

CHOICE Internal report I-2

Chinese regional and local funding bodies for Scientific and Technical research

Document organisers: Dr T J Owens and Dr T Itagaki, Brunel University London

Date: 31 October 2014

Abstract: In this report it is shown that to understand the structure of the Chinese local government offices funding S&T research it is necessary to be aware of where they are located in the hierarchy of Chinese administrative divisions. The activities of a sample of Chinese local government offices funding S&T research are reviewed according to the type of administrative division to which they belong starting with the most important divisions and progressing down the hierarchy. Conclusions are presented followed by recommendations on how an EU organisation could explore the potential for collaborative ICT R&D&I with a Chinese regional or local funding body.

Rationale for the report: In recent years much has been made of the importance of Chinese municipal and provincial funding bodies for Science and Technology (S&T) research in the context of the total annual spend on publically funded S&T research in China. In this report the involvement of Chinese municipal and provincial government S&T offices in funding S&T research is reviewed in an attempt to assess how EU organisations could engage with these offices with a view to pursuing funding for collaborative ICT R&D&I with them.

Disclaimer: The views presented in this report reflect those of the document organizers and do not necessarily represent the views of the European Commission.

Introduction

The starting point for the consideration of the importance of Chinese municipal and provincial funding bodies for S&T research in this report is a U.S.-China Economic and Security Review Commission report containing information current in January 2011¹. It notes that municipal and provincial local government in China was spending 40-50% of all reported government spending on science and were working with national Chinese research organisations to establish new facilities for R&I within their jurisdictions in an attempt to meet the innovation needs of their local economies.

The scale of such spending is evident from the report which notes that¹: “The 909 Project, for example, saw the Shanghai government invest 10 billion Yuan to establish Huahong, which is now one of China’s most advanced chip manufacturers.” However, it also cautions: “Such local funding was typically spent on projects with short time horizons and minimal considerations for technological innovation.” Nevertheless, the scale of local ambitions can be considerable: “Jiangsu Provincial Government’s support for a ‘strategic innovation alliance’ in 2010 involved 61 enterprises, research institutes and universities conducting R&D on LED semiconductors”; Yangzhou in Jiangsu is a major center for the LED industry.

It is implied that driving much of this spend is the fact that the governments of technologically advanced localities such as Jiangsu, Shanghai and Beijing control various companies in high-tech areas. A bilateral collaborative activity by the Zhejiang Provincial Government is reported; the setting up in 2005 of, the Zhejiang-California International Nanosystems Institute for joint research and management skills transfer.

The only example of collaboration between Europe and a local government funding agency mentioned in the report is the establishment in 2002 of the non-profit Shanghai Integrated Circuit Research and Development Center with support from the Shanghai government where the researchers of the Center have opportunities to engage in international cooperation through Europe’s Interuniversity Microelectronics Center.

The report¹ notes that: “Local governments are tempted to support companies that bring jobs and prestige to their area” and do not necessarily buy into the long-term vision of the central government resulting in MoST criticizing local governments for not providing adequate investment in some centrally-sponsored longer-term innovation projects.

What is certainly clear is that many local governments in China have substantial financial resources and are incentivized by the national government to support research and innovation¹: “As a result, local governments have crafted their own industrial policies to support the development of high-technology industries, and have become important partners with national level institutions in establishing new platforms for R&D, technology diffusion, standards development, and high technology industrialization.”

¹ Micah Springut, Stephen Schlaikjer, and David Chen, China’s Program for Science and Technology Modernization: Implications for American Competitiveness, the U.S.-China Economic and Security Review Commission, 2011.

To understand the structure of the Chinese local government offices funding S&T research offices it is necessary to be aware of where they are located in the hierarchy of Chinese administrative divisions.

Chinese administrative divisions

1) Chinese provinces

A provincial level administrative division is the highest-level Chinese administrative division. These divisions include 22 provinces and 4 province level municipalities (= direct-controlled municipalities).

Province-level municipalities

China's direct-controlled municipalities or municipalities are directly under the central government and are also known as province-level municipalities. This is the highest level classification for a city in China. Cities in this class have the same rank as provinces and form part of the first tier of administrative divisions of China. The current direct-controlled municipalities are those of Beijing, Shanghai, Tianjin, and Chongqing.²

- 2) Please note this layer of administrative division is currently being reorganised to enhance the relationship of the name of the division with its location and nature. It currently takes the form of:

Sub-provincial divisions

A sub-provincial division in China is like a prefecture-level city that is governed by a province, but is administered independently in regard to economy and law.

This report will now review the activities of a sample of Chinese local government offices funding S&T research according to the type of administrative division to which they belong starting with the most important divisions and progressing down the hierarchy. The review was carried out through web search and the use of google translate to translate the mostly Chinese language web sites of the offices reviewed into English. In the experience of the document organisers' google translate works well when translating Chinese into English but less well the other way.

Prefectural level municipalities

The next class of cities below the province-level municipalities are known as prefectural level municipalities, they rank below a province and above a county in China's administrative structure. "Cities in this class are often not a "city" in the usual sense of the term (i.e. a large continuous urban settlement), but instead an administrative unit comprising, typically, a main central urban area (a city in the usual sense, usually with the same name as the prefectural level city), and its much larger surrounding rural area

² http://en.wikipedia.org/wiki/Direct-controlled_municipalities_of_China

containing many smaller cities, towns and villages. The larger prefectural level cities span over 100 kilometres (62 miles).”³

Shijiazhuang and Zhengzhou are the largest prefectural level cities.

Offices of province-level municipalities

The Science and Technology Commissions

Beijing Municipal Science & Technology Commission (BMSTC)⁴

BMSTC is the part of Beijing Municipal Government that is mainly responsible for formulating local S&T development programs, building Beijing’s innovation architecture by means of policies and budgetary plans, improving its competitiveness and promoting coordinated economic and social development. The website of BMSTC states that being fully aware of the globalization of S&T activities BMSTC opens its arms to all government institutions, enterprises and NGOs worldwide that are seeking opportunities for S&T cooperation, and, together with its affiliates, provides a full range of support and services. However, its English language website appears not to have been updated since 2008.

More up to date information is on the English language version of the Beijing government which reports the responsibilities of BMSTC⁵ as including:

- Implement laws, regulations, strategies, policies and principles of the state concerning S&T endeavours; organize the drafting of strategies and policies to develop S&T to promote economic and social progress in the city; draft local regulations and rules concerning S&T development and facilitate their implementation.
- Formulate medium- and long- term and annual plans for S&T development in the city; identify priority areas; promote the establishment of mechanisms for S&T innovation and services.
- Set forth policy measures for basic research on applied sciences, high-tech development and research on applications of major S&T research findings. Design plans for major basic research projects on applied sciences, high-tech research and development, and give guidance on their implementation.
- Lead the efforts to put high-tech R&D findings into industrial production; put into operation major projects on special S&T subjects or industries;
- Explore ways to increase S&T development funding through multiple channels; funding for S&T development and special S&T projects.
- Formulate policies to set up new-type R&D institutions; exercise qualification screening of R&D institutions; and guide the restructuring of research institutes.

³ http://en.wikipedia.org/wiki/Prefecture-level_city

⁴ <http://www.bjkw.gov.cn/n244495/index.html>

⁵ <http://www.ebeijing.gov.cn/Government/Departments/t930030.htm>

- Regulate the technology market, protect S&T-related intellectual property rights in coordination with other competent departments; make annual plans to stage major events to propagate scientific knowledge.
- Handle the registration of sustainable development experimental zones in the city and support and give guidance to their construction and development.
- Formulate policies for S&T cooperation and exchanges and manage S&T exchanges and cooperation with other countries; coordinate technology import and export in cooperation with other departments concerned.

Shanghai Municipal Science and Technology Commission⁶

The Shanghai Municipal Science and Technology Commission is the part of the Shanghai Municipal Government that is responsible for the Municipality's work in S&T. Its major duties are: to implement the strategies, guidelines, policies and laws, rules and regulations of the State related to S&T; to draw up the drafts of rules, regulations and policies concerning the Municipality's S&T development; to determine the priority fields of S&T; To draw up long- and medium-term and annual plans for Shanghai's S&T development; to guide the Municipality's reforms of scientific research institutes. To develop project plans for basic, applied and developmental research in S&T and organize their implementation. To promote the industrialization of high and new technology; to guide the Municipality's work on technological markets; to formulate and implement the construction plans for the Municipality's key laboratories, scientific research centers, and engineering technology research centers; to optimize the allocation of S&T resources; to be responsible for the formulation of the budget and final accounting of related funds such as S&T funds; to implement the Municipality's training program for scientific and technological talents; to be responsible for the Municipality's work on foreign affairs and international cooperation related to S&T; attendance of international academic conferences and S&T cooperation, and to examine and approve foreign S&T personnel coming to Shanghai for S&T cooperation; to be responsible for the checking of technology-related exports and the protection of technological secrets.

Tianjin Municipal Science and Technology Commission⁷

Tianjin Municipal Science and Technology Commission inaugurated the China-US Center for Environmental Remediation and Sustainable Development. The IT industry is one of the four key cluster industries in Tianjin. The objectives of the R&D activities in the city are mainly to support the economic and social development in Tianjin. From 2006 to 2010, each year, there was 200 million Yuan from Tianjin Municipal Science and Technology Commission to fund the innovation projects in Tianjin.

⁶ <http://www.shanghai.gov.cn/shanghai/node17256/node17679/node17681/userobject22ai12991.html>

⁷ <http://cohesion.rice.edu/NaturalSciences/ChinaUS/emplibary/ACF12E.pdf>

Chongqing Municipal Science and Technology Commission

The Chongqing Municipal Science and Technology Commission appears to fulfil similar roles to the other direct-controlled municipalities S&T Commissions⁸. However, some of its usual roles as an S&T Commission may have been delegated to the Chongqing Academy of Science and Technology reviewed below:

Chongqing Academy of Science and Technology (CAST)⁹

Chongqing Academy of Science and Technology (CAST) is a public institution approved by the People's Government of Chongqing Municipality. CAST is an industrial & technical all-around institution for the integration of R&D, personnel training and international exchanges. CAST consists of nine (9) institutes and eight (8) centers. They include the Chongqing Institute of Industrial Automation and Instrumentation, the Chongqing High-Tech Incubation Center, the Chongqing Institute of Mechanical & Electrical Engineering, the Chongqing Center for Information and Automation Technologies, the Chongqing Center for Scientific & Technical Testing and Chongqing Center for Technology Evaluation & Transfer Services.

CAST is committed to the services of economical & social development of Chongqing Municipality, aiming at the frontier of the world's S&T and key technical problems as well as the technical bottleneck problems in the industrial development, while insisting on the concurrent developments of research & industrialization, and of innovations and services to emphasize the leading position of technology developments and outcome-transformations, mainly develop innovations of S&T. It undertakes the key projects of S&T; technical training, and international cooperation & exchanges.

The Associations for Science and Technology

It should be noted that each of the province-level municipalities as an association for science and technology:

- Beijing (city) association for science and technology¹⁰
- Shanghai (city) association for science and technology¹¹
- Tianjin (city) association for science and technology¹²
- Chongqing (city) association for science and technology¹³

These associations promote academic exchanges within China. They are members of a national umbrella organisation:

China Association for Science and Technology (CAST)

⁸ <http://english.cric.cn/news/cri/17784.html>

⁹ <http://www.cast.gov.cn/public/english/index.php>

¹⁰ <http://www.bast.net.cn/>

¹¹ <http://www.sast.gov.cn/>

¹² <http://www.tast.org.cn/2011/3-4/15094193719.html>

¹³ <http://www.cqast.cn/>

CAST consists of national professional and academic societies focusing on various disciplines and fields in science and engineering. It liaises with its local affiliates through a network formed by the local associations of science and technology in various provinces, autonomous regions and municipalities down to the county level. As an organisation with a national focus the primary roles of CAST include apart from academic exchanges within China, promoting science publications, and popularising science. CAST and its affiliates now publish 892 journals so of which have journals have established cooperative links with their foreign counterparts.

An example of the work of such an association is that of the:

Suzhou Association for Science and Technology¹⁴

The Suzhou (City) Association for Science and Technology (SZAST) is a non-governmental organization of S&T workers under the leadership of Communist Party of China, Suzhou Committee. SZAST is the bridge linking the Suzhou S&T community with the Communist Party of China, Suzhou Committee and Suzhou Municipal Government. SZAST is a constituent member of Suzhou People's Political Consultative Conference, where it joins in the affairs of political consultation, policy-making and democratic supervision.

The main purpose of SZAST includes making contributions to, the prosperity and development of S&T, non-governmental international exchange and cooperation, and to the overall economic and social development in Suzhou.

The main tasks of SZAST are as follows:

- To develop academic exchanges, enliven academic ideas, promote development of all scientific disciplines and encourage innovation; carry out technology development, technology transfer, provide a technology solving and technology service; undertake tasks of projects appraisal, achievements assessment, and evaluation of professional qualifications.
- To organize international S&T exchanges, promote international cooperation and develop friendly relations with overseas S&T organizations and scientists, promote development of an open economy and reunification of motherland.
- To develop continuing education and training programs

SZAST maintains cooperative relations with S&T organizations in many countries. In 2005, SZAST successfully organized 28th ICSU (International Council of Scientific Unions) General Assembly.

Offices of Provinces

We now consider a few examples of offices of provinces involved in funding S&T research.

¹⁴ <http://www.szst.cn/ENGLISH/aboutus.htm>

The Science and Technology departments

Guangdong Science and Technology Department¹⁵

The main aims of the Guangdong Science and Technology Department include:

- To carry out the national and provincial guidelines, policies, laws and regulations of S&T; to draft regional rules, provisions and regulations, policies and measures and to organize their implementation and supervision.
- To formulate provincial medium and long-term development plans and annual plans; to organize the implementation of S&T planning of provincial key basic research, applied research, and research and development; to take charge of the overall development and coordination of basic research, frontier technology research, important social technology research as well as key technology and generic technology research.
- Make suggestions for important adjustments in the implementation of key S&T projects.
- Promote the building of the provincial S&T innovation system. Jointly draft policies and measures to promote the knowledge innovation and technology innovation of the province.
- To jointly formulate policies on high and new technology and its industrialization with other related departments; to direct the construction of high and new technology development zones.
- To lead the formulation of policies related to the collaboration of industry, universities and research institutes.
- Join with other related departments in promoting the construction of the rural information highway project
- To formulate policies and layout for the S&T service industry.
- Take charge of the budgeting and final accounting of S&T funds and the supervision of the use of the funds; offer suggestions about important policies and measures for S&T investment and the optimization of S&T resource allocation.
- Formulate policies and measures for S&T cooperation and exchange; to organize and implement the inter-governmental S&T cooperation programs and cooperation programs with international organizations.

Sichuan Provincial Department of Science and Technology¹⁶

The Sichuan Provincial Department of Science and Technology is responsible for the implementation and administration of research subjects of National Scientific and Technical Supporting Programs delegated by the Ministry of Science and Technology and for promoting the construction of the innovation system for Sichuan Province. Its main functions include:

¹⁵ <http://www.gdstc.gov.cn/eng/mission.html>

¹⁶ <http://www.sc.gov.cn/10462/10758/10759/10763/2010/10/28/10147629.shtml>

- Implementing state policies and laws and regulations in relation to S&T development; drawing up local policies, draft regulations as well as policies and measures in relation to S&T development for Sichuan Province;
- Taking the lead in drawing up and implementing the S&T development plans for Sichuan Province; putting forward the layout of the S&T development and the priority fields of Sichuan Province; taking charge of the drafting and implementation of the S&T Supporting Program, Basic Research Program, and Soft Science Program; taking charge of the overall coordination of basic research, frontier technology research, key technologies and common technology.
- To make proposals for significant adjustments in the implementation of major S&T special projects.
- To draw up planning, policies and measures for high-tech industries and high-tech industrial zones with other departments concerned; to provide guidance on the construction of high-tech industrial zones and bases; to promote the construction of enterprises' capacity for independent innovation.
- To organize the formulation of policies and measures on taking advantage of S&T to promote rural and social development; to provide guidance to the construction of technology park and experimental zones for sustainable development.
- To accelerate S&T institutional reform; to put forward policies and measures in relation to the above as well as proposals on the establishment or adjustment of related scientific research institutions; to optimize the layout of scientific research institutions.
- To provide guidance on transforming S&T achievements into production.
- Taking charge of S&T communication and cooperation with other countries; organizing and implementing international scientific and technological cooperation plans; undertaking matters in relation to S&T aid.

Jiangsu Science and Technology Department¹⁷

The major functions of the Jiangsu Science and Technology Department include:

- Implementing the guidelines, policies and regulations of the State related to the work of S&T; to study the key problems related to the S&T development and economic and social development driven by S&T; to study and determine the layout of this municipality's S&T development and the fields of S&T that enjoy priority of development; to promote the construction of the S&T innovation system, and the upgrade S&T innovation capability of the province.
- Organizing the drawing up of the long-and-medium-term planning and annual plans for the province's S&T development.

¹⁷

http://www.js.gov.cn/JSGOVEN08/08jsgov_GovernmentStructure/ProvincialGovernmentDepartments/200805/t20080526_214363.html

- Studying and putting forward policies and measures for the province's system reform of S&T; to promote the establishment of systems and mechanisms of S&T innovation that adapt themselves to the socialist market economy; to be responsible for the guidance of the province's work of system reform of S&T.
- Responsibility for the formulation of the budget and final account of related funds such as scientific undertaking funds, different kinds of provincial-level scientific and technological funds, and foreign affairs expenses of S&T.
- Studying and working out policies and measures for strengthening basic research and high and new technology; drawing up and organizing for implementation of basic research, hi-tech research, key technology breakthroughs, soft science research, and S&T plans for social development.
- Intensifying the industrialization of high and new technology and the development and expansion of applied technology; organizing major S&T innovation projects, such as the Torch High and New Technological Riverside Industrial Zone and Spark Industrial Development Zone in the northern part of Jiangsu; to administer the major new production of provincial high and new technology; to be responsible for the drawing up of S&T development plans of the Torch Program, Spark Program, and the plans of achievements expansion and organize for implementation; to administer the High and New Technological Development Zones in the province.
- Directing the construction plans for the province's technological infrastructure, such as key laboratories, secondary trial base, and scientific research centers.
- Studying and drawing up the province's plans for foreign affairs and international cooperation related to S&T and organize implementation; according to authorization of provincial government, to undertake foreign exchanges related to S&T.
- Studying and putting forward suggestions to make local S&T regulations; to put under centralized administration the province's S&T achievements, S&T awards, technological markets and the protection of intellectual property rights of related S&T; to promote the development of social agencies, such as S&T consultation, bid invitation and evaluation; to promote the construction of the S&T service system.
- Responsible for the setting up and readjustment of scientific research institutions; directing the province's privately-run scientific and technological work.
- Administering the Jiangsu Intellectual Property Bureau, and direct the related work of S&T of the units of the central government stationed in Jiangsu.

Department of Science and Technology of Zhejiang Province¹⁸

The main aims of the Department of Science and Technology of Zhejiang Province include:

¹⁸ http://english.zj.gov.cn/art/2012/6/11/art_1149_165599.html

- To map out the medium to long-term S&T development and draft guidelines and policies on S&T in Zhejiang Province; and to draft relevant local laws, regulations and draft regulations and organize their implementation after approval.
- To make overall plans for basic and applied research; facilitate the process of industrialization; take the lead in organizing and carrying out major S&T projects; supervise the Provincial Natural Science Foundation; build an investment and financing system for S&T.
- To formulate policies for the reform of the S&T system and S&T innovation in Zhejiang Province; to take charge of the restructuring of S&T institutes in Zhejiang Province and the establishment and restructuring of relevant research institutes; supervise intermediary science and technology organizations, nongovernmental science and technology institutions and societies.
- To formulate plans for the development of R&D organizations affiliated with enterprises, key laboratories, science and technology incubators and local service centers for S&T innovation; and to implement these plans and manage the development of these institutions.
- To formulate policies and introduce measures for the industrial application of high and new technologies; approve and supervise the construction of S&T parks such as high and new tech development zones and high-tech industrial bases; It important to note that the Economy and Informatization Commission of Zhejiang Province¹⁹ supervises the bidding for industrial technological innovation projects and undertakes work in industrial parks and information technology parks in accordance with the division of responsibilities, and promotes the development of industrial parks, agglomeration economy and industrial clusters, and develops regional brands.

As an aside it is noted that there is a Zhejiang Provincial Government Scholarship for Foreign Students (ZGSFS) fund established by the Zhejiang Provincial Government that aims to attract and encourage excellent foreign students to study in Zhejiang.²⁰

Offices of Prefectural level municipalities

We will now consider a few examples of offices of prefectural level municipalities that are sub-provincial divisions which are involved in funding S&T research.

The Science and Technology Bureaus

Suzhou Science & Technology Bureau²¹

¹⁹ http://english.zj.gov.cn/art/2012/6/11/art_1149_165597.html

²⁰ http://scholarship.cucas.edu.cn/HomePage/content/content_29.shtml

²¹ http://www.suzhou.gov.cn/zgszeng/news/suzhou8focus/201301/t20130104_190154.shtml

In 2013 the Suzhou Science & Technology Bureau announced that Suzhou Municipality (Jiangsu Province), Suzhou Industrial Park, and Suzhou New District were among the first 15 areas authorized as provincial models in technology financial cooperation and innovation.

These areas fall into two categories of innovation-based cities and provincial or national hi-tech parks, featuring integrated resources of technologies, research, and R&D SMEs, active start-up venture capital, a good financial ecosystem, and a complete network of financial institutions and services.

Local policy-makers plan to improve these model areas in the next three years to meet the needs of local growth so as to create an initial mechanism in 2015 for effective interactions between technological innovations and financial innovations as well as efficient connection of the resources in the two sectors.

Wenzhou Municipal Sci-Tech Bureau²²

The mission of the Wenzhou²³ Municipal Sci-Tech Bureau includes:

- Implementing the laws, regulations and policies for S&T of the Party, the state and Zhejiang Province; to formulate and implement the policies and measures for the administration of S&T and the protection of IPRs; to organize the formulation of the city's medium- and long-term development plans for S&T; to organize the formulation and implementation of the long- and short-term plans of new- and high-tech industries and their zones; to direct and manage, in cooperation with related departments, the use of funds for sci-tech risk investment, such as those for technology innovation of municipal S&T-intensive SMEs.
- To direct and supervise the system reform of the city's scientific research institutes; to guide the work of technological markets, sci-tech intermediaries.
- To organize applications for establishing projects concerning constructing provincial key labs, new- and high-tech R&D centers, distinctive new- and high-tech industry bases; to guide and supervise new- and high-tech industry zones.
- To coordinate and administer the city's work of protection of IPRs focused on patents; to take charge of the city's patent law enforcement and patent technology implementation and popularization; to offer professional guidance to patent intermediaries.
- To take charge of the centralized administration of all the Wenzhou's foreign affairs in S&T; to formulate and implement the plans of sci-tech exchanges and cooperation; to coordinate the city's sci-tech exchanges and cooperation with foreign relations.
- To take charge of the formulation and to organize the implementation of the city's medium- and long-term planning for protection against and mitigation of earthquake disasters; to guide the city's work of earthquake monitoring and prediction, protection against and mitigation of earthquake disasters, to administer the whole city's digital

²² <http://english.wzsj.gov.cn/>

²³ Zhejiang Province

seismic precursor networks and seismic safety evaluation; to examine and approve the standards for earthquake protection of major construction projects.

Zhengzhou City Municipal Science and Technology Bureau²⁴

The office functions of the Zhengzhou²⁵ City Municipal Science and Technology Bureau include²⁶:

- Implementing the national S&T work policies, laws and regulations; elaboration of the city's technological development and the promotion of economic and social development policies, measures and draft legislation, together with relevant departments to promote the city's science and technology innovation system
- Responsibility for preparing the city's long-term S&T development plans and annual plans; major issues the city's S&T research to promote economic and social development; research to determine the city's S&T development and priority areas.
- Responsibility for the management and use of the city's S&T R&D funds, special funds and Technology Science and Technology Development Fund.
- Responsibility for developing the city's technological innovation projects and social development plans.
- Responsibility for the city's foreign S&T cooperation and exchanges work.

Other examples of such offices are:

Science and Technology Bureau of Dongguan Municipality²⁷ in Guangdong Province

Shijiazhuang Bureau of Science and Technology²⁸ (Hebei Province)

Yunfu Yuncheng Science and Technology Bureau²⁹

Offices of sub-provincial divisions

We will now consider a few examples of offices of sub-provincial divisions involved in funding S&T research.

The Bureaus

Bureau of Science and Information Technology of Guangzhou Municipality³⁰

²⁴ <http://www.zznet.com.cn/viewpage?path=/index.html>

²⁵ Henan Province

²⁶ <http://www.zznet.com.cn/viewCmsCac.do?cacId=402881f923c57ca70123c705c36c003c>

²⁷ http://www.fortune.net.cn/en_asp/news_show.asp?typeid=18&id=50

²⁸ <http://www.heblaser.com/en/kykf.asp>

²⁹ <https://plus.google.com/116524312501761441360/about>

Guangzhou³¹ Municipal Government appears to be distinctive in having a Bureau of Science and Information Technology rather than a Bureau of Science and Technology. Furthermore, the main responsibilities of the Guangzhou Bureau appear to be exceptionally relevant to the work of the CHOICE project. In particular they include: Promoting the ‘Integration of Three Networks’, namely, the telecommunications network, the Internet and the broadcast network; Deploying and managing radio spectrum resources; and organizing inter-governmental and international cooperation projects in science and information technology.

Xi’an Science Technology Bureau³²

Xi’an³³ Municipal Government seems to be as mature as that as that of Guangzhou in terms of its approach to Science and Technology and although it does not have Guangzhou’s focus on ICT it does have very interesting policy on IPR. Significantly, the main responsibilities of the Xi’an Science Technology Bureau include:

- Organizing the protection work regarding intellectual property, enhancing the construction of intellectual property protection system; and arranging to coordinate matters on international intellectual property rights of Xi’an;
- Mediating patent disputes according to laws and regulations, and investigating and treating with the counterfeiting of patents; taking charge of the management of approval and registration of patent license contracts; directing the business work of patent service agents, and taking charge of the construction of patent information publicity service system of Xi’an.

Given that the responsibilities of the bureau also include:

- Taking charge of the scientific and technological cooperation and exchange of Xi’an;
- Directing the commercialization of research findings;
- Research major technical issues on social development, and directing the S&T on aspects of social development and social public welfare regarding population resources, medicine and health, ecological environment, etc.

It is gratifying to note that on May 8th, 2014, the China Science and Technology Exchange Center (CSTEC) held a Horizon 2020 Infoday in Xi’an, which attracted over 130 participants from local research centers, universities and enterprises participated in.³⁴

That CSTEC organised this event is important because it is affiliated to the Ministry of Science and Technology has expertise in international S&T exchanges and plays a significant role in the reform and opening-up of China, as well as the construction of the socialist economy.

³⁰ <http://www.gz.gov.cn/publicfiles/business/htmlfiles/gzgovcn/s3709/201104/787535.html>

³¹ Guangdong Province

³² http://www.xa.gov.cn/ptl/def/def/index_1121_3316_ci_trid_160997.html

³³ Shaanxi Province

³⁴ <http://www.dragon-star.eu/cstec-held-horizon-2020-infoday-in-xian/>

Wuhan Municipal Science and Technology Bureau

Wuhan³⁵ presents itself as an “intelligent city”³⁶, identified as a national “intelligent city” pilot by the Ministry of Science and Technology. In 2012, the Wuhan Municipal Science and Technology Bureau made an offering of 10 million Yuan for domestic public to tender the “intelligent city” master plan project. In 2013, “The Intelligent Wuhan City Overall Plan” has been formed, and was expected to start to pay off within 3-5 years. It was claimed that Wuhan will be the fastest growing Chinese city in term of Internet speed. Currently, the average 2 mbps household bandwidth will be increased to 50-100 Mbps through the optical fiber plan. For understandable reasons this pilot appears to be the main focus of the Wuhan Municipal Science and Technology Bureau.

Dalian Bureau of Science and Technology³⁷

The Dalian³⁸ Bureau of Science and Technology appears to have a very similar remit to those of the provincial S&T departments. It does however include: to centrally administer computer development and application of the city and be responsible for the application and promotion of computer technology. Although it has the usually local responsibilities for international S&T matters this does not seem to be a major focus of its work.

Hangzhou Municipal Science & Technology Bureau³⁹

Hangzhou⁴⁰ Municipal Science & Technology Bureau also appears to have a very similar remit to those of the provincial S&T departments. It does however include: “Take charge of the earthquake, quakeproof and calamity relief work in the whole city. Undertake the daily work of the administration office of Quakeproof and Calamity relief Leadership Group.”

Significantly for the work of the CHOICE project it has a responsibility for IPR: “Manage and coordinate the intellectual property and patent protection work in the whole city, take charge of law execution and supervision related to the intellectual property and patent, solve relevant disputes according to laws.”

Although the responsibilities of the Hangzhou Municipal Science & Technology Bureau do not emphasise international cooperation Hangzhou hosts The Singapore-Hangzhou Science & Technology Park which was jointly developed by Asia’s leading IT Park brand Ascendas and markets itself as ‘The Haven for IT’.⁴¹

³⁵ Zhejiang Province

³⁶ <http://www.chinaabout.net/intelligent-wu-han-fiber-plan-increase-the-overall-internet-speed-to-100-mbps-in-next-3-5-years/>

³⁷ <http://www.dalian-info.com/news/other/page/kjjznen.html>

³⁸ Liaoning Province

³⁹ <http://eng.hangzhou.gov.cn/main/zpd/English/org/gov/T306906.shtml>

⁴⁰ Zhejiang Province

⁴¹ <http://www.shstp.com/en/index.asp>

Qingdao Science and Technology Bureau

As of May 2014 according to the city's science and technology bureau authorities in Qingdao⁴², expect S&T to play a more important role in driving local growth.⁴³

Significantly for the work of the CHOICE project the city has been actively engaged in facilitation of intellectual property rights protection¹⁴⁹:

“In 2013, police across the city cracked 109 cases of IPR violations, with 144 criminals arrested. The combined value of relative intellectual property was worth 492 million Yuan.

An increasing number of IPR-related training workshops are being conducted in the city.

Last year, a total of 7.5 billion Yuan was loaned to 68 enterprises as intellectual mortgages by Qingdao-based financial institutions.

The city has also been encouraging the legal trading of intellectual properties and facilitating the development of IPR agencies.

Bureau officials said the government is also improving its service to create a better business environment for high-tech companies.

Efforts include helping enterprises recruit and train talented professionals and enhancing intellectual property rights protection.”

While the local government has been trying to improve the city's innovative strength by facilitating the transfer of new technologies for commercial use by guiding more funds into R&D and public services the focus understandably is on supporting local industry. However, its efforts in the area of IPR protection emphasise the importance of local enforcement and will create a better environment of EU ICT businesses within to operate in Qingdao.

Shenzhen Municipal Bureau of Science, Technology and Information⁴⁴

The Shenzhen⁴⁵ Municipal Bureau of Science, Technology and Information (Guangdong Province), directs the development of S&T as well as information projects. It provides services jointly with the Shenzhen Association of Science and Technology (SAST).

Its major responsibilities include:

- Directing professional training in science, technology and information economy;
- Formulating and implementing plans for international exchanges and cooperation in S&T and the information economy;
- Conducting centralized management of the outcomes in science, technology and information programs.

⁴² Shandong Province

⁴³ http://qingdao.chinadaily.com.cn/2014-05/18/content_17548005.htm

⁴⁴ http://www.sznews.com/english/content/2006-03/29/content_68736.htm

⁴⁵ Guangdong Province

Conclusions

Generally, the responsibilities of the S&T Commissions of direct-controlled municipalities include:

- Designing plans for major basic research projects on applied sciences, high-tech research and development, and giving guidance on their implementation.
- They are expected to lead the efforts to put high-tech R&D findings into industrial production and put into operation major projects on special S&T subjects or industries.
- Regulating the technology market and protecting S&T-related intellectual property rights in coordination with other competent departments.
- Handling the registration of sustainable development experimental zones and supporting and give guidance to their construction and development.
- Formulating policies to set up new-type R&D institutions and guiding the restructuring of research institutes.
- Formulating policies for S&T cooperation and exchanges and managing S&T exchanges and cooperation with other countries.

However, in the case of the Chongqing Commission the integration of R&D, personnel training and international exchanges appear to have been delegated to the Chongqing Academy of Science and Technology.

Chinese provinces have S&T departments with broadly similar remits.

Generally, the responsibilities of the S&T departments of China's provinces include:

- Drafting regional rules, provisions and regulations, policies and measures, for S&T;
- Organizing the implementation of S&T planning of provincial key basic research, applied research, and research and development;
- Taking charge of the overall development and coordination of basic research, frontier technology research, important social technology research as well as key technology and generic technology research;
- Building of the provincial S&T innovation system;
- Formulating policies and measures for S&T cooperation and exchange; organizing and implementing the inter-governmental S&T cooperation programs and cooperation programs with international organizations.

However, the Department of Science and Technology of Zhejiang Province appears to delegate and limit its international cooperation and exchanges to a Zhejiang Provincial Government Scholarship for Foreign Students (ZGSFS) fund established by the Zhejiang Provincial Government.

The prefectural municipalities have S&T bureaus with broadly similar remits.

Generally, the responsibilities of the S&T bureaus of China's prefectural level municipalities include:

- Formulating and implementing plans for international exchanges and cooperation in S&T and the information economy;
- Municipal S&T R&D expenditure.

However, the Suzhou S&T Bureau appears to leave non-governmental international exchange and cooperation to the Suzhou Association for Science and Technology

Sub-provincial divisions' S&T offices are particularly interesting in that their S&T offices appear to be highly distinctive.

- Guangzhou Municipal Government appears to be distinctive in having a Bureau of Science and Information Technology rather than a Bureau of Science and Technology. The main responsibilities of the Guangzhou Bureau appear to be exceptionally relevant to the work of the CHOICE project. In particular they include: Promoting the 'Integration of Three Networks', namely, the telecommunications network, the Internet and the broadcast network; Deploying and managing radio spectrum resources; and organizing inter-governmental and international cooperation projects in science and information technology.
- Xi'an's Municipal Government has a very interesting policy on IPR. It is gratifying to note that on May 8th, 2014, the China Science and Technology Exchange Center (CSTEC) held a Horizon 2020 Infoday in Xi'an.
- In 2012, the Wuhan Municipal Science and Technology Bureau made an offering of 10 million Yuan for domestic public to tender the "intelligent city" master plan project. In 2013, "The Intelligent Wuhan City Overall Plan" has been formed, and was expected to start to pay off within 3-5 years. It was claimed that Wuhan will be the fastest growing Chinese city in term of Internet speed.
- The Dalian Bureau of Science and Technology centrally administers the computer development and application of the city and is responsible for the application and promotion of computer technology.
- Although the responsibilities of the Hangzhou Municipal Science & Technology Bureau do not emphasise international cooperation Hangzhou hosts The Singapore-Hangzhou Science & Technology Park which markets itself as 'The Haven for IT'.
- Qingdao Science and Technology Bureau is actively engaged in intellectual property rights protection.
- The Shenzhen Municipal Bureau of Science, Technology and Information (Guangdong Province) formulates and implements plans for international exchanges and cooperation in S&T and crucially for the CHOICE project the information economy.

- Wenzhou Municipal Sci-Tech Bureau administers the whole city's digital seismic precursor networks and seismic safety evaluation and examines and approves the standards for earthquake protection of major construction projects.

Recommendations

For an EU organisation to engage effectively with a Chinese municipal and provincial government S&T office it is essential to do so through a Chinese speaking member of staff. It is also necessary given the highly structured nature of these offices that this member of staff is familiar with the Chinese style of governance.

To explore the potential for collaborative ICT R&D&I with Europe with a direct-controlled municipality its S&T Commission should be approached in the first instance.

To explore the potential for collaborative ICT R&D&I with Europe with a Chinese province its S&T department should be approached in the first instance.

To explore the potential for collaborative ICT R&D&I with Europe with a Chinese prefectural level municipality its S&T bureau should be approached in the first instance.

- As Wenzhou Municipal Sci-Tech Bureau administers the whole city's digital seismic precursor networks and seismic safety evaluation it would be potentially be an interesting partner for an EU City that needs to do seismic monitoring.

Targeting sub-provincial divisions' S&T offices (S&T bureaus) for focused partnership opportunities in ICT R&D&I with EU partners is particularly promising, as has been highlighted in this report through examples of specific sub-provincial divisions' S&T offices highly focussed on specific areas of ICT R&D&I.

- The potential of the Xi'an Science Technology Bureau and the Qingdao Science and Technology Bureau as partners for exploring good practice in IPR protection and enforcement in China is significant.