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Introduction

The “*Diamond Action Plan for Biotech Takeoff*” is one of the six emerging industries (which also includes green energy, medical care, quality agriculture, cultural creative, and tourism) selected by the Cabinet for intensive development. Biotechnology will help to support the development of the quality agriculture and medical care industries, which in turn are closely related to the tourism industry. Meanwhile, the tourism sector is related to cultural creativity, which in many cases includes digital content that comes from ICT. The development of all six of these industries will look to ICT and will be very inter-dependent. This is the key logic in designing this vertical and horizontal framework that encompasses the six major industries.

The takeoff package consists of four major areas, namely strengthening the pre-clinical development in the industrial value chain, establishing a biotechnology venture capital fund (BVC), promoting an integrated incubation mechanism, and creating the Taiwan Food and Drug Administration (TFDA). The number of university undergraduate and graduate students obtaining degrees in biotech-related fields in Taiwan has grown steadily, reaching 36,352 in 2008, with 10,413 having obtained masters or PhD degrees. This is providing a constant pool of highly trained talent to the industry. In addition, recruitment groups and several elite projects provide channels through which Taiwan’s biotech sector recruits high-end talent from overseas and train individuals versed in multiple disciplines. In the area of clinical research and trials, Taiwan has established 18 clinical trial centres for new drugs (including four centres of excellence for clinical trials and 14 clinical trial centres for new drugs and Chinese herbal medicines). Statistics show that the clinical trials primarily focus on five areas, specifically tumours, metabolic diseases, central nervous system diseases, hepatitis, and cardiovascular diseases. Taiwan leads Asia in the number of clinical trials being carried out at each stage, with the average in recent years being over 300. The National Development Fund will invest NT\$24 bio. in the biotech sector over several stages based on a risk diversification approach to upgrade the output of the industry

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1. NTU ranks 26th in Webometrics Ranking of World Universities

(Central News Agency, 02 08 2009)

National Taiwan University (NTU) was listed 26th in the 2009 Webometrics Ranking of World Universities released in July by the Spanish National Research Council, making it the only local university to be included in the top 100 of the rankings, a university official said Sunday.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200908020008&pType1=JD&pType0=xJDLNHH&pTypeSel=0>

2. World's 1st botanical product industry cluster shaping in Taiwan

(Taiwan News, 02 08 2009)

The world's first botanical product industry cluster is taking shape in southern Taiwan's Pingtung Agricultural Biotechnology Park, which is now home to more than 20 companies in the field.

"The role of botanical products is becoming increasingly important in the global mainstream medical market and the industry is growing at an average annual rate of more than 10 %, " according to the Council of Agriculture.

Full article:

http://www.etaiwannews.com/etn/news_content.php?id=1020420&lang=eng_news&cate_img=35.jpg&cate_rss=news_Business

3. Three local researchers elected fellows of Royal Society of Chemistry

(China Post, 04 08 2009)

Three Taiwan chemists were elected in June as fellows of the Royal Society of Chemistry in the United Kingdom, which indicates that Taiwan's research achievements in the field of chemistry are being recognized worldwide, a dean at National Taiwan University said.

The three -- Peng Shie-ming and Chou Pi-tai, professors at National Taiwan University's Department of Chemistry, and Cheng Chien-hong, a professor at National Tsing Hua University's Department of Chemistry -- are now fellows of the largest organization in Europe for the advancement of chemical sciences.

Full article:

<http://www.chinapost.com.tw/taiwan/int'l--community/2009/08/04/219141/Three-local.htm>

4. A Compound Found In the Sea Provides Promising New Treatment for Neuropathic Pain

(Medical News Today, 05 08 2009)

A paper just published in the British Journal of Pharmacology reports that a compound originally isolated from a soft coral (*Capnella imbricate*) could lead scientists to develop a new variety of treatments for neuropathic pain. This composite is collected at Green Island off Taiwan and could be a new option for treatment.

Full article:

<http://www.medicalnewstoday.com/articles/159674.php>

5. Taiwan Can Readily Tap Global Generic Medicine Market: ITRI

(Taiwan Economic News, 08 08 2009)

Taiwanese pharmaceutical makers have good opportunity to tap the global generic-medicine market, which has an annual market of about US\$63 billion, according to Johnsee Lee, president of the Industrial Technology Research Institute (ITRI) in Taiwan.

A senior executive at the biomedical venture-capital firm Burrill & Co. is very confident of local pharmaceutical makers' strong potential in special improved agents and active pharmaceutical ingredients (API).

Increasingly more international drug makers are expected to come to Taiwan to find partners among local medical-device makers, who now are internationally famous with strong R&D, innovation, and manufacturing capability.



Full article:

http://cens.com/cens/html/en/news/news_inner_28781.html

6. Local university develops hooked collar for bridge piers

(China Times, 11 08 2009)

The hooked collar developed by Chen Su-chin of the National Chung Hsing University's Department of Soil and Water Conservation is designed to reduce local scour around bridge piers. Bridge scour refers to the removal of sediment from around piers by swiftly moving water. In the process, scour holes are scooped out, thereby compromising the integrity of the bridge. By reducing scour, the new protective hooked collar can help prevent tragedies resulting from the collapse of bridges as seen during the recent typhoon in Taiwan.

Full article:

<http://www.taiwantoday.tw/ct.asp?xItem=57476&ctNode=413>

7. Taiwan Aims at NT\$50 B. Value in Robotic Industry in 2010

(Taiwan Economic News, 11 08 2009)

Due to organized efforts to develop intelligent robots, Taiwan stands a good chance to break the NT\$50 bio. mark by 2010 in production value of the robotic industry. Over the past few years, Taiwan's robotic firms have formed several R&D alliances to focus on clean-room, education, medical-care and industrial applications. The domestic robotic industry's annual production value doubled to last year's NT\$40bio. from 2005's NT\$20 bio., with the number of firms involved reaching over 300.

Full article:

http://cens.com/cens/html/en/news/news_inner_28852.html

8. Microsoft, Taiwan Agency to Jointly Develop Cloud Computing Technology

(Taiwan Economic News, 12 08 2009)

Microsoft Corp. and Taiwan's government-financed NCP (Networked Communications Program) Office have jointly announced a plan to jointly develop cloud computing technologies and related applications. Initiated by National Science Council and integrating resources from the government, academia and enterprises, NCP is a 5-year program dedicated to Taiwan's development of communication, network and application service technologies in line with growing trends in the world.

Full article:

http://cens.com/cens/html/en/news/news_inner_28877.html

http://cens.com/cens/html/en/news/news_inner_29013.html

9. Robotic wheelchairs could help patients at hospitals

(Taipei Times, 14 08 2009)

National Chiao Tung University (NCTU) unveiled a robotic wheelchair to carry elderly or disabled patients around hospitals without the help of staff. The wheelchair is equipped with a wireless positioning system.

Full article

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=164371&CtNode=9>

10. Obesity found associated with three genetic loci in ethnic Chinese

(Central News Agency, 21 08 2009)

After six years of research and genome comparisons, a Taiwanese research team has found recently that three genetic loci, or positions on a chromosome, are associated with severe obesity in ethnic Chinese. Severe obesity is associated with novel single nucleotide polymorphisms of the ESR1 and PPAR loci in Han Chinese.



According to Pan Wen-harn, a researcher with the Institute of Biomedical Sciences, Academia Sinica, severe obesity is associated with novel single nucleotide polymorphisms, or DNA sequence variation, of the ESR1 and PPAR loci in ethnic Chinese.

Pan said many loci associated with obesity have been reported, with at least 18 genes having been replicated in five studies on obesity-related indicators and that 14 additional genes having been associated with obesity in Asians.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200908210023&pType1=ST&pType0=xEMST&pTypeSel=0>

Related article:

<http://www.taipetimes.com/News/taiwan/archives/2009/08/22/2003451707>

11. Taiwan firm unveils world's thinnest fan for electronic goods

(Central News Agency, 22 08 2009)

A Kaohsiung-based company has earned a silver award at the 2009 National Invention and Creation contest for developing the world's thinnest fan to cool down electronic gadgets.

The fan, with a thickness of only 3 mm, is nearly half as thick as the 5 mm regular mini fans, and is one 1 mm thinner than the thinnest fan of 4 mm produced by a Japanese company.

Mini fans are in high demand as electronic gadgets, such as mobile phones and wrist watches, are competing with each other to be the smallest of their kind.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200908220010&pType1=JD&pType0=xJDLNHH&pTypeSel=0>

12. Taiwan's Formosa-2 satellite vital for topographical imaging

(Liberty Times, 25 08 2009)

Over the past five years, 65 nations and over 1,000 organizations have used and cited images sourced from Formosa-2, which orbits the Earth two times a day and records many important images. These pictures have played a crucial role in topographical and terrain research.

Full article:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=165294&CtNode=9>

13. China Mobile to work with Taiwan institute on 4G technology

(Central News Agency, 26 08 2009)

Beijing-based China Mobile Ltd., the world's largest mobile carrier, will work with Taiwan's Industrial Technology Research Institute (ITRI) to develop 4G technologies, Wang Jianzhou, chairman of the state-run Chinese company, said. Wang is exploring opportunities to forge alliances with local high-tech enterprises to open up the vast mainland China market to advanced telecommunication products.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200908260019&pType1=ED&pType0=xEMST&pTypeSel=0>

14. Cabinet fund to earmark NT\$24 billion for biotech investment

(Central News Agency, 28 08 2009)

The Executive Yuan's National Development Fund will earmark NT\$24 bio. as venture capital for the biotech sector, according to investment guidelines for the sector approved by the fund's management committee. Biotech companies can apply for the financing immediately, according to the guidelines.

The committee said the fund will invest NT\$24 bio. in the biotech sector over several stages based on a risk diversification approach to upgrade the output of the industry. To be eligible for the cash injections, companies must



**TRADE OFFICE OF SWISS INDUSTRIES
(TOSI)**

瑞 士 商 務 辦 事 處

*Rm. 3101/31F, 333 Keelung Road, Sec. 1
Taipei 11012, Taiwan, R.O.C.
Tel. 886-2-2720 1001 Fax 886-2-2757 6984
e-mail address: tosi@swiss.org.tw
website: www.swiss.org.tw*

be engaged in pharmaceutical development, medical equipment development and production and other related sectors and have paid-in capital of at least NT\$5 billion.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200908280031&pType1=ED&pType0=xEMST&pTypeSel=0>