

Supply Chain Growth in Asia-Pacific
How Pharmaceuticals can manage
complexity on operating models



Abstract

Life Sciences is the talk of the town. Especially the \$959 billion pharmaceutical market faces positive growth prospects due to changing demographics and strong growth in emerging markets. Within the transition from a volume-based to value-based industry, nationalistic health care reform and local regulatory changes complicate sustainable operations. Especially in Asia-Pacific, which supplies the majority of emerging markets growth, frequent natural disasters and unstable political environments contribute to the equation. Differences in political and economic systems such as China, Japan and India, which at the center of these developments, illustrate that there is no one-size-fits-all approach for pharmaceuticals. Leading companies manage complexity rather than painstakingly trying to avoid it. Five dimensions that need to be considered when addressing supply chain growth and reach are tax-alignment, agility, resilience, visibility and analytics. Individual projects and improvement initiatives need to be measured against their contribution to each of these.

Shifting a gear through a changing market

The Life Sciences sector, which comprises the Biotechnology, Medical technology and Pharmaceutical industries, continues to show contradictory trends, despite being hyped as one of the leading sectors of this century. Economic and demographic trends generally put growth on an upward trajectory, but volatility in healthcare reform as well as regulatory and policy changes is pressuring companies to reduce costs and innovate at an increased speed.

In terms of short-term growth rate, Biotechnology and Medical technology are widely considered to be the sector's drivers with a growth rate of 9.6 percent and 2.6 percent, respectively. Pharmaceutical, however, still mounts the lion share in terms of volume, having evolved into a US \$959 billion industry that generates more than 60.0 percent of the segment (Deloitte, 2013) with growth expected to increase to 5.3 percent per annum between 2012 and 2017 (IMS, 2013).

A myriad of substantial healthcare reforms that are reshaping Pharmaceutical industries, especially in Asia-Pacific are being introduced by governments around the world. These include policies such as the Affordable Care Act (ACA) in the U.S., the 2012 Health and Social Care Act in the U.K., legislation derived from Guidelines on Deepening the Reform of the Healthcare System in China, or the Halal bill and many extensions of essential drugs lists in Indonesia. The universal objective of

these reforms is to contain costs as well as to expand the access to healthcare, a generally positive development from the patient perspective. The frequency and foremost national context these reforms are being shaped in, however, forces companies to not only reduce prices and control them more thoroughly, but simultaneously improve and manage quality as well as innovation in relation to specific reimbursement models. Within this transition from a volume to a value-based marketplace, loss of exclusivity (LOE) puts an additional burden on pharmaceutical companies and requires them to adapt their operating models. Even though truly innovative drugs can still command premium prices, payers usually pay out of pocket. In markets such as Vietnam even ethical drugs are replaced by OTC drugs – a trend that makes pharmacies a critical part of the value chain and brand switch at POS a noteworthy challenge.

As pharmaceuticals are evaluating ways to generate additional value within this transformation, more and more companies are changing their perspective from supply chain as merely a means of shouldering growth to supply chain being a key driver of growth and a source of competitive advantage, according to a recent survey by Gartner (2013).

Growth in Asia-Pacific is the center of attention

Despite the challenges of this turbulent market environment, leading companies see ample opportunities. Growth in the life sciences sector is influenced by government spending and correlates highly with gross domestic product (GDP) development, population growth, rising wealth as well as population aging (Deloitte, 2013). For pharmaceutical companies, rising chronic disease rates, technological advances and product innovation can also have a catalytic effect, but growth opportunities are generally pursued in the area of developing markets and demographic shifts.

Developing markets offer pharmaceutical companies the opportunity to approach the "next billion" consumers that have so far had no access to higher-quality healthcare. By the end of 2013 they had already accounted for more than half of world GDP (at purchasing power parity), according to International Monetary Fund (IMF) data. Taking a combined look at growth prospects in terms of GDP, population size and wealth, China and India emerge as the predominant giants to watch out for. By the end of the next decade a majority of the consuming class (those with more than US \$10,000 of disposable income) will be located in these markets (Gartner, 2013). Companies like Eli Lilly already try to

address this target group by investing how to serve the “middle of the pyramid” with product and marketing innovations. At the center of attention are diseases related to lifestyles issues in these markets such as diabetes, something many patients are not yet aware of. Consequently, it comes as no surprise that pharmaceutical sales are expected to double in U.S.-dollar terms by 2016, the strongest growth among developing market countries, according to an EIU study. Pharmaceuticals will have to price drugs in alignment with the spending capacity of patients in individual markets as sales are increasing. Reductions in price points are then likely to lead to the need of driving cost efficiencies in order to sustain profits.

Demographic shifts present the predominant trend within mature markets, even though this is not mutually exclusive to mature markets. These shifts primarily come in the form of aging populations or shifting population centers. As the elderly boost a relatively higher consumption of healthcare and medical services compared to their younger counterparts, they make up

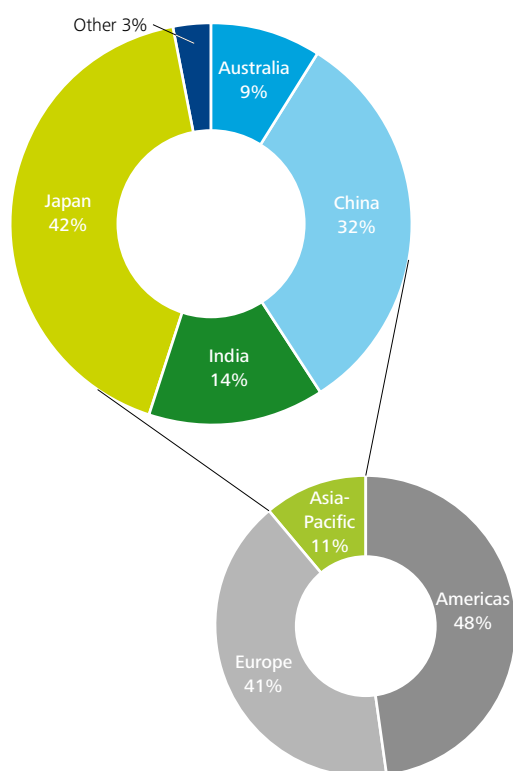
an especially attractive target group for pharmaceutical companies. Population aging is usually a slow trend, influenced by access to healthcare and rising wealth, but in this way acts as a long-term growth driver. Increased life expectancy (at birth), one of the major contributing factors, is projected to lead to around 10 percent of the global population being above 65 years of age or older within this decade (EIU). As one special example, Japan not only has the highest life expectancy (at birth) in the world with 83 years of age, but also boasts the highest and fastest growing share of population aged 65 and above (24.0 percent of their total population), according to Worldbank data.

Both domains of growth, developing markets and demographic shifts, in this way, are dominated by markets in Asia-Pacific.

As there is no one-size-fits-all for pharmaceuticals in Asia-Pacific, focus is paramount

Taking into consideration the nationally-contextual nature of healthcare reform and legislation changes itself, a deep understanding of regulatory requirements and local business practices of major markets is paramount to running successful operations.

Fig. 1 – Location and Region of Top 100 Pharmaceutical Companies by Market Capitalization



Source: Deloitte Consulting analysis of Factiva data

This is especially true when looking at the Asia-Pacific. The region cannot be dismissed as a cluster of homogeneous countries, but instead comprises a myriad of very individual and specific markets. These range from mature economies such as Japan and Australia to developing markets like Vietnam and economic powerhouses including China and India. Aside from a purely economic perspective, different political regimes and business environments further necessitate a differentiated examination.

Taking a closer look at the top pharmaceuticals located in Asia-Pacific reconfirms the importance of China, Japan, and India whose companies make up 32.0 percent, 42.0 percent, and 14.0 percent in terms of market capitalization by regional companies respectively. As most prosperous and developed pharmaceutical markets in this region, all three warrant a closer look at challenges within their individual markets.

The Japanese pharmaceutical market currently is the world’s second-largest with an estimated \$134.4 billion of sales in 2013. This amounts to around 12 percent of the global pharmaceuticals market, compared to about 37 percent for the U.S. and 22 percent for Europe (Economist Intelligence Unit, 2013).

Even though the Japanese pharmaceuticals market has seen a steady rise of foreign direct investment (FDI) and foreign companies establishing a presence since liberalization of the market took place in the 1990s, a complex and bureaucratic business environment is still considered a major hurdle to sustainable operations. The complicated new drug approval process often causes delays and increased costs for clinical trials, which even Japanese firms increasingly outsource. Japan's special drug price system dictated by the National Health Insurance (NHI) intensifies competition in an already highly fragmented market that consists of more than 1,000 companies, the majority of which are small or medium-sized enterprises. A high importance of the major wholesalers within downward supply chains further necessitates in-depth knowledge and relationships of the local market. Most challenging, however, is the risk of frequent natural disasters and black swan events, such as the Great Eastern Japan Earthquake of 2011. These pose a threat to local production facilities or supply chains and necessitate attention to visibility over operations, supply chain resilience and security.

For China, pharmaceutical sales are predicted to grow an average of more than 17 percent per year between 2013 and 2017 to \$166 billion. As a consequence, China will pass by Japan already in 2016 to become the world's second-largest pharmaceuticals market (Economist Intelligence Unit, 2013). Lavish public health care expenses in addition to planned expenditures have been a trend throughout the last years and continued to be in 2013, while the Chinese government increased its healthcare budget by 27 percent to \$41 billion. With this, the goal of China's health care reform to provide "safe, effective, convenient, and affordable health care" goes hand in hand with the country's rapidly rising income levels and individual wealth (Espicom). This, in turn, also leads to changing lifestyles with new ailments that require more health care spending, supplemented by additional demand for life science products created through an aging population (Deloitte, 2013). Nonetheless, China's very distinct operating environment and local regulatory requirements, including shareholder laws, corruption, bribery, or long product registration times continue to pose obstacles for foreign companies and highlight the importance of agility and visibility within supply chains. Especially China's nationwide anti-corruption drive has resulted in widespread allegations against the pharmaceutical industry and impacted sales and reputation for local and international companies likewise. On top of this, similar to Japan, China is also using national lists to dictate prices for essential drugs.

Only recently the government announced another major round of mandatory price cuts for essential drugs, the fourth one of its kind. Pharmaceuticals will need to navigate this challenging environment through innovative solutions and in-depth knowledge of business practices.

India, which is ranked amongst the top five pharmaceutical emerging markets, grossed \$22.6 billion of sales in 2012 and will likely grow to reach \$27.0 billion in 2016 (Deloitte, 2013). Similar to China, this double digit growth can be ascribed to socio-economic changes such as rising income levels, heightened health awareness through changing lifestyles and increasing government spending. For example, the recently expanded priority of primary health care (PHC) policy is positively reinforcing spending. Already, three-fourths of the country's health budget is addressing this area (Forbes India), mostly with support from the National Rural Health Mission (NRHM). A side-effect of this is the greater penetration of India's rural markets that poses one of the country's major growth assets and biggest challenges at once. Customer groups in India are highly fragmented, both in terms of distance as well as spending power. Insufficient health care and general infrastructure in less urban areas, combined with process issues for immature suppliers and a dominance of small chemists troubles domestic and international companies alike (Deloitte, 2013). For example, the lack of effective inventory management systems for local supply chain partners can result in elevated inventory holding costs and return numbers. As this equally pertains to distribution and manufacturing, distant relationships and communication gaps necessitate on-the-ground presence and cultural awareness (Gartner, 2012). Here domestic companies often outpace their foreign peers through a more diverse and better managed local footprint. They use the country's comparative cost advantage in the low cost of production and R&D to enhance exports (IBEF) and promote India as a regional hub for drug manufacturing. Admittedly, this trend is also supported by generally high import duties that have previously had MNCs rely on contract manufacturing – in most cases with the result of quality issues. As for generics, Indian production already accounts for over 10 percent of global output. Nonetheless, within the country's national health care reform, cost containment is of chief importance and prices are also mandated through national lists of essential drugs. Increased scrutiny by the FDA alongside from high-profile cases of generics manufacturing failure have recently increased cost pressures even further.

Leading companies capture growth by embracing and managing complexity

Growth opportunities for pharmaceuticals in Asia-Pacific seem abundant and especially the attractiveness of markets such as China, Japan and India in the Asia-Pacific region is hard to dismiss. Nonetheless, it becomes clear that particularly for pharmaceuticals in this region one size does not fit all. Language and cultural dissimilarities put aside, regional variations in quality of infrastructure and accessibility of target groups dictate a local alignment. Locally customized products and variations demand specialized logistics needs in the same way as differences between employed technologies require additional effort in monitoring the flow of goods.

As major companies are expanding their global reach, shifting supply and demand centers and adding network nodes to account for variations and local markets and regulatory requirements, the scale and complexity of supply chain networks – physical as well as virtual – is increasing dramatically.

Consequently, companies should accept that complexity is unavoidable and rather focus on managing it sustainably. The ability to master increasing levels of complexity is increasingly becoming a key measure of success for supply chain topics of pharmaceuticals (Gartner, 2013). Leading companies are already devoting more time and attention on developing more efficient ways to handle complexity. Adopting hybrid or local leadership models to address cultural differences between different countries in the Asia-Pacific region can be observed as one approach. Generally, innovative market-driven strategies and commercial innovation will set top companies apart from their peers.

Growth can be sustainably managed through five operational pillars

Effectively managing complexity, first of all, requires an overview or visibility of supply chain activity and the different tiers and layers a company’s network spans. Deriving specific strategies from the plethora of activities and data provided will require analytical capabilities build up within an organization. This information can help companies execute different scenarios more quickly and navigate the marketplace with agility. Nonetheless, accepting global turbulences and disruptions as the new norm will require a high degree of resilience within supply chains. Lastly, to sustainably manage operations on a global level necessitates efficient tax planning and alignment to run a smooth business across borders.

Figure 2 sums up these five “pillars” or key topics to sustainably grow and manage a global supply chain. This holds true especially for regions with a high complexity, such as Asia-Pacific.

Fig. 2 – Five Pillars of Sustainable Supply Chain Growth

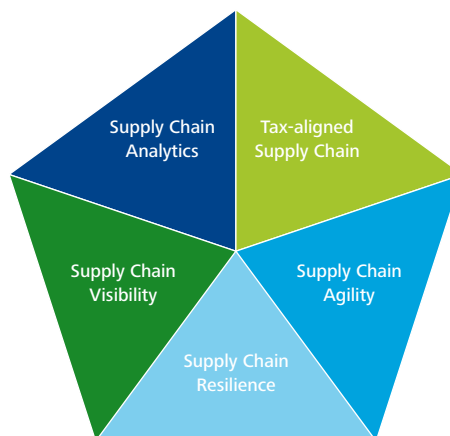
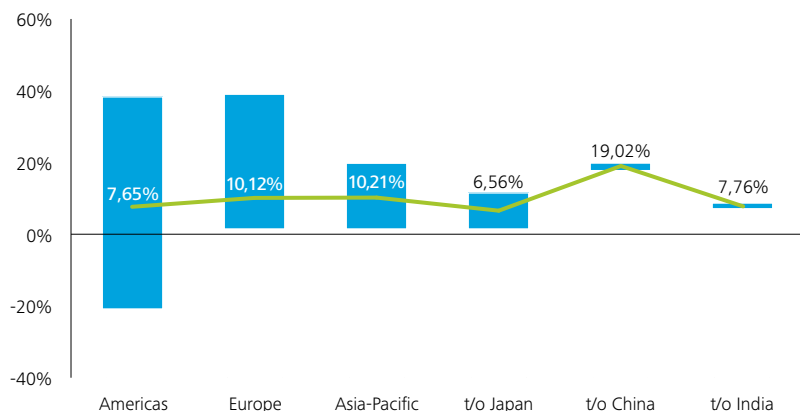
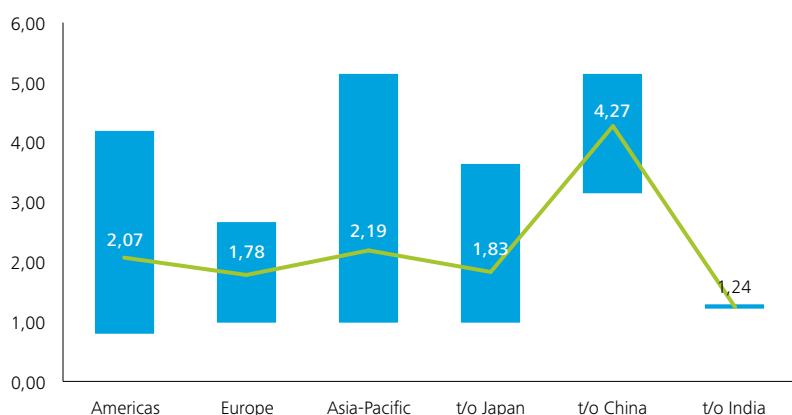


Fig. 3 – Spread and Median Return on Assets (RoA) of Top 50 Pharmaceuticals by Region



Source: Deloitte Consulting Analysis

Fig. 4 – Spread and Median Inventory Turnover of Top 50 Pharmaceuticals by Region



Source: Deloitte Consulting Analysis

Act like the leaders, learn from the locals

Identifying leading companies to look for best practices does not come easily, foremost because of the broad range of areas available to address complexity.

Traditionally, return on assets (RoA) and inventory turnover are used as measures of supply chain performance. Whereas a high RoA can be indicative of profitability in respect to the revenue generated by a company’s total assets, inventory turnover needs to be analyzed in comparison to the industry average. High turnover can imply strong sales just as well as ineffective buying and low turnover often indicates poor sales and excess inventory.

Complexity can be included as separate dimension in this consideration by analyzing RoA and inventory turnover figures of the top 50 pharmaceutical companies by market capitalization. Assuming worldwide market capitalization to be representative of diversified and wide-spread operations, these companies represent the most globally active of the overall population¹ of pharmaceuticals. In terms of RoA, companies from the Asia-Pacific region seem to be similar with the narrowest spread, ranging from one to about 20 percent. Figure 3 highlights that American companies sport only a slightly lower average RoA, but with a much wider spread, leading up to nearly 40 percent – making it easier to identify outliers. Similarly, looking at inventory turnover figures in Figure 4 reveals that American pharmaceuticals, while maintaining a relatively large spread, come closest to the industry average of 2,01. Noteworthy among companies from Asia-Pacific are Japanese companies that display a rather narrow spread with a suitable average.

Considering market maturity leads to the conclusion that top American companies may present representable global examples of sustainably managing supply chain complexity. Nonetheless, the analysis also stresses the need to take companies from Asia-Pacific into consideration as a means of learning from locally successful leaders.

¹ Based on a total population of 40,000+ companies within the i257 Pharmaceuticals classification according to the Dow Jones Industry standard

Case Studies

The following includes brief case studies to illustrate individual “pillars” of sustainable supply chain growth. These focus on pharmaceutical companies from different countries focusing on supply chain visibility, agility, analytics and tax-alignment.

Case A: Pfizer strengthens supply chain visibility, agility and analytics

In need of addressing the complexity of a supply network that grew with more than 20 acquisitions throughout the last two decades, more than 90 plants on six continents and more than 300 external suppliers, American pharmaceutical Pfizer transformed its global supply chain into a cloud-based information hub for all involved parties.

In the past, operating individual systems and proprietary data sets resulted in tremendous information access time (IAT). Pfizer would need to request specific information from individual partners, wait for their reports and then begin harmonizing, aggregating and analyzing according to the initial questions posed. This process which could easily take more than a dozen weeks to complete would not only be a strenuous exercise for all involved parties but also put additional restraints on projects such as surface network analysis or design. After integrating more than 95 percent of global network provider spend into the new solution, internally dubbed Logistics Delivery Platform, Pfizer enabled a highly innovative single source of truth. Based on the standardized approach and universal access new integrations can also be completed in a plug-and-play fashion as all parties use the same platform to measure the flow of orders, products or shipments to drive network improvement collaboratively. Especially for markets in Asia-Pacific where government standards and regulation can rapidly change, this enables Pfizer’s whole network to make information visible faster and achieve a “7-second IAT”. By utilizing analytics functionality on top of the information layer the whole network is benefiting from the spill-over effect of being able to adapt to changing and complex market environments with agility and flexibility.

This example illustrates how individual initiatives and supply chain projects can tackle multiple dimensions to address complexity throughout the whole network – visibility, agility and analytics. This should not only be seen as a convenient spill-over effect, but rather an elemental part in assessing the impact and effectiveness of respective projects. In this way, the “five pillars of sustainable

supply chain growth” can serve as a basis against which to measure initiatives against. (SupplyChainBrain) (Pfizer, 2013) (Reuters, 2013)

Case B: Canadian Pharmaceuticals Major re-aligns Supply Chain to be more focused in APAC by changing operating model

A Canadian multinational specialty pharmaceutical company that develops and markets prescription and non-prescription products had a strong footprint in Australia and New Zealand. The company had a regional headquarter in Sydney and was able to achieve significant growth from the Australia-New Zealand markets. However, the next phase of growth was expected from Asia-Pacific, more specifically from the South East Asian (SEA) markets of Indonesia, Philippines and Thailand.

In order to achieve its growth objectives, the company’s supply chain organization would need to be centered in the region. SEA is a complex market with each target market having its own regulatory requirements. Managing multiple country jurisdictions would also need greater management resource to be located in the region.

The company embarked on a transformation program to change its operating model in the region and move its regional supply chain head-quarters to Singapore from Sydney. This helped to achieve two goals: increased supply chain agility while achieving alignment with corporate tax objectives.

A reorganized supply chain organization entailed the establishment of a Singapore-based “principal operating company” with several “limited risk distribution companies” in the target markets of SEA. The company put in place a revised ERP to support its new operating model in the region and still be able to provide the required financials reporting to corporate headquarters in Canada.

This example illustrates a growing trend across several western pharmaceutical companies to reconsider and re-align their supply chain operating models to become more “tax efficient” and provide a better cost structure for competitiveness in the region. Optimizing the operating model is a big transformation that has large implications across all the building blocks ranging from people, processes and enabling technologies. Careful consideration needs to be given in the design phase to ensure these elements work together while meeting in-country regulatory requirements. These requirements

(for example labeling and packaging changes to re-routed procurement) if not catered early on, pose the risk of large scale business disruption with long standing financial implications.

Case C: Global Consumer Health Company re-designs Distribution to reach a broader market in Indonesia

Indonesia, the 4th largest populous country in the world with its stable political environment has become one of the key emerging markets in Asia-Pacific over the last decade with a consistent GDP growth of 6%. Indonesia's growing emerging consumers have made it a promising investment destination for companies across all industries. This Fast Moving Consumer Health (FMCH) company's business in Indonesia had grown at a good pace in the last 4 years at a CAGR of 25%. Going forward, the company major wanted to achieve a CAGR of 40% in Indonesia. In order to achieve this, the company relied heavily on realigning their distribution capabilities to enable geographic expansion.

The company identified an opportunity in Direct Distribution with a mandate to increase breadth and depth of reach while simplifying operations. A hybrid model was adopted that involved a combination of the following:

- Direct distribution to key accounts, hyper-chains and mini-marts
- A one-tiered distribution model using a prime distributor to hospitals and pharmacy chains
- A three-tiered route-to-market from the FMCH major to a single Distributor, Single Distributor to Multi-Distributors and finally from Multi-Distributors to Satellite Distributors

Coverage in Indonesian market (>90% of population) was maximised by identified strategic Regencies for locating the distribution points. Changing route-to-market by re-designing distribution also entailed realigning investments in "Selling" infrastructure such as sales structure and commercial investments.

This example illustrates the evolving practice on distribution by consumer health companies in Indonesia. Using multiple tiers to enhance geographic expansion poses new challenges for many companies e.g. reduced visibility along the supply chain and reduced agility. Having a hybrid option aligned with key customer segments helps companies to mitigate these issues.

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