Learning from Past Mistakes: Malaysia's Biotechnology Sector Rises from the Ashes

By: Gary Wong

Biotechnology has long been a buzzword viewed as an opportunity for glory and riches in equal measures. Before 2003, new biotechnology ventures were mainly concentrated in Japan, Australia, Hong Kong and Korea, whereas agro-industrial countries like Thailand, Malaysia and Indonesia have a combined biotechnology sector population of near zero. Under the 8th Malaysia plan, a national initiative to jumpstart the biotechnology sector in Malaysia was launched in May 2003; the BioValley. It's infamous name is now only mentioned mostly in hushed whispers.

Billed as the nucleus of Malaysia's Biotechnology industry, it closely mirrors more successful bio-clusters in Western countries, in the hopes of emulating their success. After investing RM 100 million into developing the first phase of BioValley (creating national institutes for Agro-Biotechnology, Pharmaceutial Biotechnology and Genomic/Molecular Biotechnology), our government eagerly awaited the wafts of lucrative biotechnology ventures and contracts to materialise, with little results.

We could look back fondly at our misguided enthusiasm on the project only to realise that our lofty expectations were ill-met by a combination of unfocused direction from the government, knowledge worker shortage and multiple barriers of entry for investors. In its three years of operation, the BioValley brought in a grand total of three companies.

Figure 1: The Prime Minister outlines the nine-thrust plan of the NBP

A New Beginning

After months of delay, the new National Biotechnology Policy (NBP) 2005 was unveiled by the Prime Minister, YAB Dato' Seri Abdullah Haji Ahmad Badawi, at the BioMalaysia 2005 exhibition on 28 April 2005. The NBP is a thinly veiled remedy to the BioValley initiative, albeit with a much tighter focus and strategic government push.

In the NBP, the government lists nine key policy thrusts (Table 1) and three phases of implementation (Figure 2). The key goal of the NBP is to produce at least 20 globally-competitive Malaysian biotechnology companies by the year 2020.

The NBP proudly proclaims the worldwide market capitalisation of USD700 billion and an annual turnover of USD75 billion[1] in the biotechnology sector as a substantial potential that Malaysia can strive to be a part.

The nine-thrust plan of the NBP is a point-by-point solution to compensate for our previous inadequacies in implementing the BioValley project.

Thrust One through Three encompasses the same directive and goals; to leverage on the nations existing biotechnology capabilities (in the sub-sectors of agriculture, healthcare and industrial) and push these capabilities up the value chain.

Thrust Four brings together the institutional framework to further Thrusts One through Three by establishing Centres of Excellence and accelerate development through coordinated initiatives. Projects include enhancing the capabilities of institutions

Table 1: The Nine-Thrust Plan of the National Biotechnology Policy. ***(Source: The National Biotechnology Policy, April 2005)***

Thrust	Category	Description
1	*Agriculture Biotechnology Development*	Transform and enhance the value creation of the agricultural sector through biotechnology.
2	*Healthcare Biotechnology Development*	Capitalise on the strengths of biodiversity to commercialise discoveries in natural products as well as position Malaysia in the bio-generics market.
3	*Industrial Biotechnology Development*	Ensure growth opportunities in the application of advanced bio-processing and bio-manufacturing technologies.
4	*R&D and Technology Acquisition*	Establish Centres of Excellence, in existing or new institutions, to bring together multidisciplinary research teams in co-ordinated research and commercialisation initiatives. Accelerate technology development via strategic acquisitions.
5	*Human Capital Development*	Build the nation's biotech human resource capability, in line with market needs, through special schemes, programmes and training.
6	*Financial Infrastructure Development*	Apply competitive "lab to market" funding and incentives to promote committed participation by academia, the private sector, as well as government-linked companies. Implement sufficient exit mechanism for investments in biotech.
7	*Legislative and Regulatory Framework Development*	Create an enabling environment through continuous reviews of the country's regulatory framework and procedures in line with global standards and best practices. Develop a strong intellectual property protection regime to support R&D and commercialisation efforts.
8	*Strategic Positioning*	Establish a global marketing strategy to build brand recognition for Malaysian biotech and benchmark progress. Establish Malaysia as a centre for Contract Research Organisations and Contract Manufacturing Organisations.
9	*Government Commitment*	Establish a dedicated and professional implementation agency overseeing the development of Malaysia's biotech industry, under the aegis of the Prime Minister and relevant government ministries.

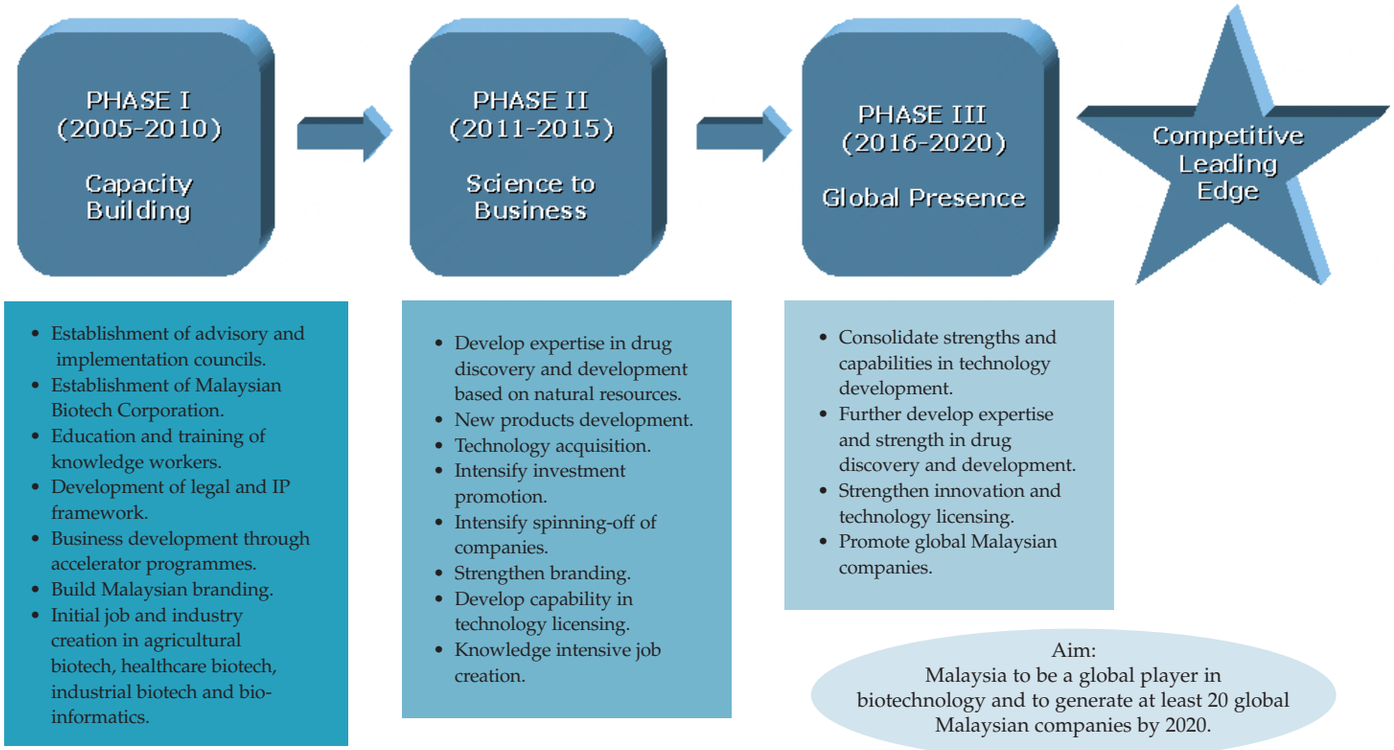

Figure 2: National Biotechnology Implementation Approach. ***(Source: National Biotechnology Policy, April 2005)***

such as MARDI, MPOB, and the Institute of Medical Research.

One of the key downfalls of the BioValley initiative was the lack of skilled and knowledged workers in the field of biotechnology. Many homegrown talent had a disheartened view of the local biotechnology sector, preferring instead the greener pastures of Singapore and overseas (indeed, it was reported that almost 40% of Singapore's Biopolis workforce came from Malaysia). Thrust Five aims to address this by building on human capital.

Thrusts Six and Seven broaches compensatory incentives for biotechnology venture capitalists, detailing grants, incentive schemes, tax relief[2], legal and regulatory reviews; all targeted to lower barriers of entry and entice more investment into our local biotechnology sector.

National accomplishment is still the best indicator of the NBP's effectiveness and success, and Thrust Eight aims to bring Malaysia to the forefront of biotechnology by leveraging Malaysia's strengths in this sector to build international recognition.

Indeed, none of the efforts outlined above could be achieved without dedicated government and private sector support. Thrust Nine will establish dedicated and professional agencies to support the government's biotechnology plan. Thus was established the Malaysian Biotechnology Corporation (MBC) (under the purview of MOSTI), which would work closely with relevant agencies and ministries such as the Ministry of Health, Agriculture and Commodities to spearhead the government's interest in attracting investments and joint ventures from local and foreign biotechnology companies.

Looking Ahead

Will the new NBP rectify the hubris of the past? Only time will tell. The government's initial push was in developing three centres of excellence; the centre of excellence for Agricultural Biotechnology at MARDI and UPM, the centre of excellence for Genomics and Molecular Biology at UKM and the centre of excellence for Pharmaceuticals and Nutraceuticals at the former location of the BioValley in Dengkil. These three centres of excellence would be collectively networked as BioNexus Malaysia.

The BioNexus is not merely a replacement for the failed BioValley project. It is a new network of companies and research institutions to capitalise on Malaysia's existing strengths in key biotechnology areas and set modest incubation-to-market goals.

The government's NBP is keenly supported by the recently released Budget Malaysia 2006. In Johor Bahru, the Bioproducts Validation Centre has been established at a cost of RM 30 million. Also, the Malaysian Life Sciences Capital Fund was established under the MTDC with an RM 100 million government's contribution to kickstart investment in the Malaysian biotechnology industry[3].

Like the proverbial phoenix that rises from the charred remains of a fallen body, the NBP has the potential to flourish and succeed but we have to be mindful and learn from past mistakes. ■

REFERENCES

[1] National Biotechnology Policy [Online] http://www.mosti.gov.my/MostePortal/website/index.jsp

[2] Office of the Prime Minister of Malaysia [Online] http://www.pmo.gov.my

[3] Budget Malaysia 2006, *Point 55*