Harrington

Phone: (414) 272-8575

Fax: (408) 947-4971

Email: cs@asq.org

Website: <http://www.asq.org>

American Society of Mechanical Engineers

Type of Organization: Professional Association

Area: Mechanical Engineering

Description:

Founded in 1880, the American Society of Mechanical Engineers is a 120,000-member professional organization focused on technical, educational and research issues of the engineering and technology community. ASME conducts one of the world's largest technical publishing operations, holds numerous technical conferences worldwide, and offers hundreds of professional development courses each year. ASME sets internationally recognized industrial and manufacturing codes and standards that enhance public safety.

Address:

ASME
3 Park Avenue
New York, NY 10016 USA

Contact Person: Mr. Andrew Mark - Coordinator, Operations and International Affairs

Phone: (212) 591-7945

Fax: (212) 591-7397

Email: marka@asme.org

Website: www.asme.org

American Society for Testing and Materials (ASTM) International

Type of Organization: Non-profit organization

Area: Standards and measurements

Description:

ASTM International is one of the largest voluntary standards development organizations in the world. It is at the forefront in the use of innovative technology

to help its members do standards development work, while also increasing the accessibility of ASTM International standards to the world. ASTM International has over 30,000 members from over 100 countries.

Address:

ASTM
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Contact Person: Kathleen Kono - Vice-President, Global Cooperation

Phone: (610) 832-9585

Fax: (610) 832-9555

Email: kkono@astm.org

Website: <http://www.astm.org/>

Institute of Electrical and Electronics Engineers, Inc. (IEEE)

Type of Organization: Professional Association

Area: Engineering

Description:

The Institute of Electrical and Electronics Engineers, Inc. (IEEE) is a non-profit, technical professional association of more than 360,000 individual members in approximately 175 countries. Through its members, the IEEE is a leading authority in technical areas ranging from computer engineering, biomedical technology and telecommunications, to electric power, aerospace and consumer electronics, among others. It also conducts technical publishing, conferences and consensus-based standards activities.

Address:

IEEE Corporate Office
3 Park Avenue
17th Floor
New York, NY10016-5997 USA

Phone: (212) 419 7900

Fax: (212) 752 4929

Email: regional-activities@ieee.org

National Institute for Standards and Technology (NIST)

Type of Organization: National Measurement Institute

Area: Standards and Measurements

Description:

Founded in 1901, NIST is a non-regulatory federal agency within the U.S. Commerce Department's Technology Administration. NIST's mission is to develop and promote measurement, standards, and technology to enhance productivity, facilitate trade, and improve the quality of life.

Address:

Office of International and Academic Affairs
100 Bureau Drive, Mail Stop 1090
Administration Building, Room A505

Gaithersburg, Maryland 20899-1090

Contact Person: Dr. Claire M. Saundry - Chief, Office of International Affairs

Phone: 301-975-2386

Fax: 301-975-3530

E-Mail: claire.saundry@nist.gov

Website: www.nist.gov

United States Metric Association

Type of Organization: Professional Association

Area: Metrics

Address:

USMA

10245 Andasol Avenue

Northridge, CA 91325-1504 USA

Contact Person: Dr. Valerie Antoine - Executive Director

Phone: (818) 368-7443

For additional listings of standards and measurements organizations, as well as professional associations related to standards, please refer to the “International Organizations in Liaison with Technical Committees” website from the International Organization for Standardization (ISO). This website has listings as well as contact information for organizations from around the world. It is available at:

<http://www.iso.org/iso/en/stdsdevelopment/liaisonorglist/LiaisonOrgList.LiaisonOrgList>

For additional listings on National Metrology Laboratories, please refer to the “National Metrology Laboratories” website from the National Institute for Standards and Technology (NIST). It is available at:

<http://www.nist.gov/oiaa/national.htm>

For additional listings of National Standards Bodies, please refer to the “National Standards Bodies” website from the National Institute for Standards and Technology (NIST). It is available at:

<http://www.nist.gov/oiaa/std-org.htm>

Information Technologies (IT)

Information technology is an important sector in many countries' economies. In many countries it represents a significant segment of the GDP. Regardless of the size of the sector with respect to others, IT is important in producing efficiencies and productivity that benefits all sectors of an economy. Thus, IT is an enabler in an economy in addition to being a significant industry in its own right.

The promotion of IT is important to its growth. While individual companies may develop individual means to promote its growth, the formation of associations is often a preferred means of addressing the many issues that inhibit the development of a vibrant IT sector.

Associations – What and Why

IT associations are typically composed of private sector business interests and do not have formal government representation. Associations may have as their members private sector companies and/or individuals. In some instances associations may have a very narrow membership base of only IT-related interests. In other cases associations may broaden their member base to education institutions, students and other entities such as the overall IT-user community.

In all cases, however, IT associations have an overriding objective of promoting the IT industry in a given economy. In reality, the IT market is actually made up of three separate and distinct markets. The first market is the domestic market – businesses in the country that use IT to increase efficiency and enhance the services they provide. The second market is the government IT market. This market is focused on improving internal governmental processes and providing better services to their citizens. The third IT market is the export or offshore market. Though arguably the least important from the development of the internal economy, it is often the market that gains the most attention. All three markets are important, however, and need to be promoted in tandem.

The most effective associations are ones that represent the broad IT sector as opposed to just a niche or a narrow slice of the overall industry. By having members from the broad industry spectrum, internal differences can be resolved before promoting positions in public. Associations that have members both from the local industry as well as the local representatives of multinational companies also tend to be stronger. Thus, when representing the local industry, all interests are represented through a single message delivered by local nationals.

An important aspect of associations is that they represent anonymity with regard to their members. While it may be very difficult for individuals or companies representing their own interests to oppose a given government policy or direction, the association can do so with relative impunity. To be most effective, however, the association needs to have independent, full-time staff so that the staff can be visible advocating the needs of their members. Since the staff cannot be linked to one or several individual companies, reprisal is difficult and advocacy is more effective.

In order to form an effective association, potential members need a common understanding of the reason for association. The most effective means of doing this is to examine the barriers or obstacles that the industry faces in a given country. When this is done, charter members possess a common understanding of the need to come together and a common purpose and focus to their organizing. A typical list of issues may look as follows:

1. Lack of Private Sector Representative Input into Government ICT Policy
2. Rural Access Policy unsupportable from business perspective
3. Taxation of Bandwidth
4. Need for Improvement of Government Procurement Transparency
5. Government Internal Tender Process
6. Lack of Feedback on Government Tenders
7. Lack of Knowledge of ICTs by Government
8. Lack of General ICT Knowledge, Specifically in Education
9. ICT Training Inconsistent
10. Lack of Standard for ICT Training
11. Licensing Requirements for Private Networks
12. Lack of Voice Competition
13. Lack of Knowledge/Effectiveness of Telecom Regulator
14. Lack of Transparency In Telecom Policy Process
15. Lack of Business Knowledge of Regulator
16. Simplification of Tax Code Needed
17. Uniform Taxation of Information Technology Products
18. Limited Opportunities in Local Market Creates Brain Drain
19. Lack of Knowledge of ICT Potential
20. Lack of Media Attention to Benefits of ICTs
21. Lack of Local Content
22. Media Distribution of ICT Information

Building a Sustainable IT Association

To be truly effective, an association needs to have an efficient administrative structure and a sustainable business model. This section

describes the elements of a typical administrative structure and an overview of programs and activities that will provide the underpinnings of sustainability.

Association Bylaws – provide the legal framework for the organization and the rules under which it operates. The Bylaws typically contain the following elements:

Executive Board

- Size of the board – 6-8 members in general
- Composition – diverse representation of various IT sectors
- Elections – of the board members
- Voting procedures – One vote per member so that one company cannot dominate the association
- Terms of Office – individuals are elected to staggered terms of office so that when there is change there is some consistency. More than one year but not exceeding three years.
- Function – oversees administrative functions, develops strategic agenda, interacts with staff through the Executive Director.

Administrative Staff – paid staff to provide consistency and to actually implement the Board recommendations. In addition the paid staff, particularly the Executive Director, can be the outside face that provides anonymity to the individual companies on controversial issues.

- Director – this position is whom the staff reports to and who is the individual that provides consistency to the outside world.
- Key Staff Functions – Some key staff functions:
 - Financial – operation of the association
 - Marketing – get membership and retain members
 - Communications – internal and external communications
 - Programs – public policy, government, internet, software

Membership Structure and Fees

- Tiered Membership Structure – this should be outlined in its bylaws.
- This can be based on the revenue or number of employees.
- Regardless of dues a given company pays, all companies receive the same benefits from the association.

Committee Structure – Driven in large part by the activities of the association. In the beginning, the association may have committees as follows:

- Membership and internal communications
- Programs
- Advocacy and external communications

Facilities

- Need for physical location
- Equipment and Technology
- Security
- Meeting Space

Membership/Marketing

- Recruiting New Members and Retention of Existing Members
- Collateral Materials – Production of materials that provide services to existing members that can also be used to get new members.
- Integrated with Financial Plan
- Recruitment Plan – Who to target and how to target

Note: The association must have a policy on how the membership data will be used and not for sale to advertisers.

Programs (These are the services that IT Associations offer to their members)

- Business Development – create new business opportunities.
 - Create a dinner series with the CIO of a major government agency
- Business Intelligence – From paid staff who develop close relationships with people in key government agencies and by continually meeting with these people and then in turn they collect the information and sends it out to all members.
- Networking -- Making opportunities to get people exposure to one another.

Public Policy Advocacy

- Influencing government procurements
- Influencing government policy

Strategic Planning Process

This section contains a classic and relatively simple strategic planning process that results in the development of a set of prioritized activities within a set of overall objectives. Having such a set of prioritized activities is essential to creating an organization that is productive and meets the needs of its members.

Vision – Step 1 is to develop an overall vision of the organization. The Vision should describe what the organization is, its overarching goal, and some of its activities. A fairly comprehensive vision that can be used as a template is as follows:

The _____ Association of _____, the premier national association representing the private sector ICT industry and professionals. _____ provides leading advocacy, research,

information, consulting, accreditation, certification and support to our members and to government to ensure sound decisions promoting, explaining and expanding an inclusive digital economy for the benefit of all.

Desired Future State - Step 2 is to identify the characteristics that would be representative of the association five (5) years into the future. The following characteristics are typical of ones that may be applicable:

- Self sustaining
- Achieving advocacy objectives
- Successful Events
- Credible to Governments
- Nationally accepted
- Leading ICT lobbying association
- Strong membership
- One-stop shop for national ICT information
- Recognized by national standards body
- Strong brand
- Setting education certification standards and curriculum development
- Credible to International Community
- Member of WITSA
- Lobby Internationally
- Regional branches
- Open and Transparent Organization
- Model for Other Organizations
- Good Relationship with Media
- Range of membership benefits
- Diverse Revenue Stream
- Efficient and Effective Secretariat
- Membership Categories
- Effective Technical Infrastructure
- Formal administrative and committee structure
- Effective Internal Communications – (web site, newsletter)

Current State – Step 3 is to develop an understanding of the current state of affairs of the association or potential association focusing on both an internal and external perspective. The goal is to identify the strengths, weaknesses, opportunities, and threats that accurately reflect the association’s current state. Typical results are as follows:

Strengths (Internal factors)

- Effective Core Group
- Motivation

- Established Relationship with WITSA
- Established Relationship with Regional Associations
- Good Network Amongst Potential Members
- Established Vision
- Identified Desired Future State

Weaknesses (Internal factors)

- Lack of Financial Plan
- Not yet Established (Legal Framework)
- No Immediate Financial Resources
- No Membership and Infrastructure Established
- Poor History of Associations in General
- Lack of Proactive-ness
- Suspicion Between Competing Members

Opportunities (External factors)

- Overcoming Existing Lack of Private Sector ICT Advocacy
- Promote Growth of _____ ICT Sector
- Create ICT Standards Body (skills, products, certification)
- Establish Code of Ethics
- Adopting International Best Practices
- Organizing/Hosting Conferences and Exhibitions
- Marketing _____ as an ICT Destination
- Create Job Opportunities in ICT Sector
- Source of ICT Information and Research
- Participate in Regional Network
- Participate in Global Events
- Creating Benefits for Members
- Specific Training to fill Skills Gaps
- Bring About Change in Government ICT Policy
- Drive Industry Cooperation
- More Liberal ICT Policy in Comparison to Neighbors
- Existence of ICT Coordination Body

Threats (External factors)

- Government Control/Policies
- Lack of Adequate Membership
- Public Perception
- Competition from Similar Organizations
- Dominance of Communications Industry Focus

Possible Activities – Step 4 is to develop a list of possible activities that the association could undertake to move the organization from the “current state” to the “desired future state.” The following activities are typical of ones identified as potential future activities:

- Develop Financial Plan
- Finalize Constitution and Incorporate
- Develop Organizational Structure
- Establishing an Initial Administrative Structure
- Develop a Dues Structure
- Recruit Members
- Establish Initial Committees
- Develop an Prioritized Issues List
- Develop an Action Plan for Each Issue
- Identify and Develop Relationship with Key Government ICT Officials
- Identify Key Media Contacts
- Develop a Media Plan
- Identify and Develop Relationship with Other Industry Associations
- Develop a Database of ICT Information in _____
- Publish ICT Information
- Organize Events, Congress
- Develop Website
- Develop an Awards Program
- Develop a Membership Database and Directory
- Develop Luncheon Series
- Create Networking and Investment Events
- Obtain Office Space
- Develop a Certification Program
- Develop a Code of Ethics
- Obtain Recognition from National Standards Bodies

Group and Prioritize – Step 5 is to group the activities into some logical categories and then to prioritize the activities within each grouping. In addition, a responsibility and timeline for each activity should be developed at this time. Finally, the groupings should be assigned appropriate objectives. The following objectives are objectives that could be associated with typical groupings.

- **Administrative**
Provide effective and efficient administrative and financial structure to benefit all members of the association.
- **Advocacy**
Create enabling policy environment for the growth of ICT regionally within the association and internationally

- **Programs**
Create a diverse array of programs that will engage members in the region and develop sources of income

For more information on IT Trade associations, please contact:

World Information Technology and Services Alliance (WITSA)

Type of Organization: Industry association

Area: Information Technology

Description:

The World Information Technology and Services Alliance (WITSA) is a consortium of 60 information technology (IT) industry associations from economies around the world. WITSA members represent over 90 percent of the world IT market.

Address:

World Information Technology and Services Alliance (WITSA)

1401 Wilson Boulevard

Suite 1100

Arlington, VA 22209 USA

Contact Person: Anders Halvorsen - Senior Program Manager

Phone: (703) 284 5333

Fax: (617) 687-6590

Email: ahalvorsen@itaa.org

Website: <http://www.witsa.org/>

Information Technology (IT) Listings

Asia & Oceania

Asian-Oceanian Computing Industry Organization (ASOCIO)

Type of Organization: Trade Association

Area: Information Technology

Description:

ASOCIO is a grouping of computing industry associations from the Asian-Oceanian region. Established in 1984, ASOCIO is dedicated to promote, encourage and foster relationships and trade between the various members. It also is tasked with developing the computing industry of the Asian-Oceanian economies.

Email: asocio@fkii.org

Website: <http://www.asocio.org/>

Atharva Education Trust's Institute of Information Technology (AIIT)

Type of Organization: IT Education Organization

Area: IT Development

Address:

AIIT

Plot No. 8 to 12, Survey No. 263

Malad Marve Road

Charkop Naka

Malad (W) Mumbai 400 095 INDIA

Contact Person: Shefali Adhikari

Phone: 28644100

Fax: 28084577

Email: atharvacollege@vsnl.net

Australian Communications Authority (ACA)

Type of Organization: Government agency

Area: Telecommunications

Description:

The Australian Communications Authority (ACA) is responsible for regulating telecommunications and radio communications, including promoting industry self-regulation and managing the radio frequency spectrum.

Address:

PO Box 78

Belconnen ACT 2616 AUSTRALIA

Phone: +61 2 6219 5555

Fax: +61 2 6219 5353

Email: nswro@aca.gov.au

Website: <http://www.aca.gov.au>

Australian Department of Communications, Information Technology and the Arts

Type of Organization: Government Agency

Area: Information Technology

Description:

The Department provides strategic advice and professional support to the Australian Government on a wide range of significant and rapidly changing policy areas including intellectual property rights, information and communications technology, and telecommunications.

Address:

Department of Communications, Information Technology and the Arts

GPO Box 2154

Canberra ACT 2601 AUSTRALIA

Contact Person: Colin Oliver - General Manager, International Telecommunications

Phone: +61 2 6271 1000

Fax: +61 2 6271 1901

Email: colin.oliver@dcita.gov.au

Website: <http://www.dcita.gov.au/>

Center of the International Cooperation for Computerization (CICC) -

International Information Technology Laboratory (ITL)

Type of Organization: Development Agency

Area: IT Development

Description:

CICC was established in June 1983 to cooperate and assist developing countries in the introduction of computers and information technology, and to promote computerization thereby for their economic and social development.

Address:

Mita 43-Mori bldg.

15F, 3-13-16 Mita, Minato-ku

Tokyo 108-0073 JAPAN

Contact Person:

Phone: +81-3-5283-0811

Fax: +81-3-5283-0808

Email: info@net.cicc.or.jp

Website: <http://www.cicc.or.jp/>

China Telecom

Type of Organization: Business organization

Area: ICT and Telecommunication

Description:

China Telecom Corporation is an extra-large telecom enterprise formed according to the state telecom structural reform scheme. It operates domestic and international fixed-line networks, including wireless loops; is engaged in

international telecom accounts settlement and overseas market exploration; and offers ICT related services like system integration, technology development, technological consultation, advertising, publishing, equipment manufacturing, sales, import and export.

Address:

31Jinrong Street
Xicheng District
Beijing 100032 CHINA
Phone: 86-10-58501688
Fax: 86-10-58501060

Website: <http://www.chinatelecom.com.cn>

CMC Limited

Description:

CMC Limited is India's leading IT solutions and services company.

Address:

CMC Limited
PTI Building, 5th Floor
4 Sansad Marg
New Delhi 110 001 India
Phone: 91-11-23736151-58
Fax: 91-11-23736159

Email: lh_corp@cmcltd.com

Website: <http://www.cmcltd.com/>

Commerce, Industry, and Technology Bureau

Type of Organization: Government ministry

Area: Science and Technology Policy

Description:

The Commerce, Industry and Technology Bureau fosters a business-friendly environment and attract investment to Hong Kong and looks to maintain Hong Kong's position as the premier digital city and telecommunications hub of Asia. It promotes high-value added, creative and high technology activities in Hong Kong, leveraging on the very strong services and manufacturing sectors in Hong Kong and in the Pearl River Delta (PRD) respectively.

Contact: Communications and Technology Branch

Address:

1/F - 2/F Murray Building
Garden Road Central HONG KONG
Phone: (852) 2189 2222
Fax: (852) 2827 6646

Email: ctbenq@citb.gov.hk

Contact: Commerce and Industry Branch

Address:

Level 29
One Pacific Place

88 Queensway HONG KONG
Phone: (852) 2918 7500
Fax: (852) 2840 1621
Email: cibenq@citb.gov.hk
Website: <http://www.info.gov.hk/citb/>

Hong Kong Office of the Telecommunications Authority (OFTA)

Type of Organization: Government Agency

Area: Telecommunications

Description:

The Office of the Telecommunications Authority (OFTA) was established as an independent government department in 1993 and is the executive arm of the Telecommunications Authority, which is the statutory body responsible for regulating the telecommunications industry in Hong Kong.

Phone: +852 2961 6333

Fax: +852 2803 5110

Email: webmaster@ofta.gov.hk

Website: <http://www.ofta.gov.hk>

Indonesian Ministry of Research and Technology (RISTEK)

Type of Organization: Government ministry

Area: Science and Technology Policy

Description:

The Ministry of Research and Technology (RISTEK) has the responsibility to assist the President of the Republic of Indonesia in formulating national policies and implementing coordination in the field of research, science and technology. Among other activities, RISTEK formulates government policies in the field of research, science and technology and coordinates national integration, including planning and program arrangement, monitoring, analysis and evaluation in the field of research, science and technology. RISTEK also coordinates national research, science and technology policies among the technology based industry in Indonesia.

Contact Person: Mr. Ardito Marzoeki Kodijat - Assistant Deputy to the Minister for International Research Program

Phone: 62 21 345 8677

Fax: 62 21 344 6733

Email: kodijat@ristek.go.id

Website: <http://www.ristek.go.id/english/main.htm>

Ministry of Information and Communication (MIC)

Type of Organization: Government Ministry

Area: Communications

Description:

The Ministry of Information and Communication is responsible for accelerating informatization in Korea, promoting the IT industry, and deregulation and market liberalization, among other activities.

Address:

100 Sejongno
Jongnogu
Seoul SOUH KOREA

Contact Person: Rha Bong ha – Director, Cooperation Planning Division –
International Cooperation Office

Phone: +82-2-750-2114

Fax: +82-2-750-2915

Email: rhabon@mic.go.kr

Website: <http://www.mic.go.kr/>

New Zealand Radio Spectrum Management Group – Ministry of Economic
Development

Type of Organization: Government Agency

Area: Communications

Description:

The Radio Spectrum Management Group, part of the Operations Branch of the
Ministry of Economic Development, administers the radio spectrum in New
Zealand.

Address:

PO Box 2847
Wellington 6015 NEW ZEALAND

Phone: +64 4 472 0030

Fax: +64 4 499 0797

Email: info@rsm.govt.nz

Website: <http://www.med.govt.nz/rsm/>

Europe

Austrian Regulatory Authority for Telecommunications and Broadcasting

Type of Organization: Government agency

Area: Telecommunications

Description:

The Austrian Regulatory Authority for Telecommunications and Broadcasting
(RTR-GmbH) was established as the operative arm of KommAustria as well as
the Telekom Control Commission to create a "convergence regulator.

Address:

A-1060 Wien
Mariahilfer Straße 77-79 AUSTRIA

Phone: +43 (0) 1 58058 - 0

Fax: +43 (0) 1 58058 - 9191

Email: rtr@rtr.at

Website: <http://www.tkc.at>

Agence Nationale des Frequences
Type of Organization: Government Agency
Area: Communications
Address:
78 Avenue du Général de Gaulle
Maisons-Alfort 94704 FRANCE
Email: info@anfr.fr
Website: <http://www.anfr.fr>

Autorite de Regulation des Telecommunications (ART) *French
Telecommunications Regulatory Agency*
Type of Organization: National Regulatory Agency
Area: Telecommunications
Address:
7 Square Max Hymans
75730 Paris Cedex 15 FRANCE
Phone: +33 1 40 47 70 00
Fax: +33 1 40 47 71 98
Email: courrier@art-telecom.fr
Website: <http://www.art-telecom.fr/eng/>

Belgian Institute for Postal Services and Telecommunications (BIPT)
Type of Organization: Government agency
Area: Telecommunications
Description:
BIPT is the Belgian regulatory agency for postal communications and telecommunication. The Institute is responsible for strategic, regulatory and operational tasks, tasks regarding the settlement of disputes between operators and regulation of the whole sector.
Address:
Avenue de l'Astronomie 14
Box 21
Brussels 1210 BELGIUM
Contact: Information Technology Section
Phone: + 32 2 226 88 88
Fax: + 32 2 226 88 77
Email: it@bipt.be
Website: <http://www.bipt.be/>

Comision del Mercado de las Telecomunicaciones (CMT) *Spanish
Telecommunications Market Commission*
Type of Organization: Governmental Agency
Area: Telecommunications
Description:

The Telecommunications Market Commission (CMT) is the independent Spanish body responsible for regulating the telecommunications and audiovisual service markets. The Telecommunications Market Commission is a public body attached to the Ministry of Science and Technology through the State Secretariat for Telecommunications and the Information Society that acts as a coordinator between the CMT and the Ministry.

Address:

C/ Alcalá 37
Madrid 28014 SPAIN

Contact Person: Sylvia Alonso – International Department

Phone: 913724300

Website: <http://www.cmt.es/>

Czech Ministry of Informatics

Type of Organization: Government Ministry

Area: Science and Technology Policy

Description:

The Ministry of Informatics seeks to create conditions in the Czech Republic for it to become the leader in information and communications technology in Central Europe. It is also striving to develop a functioning e-government, to establish conditions for fair competition on the telecommunications market and foster the development of e-commerce, and to facilitate for as many people as possible the widest access to and knowledge of communications technology.

Address:

Ministry of Informatics
Havelkova 2
130 00 Prague 3 CZECH REPUBLIC

Contact Person: Ing. Jan Prokšík - Director, Policy and International Cooperation Department

Phone: +420 221 008 111

Fax: + 420 224 221 484

Email: jan.proksik@micr.cz

Website: <http://www.micr.cz/>

Danish National IT and Telecommunications Agency

Type of Organization: Government agency

Area: Information Technology

Address:

Holsteinsgade 63
Copenhagen DK-2100 DENMARK

Contact Person: Christian Berg – IT and Mobile Division

Phone: +45 35 45 00 00

Fax: +45 35 45 00 10

Email: itst@itst.dk

Website: <http://www.tst.dk>

Danish Research Unit for Industrial Dynamics (DRUID) - Copenhagen Business School

Type of Organization: Academic research and training institute

Area: Scientific Development and Education

Description:

DRUID research focuses on the dynamics of technical, structural and institutional change at the level of the single firm as well as at the inter-firm level and the level of the economy as a whole. Fundamental trends such as the growing importance of knowledge for competitiveness, the information technology revolution, and the internationalization of the economy are also special areas of focus for DRUID research. DRUID also organizes two annual conferences and publishes an internationally well-recognized electronic working paper series.

Address:

DRUID Secretariat - Copenhagen
Copenhagen Business School
Department Industrial Economics and Strategy
Solbjergvej 3
2000 Frederiksberg DENMARK

Contact Person: Jeanette Hvarregaard - DRUID Administrative Staff

Email: druid@druid.dk

Website: <http://www.druid.dk/>

Danish Technological Institute

Type of Organization: Non-profit organization

Area: Science and Technology Policy

Description:

Danish Technological Institute is an independent, not-for-profit institution approved by the Danish authorities to provide technological services to business and the community. The Danish Technological Institute occupies a crucial position at the point where research, business, and the community converge. The Institute's mission is to promote growth by improving interaction and encourage synergy between these three areas.

Address:

Danish Technological Institute
Gregersensvej
Postboks 141
Taastrup DK-2630 DENMARK

Contact Person: Torben Colding

Phone: +45 72 20 20 00

Fax: +45 72 20 20 19

Email: torben.colding@teknologisk.dk

Website: <http://www.teknologisk.dk/>

Federation of Scientific and Technical Associations (FAST)

Type of Organization: Professional Association

Area: Science and Technology Policy

Address:

Federation of Scientific and Technical Associations
Piazzale Morandi 2
20121 Milano, ITALY

Contact Person: Dr. Alberto Pieri - General Secretary

Phone: (39) (2) 77790300

Fax: (39) (2) 782485

Email: fast@fast.mi.it

Website: <http://www.fast.mi.it/>

German Regulatory Authority for Telecommunications and Posts (RegTP)

Type of Organization: National Regulatory Agency

Area: Telecommunications

Description:

The Regulatory Authority is tasked with promoting the development of the postal and telecommunications markets through liberalization and deregulation.

Address:

Postfach 80 01

Bonn 53105 GERMANY

Phone: +49 228 14-0 (Switchboard)

Fax: +49 228 14-8872

Email: poststelle@regtp.de

Website: <http://www.regtp.de>

International Telecommunications Union (ITU)

Type of Organization: International Organization

Area: Telecommunications

Description:

The International Telecommunication Union is unique among international organizations in that it was founded on the principle of cooperation between governments and the private sector. With a membership encompassing telecommunication policy-makers and regulators, network operators, equipment manufacturers, hardware and software developers, regional standards-making organizations and financing institutions, ITU's activities, policies and strategic direction are determined and shaped by the industry it serves. ITU is also responsible for organizing Telecom, the world's largest and most influential telecommunication exhibition and forum. World Telecom is held every four years, with two regional events held each year in the intervening years, covering Asia, Africa, the Americas and the Arab States on a rotating basis. Designed as a service to ITU members, Telecom showcases the latest technologies and promotes in-depth discussion of key issues facing the industry through a comprehensive, wide-ranging forum program.

Address:

International Telecommunication Union (ITU)

Place des Nations

1211 Geneva 20 SWITZERLAND

Contact Person:
Phone: +41 22 730 5111
Fax: +41 22 733 7256
Email: itumail@itu.int
Website: <http://www.itu.int/>

Irish Commission for Communications Regulation (ComReg)

Type of Organization: National Regulatory Agency

Area: Telecommunications

Description:

ComReg is the statutory body responsible for the regulation of the electronic communications sector (telecommunications, radio communications and broadcasting transmission) and the postal sector. It is the national regulatory authority in Ireland for these sectors.

Address:

Commission for Communications Regulation
Block DEF, Abbey Court
Irish Life Centre
Lower Abbey Street
Dublin 1 IRELAND

Contact Person: Ciara Farren – International Affairs Executive

Phone: +353 1 8049600

Fax: +353 1 8049680

Website: <http://www.odtr.ie>

L'Autorita per le garanzie nelle comunicazioni (AGC) *Italian Communications Authority*

Type of Organization: Governmental Agency

Area: Communications

Description:

The Communications Regulatory Authority (Agcom) is an independent authority, which among other activities, supervises the implementation of liberalization in the telecommunication market through regulation and supervision activities, as well as through dispute resolution. It also oversees the rationalization of resources in audiovisuals, the application of antitrust rules in the field of communications, and the organization of the Registry of Communication Operators.

Phone: +39 081 7507111

Fax: + 39 081 7507111

Website: <http://www.agcom.it>

Ministero delle Comunicazioni *Italian Ministry of Communications*

Type of Organization: Government Ministry

Area: Communications

Description:

The Ministry supervises postal, financial products and telecommunications services, acts personally as a regulator, as well as practicing a policy of coordination, supervision and control, as by law enacted, as well as carries out type approvals for telecommunications apparatus.

Address:

Viale America 201

Roma 00144 ITALY

Phone: +39 06 54441

Fax: +39 06 5910953

Website: <http://www.comunicazioni.it/it/>

Office Fédéral de la Communication (OFCOM) *Swiss Federal Office of Communications*

Type of Organization: Government agency

Area: Communications

Description:

OFCOM oversees radio and television, radio communications, and telecommunications services and telecommunications installations in Switzerland

Address:

OFCOM

Federal Office of Communications

P.O. Box

Biel 2501 SWITZERLAND

Contact: International Relations Office

Phone: +41 32 327 59 39

Fax: +41 32 327 54 66

Email: ir@bakom.admin.ch

Website: <http://www.bakom.ch>

Onafhankelijke Post en Telecommunicatie Autoriteit (OPTA) *Dutch Independent Post and Telecommunications Authority*

Type of Organization: National Regulatory Agency

Area: Telecommunications

Address:

Postbus 90420

The Hague 2509 LK THE NETHERLANDS

Phone: (070) 315 35 00

Fax: (070) 315 35 01

Email: mail@opta.nl

Website: <http://www.opta.nl>

Science Foundation Ireland (SFI)

Type of Organization: Government-affiliated research body

Area: Scientific Development and Education

Description:

Science Foundation Ireland (SFI) provides awards to support scientists and engineers working in biotechnology and information and communications technology development. SFI also advances co-operative efforts among education, government, and industry that support its fields of emphasis and promotes Ireland's ensuing achievements around the world.

Address:

Science Foundation Ireland
Wilton Park House
Wilton Place
Dublin 2 IRELAND

Contact Person: William C. Harris - Director General

Phone: +353 (0) 1 6073079

Fax: + 353 (0) 1 607 3201

Email: wharris@sfi.ie

Website: <http://www.sfi.ie>

UK Office of Communications (OfCom)

Type of Organization:

Area:

Description:

Ofcom is the regulator for the UK communications industries, with responsibilities across television, radio, telecommunications and wireless communications services.

Address:

Ofcom Contact Centre
Riverside House
2a Southwark Bridge Road
London SE1 9HA UK

Phone: +44(0) 20 7981 3000 (Switchboard)

Fax: +44 (0) 20 7981 3333

Email: contact@ofcom.org.uk

Website: <http://www.ofcom.org.uk/>

Middle East & North Africa

Abu-Ghazaleh Information Technologies International (INTAGI)

Description:

Abu-Ghazaleh Information Technologies International (INTAGI) is a consulting company specialized in strategies related to information systems and technologies.

Address:

INTAGI
P.O. Box: 921100
Amman 11192, Jordan
Phone: (962-6) 566 9603

Fax: (962-6) 569 6284
Email: info@intagi.com
Website: <http://www.intagi.com/>

Agence Nationale de Reglementation des Telcommunications (ANRT)

Type of Organization: National Regulatory Agency

Area: Telecommunications

Address:

Centre d'Affaire
Boulevard Ar-Ryad
Hay Ryad - BP 2939
Rabat 10100 MOROCCO

Contact Person: M. Rachid Sefrioui – Director, Direction des Technologies de l'Information

Phone: +212 37 71 84 00

Fax: +212 37 71 86 60

Email: sefrioui@anrt.net.ma

Website: <http://www.anrt.net.ma>

Talal Abu-Ghazaleh Organization (TAG Organization)

Type of Organization: Professional Service Firm

Area: Intellectual Property Rights (IPR), Information Technologies (IT)

Description:

Talal Abu-Ghazaleh Organization is the largest Arab group of professional service firms in the fields of accounting, management consulting, training, intellectual property, legal services, information technology, capacity building, credit information and legal translation.

Address:

TAG Organization
PO Box: 921100
Amman 11192 Jordan
Phone: (962-6) 5 100 900

Fax: (962-6) 569 6284

Email: tagco@tagi.com

Website: <http://www.tagi.com/>

The Information Technology Association of Jordan (Int@j)

Type of Organization: Non-profit Organization

Area: ICT industry

Description:

The Information Technology Association of Jordan (int@j) was founded in May 2000 as voluntary non-profit, private organization established to effectively represent, promote, and advance the Jordanian software and IT services industry in the global market.

Contact Person: Bilal O. Abuzeid

Phone: 96265152322

Fax: 96265152344
Email: bilal.abuzeid@intaj.net
Website: www.intaj.net

Jordan Computer Society (JCS)
Type of Organization: Trade Association
Area: Economics and Business
Description:

The Jordan Computer Society is a nonprofit membership based trade association of Information and Communications Technology (ICT) businesses in Jordan. JCS works to enhance and improve the computer and communications technology business climate in Jordan by promoting the industry to other businesses and the general public, protecting the rights of computer and technology businesses, and assisting businesses to improve their sales and profits and to improve chances of exporting software developed by these companies to neighboring Arab countries in particular and to the world in general.

Address:
JCS
P.O. Box: 950813
Amman 11195 JORDAN
Contact Person: Dalia Al-Far
Phone: (962) 6 - 5154094
Fax: (962) 6 - 5154093
Email: info@jcs.org.jo
Website: <http://www.jcs.org.jo/>

Jordanian Ministry of Information & Communications Technology

Type of Organization: Governmental scientific institution
Area: ICT technology
Description:

It is the policy of the Government of Jordan to give the Information and Communications Technology (ICT) market incentive to contribute significantly to economic and social development by creating the legal, institutional, and commercial environment in which the ICT market is nurtured, grown, and sustained.

Address:
Jordanian Ministry of Information & Communications Technology
8th Circle, Abrader Wadi Al Seer
P.O. Box 9903
Amman 11191 JORDAN
Contact Person: Chief Information Officer
Phone: (962 6) 5851304
Fax: (962 6) 5861059
Email: cio@moict.gov.jo
Website: <http://www.mopc.gov.jo>

Informatics Association of Turkey (TBD)

Type of Organization: IT association

Area: Science & Technology Policy

Description:

TBD is the oldest ICT association in Turkey and it is open to all information systems professionals as well as those other professionals who benefit from and associate themselves with information systems in any manner when performing their respective professions. The principal goal of TBD is to help the advancement of theory and practice of computer science and related sciences and technologies in Turkey and to promote widespread utilization of information systems in the country in order to reach to the ideals of an information society.

Address:

TBD

Çetin Emeç Bulvarı 4. Cad No : 3/11-12 06450 A.Öveçler

Ankara TURKEY

Contact Person: Selçuk KAVASOGLU - Secretary General

Phone: +90 (312) 479 34 62

Fax: +90 (312) 479 34 67

Email: selcuk.kavasoglu@tbd.org.tr

Website: <http://www.tbd.org.tr/>

Saudi Ministry of Communications and Information Technology

Type of Organization: Government ministry

Area: Communications and Information Technology

Description:

The Ministry of Communications and Information Technology is responsible for issuing, supervising and following up the general policies, plans and programs to develop the sector of communication and information technology in Saudi Arabia.

Address:

Ministry of Communications and Information Technology

P.O. box 11112

Riyadh 11112 SAUDI ARABIA

Contact Person:

Phone: +966-1-463 7225

Fax: +966-1-405 2310

Website: <http://www.mcit.gov.sa/>

North America

American Society for Information Science and Technology (ASIS)

Type of Organization: Professional Association

Area: Information Science and Technology

Description:

Founded in 1937, the American Society for Information Science and Technology (ASIS&T) is the society for information professionals leading the search for new

and better theories, techniques, and technologies to improve access to information. ASIS&T counts among its membership some 4,000 information specialists from such fields as computer science, linguistics, management, librarianship, engineering, law, medicine, chemistry, and education; individuals who share a common interest in improving the ways society stores, retrieves, analyzes, manages, archives and disseminates information, coming together for mutual benefit.

Address:

ASIS
1320 Fenwick Lane
Suite 510
Silver Spring, MD 20910 USA
Contact Person: Mr. Richard B. Hill
Phone: (301) 495-0900
Fax: (301) 495-0810
Email: asis@asis.org
Website: <http://www.asis.org>

Canadian Radio-Television and Telecommunications Commission (CRTC)

Type of Organization: Non-Governmental organization

Area: Telecommunications

Description:

The CRTC is an independent agency responsible for regulating Canada's broadcasting and telecommunications systems.

Address:

CRTC
Ottawa, Ontario K1A 0N2 CANADA
Contact Person: Shirley Soehn – Executive Director, Telecommunications
Directorate
Phone: (416) 952-9096
Fax: (819) 994-0218
Email: info@crtc.gc.ca
Website: <http://www.crtc.gc.ca>

Center for Information Technologies - National Institutes of Health

Type of Organization: Government-affiliated research body

Area: Information Technology

Description:

The Center for Information Technology (CIT) has the mission to provide, coordinate, and manage information technology, and to advance computational science. It also seeks to be a vital partner in the discovery of biomedical knowledge. It is part of the National Institutes of Health (NIH).

Address:

Center for Information Technology
National Institutes of Health
10401 Fernwood Road

Bethesda, MD 20817 USA

Contact Person:

Phone: 301-496-6203

Email: TASC@nih.gov

Website: <http://www.cit.nih.gov/home.asp>

Economic Strategy Institute

Type of Organization: Think-tank

Area: Science & Technology Policy

Description:

A research think-tank that examines and publishes reports on trade and international competitiveness issues. ESI also publishes on various economic sectors, including telecommunications and information technology.

Address:

ESI

1401 H St., NW

Suite 560

Washington, DC 20005 USA

Contact Person: David Brandin - Chief Technology Officer

Phone: (202) 289-1288

Fax: (202) 289-1319

Email: dbrandin@econstrat.org

Website: <http://www.econstrat.org/>

Federal Communications Commission (FCC)

Type of Organization: Governmental agency

Area: Communications

Description:

The Federal Communications Commission (FCC) is an independent United States government agency, directly responsible to Congress. The FCC is charged with regulating interstate and international communications by radio, television, wire, satellite and cable.

Address:

445 12th Street SW

Washington, DC 20554 USA

Contact Person: Donald Abelson – Chief, International Bureau

Phone: (202) 418-0437

Fax: (202) 418-0710

Email: Donald.Abelson@fcc.gov

Website: <http://www.fcc.gov>

Information Technology for Development Division (ICT) – Sustainable Development Department (SDS) – Inter-American Development Bank (IADB)

Type of Organization: Inter-governmental agency

Area: Information Technology/Sustainable Development

Description:

The Information Technology for Development Division (ICT) facilitates matching the needs of countries in the area of information technology (IT) for development with the resources and capabilities of the Inter-American Development Bank. As countries attempt to generate synergy to ensure that their diverse IT related activities contribute to achieving development objectives, the IADB is involved in generating internal synergy in order to respond effectively and in a timely manner to a new set of integrated requirements from the Region.

Contact Person: Robert Vitro - SDS/ICT

Phone: +1-202-6232247

Fax: +1-202-3124041

Email: robertv@iadb.org

Website: <http://www.iadb.org/ict4dev/ictdev.htm>

Global Information and Communication Technologies (GICT) Department – The World Bank Group

Type of Organization: Inter-governemental agency

Area: Information and Communication Technology (ICT)

Description:

THE GICT Department provides governments, private companies, and community organizations with the capital and expertise needed to develop and apply information and communication technologies to reduce poverty and foster development. This assistance includes advising governments on policies and regulations that create a positive investment climate for telecommunications, postal services, and e-applications as well as structuring innovative transactions that attract private investment. Also, the GICT Department provides direct investment in private sector information and communications infrastructure, services, and technology companies in addition to making grants to innovative projects and disseminating what it learns from them.

Address:

Global Information and Communication Technologies Department

c/o The World Bank

1818 H Street NW

Washington, DC 20433 USA

Contact Person: Mostafa Terrab – Program Manager, Information for

Development (infoDev) Program

Phone: 202-458-5153

Fax: 202-522-3186

Email: infodev@worldbank.org

Website: <http://info.worldbank.org/ict/>

Institute for Telecommunication Sciences (ITS) - National Telecommunications and Information Administration (NTIA) - U.S. Department of Commerce

Type of Organization: Government-affiliated research body

Area: Telecommunications

Description:

The Institute for Telecommunication Sciences is the chief research and engineering arm of the National Telecommunications and Information Administration (NTIA). ITS supports such NTIA telecommunications objectives as promotion of advanced telecommunications and information infrastructure development in the United States, enhancement of domestic competitiveness, improvement of foreign trade opportunities for U.S. telecommunications firms, and facilitation of more efficient and effective use of the radio spectrum.

Address:

ITS

325 Broadway

Boulder, CO 80305-3328 USA

Contact Person: Val J. Pietrasiewicz - Chief, Telecommunications & Information Technology Planning Division

Phone: (303) 497-5216

Fax: (303) 497-5969

Email: vpietrasiewicz@its.bldrdoc.gov

Website: <http://its.bldrdoc.gov/index.php>

Institute of Electrical and Electronics Engineers, Inc. (IEEE)

Type of Organization: Professional Association

Area: Engineering

Description:

The Institute of Electrical and Electronics Engineers, Inc. (IEEE) is a non-profit, technical professional association of more than 360,000 individual members in approximately 175 countries. Through its members, the IEEE is a leading authority in technical areas ranging from computer engineering, biomedical technology and telecommunications, to electric power, aerospace and consumer electronics, among others. It also conducts technical publishing, conferences and consensus-based standards activities.

Address:

IEEE Corporate Office

3 Park Avenue

17th Floor

New York, NY10016-5997 USA

Contact Person:

Phone: 212 419 7900

Fax: 212 752 4929

Email: regional-activities@ieee.org

Website: <http://www.ieee.org/>

International Trade Administration - U.S. Department of Commerce

Type of Organization: Governmental Agency

Area: Economics and Business

Description:

The International Trade Administration (ITA) helps U.S. businesses participate fully in the growing global marketplace. It does this by providing practical information to help businesses select markets and products, ensuring that U.S.

businesses have access to international markets as required by trade agreements, and safeguarding U.S. businesses from unfair competition from dumped and subsidized imports.

Address:

ITA

14th Street and Constitution Avenue, NW

U.S. Department of Commerce

Washington DC 20230 USA

Contact Person: Terry Labat - Office of Telecommunications Technologies

Phone: (202) 482-4466

Fax: (202) 501-2548

Email: Terry_Labat@ita.doc.gov

Website: <http://www.ita.doc.gov>

National Telecommunications and Information Administration (NTIA) - U.S.

Department of Commerce

Type of Organization: Governmental Agency

Area: Telecommunications and Information Technology

Description:

The National Telecommunications and Information Administration (NTIA), an agency of the U.S. Department of Commerce, is the Executive Branch's principal voice on domestic and international telecommunications and information technology issues. NTIA works to spur innovation, encourage competition, help create jobs and provide consumers with more choices and better quality telecommunications products and services at lower prices.

Address:

National Telecommunications & Information Administration

U.S. Department of Commerce

Rm. 4701

1401 Constitution Ave., N.W.

Washington, D.C. 20230 USA

Contact Person: David S. Bortnick - Office of International Affairs

Phone: (202) 482-1866

Fax: (202) 482-1865

Email: dbortnick@ntia.doc.gov

Website: <http://www.ntia.doc.gov>

Office of Technology Policy - U.S. Department of Commerce

Type of Organization: Governmental Agency

Area: Science & Technology Policy

Description:

The Technology Administration's Office of Technology Policy (TA/OTP) has a dynamic selection of initiatives to support its mission and goals. OTP's programs involve promoting innovation, encouraging entrepreneurship and tech-led economic development, improving infrastructure, as well as empowering people through education and technology.

Address:

Office of Technology Policy
U.S. Department of Commerce
1401 Constitution Avenue, N.W.
Washington, D.C. 20230 USA

Contact Person: Ken Ferguson – Chief, International Technology Programs

Phone: (202) 482-6351

Fax: (202) 501-6849

Email: ken.ferguson@technology.gov

Website: <http://www.technology.gov/OTPolicy/default.htm>

Technology Administration - U.S. Department of Commerce

Type of Organization: Governmental Agency

Area: Science & Technology Policy

Description:

The Technology Administration (TA) serves as the focal point for policies and programs that will permit the U.S. private sector to utilize science and technology to improve its international competitiveness. This mission helps expand economic growth and jobs through the development and promotion of the use of civilian technology. It is part of the U.S. Department of Commerce and consists of the National Institute of Standards and Technology (NIST), the Office of Technology Policy (OTP), and the National Technical Information Service (NTIS).

Address:

The Technology Administration
U.S. Department of Commerce
1401 Constitution Avenue, N.W.
Washington, D.C. 20230 USA

Contact Person: Ken Ferguson – Chief, International Technology Programs

Phone: (202) 482-6351

Fax: (202) 501-6849

Email: ken.ferguson@technology.gov

Website: www.technology.gov

Telecommunications Development Fund

Type of Organization: Private Corporation

Area: IT Development

Description:

The Telecommunications Development Fund (TDF) is a private corporation based in Washington, DC financing early stage companies with high growth potential in the telecommunications industry that have innovative concepts and outstanding management. TDF acts as a catalyst for the creation and enhancement of a first class communications system for all Americans, by promoting access to capital for small businesses, strengthening competition in the telecommunications industry, stimulating new technological growth and development, promoting universal service, and enhancing the delivery of telecommunications services to rural and underserved areas.

Address:

Telecommunications Development Fund
2020 K Street, NW
Suite 375
Washington, DC 20006 USA
Contact Person: Guilherme Larangeira - Associate
Phone: 202-293-8840
Fax: 202-293-8850
Email: TDF.Mailbox@tdfund.com
Website: <http://www.TDFund.com>

World Information Technology and Services Alliance (WITSA)

Type of Organization: Industry association

Area: Information Technology

Description:

The World Information Technology and Services Alliance (WITSA) is a consortium of 60 information technology (IT) industry associations from economies around the world. WITSA members represent over 90 percent of the world IT market.

Address:

World Information Technology and Services Alliance (WITSA)
1401 Wilson Boulevard
Suite 1100
Arlington, VA 22209 USA
Contact Person: Anders Halvorsen, Senior Program Manager
Phone: (703) 284 5333
Fax: (617) 687-6590
Email: ahalvorsen@itaa.org
Website: <http://www.witsa.org/>

For a comprehensive listing of IT professionals and businesses in Jordan, refer to the Jordanian IT Expertise Search engine (or it.jo). It has extensive listings of IT professionals and businesses in Jordan and abroad and was created to benefit both employers and applicants in the IT industry. It can be accessed at:

<http://www.it.jo/>

For additional listings of World Information Technology and Services Alliance (WITSA) member organizations or to find additional IT organizations and associations, please refer to the following link:

<http://www.witsa.org/resources/>

For additional listings of related Information and Communication Technologies (ICT) organizations from around the world, please refer to the "International Telecommunication Union Global Directory" from the International Telecommunication Union (ITU). It has ICT organizations listed by region and country and is available at:

http://www.itu.int/cgi-bin/htsh/mm/scripts/mm.world?_languageid=1

Incubators

The Role of Business Incubation in a Knowledge Economy

Among the range of available economic development program tools, the process of business incubation and the development of facility-based business incubators have been a growth industry over the past two decades. Business incubators accelerate the successful development of entrepreneurial companies through an array of business support resources and services, developed or orchestrated by incubator management, and offered both in the incubator and through its network of contacts.

A business incubator's main goal is to produce successful firms that will leave, or "graduate" from the incubator program, as financially viable and freestanding companies. These incubator graduate companies have the potential to create jobs, revitalize neighborhoods, commercialize critical technologies and strengthen local and national economies. Most critical to the definition of an incubator is the provision of management guidance, technical assistance, and consulting tailored to young growing companies. Incubators usually also provide clients access to appropriate rental space and flexible leases, shared business services and equipment, technology support services, and assistance in obtaining the financing necessary for company growth.

Recently growing in importance and impact is the subgroup of incubators focused on new, technology-based companies. Many of these incubators have affiliations with major research universities or federal labs and research facilities. Typically, these incubators have tenant or affiliate companies with products or services deriving from information technology or advances in the biological sciences, although the technological concentrations have changed along with advances in the underlying science (e.g., ceramics and engineered materials). As such, they represent the incubation industry's increasingly visible role in the continued development of nations' knowledge economies.

Technology-based start-up companies represent a cornerstone of the knowledge economy that dominates the attention of government leaders, regional economic development officials, and average citizens because of the jobs and wealth it creates. While business incubators have contributed to international entrepreneurial activity for about two decades, those that focus on technology-based companies are becoming more numerous and sophisticated, and are contributing to marked increases in technology firms' sales, employment and contributions to local economies.

One of the defining characteristics of a knowledge economy is the importance of entrepreneurial enterprises and people. Small, flexible companies

seem to be particularly nimble at exploiting the potential of new knowledge and technology, getting to market faster, and providing a venue that attracts the creative and talented. In parallel, new approaches to capital formation and investment have evolved that match the needs and characteristics of knowledge economy entrepreneurs. From an economic development perspective, small companies are a significant, and arguably preeminent, source of new jobs in the economy. Whatever the specific value they add to their communities in terms of job creation and other benefits, it is clear that any region aspiring to have a robust, growth economy should have a strong entrepreneurial, technology-based sector. Moreover, in developing that sector, communities and regions can utilize technology business incubators. If planned and structured properly, new business enterprises can be built for long-term success despite the vagaries and unpredictability of markets, world events, and technology development. In other words, business incubation is perceived as more science than art, and the challenge is to establish business incubation systems that are rational, appropriate and effective.

Business Incubation as an Economic Development Strategy

The most widely held assumption about the need for business incubation is that it is a successful economic development strategy. Business incubators are viewed as a key means to strengthen local economies because they help more new businesses survive the precarious early years. Thus, local and national governments often fund and support non-profit business incubators as a way to increase the number of companies in a community, thereby increasing the number of better-paying jobs and broadening the tax base. Similarly, numerous efforts are underway to establish business incubation facilities that will accelerate economic development by establishing and strengthening an entrepreneurial climate in developing and transitional economies. Recently, efforts have increased to determine quantitative impacts of business incubation on local communities.

Business incubators of this type are most often established to stimulate business formation and revitalization of economically depressed areas where business start-ups are at high risk of failure. There is a significant body of literature about business incubation as an economic development tool. Similarly, there are a number of regional and national, even international associations for business incubation support. Examples include the National Business Incubation Association (NBIA), the Pacific Rim Incubation Network, and several business incubator networks sponsored by the World Bank, the United Nations, and other entities.

All business incubators must have a strategy for continuing operations, and most do so through establishment of a variety of income streams such as grants from local and state agencies and other support organizations, limited

financial returns from profits earned by client firms of the incubator through equity or royalties, and through rents and other fees charged to client firms. More recently, some incubators have also established seed funds that are available for highly qualified tenant firms based on business plans and anticipated future revenues from commercialized products and services. While not necessarily a characteristic of all such incubators, seed and venture funds do provide client firms with needed investment capital to achieve growth and stability. When seed funds are not available, successful incubators often maintain access to networks of angel investors and other sources of capital to which client firms are directed as appropriate.

To summarize, traditional public, non-profit, business incubators are established to achieve economic development goals. These are most often incubators “with walls” that provide office space and a suite of specialized assistance to a variety of start-up firms in a wide range of manufacturing, service, retail, and other industries. Incubators established with economic development goals are often located in economically depressed or rural areas, sometimes in abandoned warehouses or other building structures. The intent is to foster a number of high quality start-up firms that will subsequently become successful, grow, locate within the geographic area and employ a growing number of workers. Rents paid to the incubator by the client firms help defray expenses, contribute to increased property value and encourage more firms to locate in the general area.

Business Incubation as an Investment Strategy

In contrast to the public, or non-profit incubators, more recent approaches to business incubation emphasize investments leading to direct or indirect profitability for one or more investors or organizations. Examples of these more recent investment strategies include (1) for-profit incubators that resemble operating companies, including accelerators, EcoNets and Metacompanies, (2) corporate venture arms and (3) corporate-sponsored incubators. The goal in each of these general investment-type incubation systems is to generate a significant financial return by making sizable equity investments in and/or providing intensive management and technical development assistance to a few highly promising companies.

The for-profit incubators arose in the early 1990s as an outgrowth of the experiences of venture capitalists in the 1980s as well as from the corporate practice of realizing profits from acquisitions and mergers in addition to (or as a substitute for) profiting from sales of manufactured products. Since then, a variety of approaches have emerged, some with greater success than others. The earliest of these new approaches emerged with the explosive growth of Internet-based companies. After a slew of successful “dot.com” IPOs (initial public offerings) in the early 1990s that earned millions of dollars for early

investors, some technology business incubators began to focus exclusively on nurturing dot.com start-ups in a cash-rich environment.

These organizations identified themselves as “accelerators” rather than business incubators in the traditional sense. That was because the short life span of most information technology products (software, chips, and hardware configurations) and the need to “accelerate” the speed of transforming an idea into a product required a far more intensive approach to building new companies. In the accelerator model of business incubation, investors selected a small number of very promising technology-based start-ups and put them on the fast track to an initial public offering (IPO) in the stock market or merger and acquisition (M&A) status. The IPOs initially generated huge profits in many cases, leading to a new view of business development as a primary strategy for realizing profits. Another outcome of the early successes was the fact that the accelerators themselves began to work toward their own IPOs.

However, the accelerator movement was short-lived, by most standards, and other models replaced the accelerators. Accelerators were then followed by other investment-type models, such as EcoNets, Meta-companies, and an explosion of venture capital firms. In fact, as noted earlier, many “traditional” economic development focused business incubation facilities also adopted venture funds or have established formal relationships with investor groups and networks as a way to help client firms obtain investment capital needed for successful growth and sustainability. Thus, not only do the incubators continue to provide their clients with access to management, legal, financial, and other business assistance, they also help coach them in developing and making presentations to potential investor groups.

Business Incubators: Keys to Success

Business incubation facilities are now found in almost every country of the world. In the US alone there are several hundred incubators of various types and sizes, with or without venture capital investment funds, and with different goals and objectives. Managers of such facilities have their own professional societies and networks of colleagues. In Western Europe and the transitional economies of Central Europe, networks of incubators and technology enterprise centers have sprung up during the past ten or so years. Governments of developing countries, too, are moving to embrace the business incubation concept, and incubation programs managed by US universities and other entities such as the Austin Technology Incubator and IC² of the University of Texas at Austin, and funded via the United Nations, USAID and other organizations are beginning to emerge.

Virtually every business incubation facility in the US and internationally is organized along the lines determined by investment (profitability) or economic development goals, with an increasing number of US incubators combining both aspects. However, more often than not, business incubation facilities established

or being implemented in developing and transitional economies are established to bring about economic development. Incubation facilities in transitional and developing economies are often supported by government as well as by international economic development agencies including the World Bank, the United Nations Industrial Development Organization (UNIDO), and various other international, state or regional groups. The primary concern is to create and/or stabilize legal, regulatory, civil, financial and consumer environments that are conducive to new business development and growth.

But what makes for a successful incubator is still unclear as is how incubation facilities specifically contribute to the development of successful businesses. Is success determined by the amount of wealth realized by an enterprise's initial investors or by subsequent equity investments made in a new business by the incubator? Is it measured by the number of new jobs created in a community? Is it measured by the incubator itself undergoing some liquidity event, such as an initial public offering (IPO)? Or is success signified by broader geopolitical or econometric standards, such as a measurable shift toward free market capitalism, the rise and expansion of a middle class, or greater national economic competitiveness in the global marketplace?

In fact, while all of these measures continue to be utilized individually and collectively to measure business development success, not all measures are appropriate to all situations. Understanding which success outcomes are most meaningful for which groups of stakeholders (incubator managers, other venture investors, sponsoring funding agencies, community supporters, and the entrepreneurs themselves) is essential when considering the feasibility and desirability of establishing a business incubator within a community anywhere in the world. Thus, business incubation can serve as an economic development tool designed to have broad impact on a particular community in Pakistan or Turkey, for example. Incubation success in this context is measured by a set of success criteria that are very different from criteria used by early stage seed and venture capital groups that utilize business incubation as a tool for generating profits.

Business incubators funded by the US Department of Commerce's Economic Development Administration (EDA), the US Agency for International Development (USAID), or the United Nations Industrial Development Organization (UNIDO) define success very differently than do business incubation facilities operated by early stage venture investment groups. While the types of services provided to business start-ups may be similar, expectations and operations vary. The success of business incubation programs also depends in large part on the nature and extent of the economic, educational, political, and social infrastructures already present in a community, region or nation. In developing economies, for example, there may be few educated workers, erratic transportation, no intellectual property law, and undeveloped banking and regulatory systems. In such situations, business incubation programs must

address these larger issues in order to nurture an entrepreneurial spirit and foster development of new business enterprises.

In a recent survey of business incubators, the National Business Incubator Association (NBIA) noted that top-performing incubators identified in the NBIA had two very strong attributes that the program managers have identified as critical to their success:

- Location within or next to a major research university, medical institution, or federal laboratory.
- Or location in an otherwise resource-rich environment.

The NBIA report also noted that successful technology incubation programs that enjoyed access to nearby research institutions and environments, were able to provide their start-up firms with networks of highly specialized technical assistance providers, qualified workforces (including relatively low-cost graduate students), specialized laboratories, and equipment. In addition, affiliation with these research institutions provided entrepreneurial firms valuable credibility and reputational benefits, which made it easier for these firms to attract highly qualified employees, have credibility with supplier companies and customers, and have better access to venture capital and private financing.

Some other areas to consider in terms of business incubator success are noted in a that most successful incubators have either strong working relationship with a research-intensive university, medical research institution, or laboratory, or are located in a metropolitan area that had a high concentration of technology-based companies and associated business support firms (e.g., accountants, intellectual property lawyers, human resource consultants). Also, clients of incubators with a greater biotech/biomedical client focus had raised more money, obtained more research support, held more patents and in-licensed more technology than their peers. Biotech/biomedical-focused incubators' clients had slower revenue growth than IT/electronics and mixed technology incubators' clients and fell behind mixed technology incubators in employment growth. In other words, they grew but growth was based on investment capital. Service oriented incubators' companies grew faster both in terms of revenues and employment than product-focused incubator clients.

It is important to state here that two significant driving forces distinguish the various approaches to business incubation. That is, business incubators are established either (1) to achieve local and regional economic development goals with a social return on investment through the generation of jobs and businesses, or (2) to generate profits for the incubator operator(s) and investors. The most interesting new trend is a combination of both these driving forces. The following paragraphs describe the first two underlying driving forces and illustrate their influence on the nature and operations of business incubation facilities in the US and abroad.

For additional information on Business Technology Incubators, please refer to the following two publications from the Technology Administration:

A National Benchmarking Analysis of Technology Business Incubator Performance and Practices. May 2003.

<http://www.technology.gov/reports/TechPolicy/NBIA/2003Report.pdf>

Business Incubation: Emerging Trends for Profitability and Economic Development in the U.S. Central Asia, and the Middle East. May 2003.

http://www.technology.gov/reports/TechPolicy/incub_report-0305.pdf

Incubator Contact Listings

Incubator Companies

Europe

Enterprise Ireland

Area: Technology Incubation

Description:

Enterprise Ireland aims to bridge the gap between innovation and internationalization. It works with the research community and with its clients to exploit the benefits of technology innovation. Through Enterprise Ireland's network of 13 Irish offices and 33 international offices, it works with clients to win more export business by introducing them to key buyers and decision makers.

Phone: (353 1) 808 2000

Fax: (353 1) 808 2020

Website: www.enterprise-ireland.com

Scottish Enterprise

Area: Business Incubation

Description:

Scottish Enterprise priority's are to provide a range of high-quality services to help new businesses get underway, support and develop existing businesses, help people gain the knowledge and skills they will need for tomorrow's jobs, and help Scottish businesses develop a strong presence in the global economy.

Address:

5 Atlantic Quay

150 Broomielaw

Glasgow G2 8LU SCOTLAND

Phone: 0141 248 2700

Fax: 0141 221 3217

Website: www.scottish-enterprise.com

Softbank Corp.

Area: Technology Incubation

Description:

Softbank Europe Ventures (SBEV) invests in early and expansion stage technology companies with the opportunity to become market leaders. It believes that experienced, active investors can help young companies to achieve their potential.

Address:

12 St James's Square
London SW1Y 4RB UNITED KINGDOM
Phone: 44 (0) 20 7153 3409
Fax: 44 (0) 20 7153 3410
Email: info@softbanklondon.com
Website: www.softbank.com

United Nations Economic Commission for Europe
Area: Business Incubation

Description:

The "UNECE Guidelines on Best Practice in Business Incubation" cover the basic conditions and frameworks required for establishing business incubators in central and Eastern Europe and the Commonwealth of Independent States, such as the basic principles, financing, services available, choice of tenants, etc.

Address:

Palais des Nations, CH
1211 Geneva 10, SWITZERLAND
Phone: 41 22 9171964
Fax: 41 22 9170178
Email: enterprise@unece.org
Website: www.unece.org/trade/endeve/bi-main.htm

North America

ADVANSE International, Inc
Area: Incubation Company

Description:

ADVANSE International, Inc. has been providing international development assistance to its clients since 1985, when it was created by Electricité de France (EDF). It has built a unique breadth and depth of global experience, operational assistance methodologies and an unparalleled network of worldwide consulting partners to meet the unique needs of its clients.

Address:

7918 Jones Branch Dr.
Suite 600
McLean, Virginia 22102 USA
Phone: (703) 243 5991
Fax: (703) 243 5991
Email: info@advanse.com
Website: www.advanse.com

Becton Dickinson Biotechnology Incubator
Area: Technology Incubation

Description:

BD Technologies offers biotech start-up firms unique business opportunities as well as significant benefits. Incubator partners use BD's state-of-the-art

laboratory facilities and equipment and have the opportunity to research collaboratively with BD scientists during an "incubation" period that can range from six months to two years. The ultimate goal is to see successful research and development collaborations lead to further investments in new business development opportunities for both parties.

Address:

1 Becton Drive
Franklin Lakes, NJ 07417 USA

Phone: 201.847.6800

Website: www.bd.com/technologies/busdev

Cargill Ventures

Area: Technology Incubation

Description:

Cargill invests in early stage technology companies that enable commerce, innovation, and efficiencies and help us to be a global leader in providing goods and services necessary for life, health and growth. In business over 135 years, Cargill is a globally respected business leader. We take a long-term perspective, and have the patience and foresight to build sustainable business.

Address:

1500 Fashion Island Blvd
Suite 209
San Mateo, CA 94404 USA

Contact Person:

Phone: 650.356.7060

Fax: 65.356.70770

Website: www.cargillventures.com

Cenetec Ventures, L.L.C.

Area: Technological Business Incubator Company

Description:

Cenetec Ventures is a leading integrated technology commercialization and venture capital firm designed to help pioneering entrepreneurs turn the most innovative high technology products and services into successful companies. Cenetec Ventures focuses on several technology sectors including medical technology, wireless communications, microelectronics, software development, and Internet technology infrastructure.

Address:

8000 North Federal Highway
Boca Raton, FL 33487 USA

Phone: 561-953-5200

Fax: 561-953-5201

Email: info@cenetec.com

Website: <http://centec.com>

Cisco Systems, Inc.

Area: Technology Incubation

Description:

In addition to being one of the most influential businesses in its industry, Internet networking giant Cisco Systems also has a reputation for being among the top technology corporate VC's. Cisco practices an aggressive investment strategy that often leads to acquisition.

Address:

170 West Tasman Dr.

San Jose, CA 95134 USA

Phone: (800) 553-6387

Website: <http://www.cisco.com>

CMGI Corporate

Area: Technology Incubation

Description:

CMGI, Inc. provides technology and e-commerce solutions that help businesses market, sell and distribute their products and services. CMGI offers targeted solutions including industry-leading global supply chain management and web-based distribution and fulfillment.

Address:

425 Medford Street

Charlestown, MA 02129 USA

Phone: (617) 886.4500

Website: <http://CMGI.com>

Council for Entrepreneurial Development

Area: Business Incubation

Description:

With more than 3,500 active members representing 1,000 companies, CED is the largest entrepreneurial support organization in the US. CED provides an interactive forum for entrepreneurs, investors, service professionals, academicians, researchers and public policy makers who combine their energies to create an environment in which entrepreneurship can flourish. CED helps entrepreneurs in wide range industries and at all stages of development—from high-tech product based organizations to professional service firms, from one-person start-ups to 1000-person businesses. CED has several different membership categories with different levels of member benefits.

Address:

CED

P.O. Box 13353

Research Triangle Park, NC 27709

Contact Person: Monica Doss - President

Phone: 919.549.7500

Fax: 919.549.7405

Email: mdoss@cednc.org

Website: www.cednc.org/incubator/becton.html

Dell Ventures

Area: Technology Incubation

Description:

Dell Ventures was formed in March 1999 as a wholly owned strategic investment arm of Dell, investing in select private companies across broad areas of interest to Dell. Dell Ventures is a long-term investor, and the strategic objectives of Dell guide its strategy. Currently, Dell Ventures is targeting later-stage technology companies that can contribute to Dell's product leadership and customer focus, while providing a financial return to company shareholders.

Address:

Dell, Inc.

1 Dell Way

Round Rock, Texas 78682 USA

Phone: 800-274-3355

Website: www.dellventures.com

Eli Lilly & Co.

Area: Business Incubation

Description:

Lilly Ventures is the venture capital arm of Eli Lilly and Company, a leading innovation-driven pharmaceutical company. Its primary goal is to facilitate the success of companies through early to expansion stage investments and value-adding resources.

Address:

D.C. 1088

Lilly Corporate Center

Indianapolis, IN 46285 USA

Phone: (317) 651-3050

Fax: (317) 651-3051

Email: Lilly_Ventures@LILLY.COM.

Website: www.lillybioventures.com

Foundries Holdings, Inc.

Area: Technology Incubator

Description:

Foundries Holdings, Inc. is a premier broadband networking and communications metacompany, building leading edge Partner Companies to advance the Internet infrastructure. Foundries Holdings has built Partner Companies that are committed to excellence across all disciplines and have work environments that reward drive, vision and entrepreneurial spirit.

Address:

3080 North First Street

San Jose, CA 95134 USA

Contact Person:

Phone: 408-434-5500

Email: contact@razafoundries.com

Website: www.razafoundries.com

Garage Technology Ventures

Area: Technology Incubator

Description:

Garage Technology Ventures is an early-stage venture capital firm located in Silicon Valley. Its focus is on emerging technology companies in California and the West Coast. Typical investment for Garage Technology Ventures is from \$100,000 to \$1,000,000. It focuses on entrepreneurs who have big ideas and who need seed capital to turn their ideas into action.

Address:

3300 Hillview Avenue

Suite 150

Palo Alto, CA 94304 USA

Phone: 650-354-1800

Fax: 650-354-1801

Website: <http://garage.com>

IC² Institute at The University of Texas at Austin

Area: Technical Business Incubation

Address:

2815 San Gabriel

Austin, Texas 78705

Description:

IC² (Innovation, Creativity & Capital) Institute is an international, trans-disciplinary "Think and Do" tank devoted to solving unstructured problems to accelerate wealth & job creation and shared prosperity at home and abroad. As a research unit at The University of Texas at Austin, IC² is focused on knowledge exploration, dissemination, and application, across a broad range of academic and applied areas.

Phone: 512-475-8900

Fax: 512-475-8901

Email: info@icc.utexas.edu

Website: <http://www.ic2.org>

Incubator America

Area: Business Incubators

Description:

Incubator America orients companies to American business practices, introduces tenants to key figures and resources in their industry and assists companies in navigating and taking advantage of the wealth of resources available to businesses in the Washington metropolitan area.

Address:

Mason Enterprise Center

Nalin Jain

Arlington Small Business Development Center
3401 North Fairfax Drive, Room 253
Arlington, VA 22201, USA
Phone: 703-993-8132
Website: www.incubatoramerica.com

International Business Incubator

Area: Incubator Company

Description:

The International Business Incubator is a non-profit business incubator sponsored by a collaboration of business, government and academic organizations. The IBI staff and professional associates provide entrepreneurial, cultural, business development and financial experience to client businesses. IBI is also guided by a professional business incubator staff, which understand the needs of non-US business representatives new to the U.S.

Phone: (408) 351-3300

Fax: (408) 351-3332

Email: info@ibi-sv.org

Website: www.ibi-sv.org

Japanese External Trade Organization

Area: Incubator Organization

Description:

The Japan External Trade Organization (JETRO) is a Japanese government organization that promotes mutually beneficial investment and trade relations between Japan and other nations. JETRO was established in 1958, and has a worldwide network of 38 offices in Japan and 79 offices overseas. It represents the Japanese government's move in recent years to improve the climate for entrepreneurship.

Address:

235 Pine Street

Suite 1700

San Francisco, CA 94104 USA

Phone: 415.392.1333

Fax: 415.788.6927

Website: www.jetrogo.jp/usa

Johnson & Johnson Development Corporation

Area: Technology Incubation

Description:

Johnson & Johnson Development Corporation makes minority equity investments in healthcare technology startups and young, publicly traded companies whose products have potential long-term strategic interest to J & J.

Website: <http://www.jnj.com>

Korea Business Development Center

Area: Business Incubator

Description:

The Korea Business Development Center (KBDC) is a fully subsidized business incubator of the Small and Medium Business Administration (SMBA) and Small Business Corporation (SBC) of the Republic of Korea. First established in November of 2000 as the Korea Venture Center, the center name was changed in March 2004 to better reflect the organization's mission and activities. While the early tenants of KVC were start-up companies with products or services in various stages of commercialization, new arrivals to KBDC are mature small and medium sized Korean companies with well-established products or services seeking to expand into the US market.

Address:

1952 Gallows Road

Suite 110

Vienna, VA 22182 USA

Phone: 571-633-9600

Fax: 571-633-9517

Email: ghlee@kvc-usa.com

Website: www.sbc.or.kr/english/kvc.html

Lucent Technologies

Area: Technology Incubators

Description:

Lucent Technologies, Inc. seeks investments in emerging start-ups that specialize in data networking, semiconductors, and communications software.

Address:

c/o The Bank of New York

P.O. Box 11009

Church Street Station

New York, NY 10286-1009

Phone: 908 582-6173

Email: lucentir@lucent.com

Website: www.lucent.com

Merck Capital Ventures, L.L.C.

Area: Business Incubation

Description:

Merck Capital Ventures, L.L.C. is a subsidiary of Merck & Co., Inc. MCV seeks to invest capital in private Internet and other emerging businesses focused in areas related to the commercialization, distribution and delivery of pharmaceuticals and related health care services.

Address:

50 Tice Blvd.

Woodcliff Lake, NJ 07677 USA

Phone: (201) 722-5040

Fax: (201) 722-5041
Email: mcvproposals@merck.com
Website: www.merckcapitalventures.com

National Business Incubation Association

Area: Business Incubation

Description:

The National Business Incubation Association (NBIA) is the world's leading organization advancing business incubation and entrepreneurship. It provides thousands of professionals with the information, education, advocacy and networking resources to bring excellence to the process of assisting early-stage companies worldwide.

Address:

20 E. Circle Drive
#37198
Athens, OH 45701-3571 USA

Phone: (740) 593 4331

Fax: (740) 593-1996

Email: info@nbia.org

Website: www.nbia.org

Nidus Center for Scientific Enterprise

Area: Business Incubation

Description:

Nidus Center is a unique business incubator that provides high value-added services and resources to its clients. Many first-time entrepreneurs perceive that finding a space with the lowest rent is the goal when choosing a place to locate their business. In fact, those of us who have been in the entrepreneurial assistance business for some time know that it is the intangible benefits Nidus Center can bring that are the most critical to your success. Services such as assistance with business planning, advisory boards, mentoring, negotiations, management building assistance and intellectual property protection will be the most important critical factors in your success.

Address:

893 North Warson Road
St. Louis, MO 63141 USA

Contact Person: Dr. Robert J. Calcaterra, President/CEO

Phone: 314.812.8001 or 314.812.8000

Fax: 314.812.8080

Email: robert.j.calcaterra@niduscenter.com

Website: www.niduscenter.com

Panasonic Digital Concepts Center (PDCC)

Area: Technology Incubation

Description:

PDCC has the capability to work with both early stage and late stage companies. With the primary objective of creating technology collaborations, our activities include providing the physical infrastructure and critical support for early stage companies in our highly acclaimed incubator and making venture investments. The Panasonic Incubator delivers a unique opportunity for technology start-ups. The PDCC incubator, located in Cupertino, California, provides entrepreneurs access to resources and to a network of seasoned professionals driven to accelerate their growth.

Address:

550 South Winchester Blvd.

Suite #300

San Jose, CA 95128 USA

Phone: 408.861.3900

Fax: 408.861.3990

Website: www.panasonicventures.com

Santa Barbara Technology Group

Area: Technology Incubators

Description:

Santa Barbara Technology Group, LLC is a private investment and consulting firm engaged primarily in working with, and acquiring equity from, early-stage technology companies. The firm has become an important connection for any high-tech start-up on the Central Coast. They provide world-class management assistance, strategic guidance, and valuable connections for entrepreneurs. They provide young companies access to financing and operational and technological infrastructure. It was originally founded as Santa Barbara Technology Incubator, the company provided seed capital, professional guidance, physical and corporate infrastructure and relationships necessary to launch successful technology business.

Address:

Santa Barbara Technology Group, LLC

402 East Gutierrez Street

Santa Barbara, CA 93101

Phone: (805)879-1501

Fax: (805) 564-7188

Email: info@sbtechnology.com

Website: http://www.sbtechnology.com/index_main.html

TechSpace

Area: Technology Incubators

Description:

Founded in 1997, TechSpace is a premier full-service facilities and infrastructure provider. It integrates world-class flexible office space with four locations in New York, Boston, and Orange County. TechSpace provides state-of-the-art technology services and business process outsourcing solutions, enabling its customers to focus on their core business.

Contact Person: Brady Butcher (Orange County location)
Phone: 949.389.5936
Website: www.TechSpace.com

Business and Technology Incubators

Asia

hatchingIT
Phone: 61 3 9663 4688
Fax: 61 3 9650 9484
Email: adam@hatchingit.com
Website: <http://www.hatchingIT.com>

ICICI Infotech Incubation Center
Address:
ICICI Infotech Incubation Center,
Keshav Khade Marg,
Mahalaxmi, Mumbai 400034
Contact Person: AA Baride, Chief Imagineering Officer
Phone: +91 22 4906259
Fax: +91 22 4923600
Email: baride@icici.com

Indiaco (P) Limited
Address:
Indiaco (P) Limited
214 LBS Road,
Pune 411030 India
Phone: 091-20-4003068
Fax: 091-20-4336545
Email: rahul@indiaco.com

NurtureIT
Address:
NurtureIT
F-128 Mohammadpur
New Delhi – 110066 India
Phone: +91-98101-14544
Fax: +91-11-4691573
Email: achand@ittindia.com

Europe

Athena High Technology Incubator Ltd.

Description:

Athena High Technology Incubator Ltd. is an international for-profit business incubator, based in Cyprus, which provides support services for transforming teams of entrepreneurs into world-class start-ups. Athena Incubator focuses on seed or early stage financing relating to information and communication technologies (ICT) although all high-tech sectors are also possible with the exceptions of biotech and genomics.

Address:

Athena High Technology Incubator Ltd.,
6 Theotoki Street,
Nicosia,
Cyprus

Contact Person: Ms.Eleftheria Ioannou

Phone: +357-2-554360

Fax: +357-2-2343680

Email: ioannoue@athenatech.com.cy

Website: <http://www.athenatech.com.cy>

Middle East and North Africa

Ankara Technology Development Center (AU)

Area: Technology Development

Description:

Technology Development Centers have been established on university campuses to help people trained in scientific and technological fields become entrepreneurs. They are designed to assist in establishing new technology-based enterprises, support similar steps taken by existing SMEs, commercialize R&D efforts, develop and diversify regional economic activities and strengthen university-industry cooperation. They operate as business incubators in support of technology-oriented economic development.

Address:

Ankara Technology Development Center (AU)
A.Ü.Ziraat Fakültesi Gıda Müh. Bölümü 4 No.lu Blok 06110 Kalaba
ANKARA, TURKEY

Phone: 90 (312) 360 45 06

Fax: 90 (312) 360 59 35

Email: Aukosgeb@ada.net.tr

Netakeoff

Type of Incubator: Incubator/Accelerator

Description:

This is the first internet incubator in the Arab world and is a full service incubator/accelerator in Lebanon dedicated to the development of internet and technology firms by providing seed capital, office facilities, business assistance, technology know-how, and other support services in return for an equity stake in the incubated companies. The business model allows entrepreneurs to rapidly focus on building a strong market position, and thereby winning the crucial time-to market race.

Address:

Netakeoff,
PO Box 4396,
Beirut, LEBANON

Phone: 961-3-629 425

Fax: 961-1-818 755

Email: wsolh@netakeoff.com

North America

Genesis Technology Incubator

Area: Technology Incubator

Description:

The University of Arkansas with seed funding provided by the Arkansas Science and Technology Authority (ASTA), established Genesis in 1986. Genesis was founded to diversify Arkansas' technology and economic base and to help create employment opportunities for Arkansans skilled in the science and engineering professions. This incubator provides fledgling technology-based entrepreneurs with office space and shared services, such as reception, secretarial and bookkeeping.

Address:

700 Research Center Boulevard
Fayetteville, AR 72701

Phone: (501) 575-7227

Fax: (501) 575-7446

Email: genesis@cavern.uark.edu

Website: www.genesis.uark.edu

Related Websites

Development Organizations

Directory of Development Organizations

This directory has been prepared to facilitate international cooperation and knowledge sharing in development work, both among NGOs, research institutions, governments and private sector organizations. The Directory is a compilation of contact data of the main sources of assistance available for private sector development and poverty reduction. A wide range of organizations are included in the Directory: international organizations, government ministries, private sector institutions, development agencies, universities, research and training institutes, NGOs/PDOs, grant makers, banks, micro finance institutions, and development consulting firms. It lists over 29,500 organizations.

<http://www.devdir.org/>

Geographic Information

European Commission GI & GIS Project

The GI&GIS project aims at helping to pave the way for both the private and public sectors in the EU to overcome the difficulties that hinder the development and application of Geographic Information (GI). The specific objectives of the GI&GIS project are threefold: to work towards a European reference center for GI; to assist the Services of the Commission to conceive, create and harmonize pan-European spatial databases relevant to support and monitor EU policies; and to develop models and tools that help to understand the spatial component of phenomena in the Union. Site contains links, documents, and event information related to Geographic Information and Services.

http://www.ec-gis.org:8080/wecgis/ecgis.dyn_ecactivity.show?nome='6'

Hazardous Waste Technology

EPA REACH IT

EPA REACH IT is an on line searchable database that contains information about innovative and conventional technologies for treating and characterizing hazardous waste sites. EPA REACH IT contains detailed information provided by vendors that enables you to screen and assess remediation and field characterization technologies quickly. It also contains information provided by U.S. Environmental Protection Agency (EPA) remedial project managers (RPM) and other federal and state project managers about sites where those technologies are being used.

<http://www.epareachit.org/index3.html>

Intellectual Property Rights (IPR)

Academic Institutions

This link from WIPO contains listings for IPR academic institutions, along with their web addresses.

http://www.wipo.int/news/en/links/academic_web.htm

Intellectual Property Rights (IPR) Training Program Database

This site, sponsored by the Bureau of Economic and Business Affairs of the U.S. Department of State, is for the IPR Training Coordination Group. It is comprised of U.S. government agencies and industry associations that provide IPR-related informational programs, training, and technical assistance to foreign officials and policy makers. Many programs are offered to help developing countries comply with their obligations under the World Trade Organization (WTO) Agreement on Trade Related Aspects of Intellectual Property, commonly known as "TRIPs." These programs also help the United States meet its TRIPs obligation to provide technical assistance to developing and least developed members of the WTO.

<http://www.training.ipr.gov/index.cfm?fuseaction=content.home>

Intellectual Property – Related Organizations

This link from the International Intellectual Property Institute (IPI) contains listings for additional IPR organizations.

<http://www.iipi.org/links/>

International Organizations

This link from the WIPO website contains listings for international organizations related to IPR, along with their web addresses.

http://www.wipo.int/news/en/links/intergov_web.htm

International Non-Governmental Organizations with Permanent Observer Status at WIPO

This link from the WIPO website contains listings for non-governmental IPR organizations, along with their web addresses.

http://www.wipo.int/news/en/links/nongov_web.htm

Technology Policy

Technology Administration – United States Department of Commerce

The Technology Administration seeks to maximize technology's contribution to economic growth, high-wage job creation, and the social well being of the United States.

www.technology.gov

Water Technology

Water Technology

This site has extensive links to water industry, governmental and related organizations from around the world. It also has links to publications, products & services, as well as events.

<http://www.water-technology.net/>

Related Publications

***Capitol, Technology or Efficiency? A Comparative Assessment of Sources of Growth in Industrialized and Developing Countries.* Helmut Forstner & Anders Isaksson, January 2002.**

This paper centers on a set of empirical findings about growth. It aims at presenting a comprehensive overview of aggregate and manufacturing growth between 1980 and 1990 in a sample composed of industrialized and developing countries. In this overview, the focus is on quantifying the respective contributions to growth made by capital accumulation and productivity change, as well as on a decomposition of the latter into the elements of technological change and change in technical efficiency. For these results, which were obtained by use of advanced techniques of productivity measurement, the paper also attempts a broad interpretation within the framework of a standard typology of countries.

http://www.unido.org/userfiles/PuffK/SIN_DPS03.pdf

***Defensive Publishing: A Strategy for Maintaining Intellectual Property as Public Goods.* International Service for National Agricultural Research, September 2002.**

Public research institutions must consider means to ensure that the products of their work will remain accessible to their beneficiaries. One such means is “defensive publication.” In a defensive publication, the scientists disclose details about their innovation to the public, thereby preserving their freedom to use the innovation by preventing others from patenting it. The link between defensive publication and patenting is the requirement for novelty in a patent application. Since a defensive publication makes a description of the innovation available publicly, the innovation can no longer be called new and thus patent-worthy. This briefing paper first introduces the practice of defensive publication. It then reviews the concept of novelty, which is at the center of the use of defensive publishing to prelude patenting. The paper then describes the various options available for defensive publishing and discusses the strengths and weaknesses of each. The conclusion presents a table that research managers can use to aid decisions on defensive publishing – both forms and methods.

<http://www.isnar.cgiar.org/publications/pdf/bp-53.pdf>

***Evaluation of the BITS Incubator Program & Intelligent Island Incubator.* The Allen Consulting Group, November 2003.**

The purpose of this evaluation has been to provide advice to the Department of Communications, Information Technology and the Arts (DCITA) on the extent to which the Incubators are achieving Program objectives. The evaluation has also examined the efficiency and effectiveness of the two programs. The methodology used for this study follows that of the pilot evaluation. Surveys of

incubators, incubates, and Graduates were used to obtain data. The views of State government officials and venture capitalists were also sought.

http://www.dcita.gov.au/download/0,2118,4_119021,00.pdf

***Intellectual Property Rights And The Use Of Compulsory Licenses: Options For Developing Countries.* Centre for Advanced Studies, 2003.**

Intellectual property law has undergone more changes in the last ten years than in the rest of this century. These changes, prompted by the adoption of the Uruguay Round Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) in 1994, have led to an expansion of intellectual property rights into new fields and to a significant strengthening of the title-holder's legal position. The purpose of this paper is to provide concrete examples on how compulsory licenses have been provided for in national laws and, in particular, to illustrate the grounds and conditions on which such licenses have been granted in specific instances. The emphasis of the paper is not on the general principles relevant to the matter, but on the ways in which compulsory licenses have been actually provided for or used in order to satisfy diverse public interests. Many of the decisions pertaining to the granting of compulsory licenses in the developed countries may be useful in indicating the options available to developing countries wishing to have adequate legislation at the national level on this matter. The decisions referred to also make it clear that compulsory licensing is firmly rooted in the legal systems of developed countries, including those that seem to oppose that concept in international fora.

<http://www.southcentre.org/publications/complicence/toc.htm>

***Intellectual Property Rights for Agricultural Biotechnology Options and Implications for Developing Countries.* International Service for National Agricultural Research, October 1993.**

National decision-makers and directors of national agricultural research systems (NARS) are presented with a number of options to help equalize opportunities between the industrialized and developing countries regarding biotechnology innovation in agricultural research. One of these options is the use of legislation to protect intellectual property rights (IPR) for products and processes of biotechnology. The idea of selecting from these options, raise a number of issues that are currently the subject of widespread international debate. The issues include the types of protection available and their respective exemption clauses, the appropriateness of using IPR for living material, the attempts to harmonize international IPR regulations, and the relation of IPR to international trade and development. This report covers these topics in reference to this growing debate, with special attention to the possible effects of the IPR on national agricultural research systems in developing countries. Thus, the audience for this report includes decision-makers and directors of research in various ministries, including Agriculture, Justice, Policy and Planning, and

Science and Technology, as national policies on intellectual property rights are not formulated for the agricultural sector alone.

<http://www.isnar.cgiar.org/publications/pdf/RR-03.pdf>

Standards and Competitiveness – Coordinating for Results Removing Standards – Related Trade Barriers Through Effective Collaboration. Technology Administration, May 2004.

This report summarizes Department of Commerce (DOC) standards-related activities and industry input regarding the priority issues that needed to be addressed to ensure an environment in which standards do not constitute barriers to trade. The report provides recommendations on where the Department can enhance its activities. In addition, this report will be used as a basis for the Department to work with other federal agencies to inventory existing government programs and initiatives in order to improve coordination in the management of federal interagency trade-related standards activities.

http://www.technology.gov/reports/NIST/2004/trade_barriers.pdf

Turning Science into Business: Patenting and Licensing at Public Research Organisations. Organization for Economic Co-operation and Development, 2003.

This report includes data on the stock and number of patents and licenses, the amount of licensing revenue, the size and activities of technology transfer offices, the types of licensing agreements, as well as information on government and institutional policies for owning and exploiting intellectual property. In addition, the report includes several case studies on how OECD countries are moving to unlock the social and economic benefits of public research.

http://www.oecd.org/document/61/0,2340,en_2649_34797_2513917_119699_1_1_1,00.html

WIPO Guide To Intellectual Property Worldwide – Second Edition. World Intellectual Property Organization, January 2003.

This Guide is the first of its kind published by WIPO. It gives essential information on intellectual property by means of individual country profiles on WIPO Member States. The profiles include basic legislation, membership of international treaties, administrative structures, governmental and non-governmental bodies for information and enforcement, educational institutions and industrial property statistics; useful contact addresses are provided for readers needing further information. It is intended as a tool for all kinds of readers, not only for officials working in this field, but for legal practitioners, teachers, students, researchers, creators or owners of intellectual property, as well as for interested members of the general public.

<http://www.wipo.int/about-ip/en/ipworldwide/index.html>

List of Abbreviations

List of Abbreviations used in this document

CIO	Chief Investment Officer
DoC	United States Department of Commerce
DoD	United States Department of Defense
FDI	Foreign Direct Investment
GATT	The General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
HHS	United States Department of Health and Human Services
ICT	Information and Communications Technology
IFC	International Finance Corporation
IP	Intellectual Property
IPA	Institutional Patent Agreement
IPR	Intellectual Property Rights
ISI	Import Substitution Industrialization
IT	Information Technology
MBA	Master of Business Administration
MIT	Massachusetts Institute of Technology
MNE	Multinational Enterprise
NASA	National Aeronautics and Space Administration
NIST	National Institute for Standards and Technology
NSF	National Science Foundation
OECD	Organization for Economic Co-operation and Development
OTP	Office of Technology Policy
R&D	Research and Development
S&T	Science and Technology
SME	Small, Medium Enterprises
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UNCTAD	United Nations Conference on Trade and Development
UNCTNC	United Nations Center on Transnational Corporations
WTO	World Trade Organization

References

Abu-Ghazaleh Intellectual Property (AGIP). "Related Intellectual Property Websites" website. Accessed June 19, 2004.
<http://www.agip.com/links.htm>

Information Technology Association – Jordan (INT@J). "Jordanian IT Expertise Search engine (it.jo)." Accessed April 29, 2004.
<http://www.it.jo/>

International Committee on Weights and Measures (CIPM). *Evolving Needs For Metrology in Trade, Industry, and society and the Role of the BIPM*. Bureau International des Poids et Mesures (BIPM): April 2003.
<http://www1.bipm.org/en/publications/official>

International Organization for Standardization (ISO). "International Organizations in Liasion with Technical Committees" website. Accessed June 1, 2004.
<http://www.iso.org/iso/en/stdsdevelopment/liaisonorglist/LiaisonOrgList.LiaisonOrgList>

International Telecommunication Union (ITU). "International Telecommunication Union Global Directory." Accessed on June 19, 2004.
http://www.itu.int/cgi-bin/htsh/mm/scripts/mm.world?_languageid=1

Licensing Executives Society International (LESI). "LESI links" website. Accessed May 28, 2004.
<http://www.lesi.org/level1/links-fr.htm>

National Institute for Standards and Technology (NIST). "National Metrology Laboratories" website. Accessed July 15, 2004.
<http://www.nist.gov/oiaa/national.htm>

National Institute for Standards and Technology (NIST). "National Standards Bodies" website. Accessed July 15, 2004.
<http://www.nist.gov/oiaa/stnd-org.htm>

Office of Technology Policy (OTP). *A National Benchmarking Analysis of Technology Business Incubator Performance and Practices*. Washington, DC: OTP, May 2003.
<http://www.technology.gov/reports/TechPolicy/NBIA/2003Report.pdf>

Office of Technology Policy (OTP). *Business Incubation: Emerging Trends for Profitability and Economic Development in the U.S. Central Asia, and the Middle East*. Washington DC: OTP, May 2003.

http://www.technology.gov/reports/TechPolicy/incub_report-0305.pdf

Patent Office of the Cooperation Council for the Arab States of the Gulf. "Useful Links" website. Accessed June 17, 2004.

http://www.gulf-patent-office.org.sa/about_GCCframe.htm

World Information Technology and Services Alliance (WITSA). WITSA Members and Resource Links Website. Accessed May 8, 2004.

<http://www.witsa.org/resources/>