

Our Open Innovation

—Concept Paper for APAC’s Drug DA-EWG—

The purpose of this Asia Partnership Conference of Pharmaceutical Associations’ (APAC) concept paper is to provide a definition of the associations approach to promoting ‘open innovation’ in the Asia region. This paper was prepared in collaboration by the members of the APAC Drug Discovery Alliance (DA) Expert Working Group (EWG). The DA-EWG is an impartial body that focuses on improving drug discovery across all nations in Asia.

Who is APAC?

On March 16, 2012, the First APAC was held in Tokyo, Japan. Twelve organizations from eleven Asian economies affiliated with the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) participated in the conference with a focus on further promoting industry ties within the region. The following APAC mission statement and goals were agreed upon at the initial meeting.

APAC Mission: “To rapidly deliver innovative drugs to people in Asia.”

APAC Goals: “To achieve this mission, an information-sharing-platform will be built and used to disseminate information on each economy’s tasks and challenges, and for releasing the necessary proposals as the Asia Partnership Conference of Pharmaceutical Associations (APAC). Associations of various economies shall propose solutions for pharmaceutical tasks and challenges to stakeholders, including to their governments.”

Those at the first Conference approved holding APAC meetings on a regular basis as well as the establishment of EWG to promote APAC’s activities. It was agreed to establish EWGs in relation to regulatory matters, certifications/approvals, and in relation to drug discovery collaborations.

What is Open Innovation?

In 2003, Henry Chesbrough of Harvard Business School defined open innovation as follows:

Open Innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology. Open Innovation combines internal and external ideas into architectures and systems whose requirements are defined by a business model. (Henry Chesbrough, Open Innovation: The New Imperative 2003)

Open innovation has since been embraced in a number of industries, such as the software industry, and has great potential to benefit the life sciences as well. One possible visualization of this model is given in Exhibit 1.

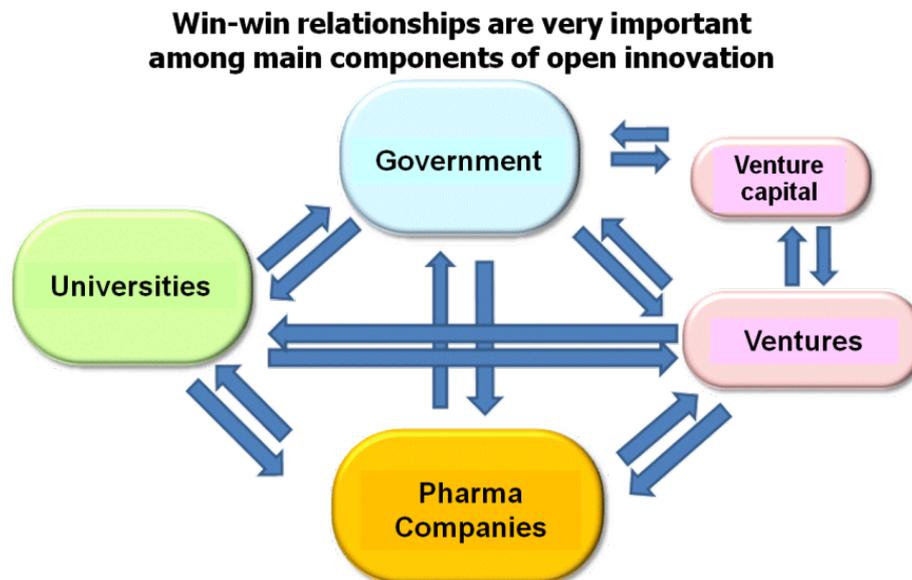


Exhibit 1: One Model of Open Innovation

What is drug discovery?

Drug discovery refers to the general process of developing a therapeutically active substance for a defined target molecule or pathway. The activities of the DA-EWG are very broad in relation to supporting activities that promote novel drug discovery, so as to include both traditional and cutting-edge approaches and so as to include a focus on disease mechanisms/pathways and other sciences, etc., necessary to achieve the drug discovery process.

What is the Drug Discovery Alliance Expert Working Group?

Following the initial APAC meeting, the DA-EWG was established with voluntary participants joining from a variety of Asian economies, such as China, India, Japan, Korea, Malaysia, Taiwan and Thailand (alphabetical order). It was decided that the first task to be studied regarding drug discovery should be the promotion of open innovation in Asia in order to promote and realize “Asia-initiated drug discovery”. **Specifically, the EWG identified that an open-innovation platform would be necessary in order to promote Asia-based drug discovery and swiftly deliver the resulting innovative drugs to people in Asia.**

What is APAC’s Open Innovation?

With APAC's mission to rapidly deliver innovative drugs to people in Asia firmly in mind, APAC's open innovation policy is as follows:

Mission

Through open innovation, to empower economies within Asia to realize drug discovery.

Vision

APAC will leverage an open innovation platform to promote the discovery of drugs that meet patients' needs and will support research organizations to collaborate across Asia.

How to create an Open Innovation Platform?

The DA-EWG acknowledges the great diversity in capabilities and expertise for drug discovery within Asia. Accordingly, in its activities, the DA-EWG will consider each Asian economy's government policy and develop alliances with representative government research institutions to promote closer inter-economy and inter-institution collaboration, as well as promote greater collaboration between government, industry and academic institutions throughout Asia. In order to achieve such alliances the DA-EWG will promote an environment that fosters collaboration between these various groups as well as venture businesses, thereby speeding the development of Asia-initiated drug discovery. The DA-EWG will first develop a common, open drug discovery platform.

In order to realize a platform designed to meet the needs of various Asian economies, the DA-EWG will incorporate delegates from the selected representative government research institutes organizations into the DA-EWG and design a platform based on the needs of each economy. The pharmaceutical associations of the various economies will participate in the EWG as gatekeepers to the various research organizations within each economy and furthermore, they will endeavor to act in such a way that optimizes the activities of APAC as a whole.

In recognition of the fact that it will take more than a decade of sustained investment in order to realize the ultimate goal of realizing sustainable drug discovery within Asia, the DA-EWG will aim to provide tangible deliverables over time. While the necessary components of the platform are still to be discussed, potential short-to-medium term success indicators could be the successful establishment of a Pan-Asia drug discovery directory, the promotion of networking exchanges between researchers, partner matching, general capacity building, the sharing of funding information and know-how between industry, academia and government.

Why now for this drive to promote drug discovery and open innovation?

Many economies in Asia have positioned healthcare innovation and biotechnology as a key pillar of their national policy (Exhibit 2). To this end, governments have been offering assistance, and numerous bio-clusters have been established in various economies. Although Asia’s drug discovery capabilities are developing, there is still further to be done to catch up with the world leaders, however there is considerable potential for Asia to grow and develop its capability into the future.

	National Policy	Bio-clusters
Japan	“Strategies to Revitalize Japan” received Cabinet approval in July 2012. Life growth strategy was set forth as an important item, and a setup to assist the creation of innovative drugs and medical devices is being established.	International strategy comprehensive special zones and local revitalization comprehensive special zones were established, aimed at creating economic effects and jobs.
South Korea	“Bio-Vision 2016” strengthens the competitiveness of bioindustry through development and globalization.	There are a total of 16 bio-clusters across 3 zones. International collaboration has been established.
China	The 12 th 5-year plan (~2015) designated seven sectors as strategic newly-emerging industries. One of these is biotechnology, and the government reportedly aims to increase the share of biotechnology industries in GDP from 4% in 2010 to 8% in 2015.	Bio-pharmaceutical industry parks are located in approximately 50 sites throughout the economy (in provisional divisions or higher). Numerous public financial investments have also been made.
Singapore	Various measures (incl. Biopolis) enhance functions as a hub for manufacturing/R&D of high-tech fields including biotechnology.	Efforts typified by “Biopolis”.
Thailand	TCELS was established under the Ministry of Science and Technology to support bio-ventures.	Efforts typified by the Thailand Science Park.
Taiwan	A Biotechnology Takeoff Action Plan was enacted in 2009, backing up development efforts to turn Taiwan into a partner in the international biomedical field. The government also creates employment opportunities, aimed at reinvigorating the biomedical industry.	As a base for bio-industries, the New Hsinchu Science and Biopharmaceutical Industry Park was opened in 2008. Manufacturing bases focusing on a medical center as well as incubation facilities are currently being built.
Malaysia	The newly developed “Eight Development Strategies” includes the pharmaceutical industry in the “Development of growing industry.”	As the biotechnology base, the Malaysian Government constructed Bio-Xcell in Nusajaya, Iskandar region in the Malaysian State of Johor, and completed it in 2010.
India	“The 12 th 5-year Plan (April 2012~)” which is under development is expected to follow the previous 5-year Plan to maintain increased public investment in healthcare	The former 5-year Plan included the promotion of innovation through the creation of bioclusters in its 3 rd Action Plan. Currently, there are clusters in the BT field in 3 areas of India.
Hong Kong	Same as China	Efforts typified by the Hong Kong Science Park.

Exhibit 2: Healthcare innovation and biotechnology as national policy

Government support of drug discovery in Asia is commendable; however it is hoped that

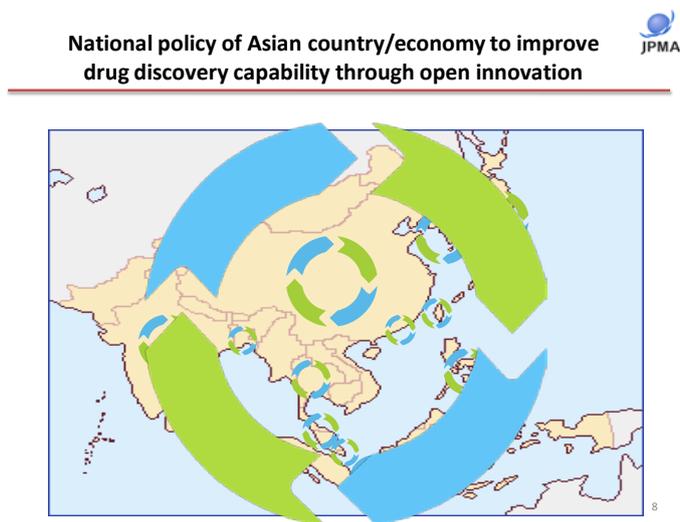
those governments making such investment are aware that drug discovery is a long-term investment with returns being realized more than a decade after the original investment.

At the 1st APAC, members emphasized the importance of strengthening each economy's drug discovery capabilities, first and foremost, to achieve Asia-initiated drug discovery. Regarding drug discovery-related policies that are being aggressively implemented in various economies, members of APAC acknowledged the importance of making proposals and providing assistance to promote such alliance activities. (Please refer to reference materials below.)

[Reference materials: From presentation at the 1st APAC]

National policy of Asian economies and economies to improve drug discovery capabilities through open innovation

Asian economies are investing funds from national budgets to gain favorable outcomes from open innovation just like the U.S. Our activities should respect and take into account such intentions of each economy. The first step of APAC's effort to promote a drug discovery alliance requires us to be fully aware of our role supporting each economy to improve their drug discovery capability.



At the same time we must remember that drug discovery is a complicated process and Asian economies need to overcome a lot of challenging issues in order to develop into drug discovery nations. Each Asian economy needs to improve its own ability to discover drugs in order to strengthen collaboration throughout Asia. I believe this will promote drug discovery in Asia and ultimately result in the whole of Asia benefiting from Asian-based drug discovery. Based on the background and current situation, alliances between Asian economies in science and technology have become a realistic approach to achieve drug discovery that originates in Asia. We intend to utilize Japan's rich experiences in drug discovery to develop and strengthen the Asia region.