

China Pharmaceutical Guide

中国医药市场指南

5th Edition (2010)

Written by:

James J. Shen, MBA

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WiCON International Group LLC

449 Sayre Drive, Princeton, NJ 08540, USA

Tel: +1 609 919 0898 Fax: +1 702 995 3905

E-mail: info@pharmachinaonline.com Internet: www.pharmachinaonline.com

China Office

Suite 17D, Building B, Oriental Kenzo Plaza

48 Dongzhimenwai Dajie, Dongcheng District, Beijing 100027, China

Tel: +86 10 84476010/11 Fax: +86 10 84476110

E-mail: info@pharmachinaonline.com

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ABOUT THE AUTHOR

China Pharmaceutical Guide is authored by James J. Shen, a veteran of the Chinese healthcare industry and market, who has dedicated his entire 24-year career to pharmaceutical businesses in China.

James Shen has rich operational and senior level management experience on China's healthcare businesses in the capacities of a senior consultant to multinational pharmaceutical companies, a manager of joint venture projects and companies, a business development executive, an entrepreneur, and most recently a publisher.



James Shen started his career in the pharmaceutical industry in 1987 when he joined Beijing Ciba-Geigy Pharmaceutical Ltd. (now Beijing Novartis) as Assistant to the General Manager. While he studied MBA in England in various periods of 1980s, he worked as an editorial consultant for Scrip/PJB Publications, IMS and Financial Times Business Information on China's healthcare news.

In 1991, he founded WiCON International Group in the USA to provide strategic consulting and competitive intelligence to international healthcare companies in order to assist and facilitate their market entry into China. He has worked with many large and mid-size international pharmaceutical companies on a diverse range of projects including entry strategy development, strategic alliances and joint ventures, marketing and distribution agreements, product registration and clinical trials, licensing and technology transfer, API sourcing, and M&A due diligence. His clients include *Pfizer*, *GD Searle*, *IVAX*, *Glaxo-SmithKline*, *Novartis*, *Sanofi-Synthelabo*, *TEVA*, *Taro*, *Ajinomoto*, *AL Pharma*, *IMS*, *Medical Economics/PDR*, *Mylan Pharmaceuticals*, *Polichem*, and *Merrill Lynch*.

As an entrepreneur, James Shen co-founded *Beijing Jicai Pharmaceutical Technologies Ltd.* in 1992, one of the first private pharmaceutical research institutions in China, and took over its management in 2001. He is also a co-founder of *Nanjing Zinox Pharmaceutical Co. Ltd.*, an emerging generic pharmaceutical company in China.

James Shen was the Managing Editor of the well-known *IMS China Update*, a monthly newsletter covering China's pharmaceutical market co-published by IMS and WiCON. He authored many China healthcare business publications in English throughout 1990s, including *Marketing Pharmaceuticals in China*, *Guide to Pharmaceutical Research Institutions in China*, and *Directory of Bulk Pharmaceutical Manufacturers & Products in China*.

In early 2006, following a restructure of WiCON's businesses, James Shen founded *Pharma China*, now the most influential English media on China's pharmaceutical industry and market which is subscribed by almost all multinational pharmaceutical

companies, CROs, consulting companies and investment banking firms active in China.

James Shen was educated in China, Europe and the USA at university and postgraduate levels, and received an MBA from the University of Exeter (UK) in 1990.

He is now based in Princeton, New Jersey with frequent visits to China and Europe. He continues to be active in strategic consulting with multinational pharmaceutical companies at headquarter and regional head office levels.

PREFACE

Despite the enormous business opportunities and growth prospects offered by China's healthcare sector, I've witnessed and experienced countless regulatory and business environmental changes, which has frequently caused painful business difficulties, frustrations and downfalls, in my past 24 years of work in the sector as a consultant, manager and entrepreneur.

The ever-changing legal and market environments in China healthcare present the single biggest challenge to companies and executives operating in the sector. Naturally, many operational level issues and problems in the country also pose significant dangers to successful businesses.

Despite these challenges and difficulties, the Chinese pharmaceutical industry and market have achieved remarkable growth in the past two decades. The sector is generally developing towards a positive direction in the sense that it continues to grow steadily, its regulatory regime has become increasingly compatible with international standards with improving transparency, once rampant corruption is being tackled, its ongoing consolidation will eventually help establish order and stability, and the country's new healthcare reform will ultimately led to a more stable and healthier market environment.

There are success stories from all categories of players, whether they are foreign or local, large or small, newcomer or established, private or state-owned. However, to be one of the success stories require a thorough understanding of the sector, ability to face and tackle challenges, flexibility to deal with changes, and skills to maneuver through complex situations.

It has been my wish to put my experience and observation in the past 24 years operating in almost every aspect of China's pharmaceutical business into a publication, which will serve as a one-stop reference to anyone seeking to enter or operating in the Chinese pharmaceutical market. As of our 2007 edition, we have been adding a rising number of commentaries and contributions from many other leading pharma industry executives and experts.

Packed with hard-to-find current data and the author's expert knowledge from years of hard-earned experience in the industry, its comprehensiveness, practicality, insight, reliable data and analysis, and up-to-date information, are the features which set this the guide apart from other publications with similar titles.

This Guide is written based on my past experience, interviews with relevant industry experts and government officials, articles from Pharma China, information obtained from or published by Chinese government agencies, information obtained from or published by independent pharmaceutical industry associations, reliable data and information released exclusively to WiCON for publication from various reputable market research and consulting firms, information from other trustworthy trade journals and newspapers, related information found on the internet, and a large in-house

information collection by WiCON International Group accumulated since 1986.

About China Pharmaceutical Guide 2010 (5th Edition)

The China Pharmaceutical Guide 2010 has been thoroughly updated with ample latest data from many reputable sources, abundant analysis by leading industry experts, new regulations and more case studies. Its coverage was renewed and expanded significantly in the following areas:

- ✓ An additional 100 pages of new data, information, analysis and case studies
- ✓ Thorough summaries and analysis of the latest healthcare reform, drug pricing & reimbursement and hospital tender purchase policies
- ✓ Comprehensive industry, market and international trade data as well as health statistics are updated with the 2009 (full year) and early 2010 figures
- ✓ Comprehensive new top line data and research findings from our collaborative partners such as IMS Health, Synovate Healthcare, Nicholas Hall, ZS Associates and RDPAC
- ✓ All regulatory changes in 2009/2010 are updated to present a clear and most up-to-date picture of the Chinese drug regulatory framework with summaries and analysis of all drug regulations in effect including new regulations by June 9, 2010
- ✓ New and expanded coverage on MNC strategies in China with healthcare reform in the backdrop, intellectual property/patent law amendments, data exclusivity, patent litigation, drug regulation, pharmaceutical marketing and distribution strategies, drug consumption patterns, the Chinese R&D and outsourcing sector, clinical studies and practices, healthcare reform, community healthcare sector, essential drug policy, regional drug consumption patterns, and the vaccine sector.
- ✓ More case studies are added to the 2010 Edition and they are in six important areas including market entry, R&D outsourcing, human resource management, market size/information sources, legal/IPR battles and local success stories.
- ✓ Comprehensive revision of MNC companies profiles to reflect their latest performance, business deals, legal disputes and outlook.
- ✓ Full text official translations of 11 Chinese laws and regulations directly related to pharmaceutical/healthcare businesses in China

I would like to take the opportunity to thank all those organizations and individuals who contributed to this publication and their continued cooperation is greatly appreciated.

While every effort has been made to ensure that information in this publication is correct, no liability can be accepted for any loss incurred in any way whatsoever by any company or individual relying on the information herein. To the best of our knowledge the information given is accurate at the date of publication.

James J. Shen

June 8, 2010

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TABLE OF ABBREVIATIONS

ADR – Adverse Drug Reaction	NBS – National Bureau of Statistics
API – Active Pharmaceutical Ingredients	NCGHSR - National Coordination Group for Healthcare System Reform
APP – Administrative Protection of Pharmaceuticals	NDRC – National Development and Reform Commission
AmCham – American Chamber of Commerce	NPFPC – National Population and Family Planning Commission
CCCIEMHP – China Chamber of Commerce for Import & Export of Medicines and Health Products	OECD – Organization for Economic Co-operation and Development
CNCM – China National Corporation of Medicines	OTC – Over The Counter
CAPC – China Association of Pharmaceutical Commerce	QA – Quality Assurance
CNY – Chinese Yuan	PRC – People’s Republic of China
CRO – Contract Research Organization	R&D – Research and Development
ED – Erectile Dysfunction	RDPAC - R&D-based Pharmaceutical Association Committee
FDI – Foreign Direct Investment	SATCM – State Administration of Traditional Chinese Medicine and Medicines
FIEs – Foreign Invested Enterprises	SDA – State Drug Administration
GCP – Good Clinical Practices	SFDA – State Food and Drug Administration
GDP – Gross Domestic Products	SIPO – State Intellectual Property Office
GLP – Good Laboratory Practices	SMEI – Southern Medicine Economic Institute
GMP – Good Manufacturing Practices	SOE – State Owed Enterprise
GSP – Good Sales Practices	SPAC – State Pharmaceutical Administration of China
IFPMA – International Federation of Pharmaceutical Manufacturer Associations	STD – Sexually Transmitted Disease
JV – Joint Venture	TC – Therapeutic Class
M&A – Merger and Acquisition	TCM – Traditional Chinese Medicine
MIIT – Ministry of Industry and Information Technology	USFDA – US Food and Drug Administration
MOC – Ministry of Commerce	USTR – US Trade Representative
MOF – Ministry of Finance	VAT – Value Added Tax
MOH – Ministry of Health	WM – Western medicine
MoHRSS – Ministry of Human Resources and Social Security	WHO – World Health Organization
MNC – Multinational pharmaceutical companies (<i>in the context of this guide</i>)	WTO – World Trade Organization
MR – Medical Representative	

EXECUTIVE SUMMARY

James J. Shen

China's economy is already the third largest in the world. Its foreign exchange reserve stands second to none. In the next three years, China's GDP is expected to grow between 7-9% per annum, while the overall compound annual growth rate of the pharmaceutical market (2009-2013) is projected to be 24%.

Sustained economic development is foundational to growing healthcare expenditures; in China, healthcare spending CAGR (2006-2011) is expected to surge to 20%. Rising levels of disposable income, meanwhile, are laying the groundwork for higher out-of-pocket expenditures for healthcare and pharmaceutical products.

Continuous double-digit growth in the past two decades has convinced even the most conservative industry analysts to offer optimistic views about the future of the Chinese pharmaceutical market.

Recap of Chinese pharmaceutical sector last year

Despite the global financial crisis and economic slowdown, the Chinese pharmaceutical sector maintained its high growth in 2009. The uninterrupted growth was driven by improved order of the Chinese pharmaceutical market place, exits of small and irregular competitors, relatively more stability in drug regulation, increased government healthcare funding and surging market demands.

Output value and sales value of the Chinese pharmaceutical industry rose 21.02% and 21.19% respectively, reaching CNY 940,305 million and 896,589 million last year, according to the National Development and Reform Commission (NDRC). Affected by the falling export sales, the 2009 growth rates were 2.6 and 1.4 percentage points lower respectively than the same for 2008.

The output value of the chemical drug sub-industry rose 16.80% to 483,183 million in 2009, while that of biological products rose 23.97% to 211,168 million. The growth rates of both sub-industries were substantially lower than those in 2008.

Also noteworthy is the much higher growth rates of new product output for the pharmaceutical industry and chemical drug sub-industry at 28.38% and 25.30% respectively, indicating a shift to new generations of drug products.

The Chinese hospital market surged 27% in MAT 3Q/2009, while the Chinese retail market and vaccine markets grew around 15% last year. In the meantime, the growth of the Chinese OTC market continued to be slower than other market segments at nearly 10%.

Many leading Chinese companies, including Hengrui Pharma (+57%), Shanghai Pharma (+100%) and Fosun Pharma (+250%), reported sharp profit growth last year, suggesting improving margins for large pharmaceutical companies. Industry-wide, however, the profit growth is expected to have been lower than that in 2008.

Rising global importance

With sharp growth and advancements on many fronts in the past two years as backdrop, the global importance and influence of the pharmaceutical industry in China is beginning to emerge.

The following trends serve as good indicators for the rising importance of China in the global pharmaceutical sector.

- ☞ *Rapid growth of the Chinese pharmaceutical market* – Regardless of the wide ranging estimates made by different information sources on its size, China is now one of the largest drug markets, and by 2020 (if not earlier) will be the second largest market in the world.
- ☞ *The importance of China to MNCs has been rising fast* – the country is important not only because it offers a fast growing and potentially huge market, but also because it plays critical roles as a manufacturing base, a critical source for APIs and raw materials, a hotspot for R&D outsourcing and in-house research centers, and a potential source for drug innovations. Most recently, some MNCs upgraded their Chinese business units and moved regional headquarter operations to China to improve competitiveness.
- ☞ *MNCs seek faster growth in China* - With worsening performance in their traditional markets, MNCs are under increasing pressure to grow their China business, the flagship of their emerging market operations, bigger and faster;
- ☞ *Chinese companies see opportunities in overseas expansion* – Despite being the dominant API supplier to the world, China is investing heavily in the past few years to gear up its preparations to become a major supplier of generic drug formulations to the world;
- ☞ *Overseas funding helps the growth of Chinese companies* - More and more Chinese pharmaceutical companies have become listed in overseas stock markets, in particular the United States, and the resulting financial strength of these companies will help facilitate their rapid growth in China and internationally; and
- ☞ *Acquisitions facilitates faster overseas growth* - Chinese companies are beginning to consider acquisition of foreign companies as an option for fast growth and market penetration in developed markets, as shown by Wuxi PharmaTech's acquisition of AppTec in 2008.

China strives to build up an innovative drug industry as its long term goal

The Chinese government has always stated that it wants to have an innovative pharmaceutical industry led by large and research-based companies. At the same time, it has consistently welcomed foreign investment and encouraged integration of the local industry with international companies.

To achieve its goal, the Chinese government has adopted industrial and regulatory policies that favor research-based multinationals and large domestic enterprises, and at the same time, it has improved market access for foreign companies, strengthened IP environment to foster innovation and, most recently, cleaned up the country's marketplace to ensure success of larger and innovative companies.

Because of this, China has won increasing trust and confidence from foreign companies, most notably from R&D-based multinationals, who are boosting their investments in the country not only to expand manufacturing and marketing operations, but also to move some of their critical business operations and to transfer core technologies to the country.

Today, China is well on its way to develop its pharmaceutical industry side by side with the research-based multinational pharmaceutical companies. With the ongoing restructure of the global pharmaceutical industry in the backdrop, the fate of the Chinese pharmaceutical industry and those of R&D-based MNCs are increasingly linked together. As this bond grows stronger and deeper, it becomes a path of no return for both sides.

China will be, as its long term policy, committed to supporting new drug innovation as well as growth and development of research-based multinational companies in the country, while, at the same time, attempting to foster the rise of its own large and innovative companies at the same time.

On the other hand, China faces the daunting challenge of securing the essential healthcare needs of its entire people. As the country's economy continues to grow, the need for new medicines and high quality healthcare will also rise. While large domestic companies are best-positioned to fulfill the essential healthcare needs of the nation in the short- and medium-term, innovative MNCs are certainly better -suited for the task of satisfying higher level demands.

Despite short term regulatory corrections, administrative changes or healthcare reform uncertainties, the long term direction and present development path for China's pharmaceutical sector are unlikely to be altered in any significant way.

MNCs in search of higher and broader growth in China

In spite of the turbulent market and regulatory environment, innovative multinational pharmaceutical companies (MNCs) have managed to establish a solid foothold and accumulated their business strength in China in the past decade.

During the period, MNCs have consolidated their bases and organizations in the country, gained absolute control in their joint ventures, expanded sales and marketing networks, improved on IPR awareness and enforcement, quietly increased their influence over the Chinese government and its policies, and most importantly, successfully fostered an industrial and market environment that is now relatively more friendly to them.

Big pharma companies fared well in China again in 2009. The country is already one of the largest overseas markets for most MNC companies and it is on the way to become the largest for many in the near future.

Pfizer reported overall growth of between 25% and 28% in China last year, while that in its other emerging markets was only 12% to 14%. Bayer Healthcare and Roche also had growth higher than 20%. All three want higher growth in the near future.

With global pharmaceutical industry restructure accelerated, most MNCs stepped up their China business last year through strategic adjustments and additional investments. Besides, a score of companies including Roche and Bayer Healthcare upgraded their China business units to facilitate higher business priority of and top management attention on China. Roche even moved its Asia Pacific headquarters to China in late 2009 and Bayer said it may even move the HQ of a global business unit to China in the foreseeable future.

MNCs are resorting to a wider range of new and existing strategies to fulfill their growing ambitions in China including:

Horizontal business diversification: In addition to the traditional urban hospital and retail pharmacy markets, MNCs are now diversifying horizontally into a range of other business areas including vaccines, generic drugs and consumer healthcare products. They are also broadening their business activities in China from mainly local manufacturing and sales to R&D, sourcing, global logistic chain and licensing/partnerships.

Vertical market expansion: Eyeing opportunities and market expansion brought by China's healthcare reform, MNCs are also working hard to penetrate into lower tier cities and the urban community healthcare market.

M&As, JVs and licensing deals: Although many MNCs were actively looking for acquisition targets in China, the outcome was meager in 2009 with only one such deal made by Novartis to take over Chinese vaccine company Zhejiang Tianyuan Biopharma. However, MNCs were more successful with joint venture deals – GSK concluded two such deals in the vaccine sector, while Sanofi Aventis formed a new consumer healthcare JV.

New product launches: Most MNC companies announced plans in recent years to boost their new product launches in China to help drive new drug sales growth, and the strengthening R&D capabilities of MNCs in China will further support this trend.

R&D outsourcing market grows at breakneck speed

There are drastically different estimates of the Chinese CRO market size at present, but everyone agrees that there was phenomenon growth for the country's R&D outsourcing in the past few years and the future is bright with highly promising prospects.

Leading companies in this sector have typically recorded triple-digit growth and are expanding in both their sales and business scope at astounding speed in the past few years. It is widely expected that strong financial support from venture capitalists, investors and the stock market will lead to fast expansion of the major players and the sector as a whole.

Despite its huge potential, the further growth of the Chinese pharmaceutical R&D

outsourcing market may be limited by three factors: 1) Shortage of highly-skilled talents, 2) High upfront investment for startup companies, and 3) Relatively low IPR awareness and weakness in the IP security of local CROs.

Competition became increasingly intensive in this sector as many new startups and existing MNC CROs entered the space through a variety of means in recent years. Besides, global service providers to CROs are also flocking to the country in order to cater for the rising demands of their clientele. This trend is help China develop and improve the infrastructure of its new drug research sector rapidly, thus making it a more important player in the global R&D outsourcing arena.

Challenges continues to cloud the future ...

Despite all the positive forecasts and encouraging trends, the pharmaceutical industry in China, including both local firms and multinationals, is facing serious challenges that may potentially jeopardize the future prospects of the pharmaceutical market in the country.

Contradictions in Government Policies - There is no doubt that the Chinese government's economic policies and systemic reform spurred the rise of the Chinese pharmaceutical industry and market.

On the one hand, the Chinese government wants the pharmaceutical industry to develop into an internationally competitive industry with strong new drug R&D capabilities, advanced technologies, and high quality standards; but on the other hand, it has cut back state investments in the pharmaceutical industry, repeatedly slashed prices of drug products and squeezed profit margins of the pharmaceutical industry through various cost containment measures.

The Chinese government, however, is now determined to reverse the trend and pledged to sharply increase government investments in healthcare dramatically in the years to come, and we already saw improvements to this end last year.

Healthcare reform initiated on various fronts -After extensive public hearings and debates, the State Council of China finally approved and released the official healthcare reform plan, "*Opinions on Deepening Pharmaceutical and Health System Reform*" and "*Implementation Plan for Deepening Pharmaceutical and Health System Reform 2009-2011*" in April 2009. The release of the two documents represents initiation of the new round of Chinese healthcare reform.

The fresh healthcare reform initiative will have comprehensive and far-reaching impacts on the pharmaceutical industry, and is triggering another round of restructuring of the industry. Launching various reform experiements may be a pragmatic and effective way to settle differences between government agencies for the time being, but the final outcome is hard to predict and may come at high costs. To the pharmaceutical industry, the reform experiments will create more regulatory, policy and market environmental instabilities and turbulences in the short term.

Cost-containment Measures - In its desperate attempts to control the rapidly rising healthcare expenditures, the Chinese government has introduced a matrix of

cost-containment measures at national and local levels. These measures, including repeated price cuts on drug products by the central government, have seriously disturbed the normal operation and profit margin, causing sharp increases in administrative costs and resources, and substantially narrowing the profit margins of pharmaceutical companies, both local and foreign.

Intensive Competition and Industry Consolidation - The Chinese pharmaceutical industry, which was once dominated by large state-owned enterprises, slowly disintegrated in the past 25 years into a large number of small enterprises with similar product portfolios. By 1985 there were only 1,377 pharmaceutical manufacturing companies in the country, but the number rose to over 4,000 in 2008 in spite of ongoing consolidation and compulsory GMP implementation.

This has led to intensive competition and to the rise of unethical and illegal practices in pharmaceutical sales and marketing. Cut-throat competition among local generic drug manufacturers has also resulted in shortening product life spans for generic drug products. Most local pharmaceutical companies are trapped in a vicious circle of low R&D investment, poor innovativeness and product differentiation, price competition and low profitability. Compounded by the effect of government price control and cuts, many pharmaceutical companies are suffering from heavy losses, and most small companies are expected to be out of business in the near future.

The government's strategy to "*support the big, and let go of the small*" in the past did not produce the desired result. Many large state-owned enterprises simply became bigger and fatter in size, rather than stronger, more competitive and more profitable. Valuable capital and resources drawn from the government and the stock market have been largely under-utilized without delivering the expected performance.

Rising Conflicts between Local and Multinational Companies - In the 1980s and early 1990s, local Chinese and multinational pharmaceutical companies had focused on the collaborative parts of their mutual relationships. The honeymoon period was over in the past decade, however, with both sides growing stronger in their own ways and beginning to concentrate more on the competitive parts of their relationships, leading to rising conflicts of interests between the two sides, especially in the area of IPR.

Rampant Counterfeit Drugs - AmCham China estimated that between 10% and 15% of drugs sold through the retail channel in China are counterfeits. Not only do counterfeit and fake drugs pose serious public health problems for China, but also the country is now one of the biggest exporters of such products. In the past, drug counterfeiters in China developed poor quality fakes, but today they are producing high quality counterfeit drugs.

Market outlook for 2010

The demographics show that the Chinese population is not only sizable but also aging and increasingly beset by chronic diseases. An estimated 10% of the total Chinese population will be over 65 by 2015. The new demographics are fortunately happening at a time of economic prosperity.

Chinese healthcare spending (2006-2011) is expected to surge at a CAGR of 20%, according to IMS Health. Rising levels of disposable income, meanwhile, are laying the groundwork for higher out-of-pocket expenditures for healthcare and pharmaceutical products.

The growth of the Chinese pharmaceutical industry is expected to be steady but slower in 2010, according to Lin Jianning, President of the Southern Medicine Economic Institute (SMEI) under the SFDA.

Lin forecasts that the economic climate surrounding the pharma industry will improve in 2010 with expanded BMI coverage and NDRL. The healthcare reform will boost the Chinese pharmaceutical market by some CNY 20 billion in 2010, he predicted.

The total output value of the Chinese pharmaceutical industry is forecasted to grow 23% this year reaching CNY 1,250 billion, while drug sales of hospitals, retail pharmacies and rural areas are forecasted to grow 20%, 13% and 40% respectively.

Impacts of healthcare reform

The expansion of basic medical care system and improved infrastructure of primary healthcare institutions will lead to additional growth of the Chinese pharmaceutical market, especially the generic drug segment. Higher government funding of the BMI programs may in turn translate into broader BMI coverage and higher drug reimbursement levels. On the other hand, the rising use of essential drugs may create pressure on sales of more expensive drugs.

Although the central government will be responsible for setting the rules and “coordinating” healthcare reform experiments nationwide, local governments are expected to be the dominating forces in local trials. Various local “circumstances” will be ranked high in shaping the local reform packages. In addition, reform measures in public hospitals are likely to create certain turbulences and chaos in the hospital market in 2010.

Vision for the future

Despite increased government funding and expanded coverage of the BMI programs, growth spurred by healthcare reform will be limited in the long run.

The ultimate fruit of the Chinese healthcare reform will be the creation of a healthy and streamlined healthcare environment under which patient needs can be better met by more robust and efficient healthcare delivery, management and insurance systems.

As China’s healthcare expenditures continued to account for less than 5% of the country’s GDP last year, the growth potential should be huge. The healthcare needs of the Chinese are clearly depressed under the present system and must be released through a reformed healthcare model.

In addition to a universal basic medical insurance system, China needs a well-established commercial healthcare sector (with Chinese characteristics) to meet multi-layered needs of its people.

In conclusion ...

Despite the anticipated growth, we believe that the future outlook of the Chinese pharmaceutical industry in the near future will continue to be heavily influenced by new government policies in areas such as healthcare reform, drug pricing, drug registration, basic medical insurance and healthcare administration.

Disputes and debates among stakeholders over the Chinese healthcare reform will persist even after the release of the final official healthcare reform plan and the process of reform has just started.

In the next three years, varying regional policies, local protectionism and characteristic experiments will almost certainly result in a more fragmented and chaotic healthcare marketplace. Pharmaceutical companies need to be vigilant, prudent and flexible to navigate through troubled waters.

As the importance of China's pharmaceutical industry grows and its bond with the world fortifies, its future fate will no longer be isolated, but will instead be increasingly intertwined with the global pharmaceutical marketplace.