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# Opportunities for pharmaceutical companies in the 21st century

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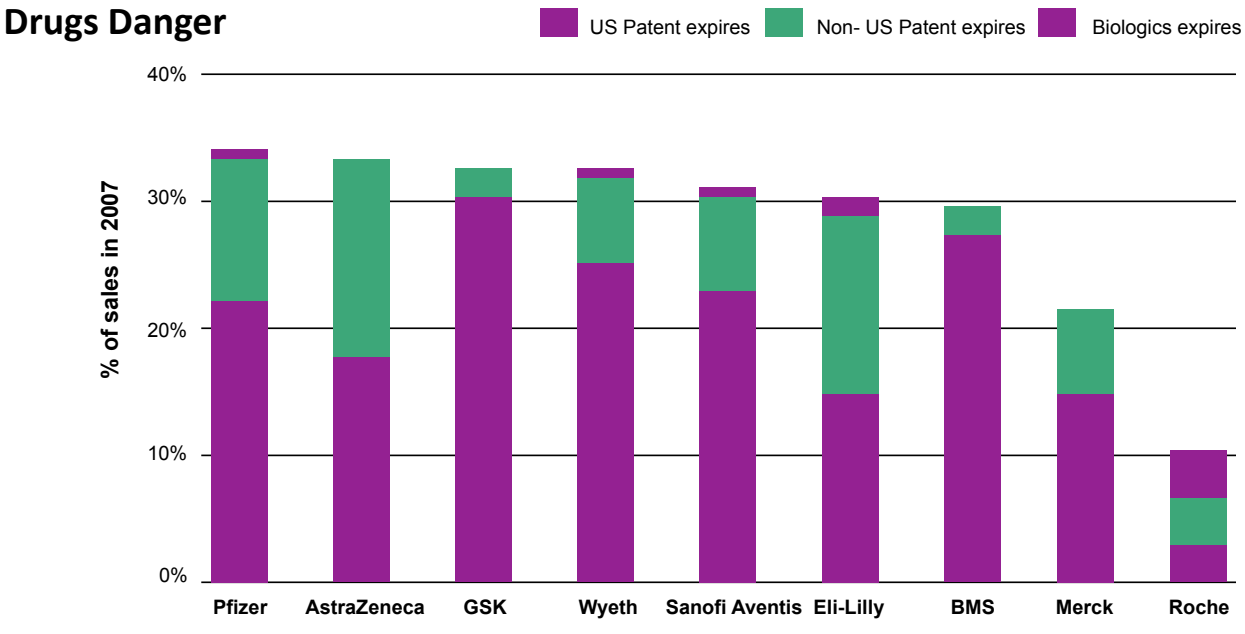
**The pharmaceutical industry is in a gloomy mood. Many blockbuster drugs will go off-patent in the next few years, R & D productivity has dropped and downward pricing pressure is growing. The valuations of most of the world's large pharmaceutical companies have declined in the past few years, as the threats from patent expiries and generic competition grow while innovation to refill their pipelines with new medicines has lagged behind. Cost-cutting is also proving popular at a time when top-line growth is hard to find. Yet, the 21st century provides unparalleled opportunities for pharmaceutical companies to reposition themselves for a brighter future, but existing practices and cultures are the biggest obstacles facing most CEOs. Find out how CEOs of large pharmaceutical companies can succeed by navigating the challenges and capturing opportunities in the globalised world.**

The next decade looks rather challenging for large pharmaceutical companies unless they change their traditional way of doing businesses. But, these challenges also provide an opportunity for CEOs of big pharmaceutical companies to conduct a root and branch review and reposition their companies. Most pressing challenge is the decline of research and development (R&D) productivity together with the fact that most top-selling products will come off-patent (see Figure 1). Large European and US pharmaceutical shares have fallen nearly twice as far as the broader large company indices in the past 12 months ending February 2008. Our analysis indicates that large pharmaceutical companies are at risk of losing about one third of their sales to generic drug manufacturers by 2012.

Cost-cutting can only do so much to preserve profits. What the pharmaceutical companies desperately need are new products to patch the potholes in their revenue streams. One way to do so is to buy smaller companies that have




**Source**: Lehman Brothers Pharma Pipelines (SM) and Sirius & Company Analysis

***Figure 1:*** *Brand name pharma sales estimated to be at risk from generics manufacturers in 2008-2012*

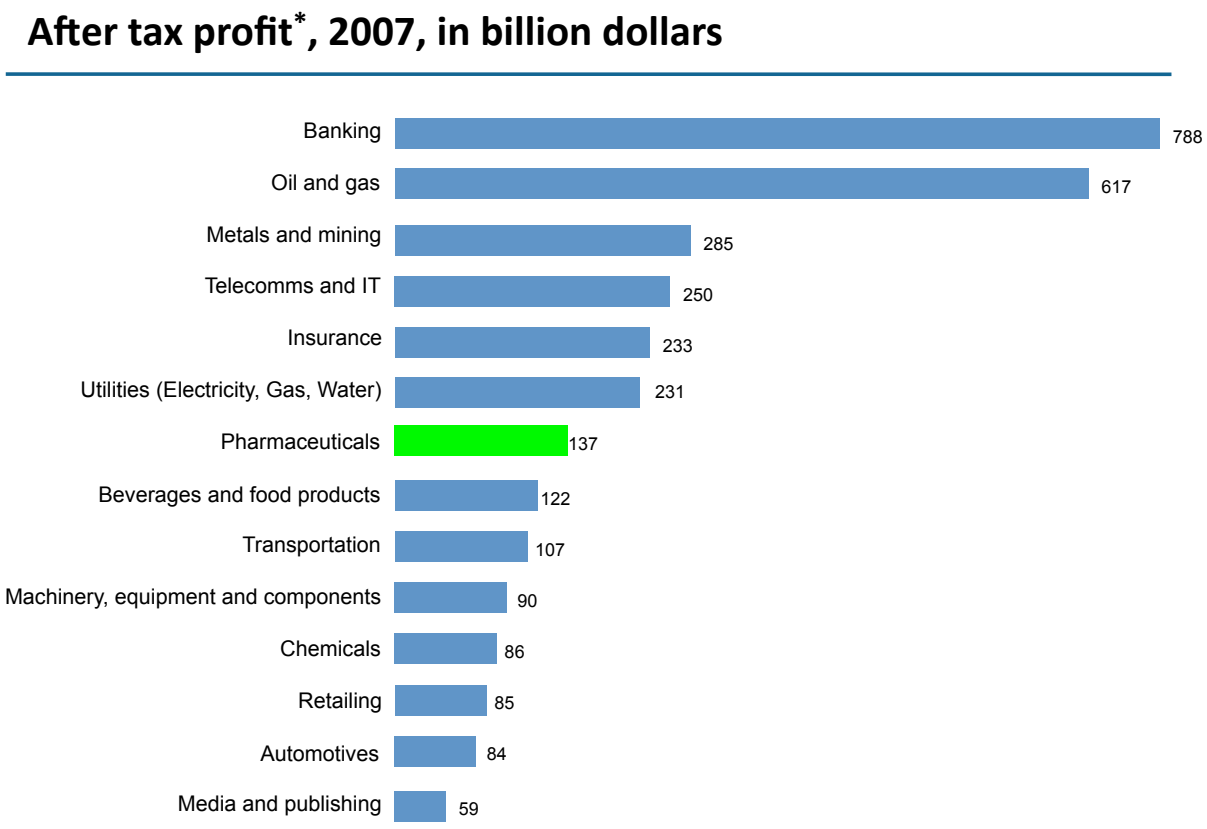



***Figure 2:*** *The profit leaders' scoreboard*

*Data for banking is based on global banking pools data. Data for Machinery, equipment and components, Metals and mining, and Telecomms and IT is based on sample of >2,000 companies. Data for beverages and food products; chemicals; media and publishing; oil and gas; retailing; and transportation is based on sample of >1,000 companies. Data for automotive, insurance, pharmaceuticals, and utilities are based on sample of >500 companies.

*Source: Company reports, Reuters, Datamonitor, Standard & Poor, MGI research, and Sirius & Company Analysis*

medicines that are already approved or in the late stages of development. Some companies have already begun their shopping sprees. Roche led a move toward specialisation about five years ago with its investment in the US biotech company, Genentech, and its focus on products aimed at small groups of patients with life-threatening diseases. The result was a stable of high-value, small-volume drugs that are harder to copy, less vulnerable to product liability lawsuits and resistant to pricing pressure. Drugs due to come off-patent between 2008 and 2012 accounted for just 11% of Roche's 2007 drug sales. AstraZeneca followed Roche to boost its biotechnology activities with the acquisition of CAT in 2006 followed by MedImmune in 2007.

The recent credit crunch has driven off many private equity buyers, but the ten largest pharmaceutical companies have enough cash on hand for the right purchase. For example, there were 995 deals in the pharmaceutical and healthcare sector in the first half of 2007 worth $140 billion[1]. However, buying small companies to beef up the pipeline is a temporary solution to help stop the bleeding; better operating strategies are indeed needed.

## Holding onto the golden past is not the best way to build a successful future

Over the last five decades, the blockbuster-drug business model has been highly successful. When things go right, it produces an effective therapy for millions and a highly profitable product. As a result, the financial performance of the pharmaceutical industry has historically been among the top half of all industries (see Figure 2). But, high profitability of pharmaceutical companies has also

created complacencies and arrogance among some senior executives, who are reluctant to change their traditional working practices saying, "We are highly profitable, why do we need to embrace practices used in other industries and change our approaches?" This is the toughest cultural hurdle facing most pharmaceutical CEOs today, and they need to instil values within their companies that drive improved behaviour.

However, our works with pharmaceutical companies suggest that the blockbuster model's days are numbered. Why? Because, identifying and developing new blockbuster treatments is becoming increasingly difficult. Even though total R&D spending by pharmaceutical companies has tripled, in real terms, since 1990, the number of New Molecular Entities (NMEs) approved by the FDA to be used as drugs has declined from an average of 33 per year during 1993–1997 to 26 during 1998–2003 [2]. As a result, the large pharmaceutical companies have not been able to create enough new drugs to offset the declining sales of blockbusters coming off-patent, let alone meet the market's expectations for continuous growth. This shortfall has triggered a wave of industry consolidation, as companies have resorted to acquisitions to fill their product lines and boost profits by achieving greater economies of scale. However, the majority of the traditional pharmaceutical companies have been reluctant to change the blockbuster model and focus on developing a larger number of drugs with much more limited market potential.

Furthermore, the large pharmaceutical companies have tended to take a dim view of drugs that are linked to diagnostics, fearing that the diagnostic component would complicate marketing to doctors and slow the identification of treatment-worthy patients by adding another step to the diagnosis process. As a result, few pharmaceutical companies have adopted diagnostics as a critical component of their discovery, clinical trial, and commercialisation efforts along the value chain.

## Major challenges facing larger pharmaceutical companies

One of the most obvious trends in the pharmaceutical industry over the last 15 years has been consolidation via mergers and acquisitions. Deals involving major pharmaceutical companies have grown in size, and have created a new class of big companies. Pharmaceutical companies had undertaken these deals for strengthening pipelines, gaining economies of scale, and improving R&D efficiency. However, the unprecedented size of these companies has created substantial management

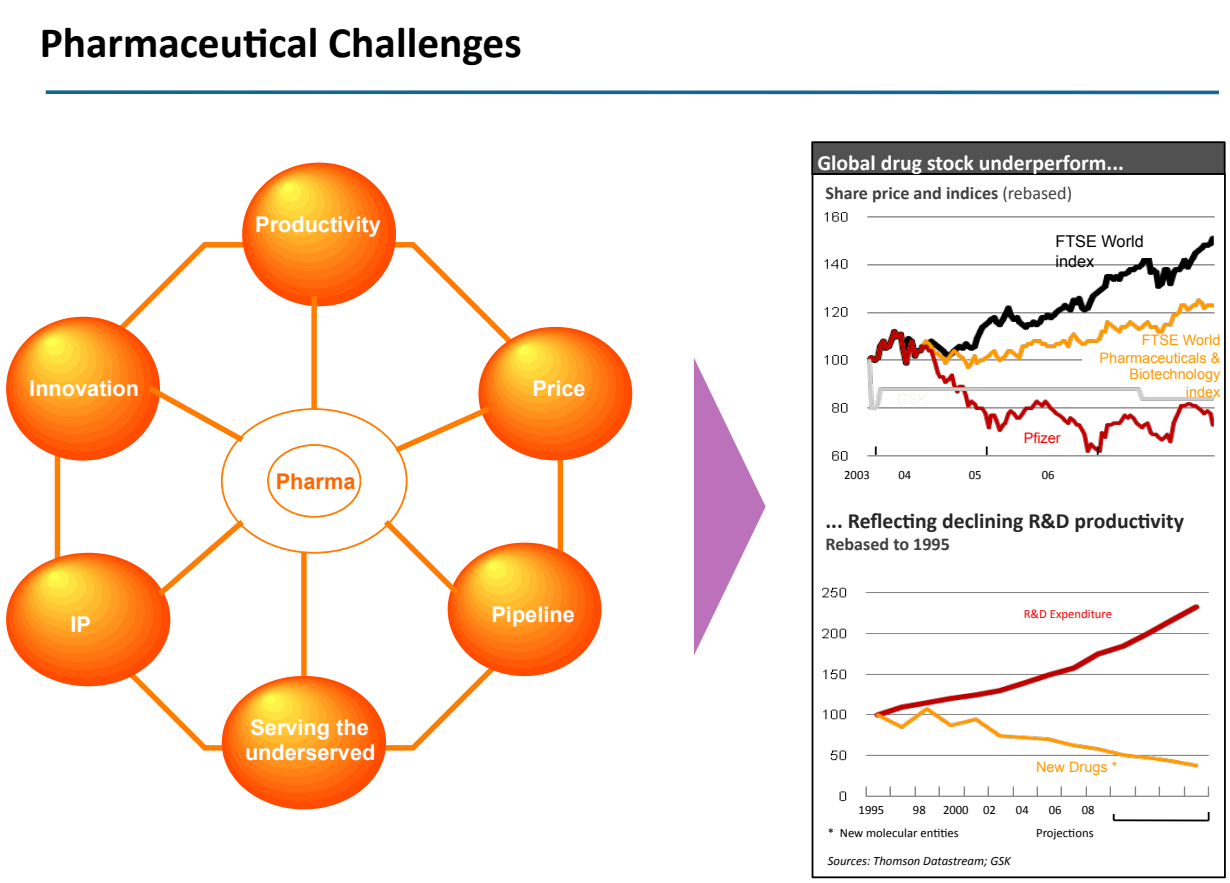



***Figure 3:*** *Major challenges facing pharmaceutical companies*

challenges and organisational complexities, and some big pharmaceutical companies are finding the expected savings and improvements elusive (see Figure 3).

The challenges have collided with other problems in global economies to send pharmaceutical companies into an era of increased cost pressures and lowered market valuations. Margin and earnings pressures are bringing an increased focus on traditional financial controls and operational efficiencies, in an industry that has historically given them little attention. Topics like purchasing and supply management, IT cost containment, outsourcing and offshoring, and manufacturing cost reductions are becoming increasingly important to senior executives. In the face of these challenges, the pharmaceutical industry needs to innovate and change in terms of product innovations and creative approach to the distribution models and internal organisation design.

## Productivity isn't everything, but in the long run it is almost everything

There has been a steady increase in the percentage of revenues that pharmaceutical companies are spending on R&D. All of this spending has not guaranteed these companies sufficient pipelines to make up for expiring patents, and to meet growth expectations. Many pharmaceutical companies are experiencing a decline in R&D productivity. Some have tried innovative organisational models (such as, Centre of Excellence) to drive productivity, but their success remains uncertain and unproven. Despite the emergence of new technologies, it is becoming more difficult to find a breakthrough molecule in many research areas. To match past levels of productivity, given their huge R&D budgets, big pharmaceutical companies should be producing three or four new drugs a year. Instead, most now struggle to produce one. And, we estimate that the average cost of bringing a drug to market has risen to over $1.0 billion (see Figure 4).This has led to some thinking the unthinkable - that pharmaceuticals companies should leave drug discovery to biotech companies and focus their efforts on development and marketing. But it would be dangerous for large pharmaceutical companies to give up and cede entirely to others responsibility for discovering new drugs.

And "me-too" competition makes it hard to turn enough drugs into blockbusters. Our analysis suggests that overall return on investment in new drugs has fallen to 5%. Every drug class has become crowded, and most companies are chasing similar diseases. Compared with the cost of developing and marketing drugs, big pharmaceutical

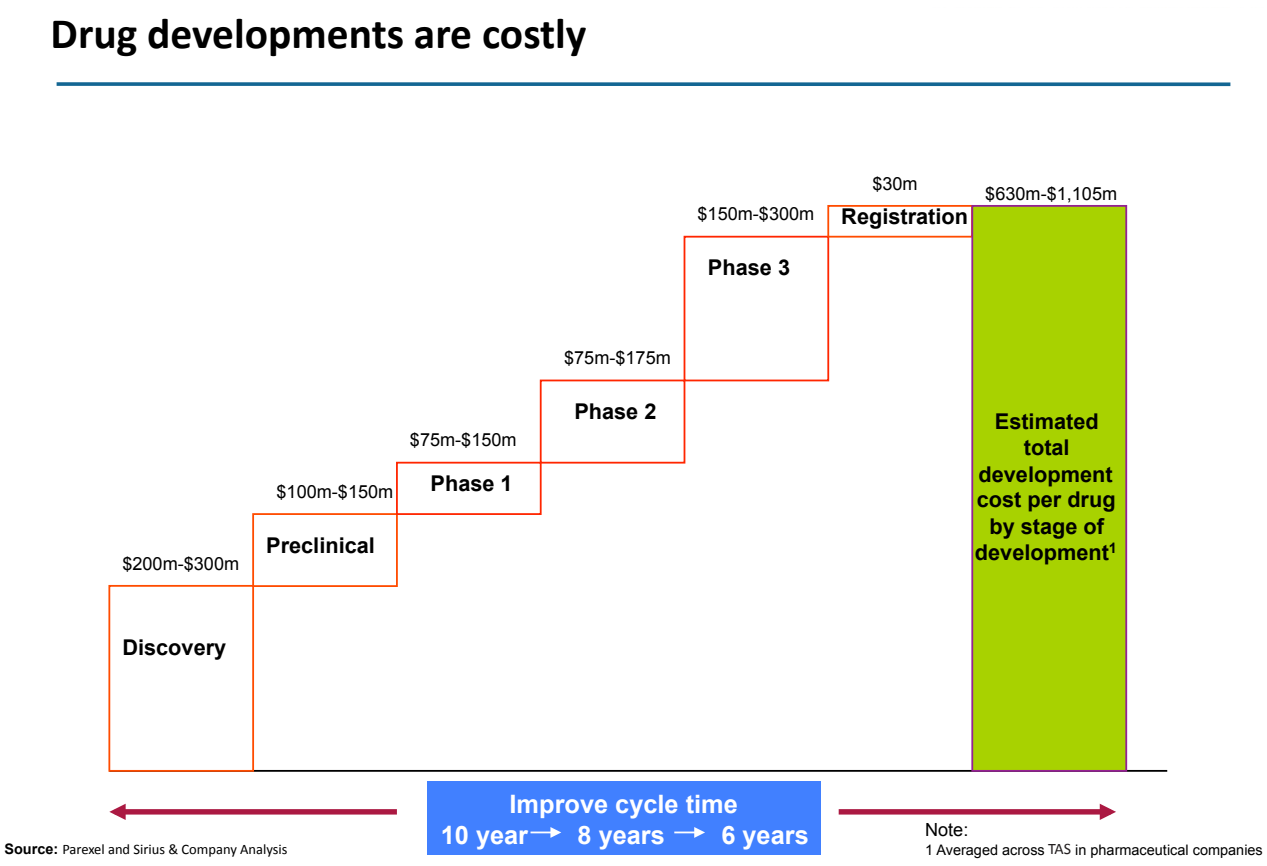
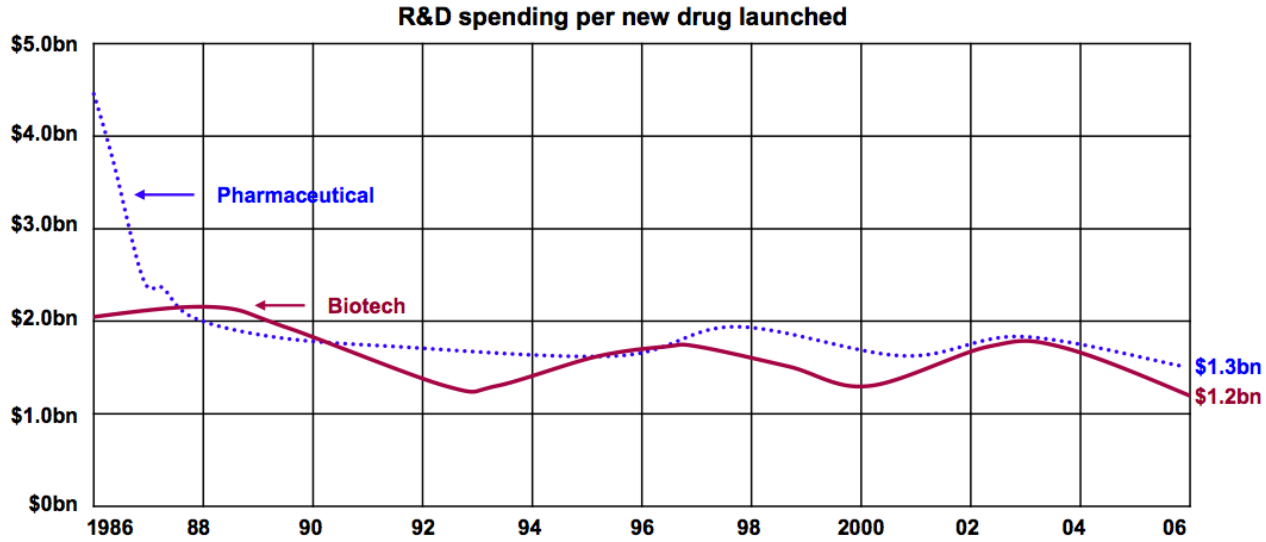



***Figure 4:*** *Average cost of bringing a drug to market has risen to over $1.0 billion*

**Biotech has produced no breakthrough in R&D productivity**




The sample of biotech companies include all publicly traded companies that tried to develop new drugs. The sample of pharmaceutical companies include the top 20 companies in the world according to their R&D spending. The drugs do not include line extensions, reformulations or approval for new uses. Every annual data point represents the cumulative R&D expenditures from 1986 through the given year divided by the cumulative number of drugs launched during the same period. The first four and the last four years data were adjusted to account for the lag between R&D spending and the resultant output. Credit for a jointly developed drug was divided equally between the biotech company and its partner.

***Figure 5:*** *Biotech hasn't solve the productivity problems*

companies' problems in R&D are modest. The primary one is attracting talented scientists to work in big and potentially bureaucratic companies rather than in research laboratories of biotech companies. Motivating creative employees is clearly a challenge for big companies but it is not confined to pharmaceuticals. The best way to recruit scientists would be to break the development log-jam - a move away from the blockbuster model. Instead of placing bets in many therapeutic areas in the hope of striking it lucky, pharmaceutical companies could focus more on particular areas of expertise. That would help them build enough know-how to make better choices among research leads. Science may also come to their aid. One reason so many drugs fail in clinical trials is that they are tested on random samples of patients suffering from illnesses. But some targeted drugs, such as AstraZeneca's Iressa, a lung cancer treatment, have an effect only on some patients. Genetic profiling or pharmacogenetics should allow faster approval of drugs aimed at a defined group of patients.

In addition, there is no conclusive evidence that biotechnology has revolutionised the productivity of pharmaceutical R&D, despite many claims to the contrary (see Figure 5).The average R&D cost per new drug launched by a biotech company is not significantly different from the average cost per new drug launched by a big pharmaceutical company. Nor has industrialised R&D dramatically increased the number of compounds that make it to human clinical testing, let alone into the market [3]. There is no conclusive proof that the unexceptional productivity of biotech companies is due to the complexity and risk of the projects they undertake. Nor is there reason to believe that biotech's productivity will improve with time.

Some industry observers point out that biotech companies account for a growing percentage of drugs in clinical development. This suggests that we should expect a great number of drugs to emerge from the biotech pipeline in the future. But while industry spending on R&D continues to increase substantially, the attrition rate of biotech drugs in development has also grown over time. Therefore, it is doubtful that biotech's output per dollar invested in R&D will improve significantly in the coming years.

## Pressure on Pricing

Drug pricing has become a heightened public topic. The difference in pricing levels between North America and Europe has become common knowledge, and customers want changes. In Europe, the prices of medicines are rising, and the Competition Commission plan to investigate if large pharmaceutical companies are abusing patent rights to delay the introduction of low-cost generic alternatives. There are theories that pharmaceutical companies agree deals

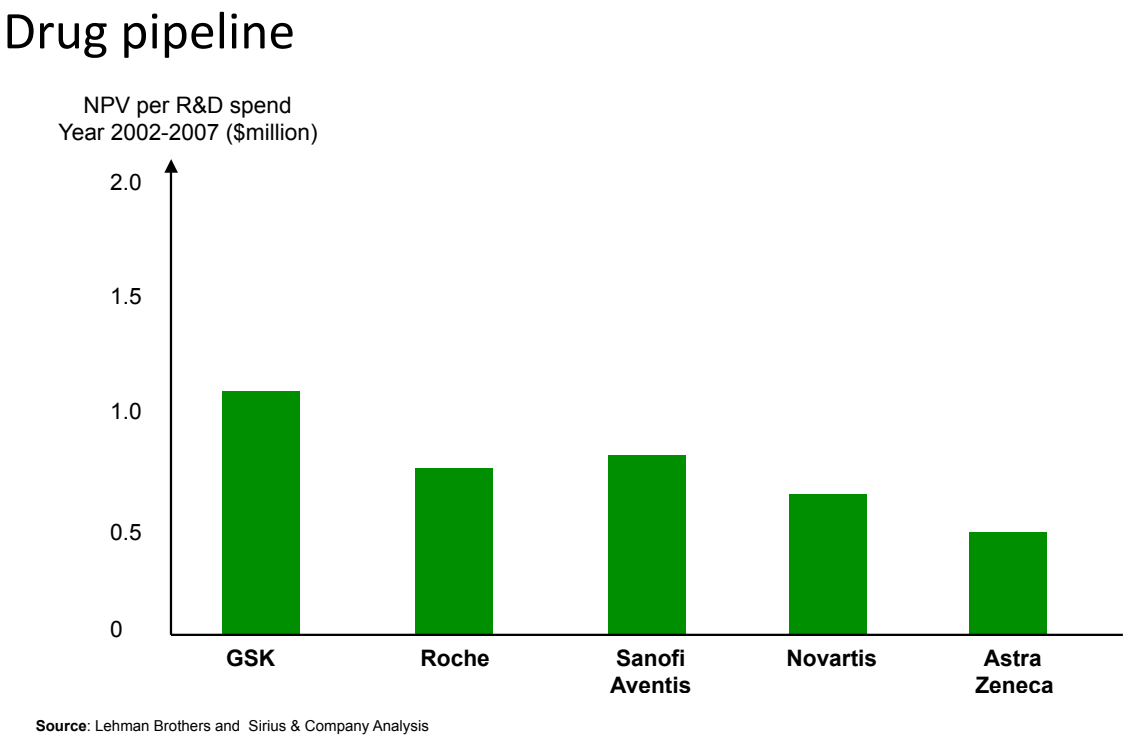



***Figure 6:*** *Investments in drugs development need better returns*

with one generic rival to exclude others and try to extend the life of intellectual property (IP) rights to stifle competition. Customers in Europe also wonder why the prices of generic drugs are not as heavily discounted as they are in the US when they come off-patent.

In some EU countries, where discounting is modest, generic manufacturers and distributors enjoy high margins. In the UK, where there is a freer approach to pricing, competition is more intense and discounting is heavy. Moreover, the UK Government's decision to cancel the existing pharmaceutical price regulation system (PPRS) for prescription medicines in the later part of 2008 is not good news for pharmaceutical companies since the PPRS provided a degree of long-term predictability and stability in pricing for them. Instead, the UK pharmaceutical industry will find themselves on the other side of the negotiation table with the Government, which will be seeking to achieve a reduction of prices in excess of 10% in 2008 [4].

Parallel trade also plays a major part on the pricing. Parallel traders, who get medicines cheaply from other countries, sell them for large profits in countries that pay more for medicines, lead to significant pressure on large pharmaceutical companies' pricing and profit. In Europe, Greece and Spain are the main source of parallel trade medicines, and their primary destination is the UK, where parallel trade products account for nearly 25%. Since parallel trade is not illegal in Europe, the companies participating in it are consolidating in a move that will make life even harder for large pharmaceutical companies.

## Problem with Pipelines

Like large oil companies, pharmaceuticals companies constantly need to refill their pipelines to survive. The struggle to develop new drugs has become more problematic (see Figure 6). Developing a reliable pipeline solely through in-house R&D has become increasingly impractical. So, what is the best way to keep supply plentiful enough to replenish blockbusters that are coming off-patent? The science and technology base has expanded so rapidly that it is no longer possible for one company to cover all the angles, or even to work out which area of scientific inquiry will yield the next fruitful line of research. The mega-merger solution has also exacerbated as many problems as they solved, by adding more medicines about to come off-patent and a bigger R&D base still not producing enough new drugs.

Instead, many large pharmaceutical companies have bought smaller biotech companies, entered joint ventures or licensing-in drugs. Roche, for example, has more than 60 active R&D partnerships, of which 12 are represented in its pipeline. Others, such as AstraZeneca, have shown that a change of tactics can revitalise portfolios quite rapidly. Moving away from over-reliance on in-house R&D makes sense, but brings new risks too. The rush to acquire the "next big thing"

is also leading to overpriced acquisitions. And the demands of picking enough of the right projects and managing complex joint ventures must make any pharmaceutical CEO yearn for the days when rejecting anything "not invented here" was considered a solid strategy.

## Innovation gridlock

Policy as well as culture plays a key role in determining the type of innovation a society produces. For much of the last century, for example, many of the most important innovations in medicine occurred in Europe, where pharmaceutical companies grew naturally from a well established chemical industry. Now, the majority of medical innovation happens in the US. This is partly because the pharmaceutical industry has moved from innovation based on chemistry to that based on biology. But, just as important, the drugs industry has been financially incentivised to produce medicines for the US market where they have been far freer to set pricing free of government interference. In Europe, where governments have worried more about medical bills, the price of medicine has been kept in control at the price of discouraging innovation. While governments can sometimes hinder innovation, in other cases they can help. US science has benefited enormously from generous funding to basic research, which has underpinned progress in the IT and other industries. Incentives may also play a role. Our American cousins have had far fewer qualms about allowing their scientists to grow rich through protecting and commercialising their inventions.

Based on our analysis on new product "pipelines" of drugs currently being tested for use, we believe that there will be a gradual increase in requests for authorisations in the coming years. But, there is a broader crisis in innovation in the pharmaceuticals sector, partly because the cost of developing new drugs is rising significantly as a result of their complexity and the need to run more trials than in the past (see Figure 7). For example, clinical development costs have risen fivefold in the past decade and pre-clinical development costs by 60%.

## Intellectual property battle

For the pharmaceutical companies, patents are sacrosanct and it's inadequate investment in health that explains the failure to get medicines to the poor. Patents provide exclusivity for about a decade after launch, during which time their owners charge high prices to recover development costs that average $1billion for each new drug brought to market. The importance of IP is increasingly recognised even in India and China, where generic drug manufacturers are trying to diversify from their roots to develop new ones. The way to have improvement in innovation is to protect IP.

Pharmaceutical companies are also vulnerable as they try to extend drug life by patenting small changes, such as extended release formulations. Generics manufacturers are mounting more patent challenges, and some are launching their own versions without waiting for a court to rule in their favour. For example, Israel's generic manufacturer, Teva has done exactly that with Wyeth's Protonix, and AstraZeneca's Seroquel and Nexium are considered possible targets. There is also trouble brewing in Europe, and the EU regulator is investigating whether manufacturers are abusing the patent process to delay generics.

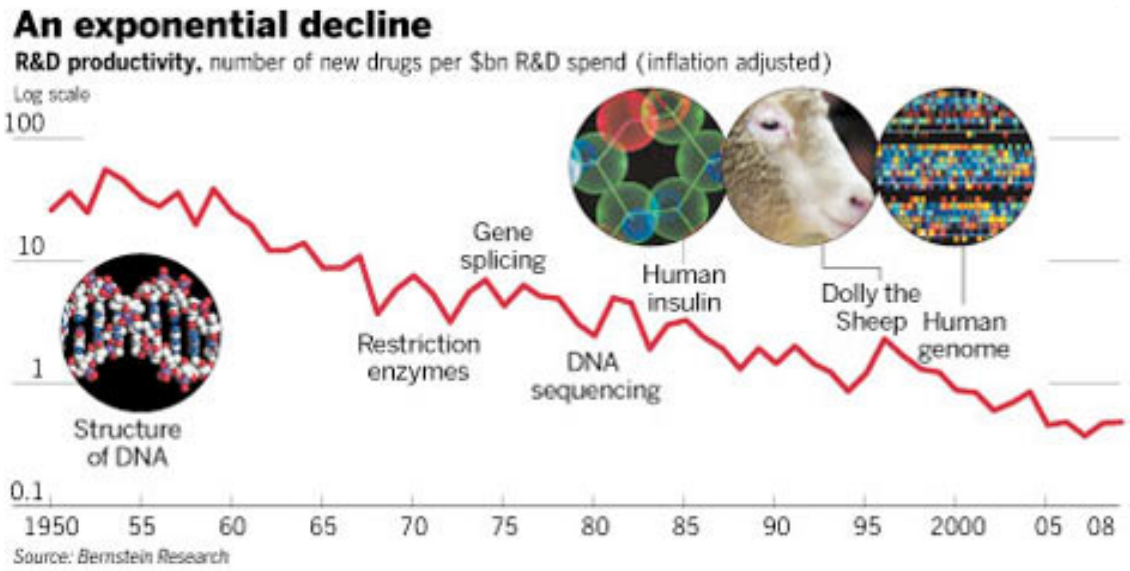



***Figure 7:*** *R&D Productivity has declined*

Patents also allow pharmaceutical companies to license their ideas at a profit for use in developed countries, subsidising the cheaper use of the medicines in the developing world. Furthermore, patents give developers more confidence in making their innovations public, allowing other researchers to gain access to their ideas. However, weaker IP may be a deterrent to transparency, slowing down understanding, collaboration and scientific advancement. As a result, the issue is less whether patents should exist and more how they should be used, interpreted and commercialised as part of a broader strategy to make medicines more affordable. The problem, however, is that while the current system of IP has helped stimulate significant pharmaceutical and vaccine advances, it has not made medicines more affordable and still fails to attract research into neglected diseases. Pharmaceutical companies need to find affordable and effective new treatments for diseases of the developing world, long neglected by them because of the lack of any significant market.

## Serving the underserved hasn't been a top priority

Delivering cheap medicines to the poor has not been part of pharmaceutical companies' core mission. The conflict between pharmaceutical industry profits and poor countries' desperate need to treat diseases, such as HIV/AIDS and malaria, is unlikely to disappear. There is a genuine problem at the heart of this dilemma, and neither the pharmaceutical industry nor the western policymakers show enough interest to solve it.

Trade bullying of the poor countries by the strong is unlikely to solve the problem. And the main problem has been that pharmaceutical companies produce drugs that are perceived as a public right, and that creates a contradiction in people's minds, and a convenient target of criticism. But, the industry's incentive to innovate would be weakened if widespread erosion of patent protection enabled generic drug makers to eat away its profits. However, the moral and practical case for providing poor countries with access to essential medicines, at a price they can afford to pay, is equally compelling (see Figure 8).

Strong public criticism has forced some large pharmaceutical companies into stepping up research into diseases found mainly in very poor countries and selling them medicines at discounted prices. But the results so far have barely dented the problem.

In order to improve their standing, pharmaceutical companies must focus on innovative drugs in important therapeutic areas - even though they face enormous scientific obstacles, have to run expensive and lengthy clinical trials, and are dependent on healthcare systems that help determine drug prices, purchasing and distribution. In the emerging markets, the pharmaceutical companies continue to make inflated claims about the donation of hundreds of millions of dollars of drugs valued at western prices that they would not otherwise sell. Making their medicines available more cheaply in the emerging markets would make economic as well as ethical sense[5]. Many of the significant social and economic challenges of China and India, once seen as obstacles by pharmaceutical companies, have become opportunities for innovation and marketing. There are profits to be found in helping solve big challenges of the emerging markets. Many pharmaceutical CEOs know that emerging markets would be their main source of growth in the coming decades and helping those within the emerging markets would ensure a steady stream of new consumers. And, the questions most pharmaceutical executives ask: how?

## Fulfilling pharmaceutical opportunities in the 21st century

Most large pharmaceutical companies have adopted four principal strategies to diversify. *First*, expand the range of products in the R&D pipeline and the use of external as well as in-house scientists to discover them. *Second*, expand geographically, especially into emerging markets. *Third*, increase sales of products other than patented prescription medicines. *Fourth*, experiment with greater flexibility in pricing in different countries and with ways to ensure drugs provide value for money. Yet, these disjointed strategies haven't produced the desired results.

Most CEOs of large pharmaceutical companies recognise that executing business as usual is not going to be sufficient as their business world has become more competitive, unpredictable and risky. Faster technological change, greater competition, the overregulation of markets, the longer time frame to develop a drug, lack of top quality scientists, and the changing demographics of the work-force are among the many factors that have contributed to this shift. The net result is that doing what was done yesterday, or doing it 5% better, is no longer a formula for future success. So, how should the CEOs of large pharmaceutical companies go about making the necessary changes happen and what are their strategic priorities to capitalise the opportunities in the 21st century (see Figure 9)?

The pharmaceutical industry is one of the most profitable of all industries and making cultural changes in these highly profitable companies, where "superior" feeling exists in

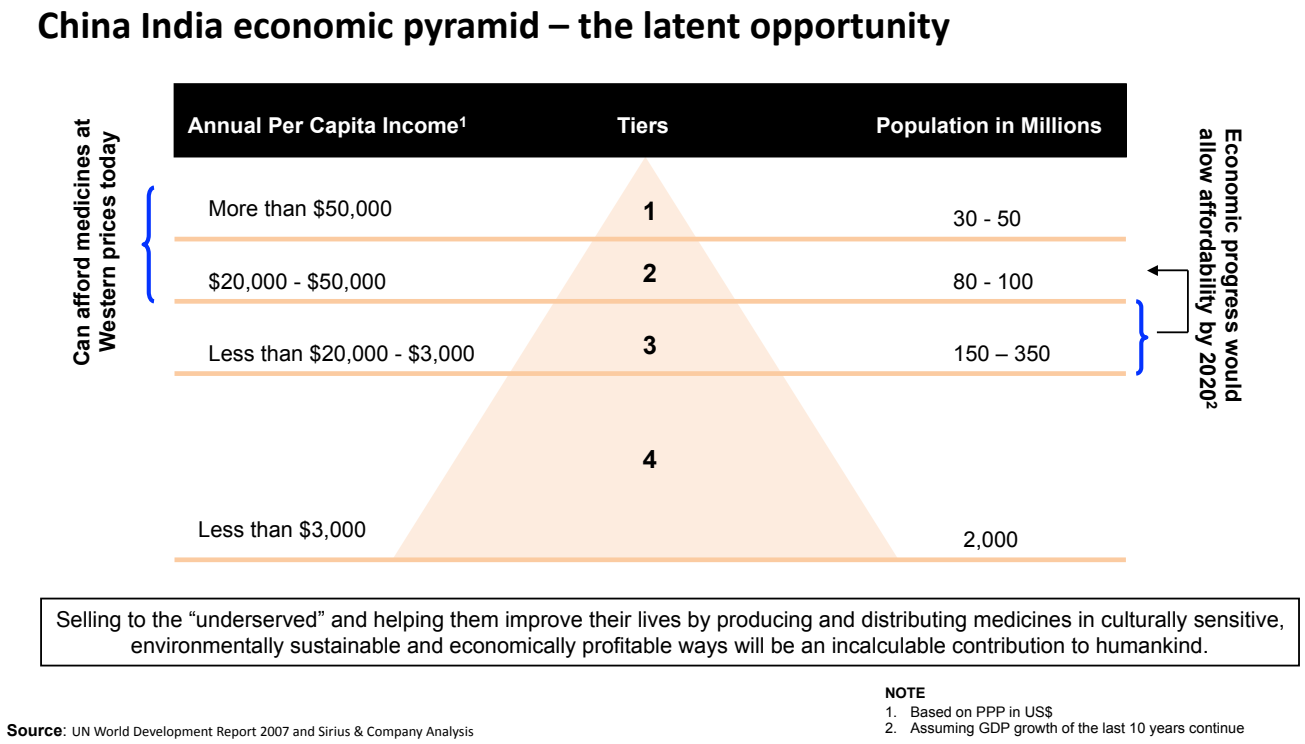



***Figure 8:*** *Selling to the underserved can be economically profitable too*

most corners of the organisation, make the CEO's job increasingly tough. But, smart CEOs know that past and current profitability of their companies provide no guarantee to future profitability and success. Leading cultural change is the ultimate test since no business survives over the long term if it can't reinvent itself. Reinvention is not changing what is, but creating what isn't. But, human nature being what it is, fundamental culture change is frequently resisted mightily by the people it most affects – those in the trenches of the business.

## Instil values that drive behavioural change and improve productivity

Over the last five years, we have studied the top 20 pharmaceutical companies try to transform themselves into better competitors. These transformation efforts have gone under many themes: speed and quality enhancement, reducing organisational complexity, reengineering business support functions, restructuring and outsourcing, externalization, and change of culture. But, in almost every case, the primary objective has been the same: to make fundamental changes in how business is conducted in order to help cope with a new, more challenging market environment. Only a few of these transformation efforts have been successful. A few have been utter failures. Most fall somewhere in between, with a distinct tilt toward the lower end of the scale. The lessons that can be drawn are interesting and will be relevant to companies in other industries, who share similar heritage to the pharmaceutical industry (e.g., Financial Services, Oil and Gas, Energy and Utilities, etc). The most common lesson to be learned from the more successful cases is that the transformation effort goes through a series of steps that, in total, require a considerable length of time. Skipping steps creates only the illusion of speed and never produces a satisfying result. A second lesson is that critical mistakes in any of the steps can have a devastating impact, slowing momentum and negating hard-won gains. Perhaps because we have relatively little experience in reinventing organisations, even very capable senior executives often make at least one big error.

It has become very fashionable in pharmaceutical circles to talk about values, which are routinely advertised on companies' websites. But, often there is little behind the advertised values when interactions are conducted at the ground levels. However, for pharmaceutical companies we studied, values truly are a primary driver behind cultural transformation since values drive behaviours. And they help the companies find business opportunities and motivate both employees and other stakeholders. To compete effectively, large pharmaceutical companies must respond quickly and creatively to opportunities wherever they arise, and yet have those dispersed activities add up to a unified purpose and accomplishment. The companies that meet this challenge rely in part on clear standards and disciplines, including, at the most basic level, standardised processes.

## Strategic imperatives


***Figure 9:*** *Key strategic priorities for pharmaceutical CEOs*

Standardised management practices and technologies in pharmaceutical companies are the equivalent of infrastructure in cities: They allow people to stop wasting energy on basic activities and instead focus on higher value matters. But providing a platform on which creative people, such as scientists in the R&D sites, can build is only half the battle. What is also required is a shared set of values to guide their behaviours, choices and actions. Values, in hearts and minds, turn out to be the key ingredient in the most vibrant and successful of today's top pharmaceuticals. Once people agree on what they respect and aspire to, they can make decisions independently and not work at cross-purposes. When they team up on a project, they communicate and collaborate efficiently, even despite great differences in backgrounds and cultural traditions, because they have a strong sense of business purpose and company identity.

The payoff for pharmaceutical companies that have embedded values and principles in their systems comes in many forms. The first benefit is integration, which permits collaboration among diverse people. Common values and standards also allow people at the front lines, such as marketing, sales, procurement, to make consistent decisions, even under pressure and in the company's most culturally and geographically disparate locations. Among the smart pharmaceutical companies we studied, this was the most striking similarity, and sometimes the most difficult thing for outsiders to understand. A strong internalised guidance system obviates the need for controls that stress obedience and instead promotes autonomy. Expressing values and standards in unified terms is not meant to inhibit differences or innovations. In fact, it helps people see how to meet particular customers' needs by adding localisation to globalisation.

Most successful transformation efforts begin when some individuals or some groups within a pharmaceutical company start to look hard at a company's competitive situation, market position, current operating practices, technological trends, and financial performance. They focus on the potential revenue drop when an important patent expires, the five-year trend in declining margins in a core business, or an emerging market that senior executives seem to agree important, but find themselves without an integrated operating model. They then find ways to communicate this information broadly with urgency, especially with respect to crises, potential crises, or great opportunities that are very timely. This step is essential because just getting a transformation programme started

requires the aggressive cooperation of many individuals. Without motivation, people won't help, and the effort goes nowhere.

We found that over 70% of the pharmaceutical companies that we studied fail in this first step. What are the reasons for this failure? Sometimes CEOs underestimate how hard it can be to drive their colleagues and other members of the senior executive team out of their comfort zones. Sometimes they grossly overestimate how successful they have already been in increasing urgency. In many cases, senior executives become paralysed by the downside possibilities. They worry that employees with seniority will become defensive, that morale will drop, that events will spin out of control, that short-term business results will be jeopardised, that the share price will head south, and that they will be blamed for creating a crisis. A paralysed senior executive team often comes from having too many managers and not enough leaders. Management's mandate is to minimise risk and to keep the current system operating. Reinvention, by definition, requires creating a new system, which in turn always demands leadership. The first step in a reinvention programme goes nowhere until enough real leaders are promoted or hired into senior levels.

Reinvention of a large pharmaceutical company sticks when it becomes "the way we do things around here," when it seeps into the bloodstream of the company's entire body. Until new behaviours are rooted in social norms and shared values, they are subject to degradation as soon as the pressure for change is removed. Two factors are particularly important in institutionalising change in pharmaceutical companies' culture. The first is a conscious attempt to show people how the new approaches, behaviours, and attitudes have helped improve performance and productivity. When people are left on their own to make the connections, they sometimes create very inaccurate links. Helping people see the right connections requires good communication. The second factor is taking sufficient time to make sure that the next generation of senior executives really does personify the new approach. If the requirements for promotion don't change, renewal rarely lasts. One bad succession decision at the top of a pharmaceutical company can undermine a decade of hard work. Poor succession decisions are possible when boards of directors are not an integral part of the reinvention effort. In at least two instances we have seen in the 20 pharmaceutical companies we studied, the champion for transformation was the retiring senior executive, and although his successor was not a resistor, he was not a transformation champion. Because the boards did not understand the transformations in any detail, they could not see that their choices were not good fits. The retiring senior executive in one case tried unsuccessfully to talk his board

## Managing contradictions is a norm in successful and mature pharmaceutical companies

| Successful Pharmaceuticals | Also-ran Pharmaceuticals |
|---|---|
| They foster a common culture across their global operations but also respect for individual differences, seeking inclusion and diversity. | They maintain different culture in different parts of their operation across the globe and rarely embraced diversity at the top despite talking about it a lot. |
| They do not abandon values in a crisis; in fact, as CEOs put them to the test, crises serve to strengthen commitment to values | They rarely get the chance to test their values and in crisis they point fingers at each other |
| They standardise and innovate, endeavouring to prevent consistency from becoming stifling conformity. | They fail to standardise their core processes and practices, and use local autonomy as the reason for lack of standards. |
| They maintain control by letting go of it, trusting people educated in the shared values to do the right thing. | They don't loose control, although appear to give impression that control exists at local levels. |
| They produce both business value and societal value. | They produce business value but often compromising other values |
| They bring together the "soft" areas (people, culture, etc) and the "hard" areas (technology and drug innovation). | They don't harmonise soft and hard areas but leave them in separate silos. |
| They globalise as well as localise, deriving benefits from the intersections. | The talk globalisation but operate on a country by country or at best on regional basis. |
| They have a strong identity but also a strong reliance on partners, whom they collaborate with but do not control. | Their identity is the sum of multiple identities resulted from past acquisitions, and prefer not to rely on partners for strategic initiatives reflecting "not inverted here" syndrome. |

***Figure 10:*** *Maturity of successful pharmaceuticals shown in their execution*

into a less seasoned candidate who better personified the transformation. In the other case, the CEO did not resist the board's choices, because he felt the transformation could not be undone by his successor. They were wrong. Within two years, signs of renewal began to disappear at both pharmaceutical companies. A small number of pharmaceutical companies who successfully navigated the first few stages of transformation resolved long-standing contradictions in their organisations, and they achieved a balance between seemingly opposing goals (see Figure 10).

Pharmaceutical companies that have established strong systems find themselves more effective in selecting and working with external partners, increasingly a necessity for competitive success. A more outward and forward-looking definition of purpose encourages exploration of partnership opportunities that extend well beyond the formal boundaries of the company. Some pharmaceutical companies use the term *externalisation* to reflect their activities in this area. It causes people in the company to think about end-to-end responsibilities to the whole ecosystem, from suppliers' suppliers to customers' customers and beyond. And it creates coherence across the entire network.

The success pharmaceutical companies we studied gain allies in innovation, influence standards, and improve the lives of people in the countries in which they operate through their partners as well as their direct activities. They work with established and smart companies but also grow their own networks. Values also arouse aspirations to increase the company's positive impact on the world, and that is worth more to many people than increases in compensation. This is why some pharmaceutical companies' rapidly growing units in the emerging markets could attract the best talent without offering the highest pay scales. Centrality of values provides a rationale for longer-term investments where the immediate business case is mixed or unclear, and it permits compassionate decisions that show that people in the company really care, thus taking the edge off the natural cynicism that transformation efforts evoke.

But, there are things pharmaceutical CEOs can control and things they simply can't. They can't really consider it a challenge if there's nothing they can do about it. The things that they do have control over - the culture of the organisation, key strategic initiatives, and probably most important, the selections of talent coming to their companies are worth worrying about. While leading the cultural transformation programme, CEOs of large pharmaceutical companies need to act on a number of other key strategic initiatives that are vital for value creation.

These include:-

- Reshaping the existing distribution models to overcome the distribution dilemma;
- Leverage emerging markets by developing an integrated strategy for China and India instead of a two-track approach;
- Streamline operations with a coherent programme for bringing in efficiencies and productivity including selected use of offshore outsourcing and shared services;
- Improve R&D, sales and marketing productivity; and
- Develop a talent management factory.

## Overcoming distribution dilemma

Top pharmaceutical companies can enhance patient safety and protect revenues by adopting successful sales and distribution models used in other industries (such as, software and Financial Services) and increase their control of medicines distribution. Today, the pharmaceutical distribution model is characterised by a mixture of channel-to-market strategies with wholesalers taking the pivotal position. For example, nearly 75% of all medicines sold in Europe are distributed through wholesalers, they in turn sell to retail pharmacies, doctors and General Practitioners (GPs). Local market consolidation together with the horizontal integration in the medicines wholesaling industry has been at the highest level in the last seven years and there are only a small number of Pan-European players (e.g., Alliance Boots, Phoenix, Celesio). These Pan-European wholesalers have become the dominant trade partners of large pharmaceutical companies controlling more than 60% of the distribution market combining sales of more than £30 billion (see Figure 11). They also carried out vertical integration by building pharmacy chains and financing pharmacy chains where chains are illegal.

The European wholesalers are also one step ahead of big pharmaceutical companies even in China. For example, Alliance Boots have invested over £40 million in a joint venture with the fourth largest wholesaler in China, Guangzhou Pharmaceutical Company, after Chinese governmental approval in 2007. It is very likely that the healthcare model in China would move from hospital dispensing to local pharmacies, giving an opportunity for the mega European wholesalers to supply the medicines in the Chinese market, creating a similar stranglehold of that fast growing emerging market.

## Direct-to-Pharmacy distribution model improves revenue and enhances patient safety

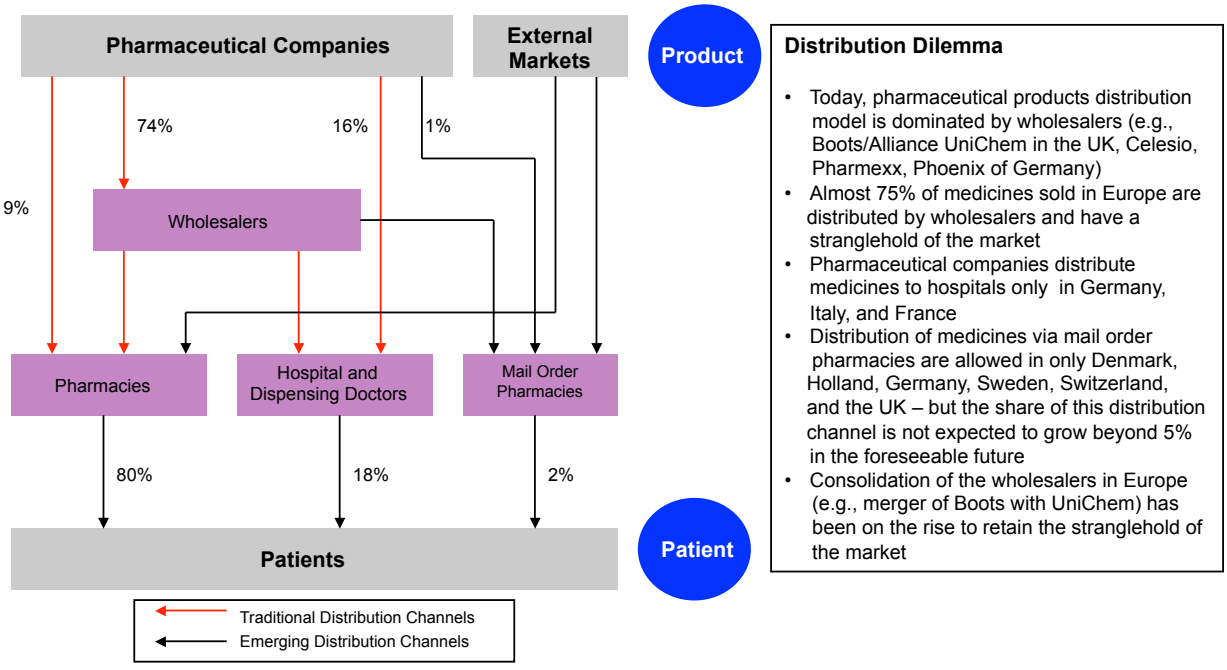
In order to break the stranglehold of the distribution channels by a handful of large Pan-European wholesalers, pharmaceutical companies need to introduce a system that cuts out most wholesalers and sells their medicines directly to chemist shops. Although, the Office of Fair Trading in the UK is concerned that direct-to-pharmacy schemes would cost the National Health Service (NHS) more money, using this distribution model will allow pharmaceutical companies to control the discounts on their medicines to pharmacists and work with them to reduce the widespread failure of patients with long-term illnesses to take their medicines as prescribed.

The direct-to-pharmacy distribution model fundamentally changes the relationships among pharmaceutical companies, wholesalers and retailers. With the objective of reducing parallel imports and volume of counterfeit medicines in the supply chain, the direct-to-pharmacy model change the wholesalers into a "fee for service logistics providers", and transfers safety of medicines and financial relationships to large pharmaceutical companies.

This distribution model is also beneficial in terms of the relationships between retailers and pharmaceutical companies because retailers are also playing a larger role as gatekeepers to doctors prescribing using generic substitution and patient management (such as doctors' prescribing pattern at a greater detail than data available today). Since these mega wholesalers dominate the Pan-European market and are entering into the fastest growing emerging markets, such as China, the implementation of direct-of-pharmacy distribution models by large pharmaceutical companies need to be global, where possible, to reduce the rising pressure on their profits (see Figure 12).

The direct-to-pharmacy distribution model will also help pharmaceutical companies to improve their revenue by not paying commissions on any of their medicines to wholesalers outside their supply chain, which account for about 10% of prescription drugs in the UK. A handful of large pharmaceutical companies, such as AstraZeneca and Pfizer have already introduced the direct-to-pharmacy distribution model in the UK. However, pharmaceutical companies need to recognise that the direct-to-pharmacy distribution model is a revenue-enhancing opportunity and not a cost-reduction initiative.

### European Pharmaceutical companies' distribution channels




**Source**: BAH and Sirius & Company Analysis

***Figure 11:*** *Untangling the stranglehold of wholesalers*

## Rising pressure on pharmaceutical companies

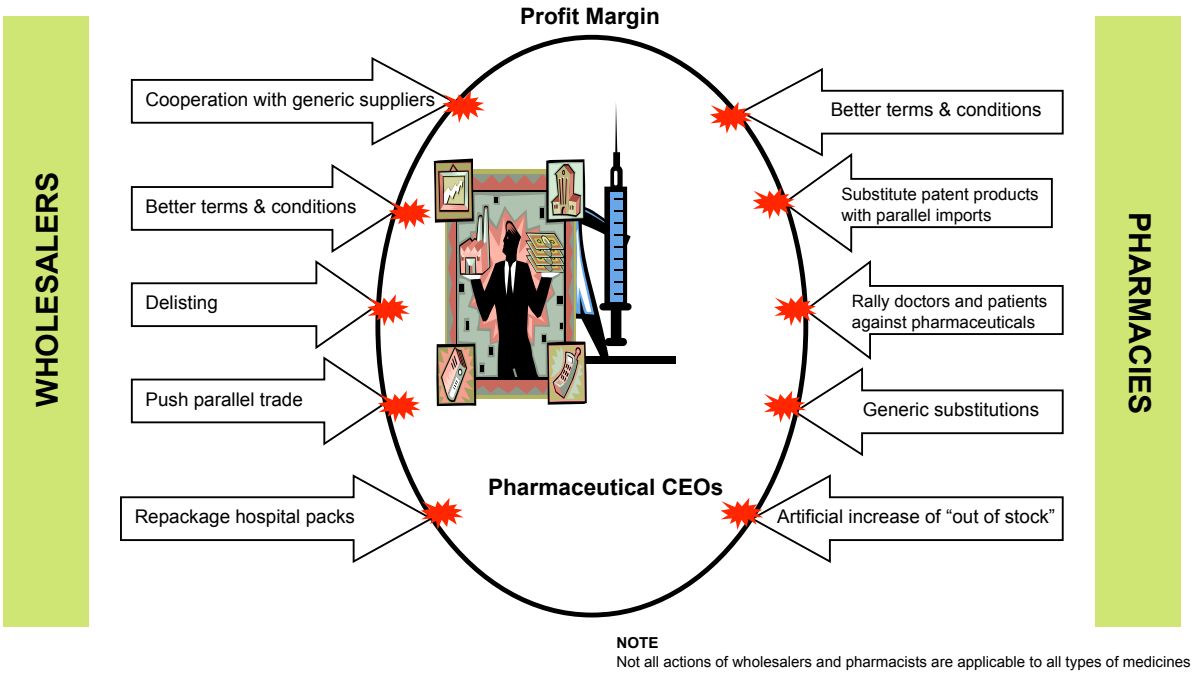



***Figure 12:*** *Working practices of large wholesales reduce pharmaceutical companies' profit*

## Improve R&D productivity with a smarter approach

Based on our study of top pharmaceutical companies, we found that they treat new drug development as a monolithic process. But the new drug development process can be more sensibly divided into two distinct stages: *fact uncovering early stage*, which is focused on evaluating novel drugs' prospects and eliminating bad bets, and a *success seeking late stage*, which is focused on maximising the value of drugs that have been cleared for development. The part of the organisation responsible for the early stage drug development looks for the most likely winners in a portfolio of molecules, recommending only the strongest candidates for costly late stage development. This type of organisational model is better because, although it may postpone the scale-up of successful drugs, it reduces risk in an environment where development costs and failure rates are extremely high [5].

Consider, for example, how two different molecules were evaluated in early development. In 2001, one of the top 10 pharmaceutical companies had begun work on a drug candidate for treating psychosis that we will call molecule AZD3480. In 2004, three years later, human brain imaging studies showed that little of the drug actually reached the central nervous system - in all probability, not enough to have a therapeutic effect. Nonetheless, the development team kept the project alive, arguing that only minute amounts of the molecule should be necessary to get results. In 2006, after five years of conventional development, it was still unclear whether AZD3480 had any clinical promise. Frustrated by the lack of definitive information, the pharmaceutical company's managers handed the molecule over to the early stage drug development organisation for an objective evaluation. The early stage drug development organisation undertook a new set of small scale clinical experiments and in just six months demonstrated that AZD3480 had no therapeutic benefit. This put an end to years of costly procrastination. The resolution was quick, decisive, and obviously cost-effective.

In the meantime, the same pharmaceutical company's managers turned to the early stage drug development organisation to reevaluate a second drug, AZD1175, that had looked promising for certain neurological disorders but had been abandoned prior to clinical testing because similar molecules were found to affect vision at therapeutic doses. Leveraging a network of in-house scientists and external sources, the early stage drug development organisation identified a novel biomarker to help in testing the compound's efficacy. The unit then ran several small

trials, finding that AZD1175 did not cause visual problems and was likely to be of clinical benefit. The early stage drug development organisation's new data put AZD1175 back in the running, motivating large-scale investment in further clinical testing. The drug is now in late Phase II trials, and preliminary data suggest that it is both safe and effective. The early stage drug development organisation delivered these results by focusing on what should be the only objective of early-stage development: reducing uncertainty about a drug candidate's clinical promises fast and effectively.

The examples of AZD3480 and AZD1175 illustrate two classes of decision-making errors that can impede traditional drug development. One type occurs when managers ignore evidence challenging their assumption that a project will succeed. There are many reasons for this sort of failure, including the power of champions to stir up collective faith in a project's promise and the human tendency to seek only evidence that supports our beliefs. Projects like AZD3480 that survive despite multiple red flags are the outcome; some of them even reach the market, only to fail after their introduction. The other type of error occurs when a project is terminated prematurely for lack of evidence that it could succeed. Such mistakes result from a failure to conduct the right experiments to reveal a drug's potential, sometimes because of organisational or personal biases against the project or because of a shortage of resources. Halting the development of AZD1175 falls into this category. Indeed, some of the pharmaceutical industry's biggest blockbusters, such as Prozac, narrowly escaped cancellation due to this kind of error.

Neither class of error is unique to pharmaceutical development. The first type, ignored evidence, abounds in industries ranging from chemicals to software to entertainment, where new products with questionable viability are propelled to market by a dogmatic, success-seeking mentality. Any pharmaceutical company that relies on new drug development for growth must avoid both kinds of errors. This requires encouraging what may seem like contradictory instincts: a willingness to kill a drug early and a willingness to persist until its potential is realised. Experts and portfolio theorists have offered a range of opinions on the shortcomings of new drug development in large pharmaceutical organisations, but none have managed to address how to avoid both types of decision-making errors simultaneously. That is because most pharmaceutical companies promote both kinds of errors by focusing disproportionately on late stage development; they lack

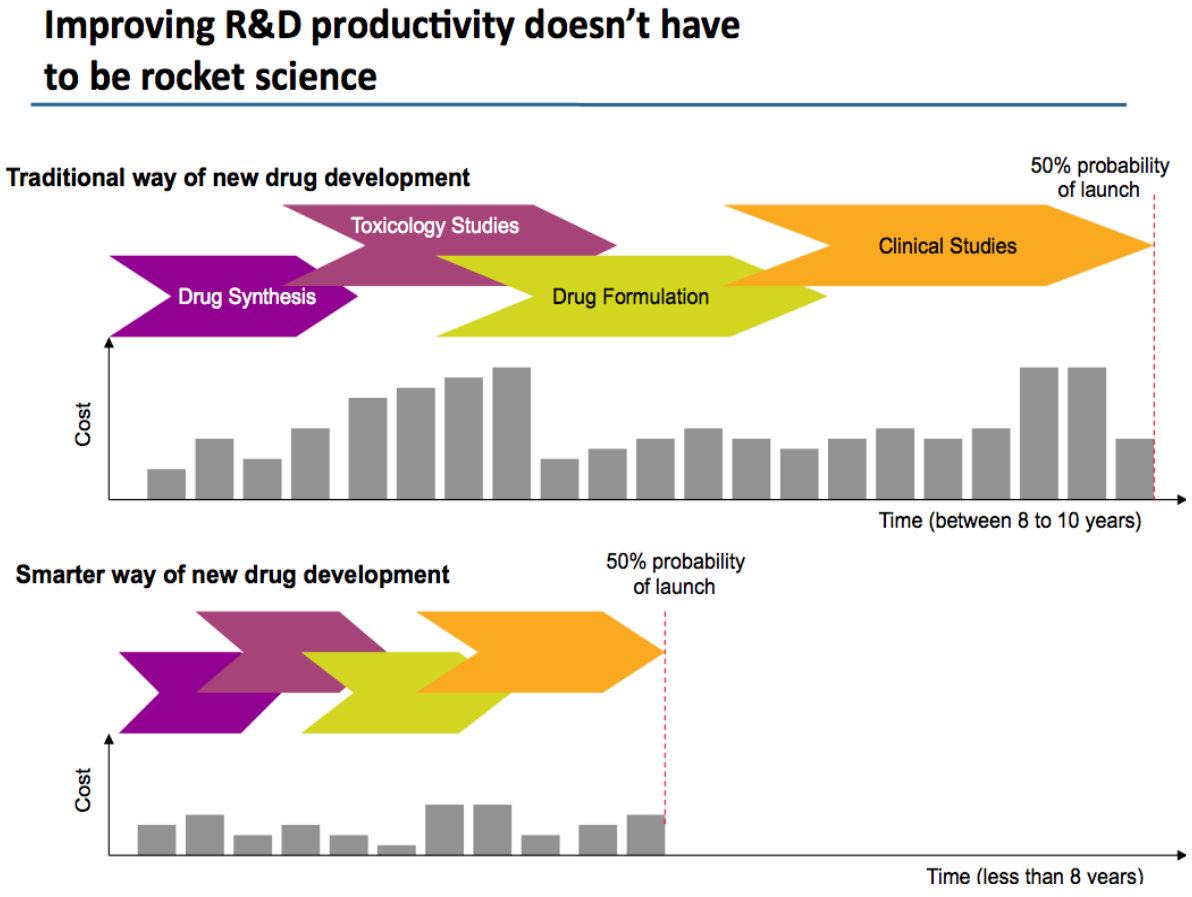



***Figure 13:*** *Creating an early stage organisational entity has an advantage*

the early, fact-uncovering functions whose explicit job is to head off such errors. The late stage model, which in drug development is designed for massive pre- and post-launch activities, imposes a rigid bureaucracy that encourages large scale experiments, conducted to maximise the likelihood of launch. For many large pharmaceutical companies, this approach comes naturally, because their new drug development objectives, incentives, processes, and workflows are geared toward finding success. But this makes it hard to expose the fact about risky prospects quickly and cost-effectively. Because a late stage mind-set dominates most pharmaceutical companies, creating an early stage organisational entity with its own objectives, governance, and operations often requires a fundamentally new way of thinking. An early stage organisational entity with proper remit reduces uncertainty about the drug's prospects for commercialisation and measurably affects the probability of launch (see Figure 13).

In a traditional drug development approach, expensive and lengthy large scale manufacturing and long-term animal studies are often initiated before critical data from the early stage safety and efficacy studies are available. Therefore, in the traditional drug development approach an extensive effort (the *drug formulation*) is made. Under the uncovering fact approach, minimal work is conducted. Unlike the late stage pharmaceutical company's portfolio, which consists of drugs headed toward launch, the early stage organisation's portfolio is made up of experiments conducted primarily to resolve uncertainty about a drug candidate's promise and thus substantially increase or decrease the probability that the candidate will launch (see Figure 14).

Changing this probability involves first identifying key attributes that would affect commercialisation. For example, does the drug occupy and affect its biological target? Does it show efficacy? Does it have undesirable side effects? And, then designing small experiments to establish whether these attributes exist. As data flow from the experiments, the early stage organisation's managers modify the experimental plan weekly or even daily in order to discover the intrinsic attributes of a candidate as efficiently as possible. Because experiments are valued according to their impact in determining the probability of launch, whether they increase it is immaterial to the early stage organisation. The staff cultivates loyalty to the experiment, not to the drug. Failure, then, is not only acceptable but periodically expected and rewarded. Reducing uncertainty quickly and inexpensively is the objective that drives the early stage organisation's process, which consists of defining what data are required to change the probability of success, designing the simplest clinical trials that will provide such data, executing the trials cost-effectively, evaluating the data objectively, and delivering a recommendation to either continue or terminate development.

## Two sides of new drug development

| STAGE / KEY FACTORS | EARLY STAGE | LATE STAGE |
|---|---|---|
| Organisational objective | ▪ Uncover fact and seek truth | ▪ Find success |
| Organisational strength | ▪ Identify and establish novel drugs' promise with objectivity or lack thereof | ▪ Take drugs to market |
| Organisational approach | ▪ Reduce risk<br>▪ Maintain loyalty to the experiment<br>▪ Focus on scientific method<br>▪ Operate with low fixed costs, low CAPEX<br>▪ Work with small and experiment based teams<br>▪ Emphasis testing | ▪ Maximise value<br>▪ Maintain loyalty to the drug<br>▪ Focus on commercialisation<br>▪ Operate with high fixed costs, high CAPEX<br>▪ Work in large, drug-based teams<br>▪ Emphasis refining |

***Figure 14:*** *The early and late stages of drug development require different focuses*

Improving productivity also requires avoiding large fluctuations in resource utilisation, the bane of pharmaceutical development in particular. To prevent idle capacity, the early stage organisation can connect with external experts, who advise on topics such as experimental design and drug delivery, and external providers, who provide most of the manufacturing, toxicology, and clinical work the unit requires. This frees the early stage organisation's staff to focus on the evidence generated by the trials. As a result, a high portion of annual expenditures can be dispersed through the network; the remaining costs are the fixed costs of running the unit. In addition to providing flexible capacity, such outsourcing reinforces fact-uncovering by injecting dispassionate outside perspectives.

The considerably complex job of managing the work of external providers and outside experts with minimal in-house staff can be facilitated by a suite of technology tools. At the level of the portfolio, the technology tools can track the impact of different experiments on probability of launch; at the level of planning, it can integrates the opinions of external content experts; and at the level of operations, it can organise work according to subject area (clinical, toxicology, manufacturing, and so on) and distribute tasks and associated documents throughout the network.

The early stage organisational model can help pharmaceutical companies improve the productivity of their innovation processes by establishing proof of concept (POC) early and reducing project attrition downstream, particularly in the later and more expensive phases of drug development. However, such fact-uncovering does have a cost: It may impede parallel processing or concurrent engineering and defer scale-up and commercialisation of drugs that will ultimately prove successful. For example, under an early stage organisational model, it is possible to use a test molecule made through an unoptimised process that would not be adequate for larger-scale trials and commercialisation, but waiting until the unit delivers a POC before starting the time and resource-intensive optimisation could delay launch and hinder commercial success. Nonetheless, the net benefit may be substantial. In large pharmaceutical companies, 80% to 90% of drug candidates that enter clinical trials will never launch; therefore, early investment in large-scale processes usually does not pay off.

The early stage model, as we explained here, is not rocket science and there are examples of its principles at work in non-pharmaceutical industries, such as technology and chemical and learning from other industries cannot be a bad idea for the pharmaceutical industry despite it being highly profitable. However, to improve the quality of pipelines with the introduction of the new early stage organisation, pharmaceutical companies need people with different mind-sets, who will not marshal whatever numbers and materials are needed to win support at reviews for continuing their projects.

To assess whether an organisational model like the early stage development unit would make sense, pharmaceutical companies need to determine whether their drug development process can be segmented into early-stage development, in which they absorb risk by culling poor prospects, and late-stage development, in which they maximise the probability of launch. As a rule of thumb, in a good risk-based segmentation, 20% to 40% of all assets (such as drug candidates) or projects make it to the late stage, and 70% to 90% of those end up having successful market launches. A good segmentation also yields a per-asset cost ratio of between 1:5 and 1:50. That is, moving an asset or project through the early stage costs one-fifth to one-fiftieth as much as moving it through the late stage (see Figure 15).

Consider the segmentation of drug development: If the early stage comprises Phase I and early Phase II clinical trials, and the late stage is made up of late Phase II and Phase III trials (post-POC studies), then about 20% of all candidates entering early-stage development will move on to the late stage, and about 70% of those will have successful market launches. Typically, the late-stage cost per candidate is about 10 times the early-stage cost; therefore, the relationship between risk absorption and cost places new drug development within the bounds of good segmentation.

Pharmaceutical companies that could benefit from an early stage organisational model need to understand that they will have to create a new, separate organisation that focuses on fact-uncovering. A small team must be selected to plan, implement, and manage that organisation. The team builds the infrastructure and recruits both internal and external staff, who bring essential expertise and objectivity to the project. Being able to ask the right questions and design the critical experiments to rule in or rule out a drug's key attributes are essential skills for people in this unit. Teams within the unit are small and fluid, composed of individuals motivated by intellectual curiosity. Each team member works on several products simultaneously, and of course, no one will follow any of the drugs into later stages, a rule created to promote objectively uncovering the fact.

When development costs are high and failure is common, pharmaceutical companies should structure research to uncover fact first, success second. The objective for any early stage organisation and, indeed, for R&D overall should be to head off costly downstream attrition of unpromising

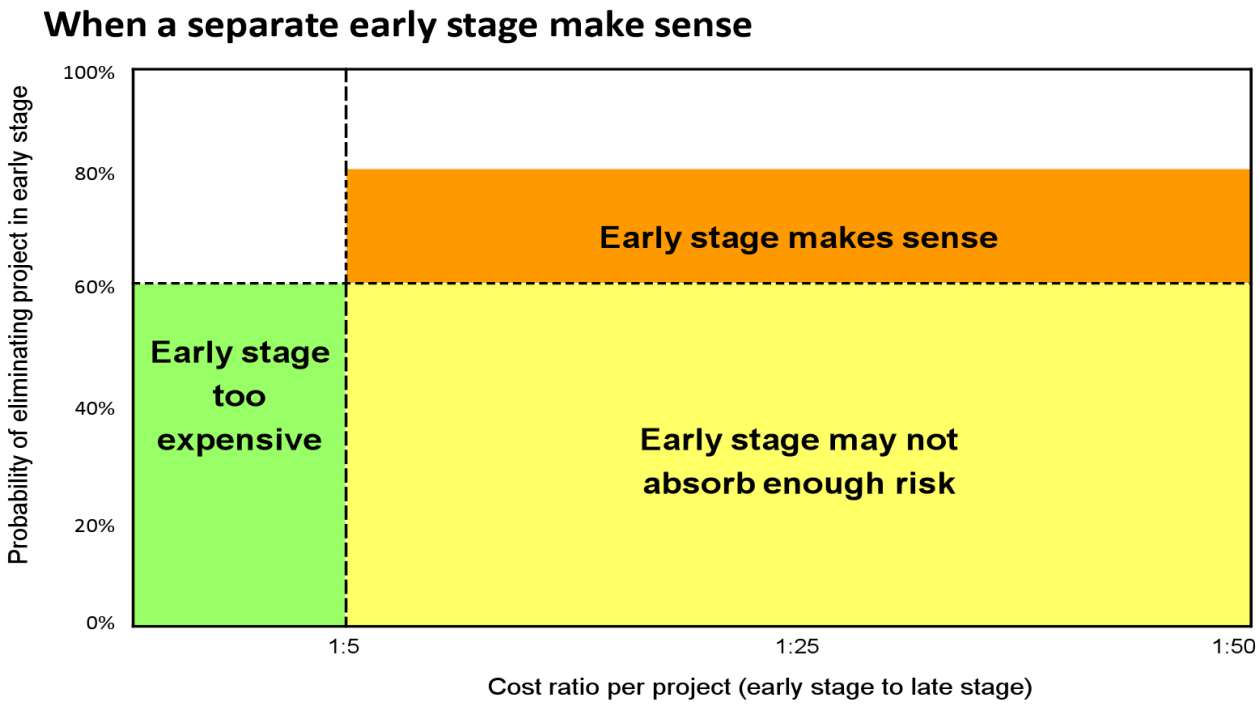



***Figure 15:*** *A prudent risk-based segmentation makes sense*

projects. Our proposed organisational model offers a promise for reducing risk and improving R&D productivity.

## Strengthen pipeline leveraging externalisation

Profitable innovation cannot only be internally manufactured. Simply spending more usually leads to a waste of resources on increasingly marginal projects. The solution to pipeline anaemia is not to boost incremental spending, but to raise the effectiveness of base spending to increase the return on innovation investment, and therefore lifting the company's return on investment (ROI). Because of two current trends - rising R&D costs and declining product revenues (due to shorter product life cycles) — pharmaceutical companies are finding it increasingly difficult to justify investments in innovative R&D initiatives that address both issues.

However, a pharmaceutical company does not have to produce all medicines from its own R&D organisation. Just as best-in-class companies manage increasingly extended supply chains, smart pharmaceutical companies are learning to externalise segments of their innovation value chain to increase ROI. For example, AstraZeneca completed 13 licensing deals between 2005-2007 by leveraging externalisation, which saved them time as well as money. And it allows the pharmaceutical company to participate in other segments through licensing fees, joint ventures and spin-offs, among other means (see Figure 16).

As pharmaceutical companies contract for increasingly sophisticated services, such as IT, back-office processes and clinical data management, from outside providers, R&D has inevitably become a prime candidate for offshore outsourcing. It has long been common wisdom that smart companies don't outsource the core operations that define them and set them apart from the competition. But that is starting to change as pharmaceutical companies contract out elements of their R&D value chain. And, innovation is going global, with pockets of expertise springing up in Asia, Eastern Europe. We are also witnessing the early stages of a revolution in R&D activities as the worldwide sourcing of innovation is growing far more rapidly in such nations as India, China, Thailand, and Brazil. As that growth continues, it will reshape the way pharmaceutical companies think about how and where they conduct R&D.

To capture the benefits from externalisation, companies need to develop the ability to experiment with their business models, finding ways to open them up. Building that capability requires the creation of processes for conducting experiments and for assessing their results. Although that might seem obvious, many pharmaceutical companies simply do not have such processes in place.

## It is too premature to unbundle R&D from sales and marketing

Some executives in the pharmaceutical industry are thinking about spinning off their R&D, and try separating sales and

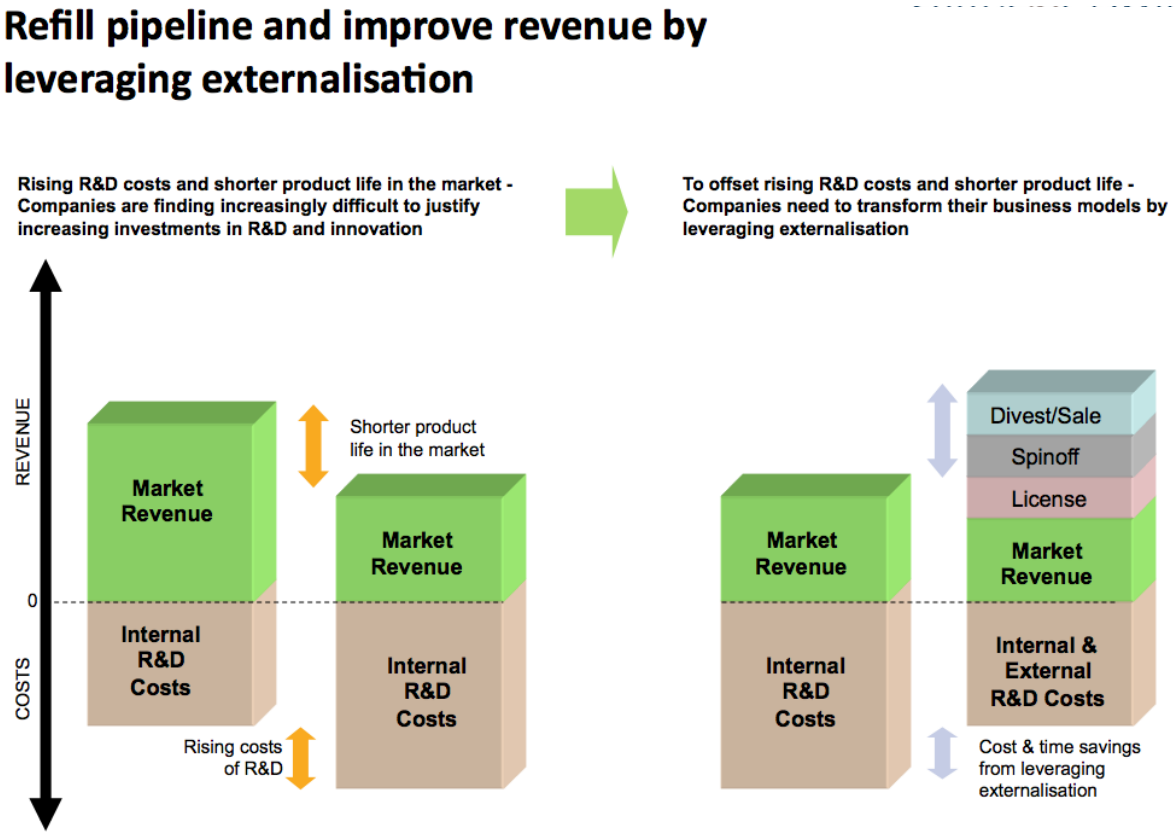



***Figure 16:*** *Externalisation has its benefit*

distribution from scientific discovery. For example, several Indian generics manufacturers who are looking to expand their original research activities are already trying this. Last year Ranbaxy Laboratories announced they would spin-off new drugs R&D into a separate company. Dr Reddy's, another large generics maker, recently formed Perlecan Pharma, a joint venture with Citigroup and ICIC, India's largest private bank, to finance some of its R&D. Moving R&D off the main company's books would be a quick way to look more profitable. However, large pharmaceutical companies marketing feedback improves R&D - but there could potentially be benefits to unbundle R&D and sales. For example, an arm's length relationship would allow medicines distributors to be dispassionate about a discovery's potential. Marketing and distribution companies might also find consolidation more profitable because synergies are easier realised in sales than research. However, the attractiveness of unbundling is not yet sufficient for large pharmaceutical companies – but it is an option that CEOs should not eliminate from their agenda in the coming decades.

## Develop an integrated operating strategy for China and India

India and China have both received increased attention by pharmaceutical companies in the last six years, reflecting a strong medical infrastructure, substantially lower costs and the relative ease of recruiting patients with diseases under investigation, which allows trials to be launched more rapidly. As pharmaceutical companies seek to reduce the escalating costs and speed up the clinical trials necessary to win regulatory approval for new medicines, they are increasingly moving tests from the US and western Europe to China and India. Our analysis indicates that China has 274 clinical trials under way at the end of 2007, compared with 260 in India. China has a cumulative total of 510 completed or ongoing trials compared with 471 in India. The trend reflects interest by the pharmaceutical industry in China and India, which are forecast to be the world's fifth and sixth largest pharmaceuticals markets by 2010. However, pharmaceutical companies including AstraZeneca, GlaxoSmithKline and Roche have committed significant sums in recent years to open R&D centres in China whilst making only token investment in India reflecting a two-tier approach.

Companies are usually reflections of the institutional contexts in their home countries, and as a result, the kinds of companies that flourish both in China and India in equal measure are very different from companies who succeed in one of the two countries. The question is: can large pharmaceutical companies from western culture make a success of both China and India? In China, where

**Pharmaceutical companies need to leverage both of Asia's giants to prosper in the 21st century – a two track approach would not produce the prize**

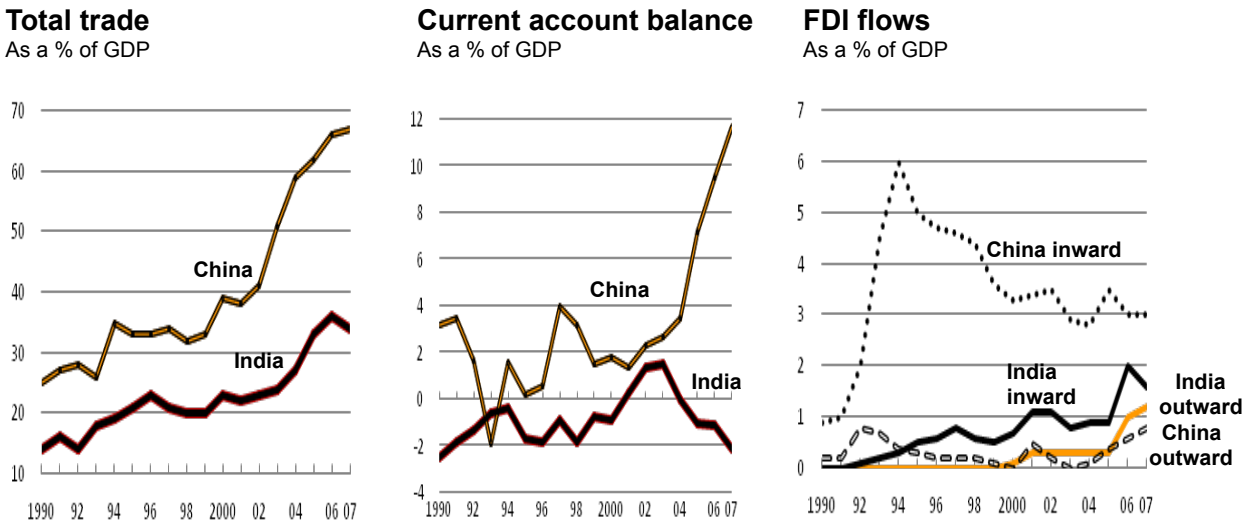



***Figure 17:*** *Macro-economic factors that pharmaceutical executives need to consider*

protection of IP rights is nascent and the government curtails some forms of expression, foreign companies don't push the creative envelope. Instead, it makes sense for them to build manufacturing plants that leverage the superb infrastructure. In India, foreign companies that depend on highway systems and reliable infrastructures find it hard to thrive; companies that train and deploy tens of thousands of English-speaking scientists and technically sophisticated engineers flourish. These complementarities pose both an opportunity and a threat for pharmaceutical companies. It is common to find mutually exclusive views of pharmaceutical executives on China and India – that is, it is either a preference for China and India later or simply China, where they see their market is - but rarely both. This is not surprising because most of these executives lack a deep understanding of these two emerging economies while trying to seek short-term opportunities. This is a major mistake. Two Asian giants contain 38% of the world's population between them reflecting a huge market opportunity for pharmaceutical companies in decades to come. Put simply, pharmaceutical CEOs cannot afford to ignore this vast market; neither can they afford to craft a two-track strategy for China and India. Why? Despite the differences between these two countries there are many similarities - both are heirs of ancient civilisations and both are among the world's fastest growing economies. By looking carefully at them pharmaceutical executives can learn more about their prospects for unparallelled growth. India is not China and vice-versa. India's development path has been very different and its global impact less significant. But it is now more open to the world economy than at any time in its post-independence history and more economically dynamic than ever before. The opening has been unambiguously beneficial to India, and it will be equally beneficial to most of the top pharmaceutical companies. But it will also create substantial challenges for both sides. The differences between the two countries' integration into the pharmaceutical world are indeed significant – but why?

*First*, in 2006 China was the world's third largest exporter of merchandise products and the eighth largest exporter of commercial services, while India's rankings were 28th and 10th respectively. Therefore, even in the latter category, where India's success is noteworthy, its exports of $74bn lagged behind China's $91bn. *Second*, in 2006 China generated 8% of world exports of goods and 3.3% of world exports of commercial services. India's shares were 1% and 2.7% respectively. *Third*, both countries are growing more open to world trade. The ratio of merchandise trade to GDP for India jumped from 14% in 1990 to 34% in 2007. But China is far more open: the rise over the same period was from 24% to an extraordinary 66% (see Figure 17).

*Fourth*, China is running vast trade and current account surpluses, while India is running modest deficits: China's current account surplus for 2007 at close to $380bn, or 12% of GDP, and India's at minus $23bn, or minus 2% of GDP [6]. *Fifth*, both countries have accumulated substantial foreign currency reserves. But at the end of October 2007, China's reserves were worth $1,455bn (45%GDP), while India's were worth $265bn at the end of November 2007 (24% of GDP). *Sixth*, both countries

have managed exchange rates, but given the scale of the reserve accumulations, China's is much more heavily managed than India's. Since July 2005, when the renminbi's exchange rate was made more flexible, the currency has appreciated by 14% against the US dollar. Since a trough in July 2006, India's rupee has appreciated 20% against the US dollar. Yet, over the past decade, real exchange rates have remained reasonably stable for both countries. *Seventh*, both countries enjoy substantial inflows of foreign direct investment, though China's are far bigger. China started receiving significant inflows long before India and is forecast in 2007 to receive gross inflows of $96bn (3% GDP) against India's $19bn (1.7%). But India's inflow is up from only $3.6bn in 2000 (0.8% of GDP), when China's was already 3.2 per cent of GDP. *Finally*, both countries are making substantial direct investment abroad, with China's outflow twice as large as India's in 2007. But India's direct investment abroad, estimated at $13bn last year, up from just $2.5bn in 2005, is almost as large as its imports, estimated at $18.7bn. China's exports of FDI, estimated at $26bn last year, are far smaller than its imports of $96bn. India's opening to the world then remains well behind China's. But since the foreign exchange crisis of June 1991, policy has moved decisively towards greater openness. This shift has helped transform economic performance.

The broad picture is of Chinese GDP growth of 9.7% a year, against India's 6.5% over the last decade. So, given differences in population growth, India's real income per head grew at less than half China's (see Figure 18). Employment generated only a small proportion of the growth: 1.2% a year for China and 1.9% for India. In China, productivity per worker rose at the rate of 8.5% a year. Increases in physical capital per worker accounted for half of this latter increase and increases in pure efficiency or "factor productivity" for the rest. India's productivity per worker rose at 4.6% a year. Given China's high investment, it is not surprising that India's accumulation of physical capital contributed less than half the growth of China's. But factor productivity also had almost double the impact in China. By 2015, two-thirds of China's population will be over 50, while 60% of India's will be under 30, China's ageing population will cause a demographic drag on growth while India will reap the dividends of a large workforce – so long as its workers receive an adequate education.

For pharmaceutical companies, China and India are not just another place to get cheap labour or conduct clinical trials cheaply, these markets are their future. China is home to 1.3 billion people and India has a population over 1.1 billion. In the next decade, they will become the largest and third-largest economies in terms of purchasing power. By 2016 they will account for around 40% of world trade, compared with 18% in 2007.

Growth prospects for large pharmaceutical companies in the emerging markets are excellent. Many senior executives recognise this opportunity, but few are developing the capabilities or the management focus that they will need to realise its full potential. They persist in thinking of these emerging markets as separate from their existing customers in the developed world. Most large pharmaceutical companies have not reorganised their operations to serve a fully global economy.

Consider, for example, one large, well-established pharmaceutical company, which has an annual growth rate of 16% in developing countries, and only 6% in mature, developed-country markets. Already, almost 20% of its revenues and nearly 32% of its profits come from emerging markets, and those percentages are increasing every quarter. Relative to other companies' leaders, the top executives of this company are advanced in their thinking; they say they aspire to sell their medicines around the world. But their actions tell another story. Their centre of gravity remains in North America and Europe: That is where 85% of the company's assets are located and where 98 of the top 100 senior executives grew up. These executives have lived their lives primarily in developed markets; they socialise largely with people from similar backgrounds; at work, they put individuals who resemble them on the fast track for promotion; and they all share a dominant logic in the way they make decisions. It is no surprise that they think of developed and emerging markets as distinct from one another, and that they have neither a structure nor a strategy to integrate them.

What if a pharmaceutical company's executives truly took seriously the new middle class emerging in so many countries? How would they organise their companies to provide medicines for those new customers? They could start with China and India, two most populous countries in the world, with the largest emerging new middle class. Drawing on capital, talent, and resources from these countries, they would establish their operations in each of them: offices with enough capabilities in marketing, manufacturing, and logistics to maintain a powerful presence in all the markets of that region. Rather than acting as if their central management were rooted in their home countries, they would also build a global senior management pipeline from their two operations, treating all executives from these operations as equally important to the company's future. Although no pharmaceutical company is yet fully organised this way, there is reason to believe that most successful pharmaceutical companies in the 21st century will craft such a structure [7].

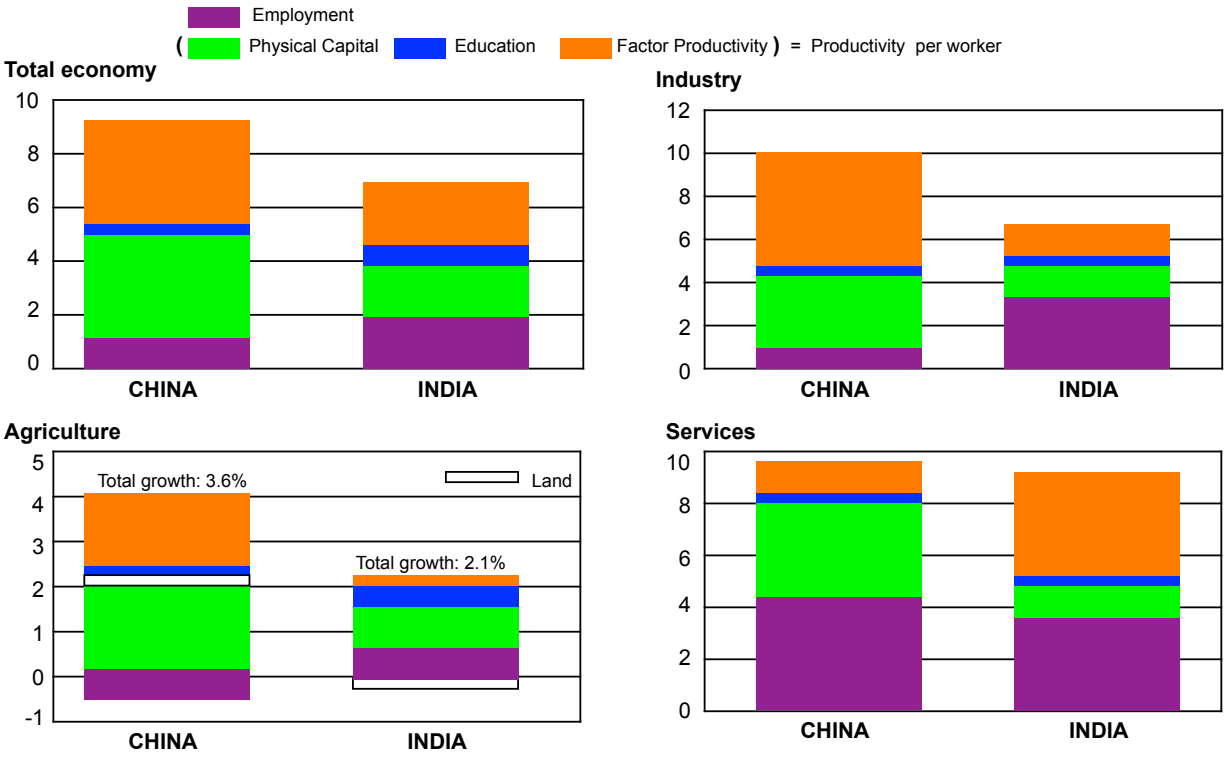



***Figure 18:*** *China and India's growth provides a compelling case for pharmaceutical companies*

## Extend operations where tomorrow's market is

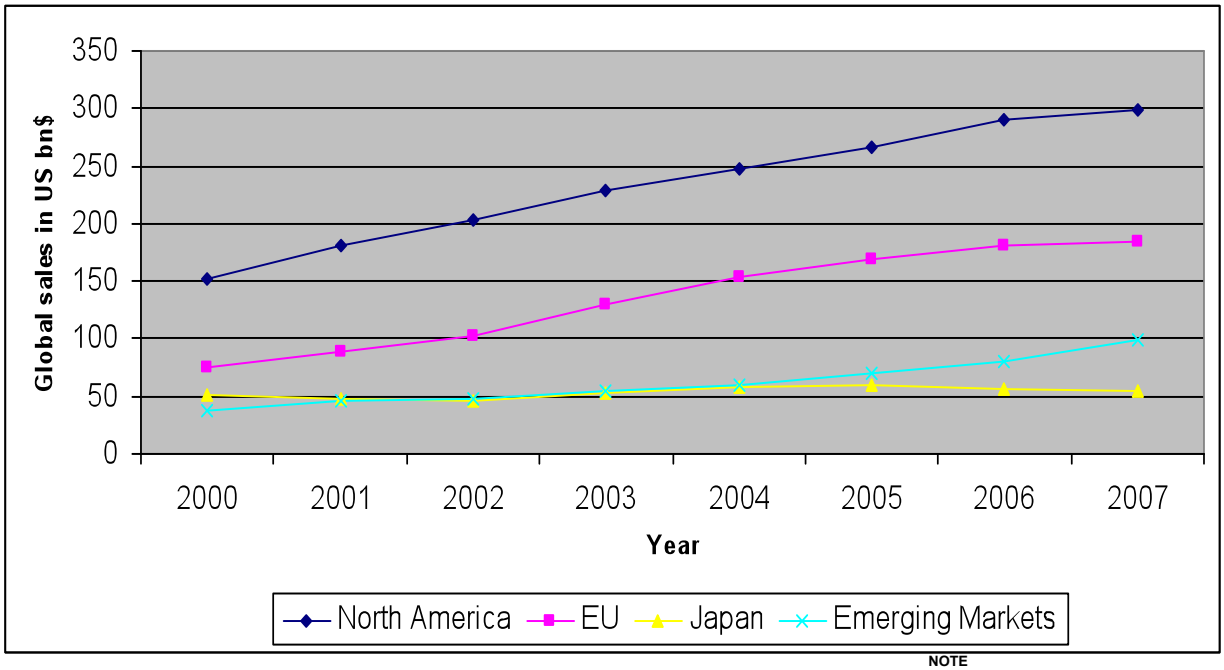
Admittedly, many pharmaceutical CEOs may find the very concept of the distributed operating structure discomfiting. Some may seek to avoid it altogether by remaining in their home regions. But they run a terrible risk of disappointing shareholders if they do. Some pharmaceutical CEOs have understood, in principle, the importance of a global operating strategy, but they consistently underestimate the value creation potential of developing countries. The assumptions persist that emerging countries do not represent viable markets, because their consumers cannot afford to buy expensive medicines.

The global sales trends, and in particular North America, the largest and most profitable market, is not exciting. For example, nominal sales in the USA rose 3.8% in 2007, the smallest increase since 1961. Adjusting for inflation, the sales in the USA grew by less than 1%. On the other hand, global sales of drugs in the emerging markets (including China, India, and Latin American countries) are growing steadily (see Figure 19). Our findings suggest that the pharmaceutical industry had an unprecedented two-decade expansion that is unlikely to be repeated soon. Between 1983 and 2003, inflation-adjusted sales grew, on average, 10% a year. The long-term average for the industry, dating back to 1957, is 6%, and growth since 2003 has averaged 3%.

Senior executives also tend to underestimate the skill base and talent in the emerging countries, often on the grounds that potential employees lack the education and training to meet standards of the USA and Europe. And they overestimate the prevalence of corruption, quality flaws, risky supply chains, and unreliability when sourcing from these countries.

Most importantly, senior pharmaceutical executives misjudge the relative profitability of activity in emerging markets. When looked at in PPP dollars, the GDP data tells us how significantly the world has changed since 1997. In that year, no emerging country was included in the IMF's list of the world's highest-ranked 10 economies. In 2007, China, India, Brazil, and Russia made it onto that list. In these PPP-based rankings, China has a higher GDP than Japan; China and India are both ahead of Germany, the U.K., France, and Italy; and Brazil, Russia, and Mexico all outrank Spain, Canada, Australia, and the Netherlands in GDP. And the economies of the developing world are growing at

## Global sales trends of pharmaceutical companies




**Source**: IMS Health Top-Line Industry Data 2007 and Sirius & Company Analysis

**NOTE**
Emerging Markets include China, India, other Asia countries and Latin America

***Figure 19:*** *Global sales trends tell its story*

more than 5% per year even after the subprime tsunami in the USA, which is more than twice the rate forecast for the developed countries. China and India are growing at a rate of more than 9%.

If nothing else, this data challenges the traditional categorisation of economies as rich and poor. That distinction is rapidly becoming a thing of the past, as the "poor" economies of emerging markets grow rapidly in scale and sophistication. The purchasing power of households in South Korea, South Africa, Mexico, Russia and Brazil is not much different from that of households in Spain, Portugal or Italy. The growth opportunities are especially evident when it comes to medicines that are normally associated with a vibrant economy. Similarly, the opportunities to profit by serving the economic "bottom of the pyramid" no longer exist just in emerging markets. For example, people in the U.S. and Europe who cannot afford medicines are not just a political constituency; they are a market for low-cost preventive medicines.

There is another financial implication, often forgotten by senior pharmaceutical executives. When revenues or returns from an emerging market, such as India, are calculated in U.S. dollars or euros, they often appear smaller than they should because of currency exchange rate conversions. In other words, most companies do not incorporate the effect of PPP and foreign exchange in evaluating their investments. To understand the significance, consider a pharmaceutical company that invests US$1 million in R&D in the U.S., versus the same US$1 million in India. One dollar converts to about 40 rupees in India at the current exchange rate. But it takes only 9 rupees to buy goods in India that would be worth $1 in the United States. A $1 investment in India is therefore the purchasing-power equivalent of about $4.40 in the United States. This index, 4.4 to 1, is the *investment gearing factor* for India. Every developing country has its own investment gearing factor. Even when it isn't noticed, the investment gearing factor is operating. That is why it makes far more sense to manufacture products in India or China for sale in the United States or in Europe, rather than the other way around. The investment gearing factor in effect represents a final nail in the coffin of the old mercantile ideal of sourcing raw materials from developing countries, manufacturing in developed countries, selling the finished products back to an elite group of customers in the developing countries, and bringing the profits back home. It is much more cost-effective for a pharmaceutical company from the USA or Europe to source, manufacture and sell around the world from a global network of operations that includes emerging markets. In other words, it makes sense to treat emerging countries as an integral part of a

## Six Levers of global operating strategy

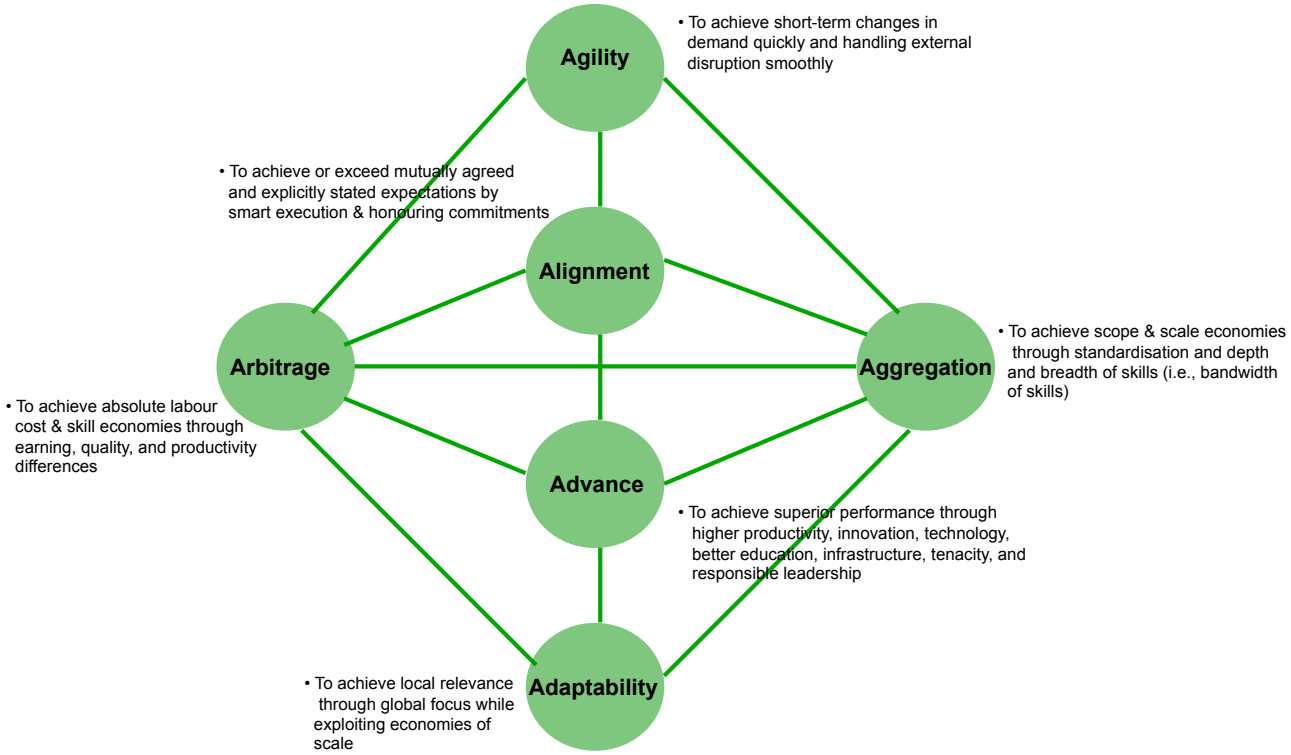



***Figure 20:*** *Pharmaceutical companies operating model for the emerging markets*

global system, transferring profits through medicines rather than currencies.

The new model for global operations is based not on the priorities of home, but on the needs of the marketplace and on locating work wherever it can be conducted most efficiently and managed most profitably. But adopting this new operating model needs courage and conviction – many pharmaceuticals CEOs posses these qualities, so what is stopping them? Whether pharmaceutical companies like it or not, their future in coming decades is tied to both China and India. So, the question is: how should pharmaceutical companies, who want to succeed in both countries in equal measure, craft their operating strategy?

When it comes to crafting a global operating strategy, most pharmaceutical CEOs make two assumptions: *first,* that the central challenge is to strike the right balance between economies of scale and responsiveness to local conditions, and *second*, that the more emphasis they place on scale economies in their worldwide operations, the more global their strategies will be.

These assumptions are inherently limited. The main objective of any global operating strategy must be to manage the large differences that arise at borders, whether those borders are defined geographically or otherwise. Furthermore, assuming that the main tension in global operating strategy is between scale economies and local responsiveness encourages companies to ignore the challenge of cross-border integration – namely, *arbitrage*. Some smart companies (such as GE, Citigroup, Oracle and Microsoft) from other industries have found significant opportunities for value creation in exploiting, rather than simply adjusting to or overcoming, the differences they encounter at the borders of their various markets. As a result, we see value chains of successful companies spanning multiple countries including China and India. It is easy to spot the advantages of treating China and India synergistically and getting the best of both worlds but very few companies from the USA and Europe succeed in leveraging value from both. Based on our experience of working in companies such as Citigroup and Oracle, we developed an operating model that integrates the six levers to capture the opportunities in China and India (see Figure 20).

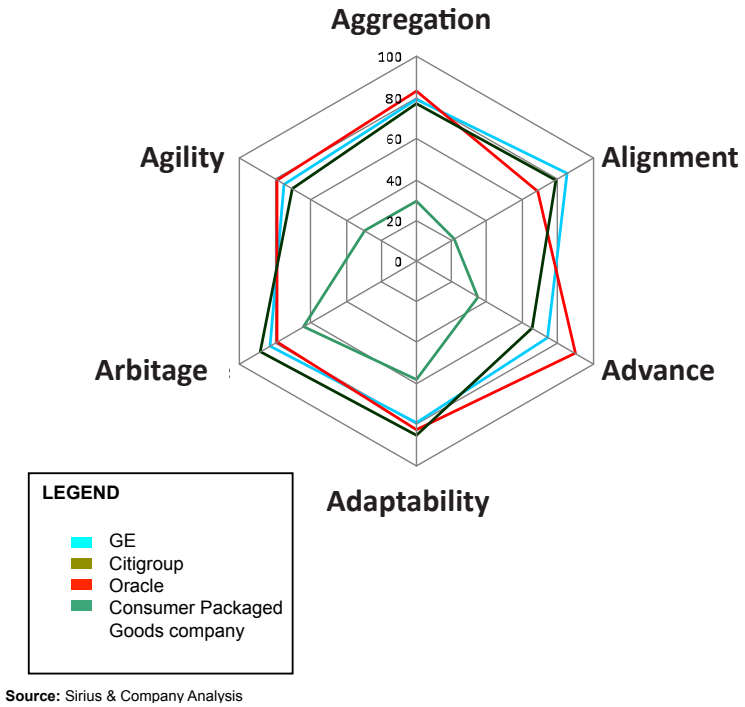
The six A's stand for the six distinct types of operating levers. *Advance* aims to achieve superior performance through higher productivity, innovation, technology,

better education, infrastructure, tenacity, and responsible leadership. *Adaptation* seeks to boost revenues and market share by maximising a company's local relevance. *Alignment* seeks to achieve or exceed mutually agreed and explicitly stated expectations by smart execution and honouring commitments. *Aggregation* attempts to achieve scope and scale economies through standardisation and depth and breadth of skills (i.e., bandwidth of skills). Aggregation has an important role to play in the pharmaceutical industry's future. It will be most useful in the pursuit of the most scientifically innovative drugs. Aggregation requires a degree of scale, which means that established pharmaceutical companies are well positioned to be aggregators. But that will require change. Most major pharmaceutical companies have created their own islands of expertise inside their own corporate boundaries, a deeply problematic practice that probably explains their poor R&D productivity. To realise their potential as aggregators, they will need new internal structures, systems, and processes to connect technical and functional domains of expertise. *Arbitrage* is the exploitation of differences between national, regional and markets, often by locating separate parts of the supply chain in different places—for instance, call centres in India, factories in China, and retail shops in Western Europe and the USA. And, *Agility* is for achieving short-term changes in demand quickly and handling external disruption smoothly.

It's not surprising that multinational pharmaceutical companies find it hard to develop an integrated operating strategy for China and India. But they can learn from successful companies in other industries who navigated this path before. Over the last ten years, we studied 12 companies across the world spanning multiple industry sectors. These companies include: GE, Citigroup, Oracle and a mobile handset manufacturer from the USA; an Anglo-Dutch consumer packaged goods company, five financial services companies from Europe, a bank and electronics manufacturer from Asia-Pacific region. All have operations in both countries (see Figure 21).

However, most of these companies have customised their business models to the local institutional context, which makes it hard for them to generate synergies from their operations in the two countries. For example, the Chinese operations are less transparent than the Indian ones. The opacity has made it harder for Indian subsidiaries to collaborate with their Chinese counterparts. The Indian operations also depend on local suppliers more than the Chinese ones do, since they have operated longer in India

## Success depends on smart execution




**How GE did it**

- The effective way of combining China and India is to focus on their respective strengths - that's exactly what GE Healthcare does. For example, it developed the 719 parts of a high-end Proteus radiology system in a dozen countries. It created the software and the scanner's generator in Bangalore and allocated part of the hardware manufacturing and assembly to Beijing.
- The ability to set up parallel groups of highly skilled engineering talent in both countries raises the efficiency of product development and fits in with GE's competitive culture.
- GE did well in China and India because it tailored its business model to the realities of each market.
- GE also succeeded because it became a good corporate citizen in both countries. Its aircraft engines business has transferred several technologies to China, and its medical diagnostics business is engaged in the debate about health care there.
- In India, GE was one of the pioneers of BPO, the practice that put the country on the world's business map. GE has opened cutting-edge R&D centers in Shanghai and Bangalore.

**Source:** Sirius & Company Analysis

***Figure 21:*** *A scorecard indicating how well companies have succeeded*

than China. However, even in companies that have entered both countries in the last six years, the reliance on local suppliers is 68% in India and 10% in China. Therefore, the Chinese and Indian operations use different business models and generate few synergies. Furthermore, nine of the 12 Chinese operations we studied viewed themselves as independent of their Indian counterparts, which precluded the chances of cooperation. Relatively few China and India country managers report through their hierarchies to a common decision-maker, and companies reward them on the basis of their performance in each country. These organisational factors make it almost impossible for companies to identify opportunities in both China and India that would benefit their strategies.

Another barrier to developing an integrated operating strategy for China and India arises from success. For example, at the mobile handset manufacturer from the USA, one of the most successful investors in China, there is a hotline from the Chinese headquarters to the USA headquarters. Because the mobile handset manufacturer has not focused on India nearly as long, that market is starved for attention (despite the fact India is the fasted growing market for mobile phones). The converse is true of the Anglo-Dutch consumer packaged goods company from Europe - their success in India means that the Indian subsidiary has a direct line to the UK and the Netherlands, while the China operation doesn't enjoy the same privileges. China shines in the mobile handset manufacturer's world from the USA and India sparkles in the eyes of the Anglo-Dutch consumer packaged goods company from Europe. Both companies have neglected one of the two markets and both have achieved less than they could have, and it gets reflected in their performance [8].

It may proved difficult for the mobile handset manufacturer from USA and the Anglo-Dutch consumer packaged goods company from Europe to make the best use of China and India, but it isn't impossible. The coming together of China and India puts at a disadvantage many companies, especially from the USA and Europe that refuse to react to this trend to see them as two unconnected markets instead of preferring one over the other. They will not be able to generate the synergies that their rivals can. If they lose share in those two markets, they are unlikely to remain market leaders for very long. China and India play complementary roles in the global pharmaceutical market. It is their very differences that make the two so powerful as a combined force. In fact, as GE, Citigroup and Oracle show, CEOs of pharmaceutical can learn a great deal from these successful companies operating strategies.

## Improve productivity using selective use of offshore outsourcing and shared services

The pharmaceutical industry is one of the original outsourcers engaged in outsourcing to third party providers from clinical trials and manufacturing to safety monitoring. However, despite the industry's historical relationship and familiarity with outsourcing, subsequent progress has been limited. Today, only a handful of senior executives in pharmaceutical companies ask, "Is outsourcing or offshore outsourcing a strategic management tool?" Yet, the majority of senior executives ask, "Why do we need to offshore business functions to reduce cost since we are the most profitable of all industries?" Both types of question reveal the uncertainty in senior executives' minds and as a consequence, we found that most pharmaceutical companies don't make decisions about outsourcing and offshoring systematically enough despite hiring an army of advisers. They commit at least one or more of the *seven sins* itemised below:-

- *First*, they focus their efforts on choosing providers from their preferred list, deciding on outsourcing model, producing Request For Proposal (RFP), even selecting countries, and cities, as well as on negotiating prices; but they don't spend quality time evaluating the characteristics of the processes they plan to outsource.
- *Second*, they don't take into account all the risks that accompany outsourcing.
- *Third*, they approach outsourcing and offshoring on a project-by-project basis without sufficient consideration of the company's strategic intent.
- *Fourth*, they don't realise that outsourcing is no longer an all-or-nothing choice, and that they have a continuum of options.
- *Fifth*, they pay lack of appropriate attention to provider selection, and often start with a group of existing providers who are not "fit for purpose" for the company's strategic intent.
- *Sixth*, many pharmaceutical outsourcing projects fail in the implementation because of an inadequate governance model and poorly crafted transition plan.
- *Seventh*, many pharmaceutical companies discover their inability to manage new processes and relationships in the implementation stage. Outsourcing draws on a brand-new set of capabilities and skills and requires a brand-new set of people in key management positions. They use "external advisers" to fulfil these key roles to mitigate skills shortage, and this approach fails miserably.

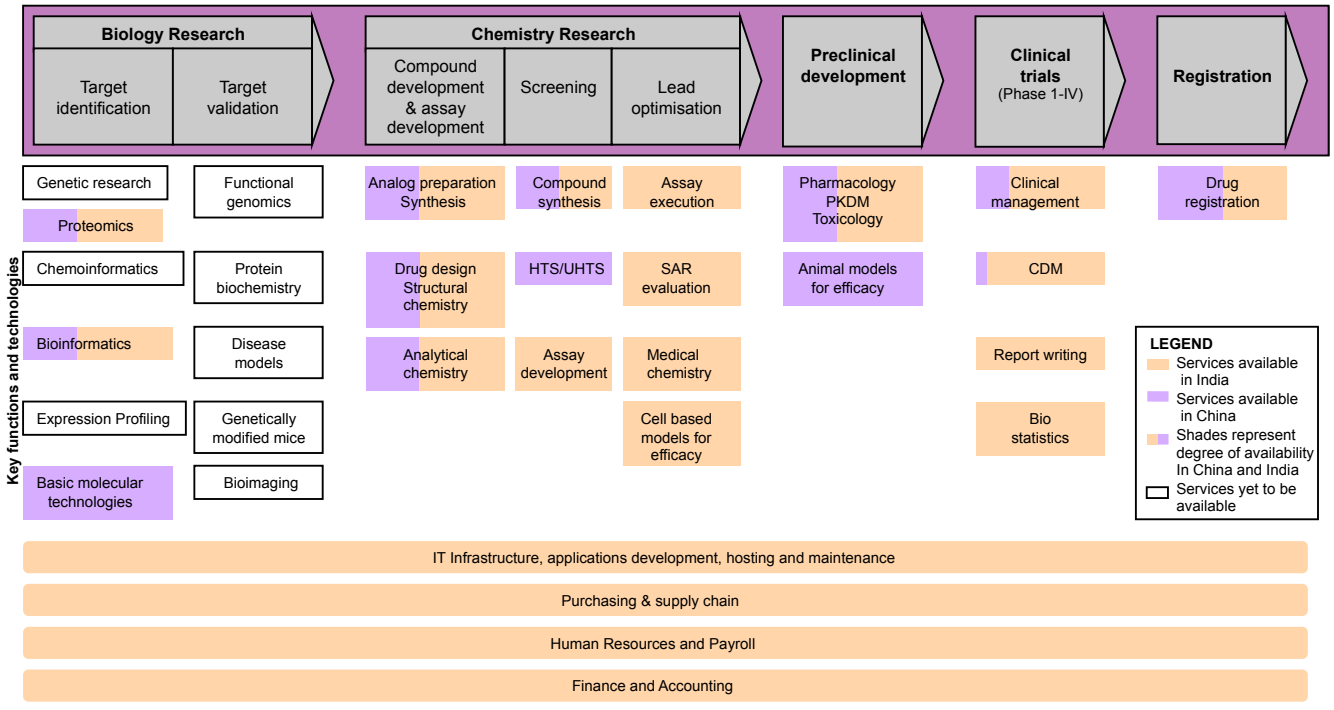
Getting outsourcing and/or offshore outsourcing right is not common in most pharmaceutical companies. Why? Because, for years, outsourcing and offshoring have been just another word for purchasing within the pharmaceutical companies - a financially material, but strategically peripheral corporate function - that is a tactical activity. Now, globalisation, aided by rapid technology innovation, is changing the basis of competition. It's no longer a company's *ownership* of capabilities that matters but rather its ability to *control and make the most of critical capabilities*, whether or not they reside on the company's balance sheet.

Offshore outsourcing is becoming so sophisticated that even core functions like R&D, engineering, drug manufacturing, and marketing can be moved outside. And that, in turn, is changing the way companies think about their organisations, their value chains, and their competitive positions. Forward thinking pharmaceutical companies are making their value chains more elastic and their organisations more agile. With the decline of the vertically integrated business model, offshore outsourcing is evolving into a strategic tool for pharmaceutical CEOs organising and fine-tuning the value chain for their companies. It is, therefore, essential that top pharmaceutical companies rigorously assess each of their functions to determine in which they have sufficient scale and differentiated skills and in which they don't (see Figure 22).

Greater focus on offshore outsourcing can improve a pharmaceutical company's strategic position by reducing costs, streamlining the organisation, bringing in efficiency by standardisation, and improving productivity and quality. Finding more-qualified partners to provide critical functions allows pharmaceutical companies to enhance the core capabilities that drive competitive advantage in their industries.

Only recently has the spotlight turned to labour and intellectual arbitrage and markets as pharmaceutical companies have become aware of the arbitrage and innovation opportunities available through offshoring. However, only a tiny fraction of the top pharmaceutical companies that engage in offshoring appear to think about it strategically. Even when they recognise the significance of offshoring and outsourcing, they merely delegate this strategic activity to purchasing function. Clearer thinking is needed by pharmaceutical CEOs on the strategic choices that are available to them to leverage opportunities and enhance their global performance.

**Offshore outsourcing and shared services opportunities along the R&D Value Chain**




**Source**: Various publications , Sirius & Company Analysis

***Figure 22:*** *Opportunities for outsourcing, offshoring and shared services*

## Manage top talent as CEOs' future depends on them

Despite all that is known about the importance of developing talent, and despite the great sums of money dedicated to systems and processes that support talent management, most pharmaceutical companies still struggle to fill key positions, which put a considerable constraint on their potential to grow. The problem is that, while most pharmaceutical companies have talent processes in place, those practices may have fallen out of sync with what the company needs to grow or expand into new markets. Even if a company's practices and supporting technical systems are robust and up to date, talent management will fail without deep-seated commitment from the CEO. Passion must start at the top and infuse the corporate culture; otherwise, talent management processes can easily deteriorate into bureaucratic routines.

The challenge of filling key positions has, in a sense, crept up on the pharmaceutical industry. Today, demographic shifts along with changing business conditions, such as significant growth in largely unfamiliar markets, like China and India, have combined to produce something of a perfect storm. Top talents needed in the large pharmaceutical companies are not confined only to Boston, San Francisco, London, Manchester and Stockholm, they can be found in Beijing, Bangalore and Shanghai too. And, because of the economic prosperity of China and India, top scientists are reluctant to uproot themselves permanently to Boston, San Francisco, Manchester, London or Stockholm. That is why leadership development in pharmaceutical companies has become a much more strategic process, and faulty or old processes now carry a tangible cost. Some companies, by contrast, face the future with confidence because they don't just manage talent; they build talent factories across the globe. This allows them to develop and retain key employees and fill positions quickly to meet emerging business needs.

## What does this all mean?

No other companies carry the degree of social and humanitarian responsibilities like pharmaceutical companies do. Yet they also carry profit generation responsibility like other successful companies. Striking the right balance to serve the poor in the developing world whilst meeting the expectation of the market and shareholders make pharmaceutical CEOs' jobs harder than most.

It is clear that the job of the pharmaceutical CEOs in the 21st century is far more challenging than it has ever been in the history of their industry. As their business becomes more complex, competitive and global, the temptation to skirt responsibility is enormous. So, the questions are: Will the pharmaceutical CEOs of the 21st century adhere to common standards of governance, ethical practices around the world, serving the underserved, environmental protection and intellectual property rights with same vigor as their pursuit for profit? Will they use their influence to collaborate with policymakers, customers, and society to tackle issues such HIV/AIDS and eradicating malaria, typhoid from the developing world? How will they bring new waves of innovations to fill their pipelines as the industry globalises, and maintain the delicate balance among competing interests within the value chain. Will they be equal to the challenge of managing a global workforce comprising disparate beliefs, cultures and expectations while managing a core purpose? How will they bring life-saving medicines faster to the market? How will they create and manage productive and enduring relationships with their critics? How will they manage and motivate a global workforce whilst taking advantage of lower cost of labour in China, India, Mexico and Brazil? Will their diversification into other areas cure the central challenges facing most large pharmaceutical companies?

The challenges we outlined provide opportunities for renewal and reinvention. Fundamental components of the renewal programme include changing the existing culture and behaviour of people, which starts with instilling new values relevant for a modern and agile business. To improve productivity of R&D and to strengthen pipelines, CEOs will need new approaches to drug development together with leveraging externalisation activities. Most large pharmaceutical companies' operations are monolithic because of successive mergers and acquisitions, and therefore streamlining operations is not going to be easy. One reason many pharmaceutical companies find it hard to mobilise activities from discovery to sale and marketing of their medicines is because of complex and inflexible IT architecture, where reusability is rare. The result is an increasingly complex, non-standard and spaghetti-like architecture littered with incompatible stand-alone applications, operating on multiple software platforms. Moving both their core and non-core activities along the value chain to where tomorrow's markets are going to be will necessitate the standardisation of processes and increase productivity. In any innovation-centric industry, such as the pharmaceutical industry, IT is used to innovate and grow the business, and not just to keep the "lights on". Here, the CEOs need to guide their chief information officers (CIOs) to build agile and services-oriented IT organisanisations,

instead of placing the IT organisations under the chief financial officers (CFOs).

CEOs have long said that people are their companies' most important assets, but making the most of them has acquired a new urgency. Any pharmaceutical company aiming to grow, in particular, to grow on the global stage, has little hope of achieving its goals without the ability to put the right people on the ground, and fast. Pharmaceutical companies apply focus and drive toward capital, IT, equipment, and world-class processes, but in the end, it is the talented people who make it happen. Refreshing and bringing in new talent in every part of the organisation will be one of the top priorities of any pharmaceutical CEO.

The 20th century was shaped by developments in the physical sciences. The foundational ideas of relativity and quantum mechanics were developed in Europe, and advances in our understanding of physics also led to the development of the transistor, the semiconductor and ultimately to the IT explosion that transformed economic life. If the 20th century was defined by developments in the physical sciences, the 21st century will be defined by developments in the life sciences. Lifespans are rising sharply as cures are found for chronic diseases [9]. If pharmaceutical companies are going to be the 21st century organisation preventing and curing the health problems of billions of people around the world whilst delivering consistent year on year profit, CEOs will really need to walk the talk. Although, there is no contradiction in aligning pursuit of profit with the search for solutions to challenges facing pharmaceutical companies in the 21st century, very few pharmaceutical CEOs have yet to venture in that direction. Pharmaceutical companies with the right vision, relevant operating strategy, as we described earlier, and technology to provide medicines and services that address business, humanitarian and other pressing issues will enjoy a competitive advantage. They will not just do well, but outperform their competitors by miles. Responsible pharmaceutical companies with smart business leaders have a vital role in addressing these immense challenges. It will be disappointing if they don't.

## NOTES

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6. *The World Economic Outlook* by the International Monetary Fund, September 2007.
7. *Twenty Hubs and No HQ* by C.K. Prahalad and Hrishi Bhattacharyya, Startegies+Business, Spring 2008.
8. The Anglo-Dutch consumer goods company's new CEO has slimmed down management, cut costs, shed some underperforming assets, and the company has now no English or Dutch representatives among its senior executive team for the first time since it was formed nearly 80 years ago. Today, the consumer goods company's senior executive team is composed of a Frenchman, three Americans, two Indians and a Zimbabwean. Similarly, the mobile handset manufacture from the USA is also in difficult position – its market-share halved in 2007 and the company had to appoint a new CEO. On the other hand, the mobile handset manufacture from the USA had to cut more than 10% of its workforce since 2007 and split its handset business from its network operations. However, splitting business into two may please its shareholder in the short-term, but it does not address the business's core problem: producing desirable phones to win back lost market share from bigger rivals in the growth markets, which it ignored in the past.
9. *America must not surrender its lead in life sciences* by Professor Lawrence Summers, Harvard Business School, Financial Times, 28 January 2007.

About the author

Sukhendu Pal is the CEO and Managing Partner of Sirius & Company.