

Technology Market Scan

ASIA-PACIFIC CHINA

State Council offers science, technology plan

China issued a national plan for national science development on Thursday, giving academics and inventors more incentives. The plan by the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council introduces mechanisms to motivate researchers and foster innovation with 32 specific measures.

It was designed to encourage enterprises taking a dominant role in the country's sci-tech development, reforming existing research institutes to encourage innovation and technology transfers and establishing incentive mechanisms to attract more talent.

Current evaluation mechanisms should be overhauled to allow financial capital to be proactive in inspiring new findings and applied technology, it said.

Moreover, it stipulates the particular responsibilities of more than 40 related government departments that will coordinate to implement the reforms.

The State Council published a guideline in May that requires universities, research institutes and other public institutions to retain the posts, as well as part of the welfare contribution, for 3 years for researchers who quit to start their own business. The implementation plan also includes new policies to change the traditional evaluation system for scientists, assessing the performance of researchers using different criteria according to their fields.

<http://www.chinadaily.com.cn>

New models to boost innovation, entrepreneurship

China will accelerate its exploration of new models to promote innovation and entrepreneurship, said the central government in a statement. The government will step up the establishment of relevant platforms, support crowdsourcing, encourage private capital to invest in innovators and widen funding channels, according to a

guideline released by the State Council, China's cabinet. Inventors and innovative start-ups should make the most of opportunities generated from the Internet and the government should remove barriers and lift restrictions that stifle new ideas and business, the guideline said.

Science parks, innovation bases and incubator projects will be encouraged to build new online innovation platforms. Leading Internet firms should also share resources with innovators and e-commerce platforms were urged to lower their thresholds for start-ups. The government will promote crowdsourcing in high-tech enterprises, research institutes and manufacturers, and encourage crowdsourcing in service providers in transportation, couriers, finance, medical treatment and education. The guideline also said large companies should assist innovators in upstream and downstream industries, and associations should intensify their support to small firms.

Moreover, small- and micro-sized firms can turn to crowdfunding to widen financing channels and the government will look into regulation that protects borrowers, according to the guideline. The guideline promised that the government will grant easier market access to start-up companies by cutting red tape and improving supervision.

<http://www.chinadaily.com.cn>

High-tech manufacturing rises 10.4%

The added value of China's high-tech manufacturing sector rose 10.4% in the first 8 months of the year, outpacing industrial growth by 4.1% points, according to a reform watchdog. Entrepreneurial passion has been ignited as policy support widens with added intellectual property protection and the establishment of industry guidance funds and incubators, said Lian.

The percentage of entrepreneurs among fresh graduates rose by nearly 100% in 2015, whereas 15% of overseas returnees chose to start their own businesses, according to data.

<http://www.chinadaily.com.cn>

Technology transfer platform

Suzhou and Shanghai Yangpu Venture Company signed a cooperation agreement on September 6 to build Suzhou Branch of Eastern Centre of national technological transfer. After the completion of the platform, it will become a bridge linking Suzhou and Shanghai and it is also helpful to Suzhou-based enterprises in going global and to attract foreign enterprises to come to Suzhou.

Eastern Centre of national technological transfer was co-built by Shanghai Municipal Government and Ministry of Science and Technology. Suzhou Branch aims to build a regional technological transfer platform gathering technological trading service, technological financing innovation, technological transfer, intellectual property service and big data of technological transfer.

<http://english.anhuinews.com>

INDIA

Technology acquisition and development fund

The Government has notified a scheme for enabling Technology Acquisition and Development as per the National Manufacturing Policy 2011 (NMP) through patent pool and licensing; reimbursement of direct patent acquisition cost; incentivizing production of equipment for controlling pollution, reducing energy consumption and for water conservation through interest and capital subsidies; and incentives for energy and environmental audit, waste water treatment, rain water harvesting, renewable energy and green buildings.

The objective of TADF is to provide funding support for the acquisition and development of clean and green technologies.

- Industries/companies/organizations willing to avail the funding support should be eligible as per the specifications/definitions/eligibility criteria for what can be categorized as 'Clean and Green Technology' as devised by a committee called the Green Manufacturing Advisory Committee (GMAC) comprising representatives from the

Ministries/Departments of the Central Government concerned and select external experts. The criteria will be consistent with the objective of the National Action Plan on Climate Change and the strategy for inclusive sustainable development. The criteria will be reviewed by the GMAC periodically as technology being dynamic and evolving constantly.

- Any unit seeking subsidy under this scheme should certify that it has not obtained or applied for subsidy for the same purpose or activity from any other Ministry or Department of the Government of India or State Government.

In case of industrial areas/establishments/institutional units located outside the NIMZ, GITA will ensure the compliance of clean and green parameters and implementation of incentive scheme and will provide a copy of compliance/implementation report to the concerned District Industrial Centres of the State Government.

In case of NIMZ, the Special Purpose Vehicle concerned will be enjoined with the responsibility of ensuring project compliance with the above-mentioned criteria set up by the Committee and also put up the cases for incentives after due diligence. The onus of proving 'cleaner'/'greener'/'energy efficient' will be on the claimant subject to third party certification by an agency/expert drawn from a panel approved by the GMAC. The claimant will provide clear, objective information on the product/technology throughout the lifecycle from manufacture to disposal.

The mode of technology acquisition includes:

- outright purchase of technologies with/without the engagement of a consultancy
- joint venture with counter parts for relevant technology
- purchase of active intellectual property right (IPR) which meets buyers' requirements
- creation of "Technology Pool/Patent Pool"

The extent of financial support for technology acquisition includes:

- Financial support up to Rs. 20.00 lakhs or 50% of the cost of technology/patents/industrial design, whichever is lower will be provided to industry for acquiring technology patented up to a maximum period of 5 years prior to the date of submission of the project from individuals, organizations located in India, and anywhere in the globe, who are legitimate technology owners.
- Technologies/patents/industrial design acquired centrally from various sources, as a pool, will be licensed to selected companies, at mutually agreed values and terms and conditions.

<https://www.thedollarbusiness.com>

Pharma contract manufacturing on the rise

The past few decades have been very productive for India, as it took a major leap from pharmaceutical production, to include contract manufacturing. According to the President of the Indian Drug Manufacturers' Association (IDMA), S.V. Veeramani, the overall pharma contract manufacturing industry is growing at 20%, providing a burgeoning opportunity for small and medium enterprises, reports Brand India Pharma. The current market value is estimated at 50% of the domestic production, which roughly translates to \$5.3 billion. Multinationals hold a generous 20–25% stake in the domestic pharmaceutical market.

For the basic manufacture of medical products and drugs, India has a far superior edge over nations such as China, Viet Nam and Ireland, due to resources including manpower, technically knowledgeable work force, and World Health Organization-Good Manufacturing Practice-approved production premises. A substantial 40% lower cost of operation and production is clearly the highlight for multinationals to consider India for their outsourcing needs.

With the advent of multinational pharmaceutical organizations, and their rapidly growing presence in the country, the

concept of contract manufacturing has steadily evolved and quickly adapted, so as to encompass services such as basic manufacturing of medicinal products, formulation development, stability studies and various stages of clinical trials. In addition, scale-up of drug syntheses and late clinical trial studies have also been profitable protocols in this sphere. The Drug Technical Advisory Board has agreed to grant a waiver to Phase III studies of certain drugs in India, which are from the regulated markets of the USA and European Union. This step is an incentive for many pharmaceutical organizations to focus on India, as the cost savings could be enormous.

Also it is estimated that patented drugs worth \$85 billion in potential annual sales in the USA would be off patent during the period 2014–2020. Price competitiveness and manufacture of these generic drugs in the most cost-efficient manner would be the key drivers boosting the prospects of the Indian players as India is known to have the world's best known low-cost manufacturing centres, with the highest number of US Food and Drug Administration (USFDA)-approved manufacturing plants outside the US.

The government is also looking at incentivizing the upgradation of Schedule M facilities to WHO-GMP complaint units with the help of soft loans, which would lead to additional 1000 units being certified WHO-GMP compliant, further corroborating the manufacturing processes.

<http://www.thepharmaletter.com>

PHILIPPINES

Innovation centre set up

The Philippines has announced a plan to build a national innovation centre – taking cue from Silicon Valley in the US, Block 71 in Singapore, and MaGIC in Malaysia. Government agencies, including the Department of Science and Technology and the Department of Trade and Industry are collaborating with start-up accelerator IdeaSpace for this effort.

With initial funding of PHP 30 million (US\$665,000) from the government and counterpart funding of up to PHP 15 million (US\$332,000) from private sector and

academe, the innovation centre will have two locations – both of which will be near the country's premier universities.

The Philippine innovation centre will foster technology advancement and start-up ecosystem growth. Valencia said the hubs will be set up near key academic institutions to imbibe the spirit of innovative and entrepreneurial thinking among students, to tap into a wellspring of engineering and technology talent from these universities, as well as to address the growing interest of students in founding their own start-ups.

The centre will also serve as a venue for government agencies and academic institutions to promote products, facilitate transfer of their R&D results, and establish connections with the investment community. The creation of the innovation hub will be a critical component in boosting the Philippines' ranking in the Digital Evolution Index, which ranks countries in terms of their readiness for the quickly expanding digital economy.

<https://www.techinasia.com>

REPUBLIC OF KOREA

IPR trade deficit surges

Republic of Korea's trade deficit in IPRs towards the US, including patent licensing fees, amounted to 2.86 trillion won (US\$2.42 billion) in the first quarter of this year, which is a new record. The highest deficit is attributable to the fact that Samsung Electronics and LG Electronics paid Qualcomm for a large amount of smartphone patent royalties during the period.

The amount of money paid by local companies to overseas companies that hold intellectual property like patents, design rights, and trademark rights was US\$4.97 billion, according to statistics on the nation's intellectual property trade deficit during Q1 2015 published by the Bank of Korea (BOK) on August 26. In contrast, exports of patents and software copyrights were only US\$2.66 billion, half the amount of imports. As a result, the nation reported US\$2.31 billion of trade deficits in the intellectual property area in Q1.

The manufacturing sector posted US\$2.14 billion of losses in the field, led by the

electrical and electronics industry. The US topped the list of the nation's trade deficits in the intellectual property area, since local companies paid US\$2.66 billion to US firms for the use of intellectual property, seven times as much as exports of intellectual property to the US, which were US\$410 million. Due to the trade imbalance, the country recorded US\$2.42 billion of losses in IPRs during its trade with the US.

The number is the highest ever since 2010, when the BOK started to compile related statistics. It is due to the fact that local smartphone makers' payments of patent royalties to Qualcomm were concentrated during the period. Industry analysts estimate the amount of royalties paid by local IT companies to the world's largest mobile chipset maker to be 2 trillion won (US\$1.7 billion) per year. Currently, the Korea Fair Trade Commission is examining whether or not Qualcomm is abusing its patent rights.

<http://www.businesskorea.co.kr>

Smart innovation in manufacturing sector

Smart innovation based on the Industry Innovation Movement program is gaining speed in the domestic manufacturing sector. The purpose of the movement is to assist in the innovation of subcontractors based on cooperation among the government, economic organizations, large corporations and their contractors.

In the second phase of the movement, from August 2014 to August 2015, a total of 2,027 small and medium enterprises joined the program. Each of them was granted 20–40 million won (US\$17,152–\$34,304) and production and business management consultants were allocated as advisors for a higher level of business efficiency, cost reduction and better customer service. During the period, the 1,238 firms that took part in the program as partners of large corporations recorded an improvement of an average of 64.3% in defect rate, delivery schedule compliance, and the like. This percentage is equivalent to 82 billion won (US\$70 million), or 70 million won (US\$60,032) per firm in reduced costs.

The third stage, which kicked off last month, focuses on the expansion of ICT-

based smart factories. Such facilities were built in 152 companies in the second phase, but the number is slated to be increased to 340 in the third. At the same time, 32.2 billion won (US\$27.6 million) is invested in 1,428 firms during the 1-year period for the optimization of production processes, better quality and energy control, and other things.

Also, the Standard Innovation Activity Roadmap is drawn up so that the participants can analyze their innovation capabilities and plan on annual action plans on their own. Consulting services continue to be provided even for the firms that joined the first or second stage but did not join the third.

<http://www.businesskorea.co.kr>

Venture financing led by private sector

The Financial Services Commission released a plan to facilitate the financing of small and venture firms on July 19. The idea is to boost their self-sustainability by means of private sector-led investment. The Republic of Korean government has invested a large amount of public funds for a couple of years to enrich the domestic startup ecosystem. As a result, the size of investment in venture firms and the number of start-ups have greatly increased. However, some experts have pointed out that there is still a long way to go when it comes to the self-sufficiency of the ecosystem and the revitalization of venture capital in more diverse industrial fields.

According to the commission, the Small and Medium Enterprise Establishment Investment Association and the Korea Venture Fund raised 80 million won (US\$69,049) for them in 2012, but the amount skyrocketed to 2.5 trillion won (US\$2.16 billion) last year. The amount of new venture investment increased from 1.2 trillion won (US\$1.0 billion) to 1.6 trillion won (US\$1.4 billion) during the same period, and the government's new investment in the sector has amounted to 1.3 trillion won (US\$1.1 billion) since 2013. This has resulted in an increase in the number of newly established venture firms from 74,162 to 84,697 between 2012 and 2014.

Nevertheless, the domestic venture investment ecosystem still relies heavily on government funds. The government accounted for 27 percent of financing to that end in 2007, and the percentage rose to 40.3% last year, but investment by private-sector entities continued to decrease during the period.

It is also pointed out that the government has failed to raise the rate of survival of investees due to its concentration on the supply of funds. As of 2013, the ratio of start-ups that remained in business for 3 years reached 57.6% in the United States, 55.4% in Israel, and just 41.0% in the Republic of Korea.

<http://www.businesskorea.co.kr>

SINGAPORE

ASEAN's first international patent authority

Singapore has joined China, India, Japan and the Republic of Korea as an international patent authority recognized by the World Intellectual Property Organization. From 1 September 2015, local and global businesses and inventors may fast track their applications for patent protection in multiple markets via Singapore, as the nation begins operations as ASEAN's first International Patent Search and Examination Authority under the Patent Cooperation Treaty (PCT). Administered by the World Intellectual Property Organisation, the treaty enables innovators and businesses to seek patent protection in 148 countries through a single international patent application. Singapore is the fifth in Asia (after China, India, Japan and the Republic of Korea) and joins a select group of 19 IP offices worldwide that have been appointed as International Authorities for the PCT.

Patent applicants to Viet Nam, Mexico, Brunei, Japan and Laos will be the first to gain access to Singapore's new service offerings as an International Searching Authority and International Preliminary Examining Authority in the coming months. Patent applicants could also enjoy rebates of up to 75% when making a PCT application through the Intellectual Property Office of Singapore. Singaporean businesses and inventors, in particular, will benefit from the ease and

cost-effectiveness of filing locally to enter the PCT system. This arrangement is expected to immediately benefit some 1,000 PCT applications originating in Singapore yearly that were previously filed through other IP offices.

<http://www.asianscientist.com>

SRI LANKA

Spending on R&D

Sri Lanka lags in innovation and technological adoption in the Global Knowledge Economy Index of the World Bank, said the Asian Development Bank's Outlook for 2015. The Global Competitiveness Index of the World Economic Forum ranks Sri Lanka behind other countries in university-industry collaboration in research and development (R&D), PCT patents and applications, corporate R&D spending, and the quality of science research institutions.

Sri Lanka's spending on R&D equalled 0.16% of GDP in 2010. This is low even compared with its South Asian neighbours, with India at 0.81% in 2011, Pakistan at 0.33% in 2011, and Nepal at 0.30% in 2010. Sri Lanka's component of high-tech products in total manufactured exports was 0.9% in 2012, far below the 6.2% average for South Asia, 8.4% for lower-middle-income economies, and 20.6% for upper-middle-income countries. Private investment in R&D needs to be encouraged by removing institutional and regulatory bottlenecks and improving infrastructure, including those pertaining to information and communication technology.

The environment for innovation could be improved by establishing proof-of-concept labs and patent-application grants, introducing innovation voucher schemes and incentives for collaboration between firms and universities, and investing in knowledge-based capital supported by copyrights, trademarks, and brand equity.

<http://www.dailynews.lk>

THAILAND

Innovation district initiative revealed

The National Innovation Agency (NIA) aims to transform the Yotee district in

Bangkok into an 'innovation district' similar to that in Singapore in the hope that it will serve as a platform that will boost the birth of new innovative ideas and start-ups in Thailand within 2 years.

Pun-Arj Chairatana, the NIA's new director, said for decades that governments, universities and traditional firms had tried to encourage the transfer of know-how and technology by encouraging more foreign direct investment (FDI) through the luring of Board of Investment (BOI) privileges but these efforts had proved somewhat of a failure. "We are offering these BOI privileges partly because we want a direct technology transfer from foreign firms and we have been trying this approach for three or four decades already hoping that we can have technology from FDI but in reality we have so little from that approach," he said.

"A city can act as a magnet for innovators such as the attractiveness of Bangkok or Chiang Mai for the past 10 years, and they are already accommodating IT start-ups or foreign talent who moved from around the world to live there," he said. Pun-Arj said Yotee was perfect to turn into an innovation district as the NIA was located there and the agency already had an innovation park which would be used as the centre of the innovation district. He said the NIA was already working with state-owned CAT Telecom, with them working with hospitals and universities in Yothin to develop hospital service and medical innovations.

"The NIA already has an innovation park here so we are [trying to develop an innovation district so that people from the medical innovation and digital technology sectors can mingle and work with other key players to develop an innovation district]," he said.

"Next year, there should be some tangible evidence (of this happening) and we expect this to become a reality within 2 years based on the new platform of area-based innovation instead of the linkage between firms and universities, which is currently too little and too long." The BOI's latest science technology and innovation privileges offered to foreign firms and joint ventures focus on innovation activities in

the Kingdom such as the 300% research and development tax privilege, he said. The government's tax privilege for start-ups should also increase the level of research and development and innovation activities in the country, he added.

<http://www.nationmultimedia.com>

VIET NAM

Incentives to foreign investors

Viet Nam gives big incentives for FDI enterprises with the expectation that they will perform technology transfer in the country, but the fact is that only 20% of foreign firms were engaged in technology transfer in the past 5 years. Dr. Nguyen Thi Tue Anh, deputy director of the Central Economic Management Institute (CIEM), said that there are many factors affecting the competitiveness of enterprises, including technology. Surveys conducted in recent years show that technology of Vietnamese enterprises has improved but improvement is low in comparison with the world and other regions.

According to the survey 'Competitiveness and technology at the enterprise level in 2010–2014' by CIEM and a research team from the University of Copenhagen (Denmark), Vietnamese enterprises can realize the benefits of technological innovation, but they lack the capacity and resources to implement it. Among many reasons, the survey indicates that financial constraint is essential. It said that there is a lack of skilled labor and access to equipment.

Viet Nam has rolled out the red carpet to welcome foreign investors, with the hope that they will transfer new technology to local firms. However, up to 80% of technology transfer in the past 5 years came from local firms.

Dr. Neda Trifkovic, from the University of Copenhagen, a member of the survey group, pointed out that in 2009, only 1% of technology was transferred from foreign-invested enterprises to domestic enterprises. The figure was 10% in 2013 and 35% in 2011 and 2012. But then, it fell to about 30%. "This trend can be explained mainly by the competitive nature of the relationship between domestic and foreign

enterprises. The phenomenon of hampering local businesses is a concern because the strategy of domestic firms is often to rely on copying and adapting the experience of foreign enterprises, while foreign firms will not easily reveal their secrets," said Dr. Trifkovic Neda.

With the actual situation of technology transfer between foreign-invested enterprises and domestic firms mentioned above, the Deputy Ambassador of Denmark to Viet Nam, Christian Brix Moller, said that Viet Nam has high expectations for foreign firms in technology transfer, but in fact, local enterprises often transfer technology to each other more than foreign firms do to local ones. "This is a very noticeable point for the policymakers of Viet Nam to consider in FDI attraction policy because Viet Nam has long emphasized technology transfer of foreign-invested companies to domestic enterprises," he noted.

Another notable point in technology transfer between foreign-invested firms and domestic enterprises in Viet Nam is related to the mobility of Vietnamese workers. The surveyed businesses said that the skills and experience of employees is an important source of technology transfer. Eighty-four percent of employees in the foreign-invested firms are Vietnamese, 15.5% are foreigners and 0.5% are returnees. The survey shows that the effect from technology transfer in Viet Nam did not come from foreign sources, but from domestic enterprises in case transfer of workers is considered a channel of new technology.

Viet Nam gives big incentives for FDI enterprises with the expectation that they will perform technology transfer in the country, but the fact is that only 20% of foreign firms are engaged in technology transfer. It means that Viet Nam has given excessive incentives for these firms.

<http://english.vietnamnet.vn>

Biotechnology studies strengthened

Three national centres for biotechnology will be established in the country as part of

a recently approved plan for developing a network of facilities serving the sector by 2025. The centres will be equipped with modern and comprehensive facilities in line with international standards and a capable workforce – between 200 and 500 persons each – to effectively serve biotechnology studies at the national level as well as trial production and practical applications.

From 2016 to 2020, a centre will be built in the central region and two centres for the north and south will be developed from the Institute of Biotechnology under the Viet Nam Academy of Science and Technology and the Centre for Biotechnology in Ho Chi Minh City. In addition, improvements will be fostered within ten other national-level biotechnology laboratories in terms of advanced facilities and human resources.

<http://english.vietnamnet.vn>

Finance comes for high-tech incubator

Minister of Science and Technology Nguyen Quan officially launched a fund to support the Innofund technology incubator on September 25. Innofund is a key part of the Business Incubators Policy Project (BIPP) project. It will mainly provide non-refundable financial support to feasible projects from organizations and individuals in the application of high technology and start-ups and projects in science and technology. Innofund will provide finance for each project ranging from EUR15,000 (\$16,791) to EUR45,000 (\$50,375).

The launch is part of the BIPP project, worth a total of EUR4.4 million (\$4.92 million), of which EUR4 million (\$4.47 million) was sourced from the Belgium Government's non-refundable official development assistance, while the remaining amount will be sourced from Viet Nam's reciprocal capital. According to Minister Quan, Viet Nam has about 50 technology incubators at universities, enterprises, and high-tech park, such as the Hanoi University of Science and Technology, the FPT Group and the Hoa Lac High Tech Park.

<http://english.vietnamnet.vn>