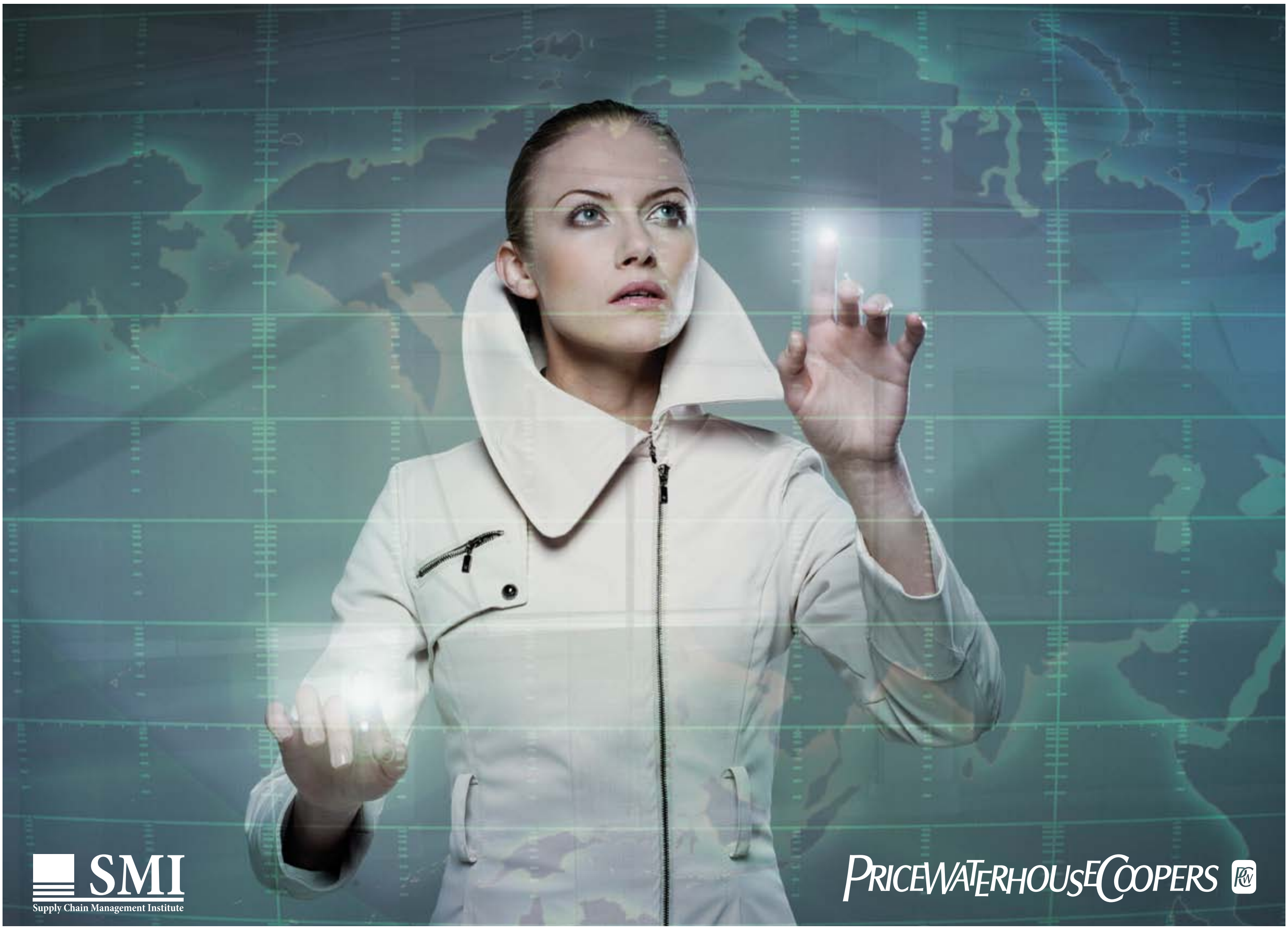
Transportation & Logistics 2030

Volume 3: Emerging Markets – New hubs, new spokes, new industry leaders?



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For more information on the T&L 2030 series or a download of our three T&L 2030 publications, please visit www.tl2030.com.

Welcome

Is it even still possible to speak about ‘emerging’ markets in the logistics sector? Many large logistics service providers report that they already operate in more than 100 countries; the largest express companies list as many as 200 countries or more. And such wide-reaching networks are not a new development – on the contrary, global logistics are as old as global trade itself. Yesterday’s Silk Road has left traces in countless transport connections in the air and by sea, road or rail – and these too are long established. The first express company to operate as a joint venture within China was set up 25 years ago. Today, the world famous refreshing soft drink is available throughout the world, without anyone seriously considering the possibility that insufficient logistics could throw a spanner in the works.

It might almost be possible to believe that state of the art logistics services are uniformly available in all corners of the globe. Take a closer look, though, and significant differences soon become apparent, together with the challenges that global logistics companies will need to face in coming years and decades. Emerging markets will clearly play a central role. But what will the T&L industry in these countries look like in twenty years? Will logistics’ centers of gravity shift eastward? Or southward? What new hubs and spokes will develop in global transportation networks? Who will be the leaders in the logistics industry in emerging markets – the state as owner of railroads and postal companies, ports and airports, airlines and shipping companies? Existing local private companies or new players? Or large multinational corporations from industrialised countries? Will the future belong exclusively to high-tech service offerings, or will simple, reliable services also play a role?

Our third volume of Transportation & Logistics 2030 (T&L 2030) is dedicated to answering these and other questions. Nearly a hundred experts from all over the world took part in our Delphi Survey. We’ve analysed their views, together with professionals from our global PwC network. We’ve also taken a closer look at seven specific emerging markets: Brazil, China, India, Mexico, Russia, South Africa and Turkey. The report will certainly be of interest for readers from other regions of the world though. Who wouldn’t want to learn whether logistics companies from China and its peers will take over the logistics markets of North America and Europe in the foreseeable future?

We hope you will consider T&L 2030 Vol. 3 food for thought and welcome your feedback.

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Foreword

Western industrial, consuming and logistics countries will do much more business with the striving nations of emerging markets than today – and vice versa. Soon, a nice new world will open up unforeseen collaborations between the East and West, North and South. Thanks to the strong development of emerging markets, completely new logistics passageways will appear on our world map: passages between Asia and Africa, between Asia and South America and within Asia. The expected relative weight of the flow of goods between the continents will shift considerably. Logistics companies in developed markets have to be active in developing foresight in order to use the enormous potential of this trend. Hence, they can productively and cooperatively take advantage of the new trade corridors. He, who already has the landslide of the global logistical topography on his display, can take advantage of this megatrend at the right moment: namely now.

Preparation is everything. The better the strategic market and corporate foresight, the safer and greater the subsequent success of logistics service providers and emerging countries. This study operates along these lines of strategic foresight. It gives an overview of the status of emerging markets, as far as what regulation and liberalisation concerns. It describes the new trade corridors, the new flows of goods, the predicted market development for individual logistics products and services and the progress of the competition.

This study focuses on reporting from and out of emerging markets, rather than just about them. Half of the 90 study experts from 28 countries were born in emerging markets and provide their invaluable insider knowledge on the following pages. This knowledge is refined and illustrates country-specific examples in different country sections.

The logistics explosion in the emerging markets will be immense, will elevate the international flows of goods to an unknown level, herald the globalisation programme 2.0 and unite the world under one roof, as seldom before in history. Gigantic quantities of goods will flow between Africa, Asia and South America with the support of North American and Western European means of transportation and logistics services. The world will grow together in a common team effort in a way which sociologists and utopians have only dreamed about. And logistics will be right in the middle of it all – but only if you begin to prepare for this wonderful team effort today.

Dr. Heiko von der Gracht

Director
Center for Futures Studies and Knowledge Management
Supply Chain Management Institute, EBS Business School

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Executive Summary

As the importance of emerging markets continues to increase, what new hubs and spokes will develop in global logistics networks? Where are we likely to see the emergence of new industry leaders, and what strengths will they need to compete in a crowded global marketplace?

Some of the answers can be found by looking at the globe – regions which are able to serve as an economical transit point have an inherent advantage in establishing logistics hubs. In our discussions of the T&L markets in Turkey, Russia and South Africa we look in detail at how each of these countries plans to capitalise on their geographical position, serving as a link between Asia and Europe or as an entry point to Africa.

> New trade corridors between Asia and Africa, Asia and South America and within Asia will re-chart global supply chains. Trade volumes will shift towards emerging markets and least developed countries will take their first steps into the global marketplace.

Demographics are also critical, and here the balance tips strongly towards Asia, notably to China, with the world's largest population and India, with the world's fastest growing populace. China currently holds a strong advantage, with significantly superior infrastructure in place compared to India, and a respectable ranking of #27 on the World Bank's Logistics Performance Index. Seven of the world's twenty largest ports are located in China – and the traffic is not all directed towards North America or Western Europe.

China is also Brazil's largest trading partner and a significant market for many of its emerging Asian neighbors like Malaysia and Indonesia. All of these countries provide sizeable quantities of raw materials to China, which has started trading with some of Africa's least developed countries. While these countries are still economically poor, some are rich in natural resources. The establishment of the relevant trade corridors is already well underway in some cases; in other cases initial investments in infrastructure are just beginning.

As a result of these developments, new trade corridors between Asia and Africa, Asia and South America and within Asia will re-chart global supply chains. Trade volumes will shift towards emerging markets and least developed countries will take their first steps into the global marketplace.

This is one of the key findings of the 3rd volume of our *Transportation & Logistics 2030* series of publications. Our analysis of the T&L industry in emerging countries also takes a close look at regulation, industry consolidation and competition.

Changing regulation will have a major impact

One important step towards developed market structures can be seen in the move from state-owned enterprises to private companies. This trend is encouraged by the requirements of the International Monetary Fund and the World Bank. Both organisations require emerging markets to undergo structural adjustment, including privatisation, as a condition of receiving new loans. The emerging markets vary dramatically in the degree to which they have begun the transition to privatisation. Some have only seen very minimal privatisation activities, others have taken tentative first steps and a few are well along the privatisation journey. China's emergence as a global economic player has been accompanied by a major internal transformation. The economy has shifted from complete reliance on state-owned and collective enterprises to a mixed economy where private enterprise plays an important role and the number of state-owned enterprises has declined significantly. Privatisation has helped spur China's dramatic growth.

Turkey has also launched an all-embracing privatisation programme. While the results of the country's first wave of privatisation (1985-1998) were somewhat lackluster, the government has renewed its focus and established a number of goals for privatisation, including the provision of a legal and structural environment for free enterprise to operate and the transfer of privatisation revenues to major infrastructure projects. The T&L industry is receiving particular attention, with a number of projects already underway or in planning.

> Privatisation has already helped fire up China's economic growth and other countries like Turkey are also looking to benefit from increased efficiency and better access to capital.

Privatisation will continue to be critical in these and other emerging markets. In some of these the government's role will undergo a major shift, from active market player to watchdog. This oversight functionality will remain vital to ensure fair and sustainable competition, though. Emerging markets are evolving towards more transparency, so there will still be a strong need for governments to regulate and provide process assurance.

The government may play an important role in a number of other ways as well. For many emerging markets, free trade zones will help spur economic growth and logistics services providers will need to adjust their service offerings to serve these trade hot spots.

Changing CEP market offers bright spots

The courier, express and parcel (CEP) market is one of the strongest growing sectors of the T&L industry in a number of emerging markets. It's also an area where changes in demographics and consumer behaviours could have the most significant impact. Logistics providers with a service portfolio characterised by low-cost and low-service will have to improve the scope of services in order to maintain competitiveness.

Turkey provides a good example. Changing consumer behaviours such as lower levels of reliance on the national post, growing e-commerce, urbanisation and a young population should drive significant growth levels in CEP. The Turkish textile and clothing industry already relies heavily on international CEP services. As a result of these services, samples of ready-to-wear items and new designs can be delivered quickly to potential customers in Europe, avoiding delays in the race against competitors.

This example shows some of the promise the CEP can hold for both domestic and foreign logistics service providers. However, to be successful in the long term, logistics service providers will need to observe changing customer needs carefully and provide the required products and services.

Many paths lead to the emerging markets and M&A opportunities will abound

Emerging countries have long been target markets of leading multinational logistics operators. Our research suggests that additional multinational logistics companies will have successfully entered the domestic logistics markets in emerging markets by 2030. This means that multinationals will not only operate in emerging markets for advantages in international trade, they will also engage and operate in the domestic logistics markets.

The number of logistics service providers in BRIC countries already exceeds the tens of thousands mark. The spread ranges from one-man businesses to large companies with several thousand employees, with the resulting differences in competitiveness, financial resources and offered services. The larger and financially-better equipped logistics companies will target growth by looking for suitable mergers and acquisitions (M&A). Consolidation of the logistics markets in emerging countries will be the consequence and is also a natural part of the process of industry maturation. Perhaps more importantly, it is a necessary step towards achieving economies of scale in an industry which is as strongly fragmented as the logistics industry in emerging countries.

In recent years a number of the pioneering joint ventures and other arrangements have led to acquisitions by major players. Our quarterly PwC M&A analyses suggest that consolidation activities have already been taking place during the past two years in a number of emerging markets and are on the rise. The relative interest in Asia and Oceania targets has grown significantly compared with deals targeting entities in other regions.

Emerging market logistics players won't rule the world; nor will they need to

PwC's macroeconomics group anticipates ever-growing numbers of multinational companies entering the world stage from emerging markets. We also believe that many of these companies will look to grow their businesses in developed markets, rather than looking to other emerging markets.

> Emerging market logistics players are unlikely to dominate developed markets; instead they will build competencies and market share in more attractive home and emerging markets.

The picture for the T&L industry looks somewhat different, though. While China is already making serious inroads into the Fortune Global 500, only one transportation company, China Railways, makes the list. Emerging market players do not yet represent major players on the world stage in the T&L industry, unlike in other sectors such as consumer goods or electronics. Very few are looking beyond their own local markets, or at most those of other emerging markets (usually neighbours). This situation looks unlikely to change in the next twenty years.

At the same time, there is good reason to argue that logistics companies need to look no further than their own domestic markets and those of their emerging neighbours to find growth. After all, their markets are generally very far from saturated and growing at double-digit rates – a major contrast from the mature markets of the developed nations, where growth expectations generally hover around a much more modest 5%. Companies in emerging markets which focus on their home markets and actively search for opportunities to enlarge their logistics capabilities will maintain and improve their competitiveness, providing ample room for highly attractive growth. And while it looks unlikely that the T&L industry's centre of gravity will shift to emerging markets, leading local players will become increasingly important as partners and collaborators for multinationals from around the world.

Future prospects

The world's supply networks are changing. New trade corridors are already becoming visible and those companies and countries able to capitalise on them will benefit most from the evolution of global trade.

As emerging markets continue to grow, there will be a host of opportunities for logistics service providers of all sizes. Some of these will stem from the sharing of a whole range of good practices that are commonly used in developed markets, but not yet fully implemented in many emerging markets. These include strategies for managing people, such as diversity management, managerial accounting systems including the use of KPIs, sharing lessons learned during past liberalisation processes and developing robust corporate social responsibility practices and reporting. Others may involve emerging markets providers who are able to act as advisors to those entering their marketplace, to help scout out suitable acquisition targets, as just one example.

Most importantly, though, logistics companies will need to develop or fine-tune their own specific strategies for operating in diverse emerging markets. They will need to understand how government regulation in each market affects them, be it changing customs procedures, the establishment of free trade zones, incentives for foreign direct investment or new sustainability requirements. This may mean adapting their service portfolio not once, but many times, as demand patterns change and emerging markets develop.

Note on methodology

This study is based on a multifaceted analysis of the importance of emerging markets for the Transportation & Logistics industry. Our methodology draws upon a rigorous mix of desk research and the results of a Delphi survey among 90 selected subject matter experts from 28 countries around the world. Nearly half (49%) of the survey participants were from emerging countries. We also drew strongly upon the knowledge and experience of PwC's own T&L leaders in seven key emerging markets.

Findings of Delphi Survey

Section 1

Regulation sets the scene for investment and growth

The establishment of free trade zones and resulting increases in foreign direct investment will lead to above-average growth of the transportation and logistics industry in emerging markets.

Liberalised conditions for cross-border trade, as signalled by free trade agreements, have been an important factor in the development of international trade flows. Europe pioneered such agreements, starting with the formation of the European Economic Community (EEC) in the 1950s and the European Free Trade Association (EFTA) in 1960. The Americas followed suit in the 1976-1990 period, with the signing of the North American Free Trade Agreement (NAFTA) by Canada, Mexico and the United States, and the Mercado Comum do Sul, Common Market of the South, or Mercosur, agreement between Brazil, Argentina, Paraguay, Uruguay and Venezuela. In the 1990s, the Former Soviet bloc nations forged another wave of agreements. The Association of Southeast Asian Nations (ASEAN), originally including Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand, established the ASEAN Free Trade Area (AFTA) in 1992. According to the World Trade Institute, 570 free trade arrangements have been signed worldwide, of which 370 were still in force in 2007.

In 2010 China and ASEAN established the world's third largest free-trade area after the European Union (EU) and the NAFTA.[1] When the ASEAN-China Free Trade Agreement (ACFTA) comes into effect it will cover 1.9 billion consumers and an estimated trade volume of US$1.2 trillion, with a combined GDP of US$6 trillion.[2]

Such agreements are critical, however within regions, additional measures have proven to be important in encouraging cross-border trade and capital flows. Many governments have established so-called special economic zones or free trade zones. Governments typically subsidise companies which relocate inside the zones, making them particularly attractive for manufacturing and exporting companies.[3] Companies who move to free trade zones are rewarded with tax and customs exemptions and in some cases with streamlined procedures which reduce red tape. Some free trade zones are also specifically designed to serve the needs of particular industries, such as chemicals or pharmaceuticals. Often such areas create economies of scale in terms of transport, as the presence of multiple producers facilitates better capacity utilisation. Free trade zones may also feature superior infrastructure, such as excellent connections to export facilities and ports.

The main objective of free trade zones is to attract foreign direct investments by facilitating market entry for foreign investors. Foreign direct investment inflows may provide capital either directly or through other related enterprises. Foreign direct investment represents the most important source of capital for emerging markets.[4] Free trade zones stimulate foreign direct investment inflows to a country, since companies looking to invest will benefit from better accessibility and reduced transport cost. Historically, the establishment of free trade zones has fostered the industrialisation and economic growth of countries like Taiwan, South Korea and Singapore, some of today's most important industrialised economies.

In the emerging markets, the number of free trade zones and similar arrangements is expanding rapidly. Currently 600 special economic zones are in the approval process in India. Free trade zones have also been established in Brazil, China, Mexico, Russia, South Africa, Turkey and additional emerging markets.

Free trade zones alone are no guarantee for obtaining higher growth rates or attracting foreign direct investments however. Certain factors significantly increase the likelihood of success, e.g. quality infrastructure, a supportive government, lighter regulation, strong export focus and large warehousing and handling capacities.[5] Several of these elements relate directly to the transportation and logistics (T&L) industry, so we asked our Delphi panel to evaluate the future influences and effects of free trade zones on the logistics industry in emerging markets. The experts show a strong consensus around the thesis "2030: The establishment of free trade zones has fostered strong economic growth in emerging markets." They further attribute a high probability to this development. The Delphi experts argue that free trade zones will facilitate opening markets for international trading partners, providing benefits especially for those economies that are strong in export. In addition, free trade zones can support further globalisation if strategically located inventory buffers are established, allowing exporters to respond with quicker lead times to demand from the destinations which they serve.

Developed countries are the main suppliers of foreign direct investment to emerging countries, accounting for 84% of global outflows.[6] The share of developing and transition economies as recipients to foreign direct investment inflows rose from 26% in 2007 to 31% in 2009. Additionally, this grouping attracted more than 50% of greenfield projects in 2009. Double-digit growth trends helped emerging markets increase their attractiveness for investors. A closer look at the amount of foreign direct investment flowing into emerging markets suggests that the establishment of free trade zones may also have been a factor contributing to the recent upswing. Selected emerging markets which have been successful in the establishment of free trade zones are also receiving large shares of foreign direct investment. The seven largest exporters among the emerging markets are also among the top ten recipients of foreign direct investment flows.[7]

Emerging nations are also reaching outwards. In recent years, foreign direct investment outflows from emerging market multinational enterprises (firms investing in both industrialised and emerging economies) have shown dynamic growth rates of roughly 82% on average since 2003.[8] The largest share of outward foreign direct investments (40%) came from the BRIC countries. China and some other emerging countries outside of BRIC are increasingly making investments within other emerging markets. In contrast Brazil, India and recently also Russia have shown a preference towards investing in developed countries, in particular in the US and Western Europe.

The Delphi panel also evaluated whether the T&L industry would become a focus area for (foreign direct) investment in the emerging markets in 2030, a trend they see as very likely. They point out that as logistics costs, as a proportion of total costs, continue to rise, investments in improving efficiency will continue to gain momentum. Some also stress that increasing global focus on the environmental impact of T&L services will trigger investments in 'greener' technologies and solutions. Such investments may not reach their full potential, though. Some experts note that foreign direct investments to the T&L industry would be even higher, if the sector was not constrained by unclear and opaque regulations.

Emerging markets continue to face challenges around law enforcement; social networks and personal contacts play an important role to cope with this situation.

According to the Logistics Performance Index (LPI), an index capturing the most important aspects of the current logistics environment compiled by the World Bank, the BRIC countries and other more advanced emerging markets like Mexico still lack efficient means of law enforcement, such as effective customs offices and procedures, compared to their industrialised counterparts.[9]

In some cases, customs clearance times account for a notable time period in cross-border transport, exemplarily, customs clearance in Brazil takes twice as long as it does in the United States.[10]

Insufficient transparency in the border process is also a major concern due to missing or inefficient collaboration among all border management agencies. The introduction of modern approaches to regulatory compliance will be especially important to improve the situation. Surveys among logistics operators found out that they have little confidence of an independent review of decisions made by a customs officer in some countries. Further, emerging markets lack staff for public enforcement of regulation designed to enhance the security of shipments. Some emerging markets are taking steps – China and Russia have ratified the UN Convention against Corruption (UNCAC), while Brazil and South Africa have signed the OECD Antibribery Convention. India, though, has not yet ratified either convention.[12]

Emerging markets are not the only ones facing corruption; the Bribe Payers Index found out that corruption also occurs in industrialised countries, those which have effective law enforcement and long traditions of integrity in public services. However, the occurrence of bribery in emerging markets with indifferent law enforcement and long traditions of corrupt bureaucracies is dramatically higher.[13] The study also posits a link between a cultural heritage of social networks and personal contacts and higher rates of corruption. Informal agreements, exchange of services and personal connections are used more often in emerging markets for business affairs than in developed countries. Such informal practices, in China known as 'Guanxi' allow actors to make use of social networks based on kinship, friendship and other trust-centred relationships, avoiding the involvement of economic and political regimes.

We asked the experts participating in our Delphi survey if they think that by 2030 the influence of social networks and personal contacts will have increased and indeed become the key determinants of supply chains structures in emerging markets (see thesis three on page 57). Our panel rated this possibility as somewhat probable. Their comments suggest that while most experts are not calling the continuing existence of such networks into question, they do not see social networks as key determinants of supply chain structures.

Nonetheless, the panellists' comments suggest that views of social networks and personal contacts are changing. Most no longer see them as primarily representing illegal business relationships, but rather are moving to a more neutral view which sees such systems as expanded personal connections. The panellists' views vary significantly as to the importance of those informal systems, though, and whether or not they will become a key determinant for future supply chains. Some Delphi experts think that social networks will evolve, as will new technologies which enhance their usefulness. However they will not become the key determinants of supply chain. Instead, factors such as 'efficiency', 'cost effectiveness' and 'sustainable and reliable performance' are cited as most critical. Other panellists point out positive aspects of personal networks on supply chains, arguing that they facilitate finding new customers and suppliers and enhance cooperation. One comment even argues that as long as inefficient bureaucracy and political intervention impede the logistics performance in emerging markets, social networks may be a legitimate solution to improve the situation.

We also asked our Delphi panel if emerging markets will continue to suffer from inadequately designed mechanisms of law enforcement (e.g. customs, capital collection etc.) until 2030 (see thesis one page 57). This thesis received a fairly high probability rating, but the lowest desirability score of all theses. Still, while the panellists believe mechanisms for law enforcement will remain inadequate, some see light at the end of the tunnel. As one panellist puts it: "The imperfect legal regime in emerging markets impacts logistics operators, but the situation is improving."

As markets evolve from emerging to developed, law enforcement generally increases. In China the logistics sector is being promoted as an important growth area. Policymakers are correspondingly motivated to strengthen law enforcement mechanisms. The impact on the logistics industry should be considerable, as border clearances become quicker, more timely and more efficient and administrative collaboration improves.

The meaning of social networks and personal contacts is also evolving. In the future, market access will be determined by strict regulations and business relations are likely to be based more firmly on contracts, e.g. service-level agreements, rather than dependent upon person to person contacts. Corporate players are also likely to institute programmes to prevent and detect corrupt practices, as legislative, regulatory and law enforcement bodies demand greater accountability.

The degree and pace of privatisation of state-owned transportation and logistics organisations will strongly differ among emerging countries; while governments in some cases become watchdogs, they are still the game makers in others.

One important step towards developed market structures can be seen in the move from state-owned enterprises (SOE) to private companies. This trend is encouraged by the requirements of the International Monetary Fund and the World Bank. Both organisations require emerging markets to undergo structural adjustment as a condition of receiving new loans. Structural adjustment consists of policy changes to ensure that emerging markets become more market-oriented, including internal changes such as deregulation and privatisation.[14] Many emerging markets' governments have launched specific programmes in order to trigger the process of privatisation.

China's emergence as a global economic player has been accompanied by a major internal transformation. The economy has shifted from complete reliance on state-owned and collective enterprises to a mixed economy where private enterprises play an important role. This remarkable transformation has been accomplished through the dynamic growth of the private sector and more recently through privatisation. The Chinese term 'Gaizhi', which means 'transforming the system', led in many cases to a full privatisation. Between 1996 and 2003 the number of state-owned enterprises in the industrial sector of China declined to 34,000 or around a third of the number present in 1996. Half of the decline is credited to privatisation.[15]

Turkey has also launched an all-embracing privatisation programme. In the initial stages of a large privatisation programme between 1985 and 1998, only a small fraction (8.3%) of large state-owned enterprises was privatised. The generated net cash flow was deemed to be less than satisfactory and the impact on the stock market and the economy was not very impressive. In recent years, Turkey has emphasised the acceleration of its programme, especially in the logistics industry, in order to realise the full effects. The government's goals for the programme include the provision of a legal and structural environment for free enterprise to operate, a decrease in the financial burden on the state represented by SOEs and the transfer of privatisation revenues to major infrastructure projects.[16] Turkey is also looking to expand and deepen the existing capital market by promoting wider share ownership.[17] Plans for 2010 include 8 highways and 2 Bosporus bridges.[18]

“Some emerging markets have already taken first steps towards privatising parts of their T&L sectors. Others are likely to follow, both in the hopes of increased efficiency and to increase potential access to investment capital.”

Andrea Pal
Chief Financial Officer
Northern Capital Gateway Ltd.
Pulkovo Airport Sankt Petersburg

There is no set path followed by privatisation around the world; different sub-sectors are affected in each country. In many cases, though, transformation in the T&L industry begins with the privatisation of transport infrastructure and the postal sector. How far will the reach of privatisation be? Will the process of privatisation reduce the role of governments from major players to a ‘watchdog’ in emerging markets? Our Delphi panel rates this event as very likely, but stresses the importance of the oversight functionality. Emerging markets are evolving towards more transparency, so there will still be a strong need for governments to regulate and provide process assurance, effectively shifting their role to one of monitoring market players‘ compliance, instead of participating actively in the market. Our panellists note that logistics operators in emerging markets express approval of this role. They expect more effective regulations, as well as the abolition of monopolistic practices and thereby free competition among companies.

Still, statements of our experts also highlight the fact that a consistent overarching trend towards privatisation cannot be observed. Some emerging countries, e.g. Brazil and Turkey, experienced the first wave of privatisation in the 1990s and are fairly far along the path, whereas, other countries have not yet started the privatisation process. Other experts note that a few countries are actually moving towards more governmental control. In Algeria, for example, the government announced several economic policies in 2008 and 2009 that strengthen Algerian Government control over foreign investment projects. The Complementary Finance Law issued in 2009 imposed further restrictions on foreign investment, import companies and domestic consumer credit.[19]

In coming years the gap between emerging and developed countries in terms of trade power will narrow. Nevertheless, the pace and intensity of privatisation will differ tremendously between individual emerging countries. Logistics service providers in emerging markets will need to prepare for new market structures. New market structures and processes will be established and market dynamics will significantly change, with more active private players.

Section 2

New transport corridors span the globe

Important sales and supply markets evolve in which emerging and least developed countries play a major role. New transport corridors will emerge, especially between Asia and Africa, Asia and South America as well as Intra-Asian.

Over the last 20 years, economic and political power has been shifted towards emerging economies. A number of emerging countries have become centres of strong growth, increasing their shares of global capital significantly, which has made them major players in regional and global business. The enormous pace of development in emerging markets, double-digit GDP growth, growing middle-classes and thereby consumer demand, are slowly lifting them up to the standard of developed countries. At the same time, some former competitive advantages, e.g. low labour costs, are decreasing. In order to stay competitive and keep production costs at a low level, as well as satisfy the domestic market, emerging countries have begun to source in neighbouring countries, other emerging countries or least developed countries. Taking a closer look at China, for example, it has become an increasingly important end-market for the rest of Asia. Imports from developing neighbours are driven in part by domestic demand; China's customs data indicates that about half of its imports are for domestic uses. This is especially the case for raw materials such as fuel from Indonesia and timber from Malaysia and Indonesia. As a result, China has been the highest growth market for most Asian exporters over the past decade, with its share in total exports of these economies more than doubled.[20] In order to satisfy growing demand, new trading relations are emerging and new transport corridors will establish. Increases in transport volumes will also require suitable transport infrastructure.

The development of new trade corridors is already underway to support Intra-Asian trade and increasing trade flows between Asia and other regions such as Africa and Latin America. These reflect increasing transport flows among emerging markets in general.

This development is illustrated by Figure 1 where global trade volumes in 2000 are compared to those in 2008, based on WTO figures. The size of the arrows in both figures represents the cash value of trade volume between different regions, including North America, South and Central America, Europe, Africa, Commonwealth of Independent States (CIS), Middle East and Asia. The illustration is limited to those trade volumes showing an annual increase of 20% or more between 2000 and 2008. Consequently, 'traditional trade routes' such as North America to Europe (6% annual growth) or from Asia to Europe (13% annual growth) are not displayed in the graphic, although they represent the largest flows measured in terms of absolute value.

"Transport operators in the emerging markets have a critical role to play in the evolution of the world economy. As they expand to new markets and strengthen the transport links between their domestic markets and the rest of the world, they will provide the infrastructure for radically changing trading networks."

Libano Barroso
Chief Executive Officer
TAM Airlines

While the WTO does not provide any future projections for trade volumes, the analysis clearly displays those trade routes that have experienced the highest growth rates. Many of these look likely to sustain their growth potential in the future. Transport flows originating in Asia grew tremendously during the eight year period. Trade volumes from Asia to CIS measured in billion US$ rose annually by 42% and from Asia to Africa by 23% respectively. Another transport corridor showing a dramatic increase is the 'South-South connection' between South and Central America and Africa. While transport flows were only of minor importance in 2000 (not illustrated), the world map shows thin arrows connecting both continents in 2008. Annual trade from South and Central America to Africa rose by 25%, while trade from Africa to South and Central America was up 22%. South and Central America also dramatically increased exports to the CIS, with the flow of goods up by 49%. This figure shows the dramatic process of transformation already underway and help to identify important new transport corridors.

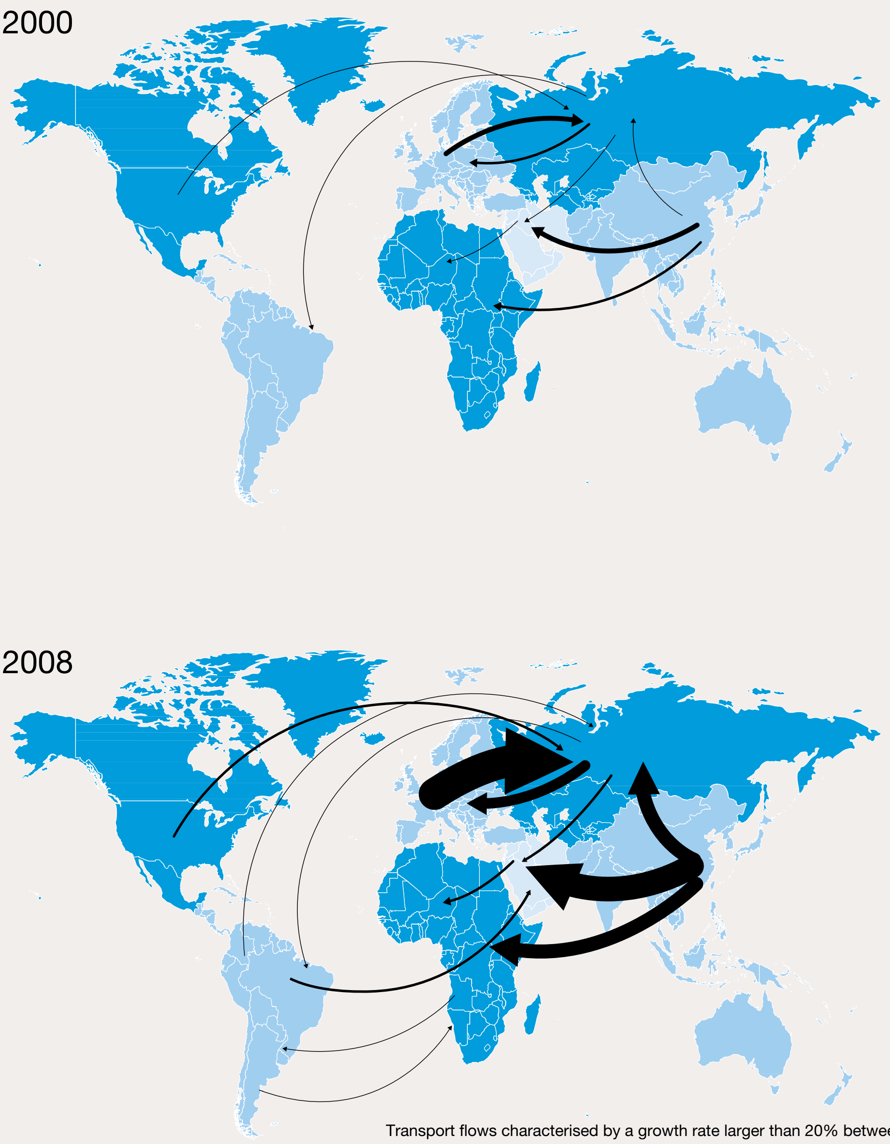


Figure 1
Exports of manufactures of regions by destination in US$ bn in 2000 and 2008

Transport flows characterised by a growth rate larger than 20% between 2000 and 2008 are displayed, not by largest dollar volumes. The thickness of the arrows represents the value of exports of manufactures. Analysed regions include: Africa, Asia, Commonwealth of Independent States (CIS), Europe, Middle East, North America and South and Central America.

Source: WTO, International Trade Statistics 2009, PwC Analysis[21]

In 2009, China became Brazil‘s largest export destination.[22] In 2010 Turkey and Russia also signed a number of agreements to deepen their economic relations. One important point involves the use of domestic currencies between Turkey and Russia, bypassing the US dollar’s dominance.[23] In doing so, both countries reflect their trust in the stability of their own currency and their willingness to maximise bilateral trade. Such new trading relations will result in higher transport volumes on new routes and diminished volume on traditional routes.

Emerging market economies are also beginning to take a significant role in investing in the world‘s least developed countries (LDC). China is investing significant amounts in Africa, home to the largest number of LDCs. According to the World Bank, China provided US$7 bn in 2006 to sub-Saharan Africa and a further US$4.5 bn in 2007 towards infrastructure projects.[24] During the economic crisis, many foreign investors withdrew capital investment from the continent, however China’s resource investments and further commitments related to the extractive industries sector have been ongoing.[25] Africa’s low level of transport infrastructure imposes logistical challenges and constrains the ability to transport goods and resources between neighbouring countries, not to mention the difficulty of establishing reliable transport routes to coastal regions for international trade. Noteworthy recipients of Chinese loans and grants for commercially driven projects include Angola, Ethiopia, Nigeria and Sudan among 35 other African countries.[26]

Logistics companies are responding to new trading and investment patterns and adjusting their schedules accordingly. APL has reduced capacity within its Asia-Europe routes by approximately 25%. The CKYH Alliance among the Asian shipping companies Cosco, K-Line, Yang Ming and Hanjin Shipping reduced their capacity between the US and Europe by 18%.[27] Shifts in movement of freight around the globe are not restricted to ocean travel; air freight connections have also shifted towards emerging markets such as CIS and Asia.[28]

Our Delphi experts are well aware of such trends. They evaluated the thesis “2030: Global trade flows have shifted such that new transportation corridors between emerging countries and least developed countries have been established”, as highly probable. As a consequence, many of the new trade flows will bypass developed countries. The experts see the impact of this shift as significant and positive – the thesis received the highest ranking for both impact and desirability. Panellists noted that this type of shift will affect talent development, planning and capacity cycles, as well as infrastructure development. The main trade corridors will relocate the growth regions for transportation and logistics operators from Asia to Africa, from South America to Asia and on the Asian continent. Indeed, other sources estimate that trade centred around Asia will contribute almost 40% of global trade by 2028.[29] Asia and the emerging markets represent evolving economic powerhouses which will drive and shape the direction and future of global transport corridors.

Many logistics companies are looking to respond to the development of new transport corridors, however the sheer geographic size of emerging markets and the multitude of cultures, attitudes and languages require a significant investment. Further, companies must be willing to adapt to the local markets where they wish to expand. Logistics service providers will need to take a targeted approach, which will require taking an active part in the design process of new transport corridors, developing adequate structures and pricing systems and initiating and building logistics clusters.

It‘s all about money — the importance of barter trade diminishes

Barter trade is not a new kind of trading system, on the contrary; it’s been used since the beginning of humankind. In recent years it has been used by private companies as well as national government authorities. Barter describes the direct exchange of goods and services, or both, between two parties without a cash transaction. It is one form of 'counter trade' which also covers the exchange of obligations or time-deferred purchase of a specific good. Counter or barter trade is primarily used when companies – especially developed country multi-national companies (MNCs) – export to countries whose currency is not freely convertible, whose markets are deemed too small and risky and who may lack the foreign exchange reserves required to purchase the imports. Estimations about the global volume of such trading contracts differ greatly. Sources argue between 8% and 20% of world trade is bartered.[30] Some advocates suggest that a return to barter system would mean that goods and services are exchanged like for like, rather than on inflated or biased monetary 'valuations'. Many barter organisations like the Barter Systems Inc. or Canadian Barter System even claim their systems ease trade and make it far easier to create and maintain a customer base.[31]

As the WTO's recent World Trade Report pointed out, bilateral long-term supply contracts still exist, especially for natural resources involving Russia or countries in Asia and Africa.[32] For example, the Chinese International Fund is financing infrastructure investments worth US$7 bn in Guinea in exchange for access to its natural resources.[33] Especially in Africa, China and India are investing heavily in the continent's infrastructure in exchange for access to resources from the local extractive industry.[34] Transport infrastructure investments accomplished via counter-trade deals are also taking place between emerging markets. For example the ministry of transport in Malaysia, on behalf of the government of Malaysia, agreed to offer the construction of a railway link in Tanjung Pelepas, Johor to the Indian Railway Company. This rail construction project was valued at US$120 m. In exchange for the construction activities, Malaysia supplied palm oil with the same value equivalent of the contract.[35]

In order to evaluate the future importance of such arrangements, we asked our Delphi panel to evaluate the probability of the thesis "2030: Major infrastructure projects between emerging markets and least developed countries are primarily realised via barter trade (i.e. swaps of goods and services rather than cash)." Views amongst the panellists regarding the further development of barter-trade were mixed and no general consensus was reached. Some experts argue that investment commitments in exchange for fuel, energy and commodities are likely to persist until 2030, particularly in countries with minimal foreign reserves. Another expert stresses that the realisation of major infrastructure projects via barter trade depends on major transformations in multi-lateral agreement mechanisms.

As the harmonisation of global economic systems advances, swaps of goods and services rather than cash will become uncommon, but won't disappear. In fact, a business opportunity for logistics service providers specialised in barter transactions may emerge. Emerging countries MNCs may have strategic reasons to execute barter trade, particularly in LDCs, where they may be able to gain access to natural resources.

Section 3

Industry consolidation accelerates and service levels improve

After a period of tremendous market growth and continuous market entrance of multinational logistics service providers, the transportation & logistics industry in emerging markets will face a period of fierce competition followed by consolidation.

The rise of emerging markets has not gone unnoticed by multinational companies in developed countries. Multinational logistics service providers are already continuously entering these markets. The first moves to emerging markets were generally seen after individual countries underwent liberalisation or opened their markets to foreign investors. According to their own statements, the largest multinational logistics companies as DHL, FedEx, UPS or TNT operate in approximately 200-220 countries worldwide, including virtually every emerging market.

While the economic crisis weakened the majority of developed countries, emerging markets generally suffered much less. The growth gap can also be clearly seen by observing standard indices. In the first half of 2009, the Financial Times Stock Exchange (FTSE) 'International Emerging Markets Index' - providing an overview about the performance of more than 7000 stocks from emerging markets - was up 41.1%, whereas the FTSE 'All World Developed Markets Index' was up only 7.2%.[36] This impressive performance underlines the attractiveness and market opportunities offered by emerging markets. As a result, some medium-sized logistics service providers also entered these markets, setting aside their concerns about market and financial instability as well as economic uncertainty. For example, in 2010 the German medium-sized logistics company Hellmann Logistics founded a joint venture with India-based Calipar (Parekh Group), who selected the free trade zone of Dubai World Central (DWC) as the location for their newly dedicated Healthcare Hub.[37]

However, multinationals entering and operating in emerging markets also need to adapt their businesses models and organisations to domestic market players and other stakeholders, such as the government. Partnerships, collaborations or joint ventures with domestic logistics companies are seen as one way to approach regional requirements. In China, for example, UPS, TNT, Fedex and DHL have chosen to cooperate with domestic logistics companies in order to penetrate the sector. FedEx has set up a cooperation with Datian Corporation and UPS has a cooperation agreement with Sinotrans.[38] Further, DHL and Sinotrans have created a joint venture. The Belgian freight forwarder ABX Logistics also created a joint venture with Penske Logistics in Brazil in 2007. The resulting company, ABX-Penske Air & Sea is positioned to serve the growing maturity of Latin American markets and the demand for complementary logistics expertise.[39]

"Logistics service providers who follow the device 'share & collaborate' will benefit regardless of being a domestic logistics service provider or a multinational company in emerging markets."

Ye Weilong
Managing Director
COSCO Logistics Company Ltd.

More multinational logistics companies will have successfully entered the domestic logistics market in emerging markets by 2030. This means that multinationals will not only operate in emerging markets for advantages in international trade, they will also engage and operate in the domestic logistics market in emerging countries. We asked our Delphi experts how they see the future presence of MNCs in emerging markets and raised the thesis if in 2030 “Multinational logistics service providers have entered the domestic logistics market in emerging countries.” The experts rated this development as highly probable, assigning it the highest probability rating among all 16 theses. Experts point out that the rising number of market players, both international and domestic, will lead to increased competition and likely to consolidation of the logistics industry in some emerging countries. The Delphi panellists further discuss appropriate modes of market entry and highlight the relevance of joint ventures and other collaborative forms. Such partnerships are often beneficial for both multinationals as well as domestic companies in emerging markets. In this win-win situation, multinationals profit from accessing valuable knowledge from their local partners, while domestic logistics service providers will benefit from technology transfer and expertise brought into their market.

Some phases of industry development already seen in developed markets are likely to be repeated in emerging markets. Looking back several years, the mature logistics industry in developed countries went through a consolidation phase which had a major impact on the industry landscape. Tibbett & Britten was acquired by Exel Logistics in August, 2004, and Deutsche Post World Net took over Exel in December 2005. Bax Global was taken over by Deutsche Bahn, parent company of Schenker, in November 2005 while A. P. Møller acquired P&O Nedlloyd in February 2006 and TNT Logistics was sold to Apollo Management L. P. in November 2006 and transformed to CEVA Logistics; later the US-based Eagle Global Logistics was integrated.[40]

The number of logistics service providers in BRIC countries currently exceeds the tens of thousands mark.[41] The spread ranges from one-man businesses to large companies with several thousand employees. Consequently, differences in competitiveness, financial resources and offered services can be observed. Small logistics companies with limited capital resources will aim to grow organically, while larger and financially-better equipped logistics companies will target growth by looking for suitable mergers and acquisitions (M&A).[42] Consolidation of the logistics markets in emerging countries will be the consequence.[43] The number of cooperation agreements or joint ventures is also likely to increase, some of which may eventually lead to further M&A. As we already noted, after China’s entrance in the WTO and subsequent liberalisation, the market was completely open for foreign investors. Multinational logistics service providers responded by buying out established joint venture partners. FedEx bought the joint venture that was set up with Datian Corporation for US$400 m and UPS paid US$100 m to take over some operations from cooperation agreement partners. Sinotrans and TNT purchased Huayu Logistics Corporation.[44]

Our quarterly PwC M&A analyses suggest that consolidation activities are already taking place in a number of emerging markets. The relative interest in Asia and Oceania targets (when deals are measured by target region) has grown significantly compared with deals targeting entities in other regions. Asia and Oceania targets accounted for 69% of deal volume announced in the second quarter of 2010, compared with 49% of volume announced in 2009.[45] The rise in deals for Asia and Oceania targets has been driven by an increase in local-market transactions within China and India, many of which involved the shipping and passenger air transportation modes. This has been supported by higher economic and traffic growth rates in many nations within the Asia and Oceania region. For example, the International Monetary Fund estimates that expected real growth in gross domestic product over the next five years in both developing Asia and newly industrialised Asian economies will surpass the average growth rates within advanced economies. This relatively high level of economic activity should continue to encourage deal making by parties in this region.

Comparable observations can be made in Brazil. While the transport sector was strongly fragmented in the 1990s, it has already become quite consolidated. Multinational (primarily European) logistics service providers have been the drivers for this development.[46]

Our Delphi panel assessed the projection that by 2030 “The logistics industry in emerging countries has undergone a strong process of consolidation” and assigned a probability of more than 66% to this scenario. They argue that consolidation is a natural part of the maturation of an industry sector. Furthermore, the experts assert that consolidation is a necessary step towards achieving economies of scale in an industry which is as strongly fragmented as the logistics industry in emerging countries. Nevertheless, they also observe forces which could deter consolidation: socio-political instabilities in some emerging countries may complicate consolidation activities and state-owned companies have powerful positions in a number of emerging countries and may leverage their powerful position to decelerate consolidation waves.

Irrespective of the legal form used in emerging markets, logistics service providers entering new markets should adapt company structures and their operations to local peculiarities. A strong local presence and the development of customised logistics business models, rather than simply transferring established standard procedures, are a necessity for success in upcoming markets.

The logistics service industry in emerging markets will increase its level of professionalism, partly driven by strong commitment, technology and know-how transfer of multinationals in their markets.

Logistics processes in developed countries have been optimised and improved constantly in the past. Consequently, many transportation, handling and warehousing processes have become highly automated. In contrast, emerging countries are frequently characterised by very low labour costs and low levels of automation. Especially in the field of logistics, a large portion of logistics processes in emerging markets are conducted manually.

In order to analyse the extent to which the automation levels in logistics processes will increase, we asked our expert panel to assess the projection that by 2030 "Domestic logistics service providers in emerging markets have significantly increased the level of automation in their logistics processes." The participants rate significant improvements in the use of automation in logistics processes as highly probable. Nevertheless, they argue that there are some factors which may put the brakes on the process of enhancing automation logistics processes in emerging countries. As long as labour costs are quite low, investments in technologies which allow increased automation do not pay off fast enough. One expert also notes that some shippers may not try to push automation too far in order to preserve employment levels.

As economic prosperity increases, customers will become more demanding in terms of quality and price. While logistics service providers in emerging markets frequently have limited their range of products to basic services like conventional transport in the past, suppliers of such a constricted service portfolio may find it increasingly difficult to satisfy future customer demands. Manufacturing companies in emerging markets will seek new opportunities to increase margins, become more efficient and to focus on core competencies. As a result, the demand for value-added logistics and third party logistics (3PL) services is expected to increase.

In China, transport operators still struggle to provide shippers with integrated contract logistics. Offering value-added services within the country remains a challenge, even for those with the most sophisticated networks and resources.[47] At the same time, though, the market for 3PL services exhibited the highest growth rates in the logistics industry in recent years and is likely to continue booming – so the payoff is significant for those companies that are able to overcome the hurdles.[48] Likewise, the supply of higher value-added services is considered to represent one of the strongest growth opportunities in the Indian logistics market.[49]

Our expert panel sees logistics companies as up to the challenges posed by offering value-added services. They evaluated the projection that by 2030 "Logistics service providers in emerging markets have strongly increased their depth of value-added services, e.g. offering value-added services as packaging, labelling and mounting" as highly probable. Such a shift is seen to have a strong impact on the industry, as the increase in the depth of added-value service offerings signifies an improvement of service level, quality and talent management. Further, it offers sustainable growth opportunities, higher profit margins and the opportunity to become internationally competitive. Notwithstanding, not every logistics service provider in emerging countries will be able to increase its range of value-added service offerings, due to financial restrictions or lack of capabilities.

Multinationals entering the domestic logistics markets in emerging countries will accelerate the increase in professionalism of the logistics industry. Through cooperation, joint ventures or by following the lead of competitors who have established such practices, logistics service providers in emerging markets will increase their level of automation and implement a broader range of value-added services.

Section 4

Fierce competition at home and abroad

Logistics service providers from emerging markets will not gain significant market share in developed countries, even low-tech logistics solutions are not perceived as a viable route to win market share.

Within the last five years, the number of Fortune Global 500 companies based in BRIC countries has more than doubled, going up from 27 in 2005 to 67 in 2010. All the BRIC countries as well as Turkey, Mexico and other emerging markets are currently represented in the Fortune Global 500 list. According to a PwC analysis, the largest number of MNCs headquartered in emerging markets has come from China in the past, while India is expected to produce the most new multinational companies in the coming years. By 2024, India is expected to produce over 20% more new multinationals than China. These new MNCs will not limit their scope of activities to other emerging countries. Instead, many will penetrate developed markets directly, offering not only tangible products but also business services.[50]

In the logistics industry, the development of multinationals from emerging markets seems less promising. China is positioned number three in Fortune's ranking of countries, but contributes just one transportation company, China Railways, a state-owned transport organisation operating in the domestic market and representing a share of 0.25% of the total revenues of all Fortune Global 500 companies. For comparison, Germany has a smaller number of companies in the ranking, but 3 of them are T&L companies: Deutsche Post DHL, Deutsche Lufthansa and Deutsche Bahn, who all operate in international transportation and logistics markets and represent a revenue share of 0.7%. Another analysis reveals that among the top twenty multinational 3PLs, only one emerging market player is ranked, the Chinese state-owned enterprise Sinotrans (13rd).[51]

T&L companies from emerging countries have focused their attention primarily on their domestic markets and this is unlikely to change. We asked the Delphi panel to assess the projection that by 2030 "Logistics service providers from emerging countries have gained significant market share in developed countries". The panel experts do not believe that the logistics industry in developed countries will be target for logistics service providers from emerging markets. Given that the emerging countries' own local logistics markets exhibit much higher growth rates than those in developed countries, logistics service providers from these strong growing markets may have little incentive to enter mature, competitive and saturated logistics markets. To give an example, growth rates of the European logistics market are considered to range around 5% while most of the emerging markets included in this study promise double-digit growth rates.[52] Nevertheless, some experts point out that logistics companies from emerging countries will become more flexible concerning the scope and location of their operations. As pointed out in chapter 3, logistics companies from emerging and developed countries will increasingly work in collaborative partnerships such as joint ventures. In such cases both parties might also extend their activities into the domestic markets of their business partners.

"As emerging market economies grow, new trade lanes emerge – many of them Intra-Asian ones or between Asia and Middle East. If you want to share in this dynamic and grow with it, you need to complement global reach with local business expertise – be it your own or that of local partners."

Dr. Frank Appel
Chief Executive Officer
Deutsche Post DHL

Emerging countries will be hotspots of competition between logistics service providers from around the world.

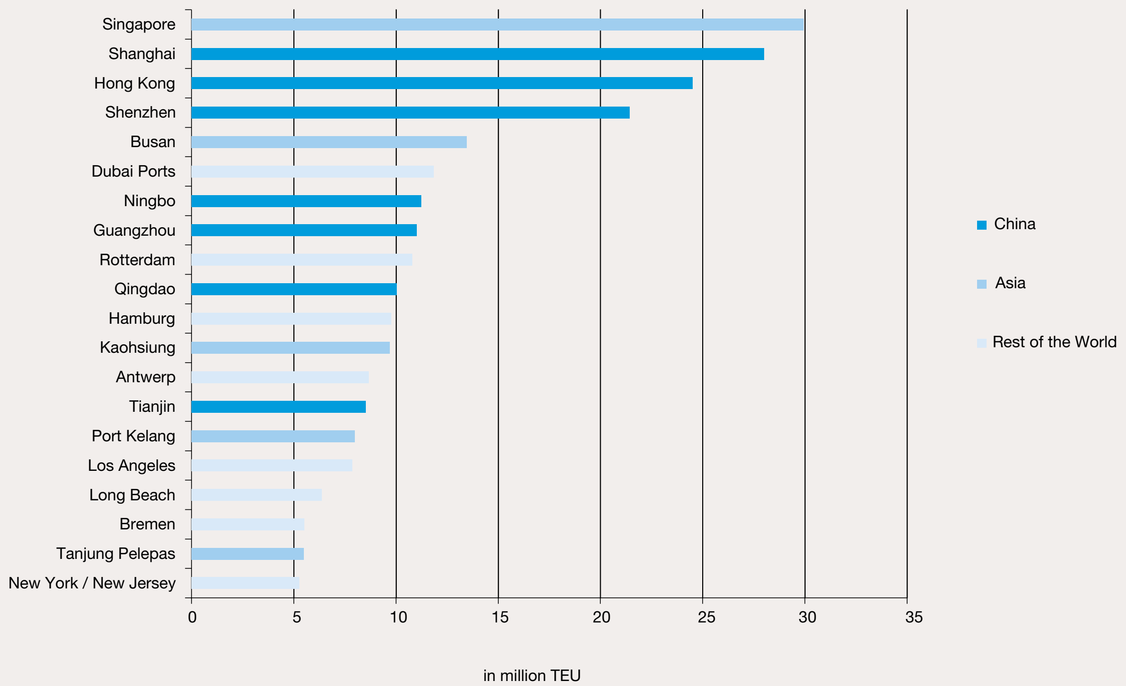
Multinational logistics service providers from emerging markets will not enter developed markets on a grand scale. Only a few 'shining stars' are likely to develop the potential to do so.

Notwithstanding, will we see particularly successful or innovative logistics services from emerging markets entering developed markets? – In 2008, Tata Motors launched the new Tata Nano, a revolutionary low-tech automobile costing only 100,000 Indian rupees, approximately US$ 2,180. In 2009, the Tata Nano won the Frost & Sullivan Innovation Award for its outstanding innovation and ability "to think of better product designs and increase the performance boundaries of their products while working within an unforgiving budgetary constraint."[53] Tata's success with the Nano is prompting other OEMs to think about enlarging their product portfolio by developing their own low tech, low cost car.[54]

Emerging markets have also developed some innovative solutions in the logistics industry. For example, the low-tech logistics network of dabbawallas in India shows a better performance than some sophisticated Western logistics networks.[55] The dabbawallas, a workforce group of approximately five thousand people, deliver nearly two hundred thousand home-cooked meals to workplaces around Mumbai each day. Using the system of reverse logistics, they also collect the empty tins after lunch and return them home. No databases, software or barcode scanners are used, yet the error rates of delivery are extremely low.[56]

We asked the Delphi panelists to evaluate the thesis "2030: Low-tech logistics solutions from emerging markets have flooded the markets in developed countries." According to the experts, this projection is improbable, since emerging countries will increasingly aim to benefit from advancements in technology and IT and thus move from low-tech to high-tech services. Instead of searching for low-tech and low-cost logistics services, customers in developed markets have a strong preference for 'high-tech' logistics services and they seek for more advanced and innovative products. In addition, the experts point out that low-tech logistics are tightly connected to labour-intensive service. Providing similar low-tech services in a profitable way would be much more difficult in developed countries with higher salary levels. Some experts even argue that only those logistics service providers who offer high-tech logistics services will survive in the long-term.

Figure 2
World Port ranking in container traffic in 2008



Source: Institute of Shipping Economics and Logistics[59]

Logistics service providers from developed countries will heavily engage in emerging markets. However, emerging markets will not become the new centres of gravity in logistics as regards standard setting, innovation and technology transfer.

The so-called Westline theory describes the move of the centres of trade and exchange of goods over time.[57] Over 5000 years ago, commercial centres of shipping started to follow a path westward, starting from Lebanon, to the Greek mainland, over to Europe and then to North America. In the 20th century, a giant leap took the centre of trade towards Japan, South Korea and China where economic centres of shipping can already be observed today.

Looking at future transport routes, transport volumes and the required infrastructure to handle them, e.g. ports, China sets the benchmark. As can be seen in Figure 2, seven of the twenty most important hubs are located in China and almost half of the ports are located in Asia. Countries such as Thailand, the Philippines or Malaysia are also positioning themselves to become future logistics hubs by investing strongly in their transport infrastructure capacities. Thailand, Malaysia and the Philippines are allocating intensive resources to upgrade their infrastructure, enhance their competencies and attract international integrated logistics service providers. Likewise, Taiwan has provided a blueprint for how to develop into a global logistics centre.[58] Certainly, there will be massive shifts of logistics operations to Asia and other upcoming regions.

But will emerging markets become the new centres of gravity in transportation and logistics in regards to standard setting, innovation and technology transfer? Will innovation come from or will innovation be brought to emerging countries? Where will standards be set? Will the headquarters of globally leading logistics companies be located in emerging markets? Or will they be served through subsidiaries of global players?

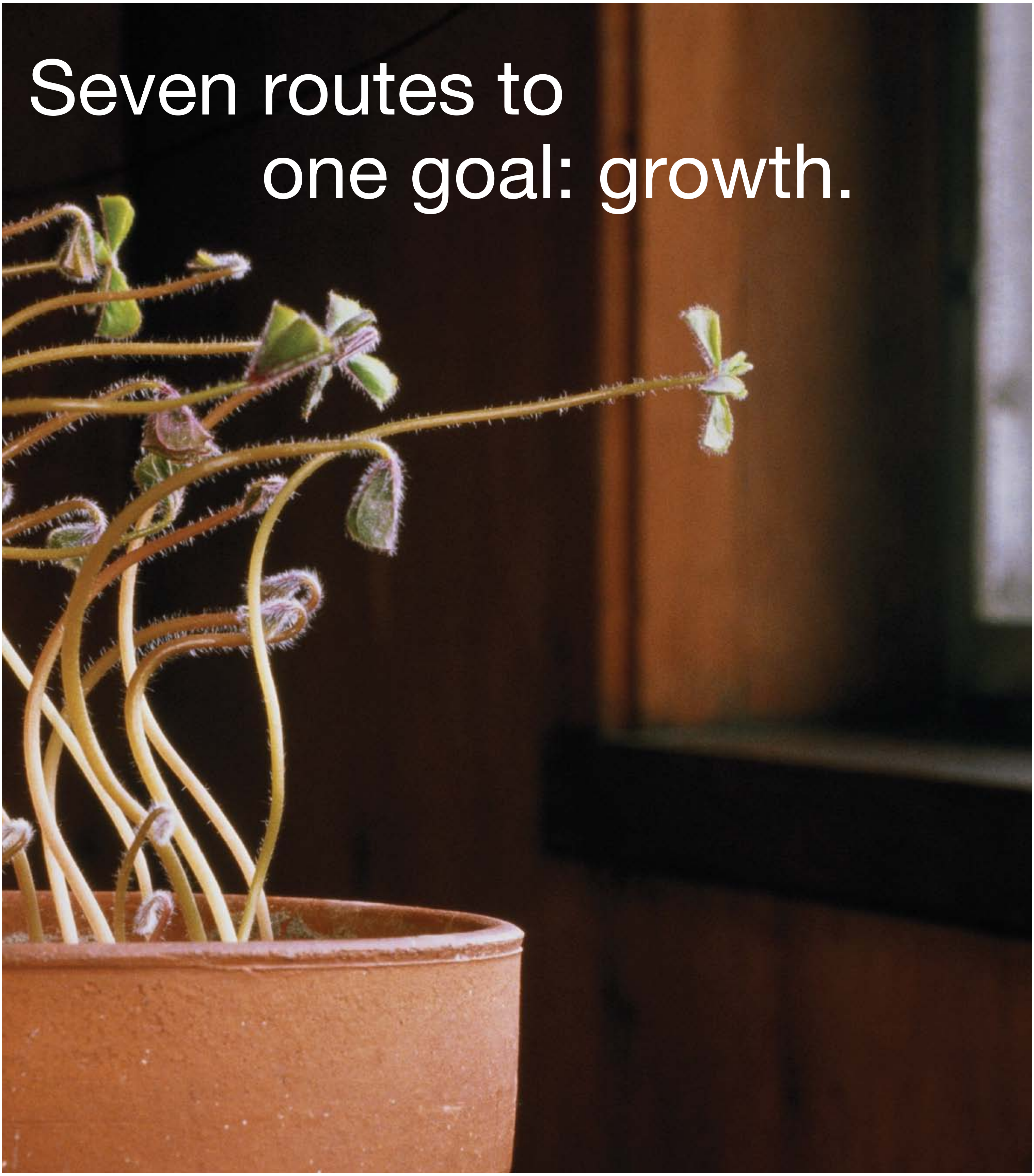
Emerging countries have not yet proved to be the source for far-reaching logistics innovation. A wide range of innovations in logistics have originated from the US, including the container, radio-frequency identification (RFID), warehouse management technologies including automated storage and retrieval systems (AS/RS) and GPS technology.[60, 61, 62, 63] The term 'Internet of things' or 'Ambient Intelligence' is increasingly being driven forward in Europe. It describes the vision of a decentralised, autonomous organisation of intelligent logistics objects in service-oriented environments. Logistics data would be stored on RFID tags attached to the goods to be conveyed, which means all required information for logistics decision-making is 'on the ground'. Consequently, objects themselves will direct their own path through transportation nets.[64] These and other developments reflect the dominance of developed markets over innovation to date.

Most international logistics standards have been set by cross-border cooperations. Logistics operators already apply several standards and norms in supply chain management, e.g. batch management, palette dimensions, electronic data interchange with clients, RFID, packaging etc. The majority of standards have been developed by the International Organisation for Standardisation (ISO), a conglomerate of 164 national standardisation offices worldwide.

The organisation's members are divided into the three categories 'Member bodies', 'Correspondent members' and 'Subscriber members'. While member bodies are entitled to participate and have full voting rights in any committee of ISO, the latter two do not actively take part in ISO's policy work. The number of member bodies from emerging countries has constantly been increasing since 2005 and it can be assumed that emerging countries' influences on standard setting are going to increase in the future. This will help them to benefit from the transfer of technology that standards make possible, adapt products and services to global requirement and demonstrate their compliance with world market needs.[65] Regarding RFID standards, the EPC Global Incorporation developed standards and set up standard setting processes. The EPC is a cooperation of the European Article Numbering Association and the Universal Code Council in the United States.[66] In food logistics, international logistics standards as the Hazard Analysis and Critical Control Point concepts (HACCP concepts) were developed by Codex, a cooperation of the World Health Organisation and the Food and Agriculture Organisation of the United Nations.[67] Given the multinational character of most standard-setting initiatives, it is generally not possible to credit the origin of standards and norms to emerging or developed countries – rather, they generally emerge as a collaborative effort between a wide range of involved parties.

We asked our Delphi experts to assess the projection that by 2030 "The centres of gravity in transportation and logistics (e.g. innovations, technology, headquarters and standards) have shifted to emerging markets." They give this scenario a rather uncertain rating, assigning it an average probability of 53%. A number of experts argue that 2030 is too early to expect such a shift. According to the experts, this is likely to take a much longer time, since the status of technology and automation standards still incorporate room for improvement in emerging markets. Also, some imagine that new centres of gravity in emerging markets could complement existing institutions, rather than displacing them.

With the exception of Sinotrans (China), all of the top twenty multinational third party logistics providers are headquartered in industrialised countries.[68] Almost all of them are active in several emerging countries. They dominate and control much of the global transportation and logistics industry and are likely to keep their leading position. The best strategy for many logistics service providers from emerging markets will therefore be to focus on their more attractive home markets and seize opportunities to enhance their service level and logistics capabilities.


Seven routes to
one goal: growth.

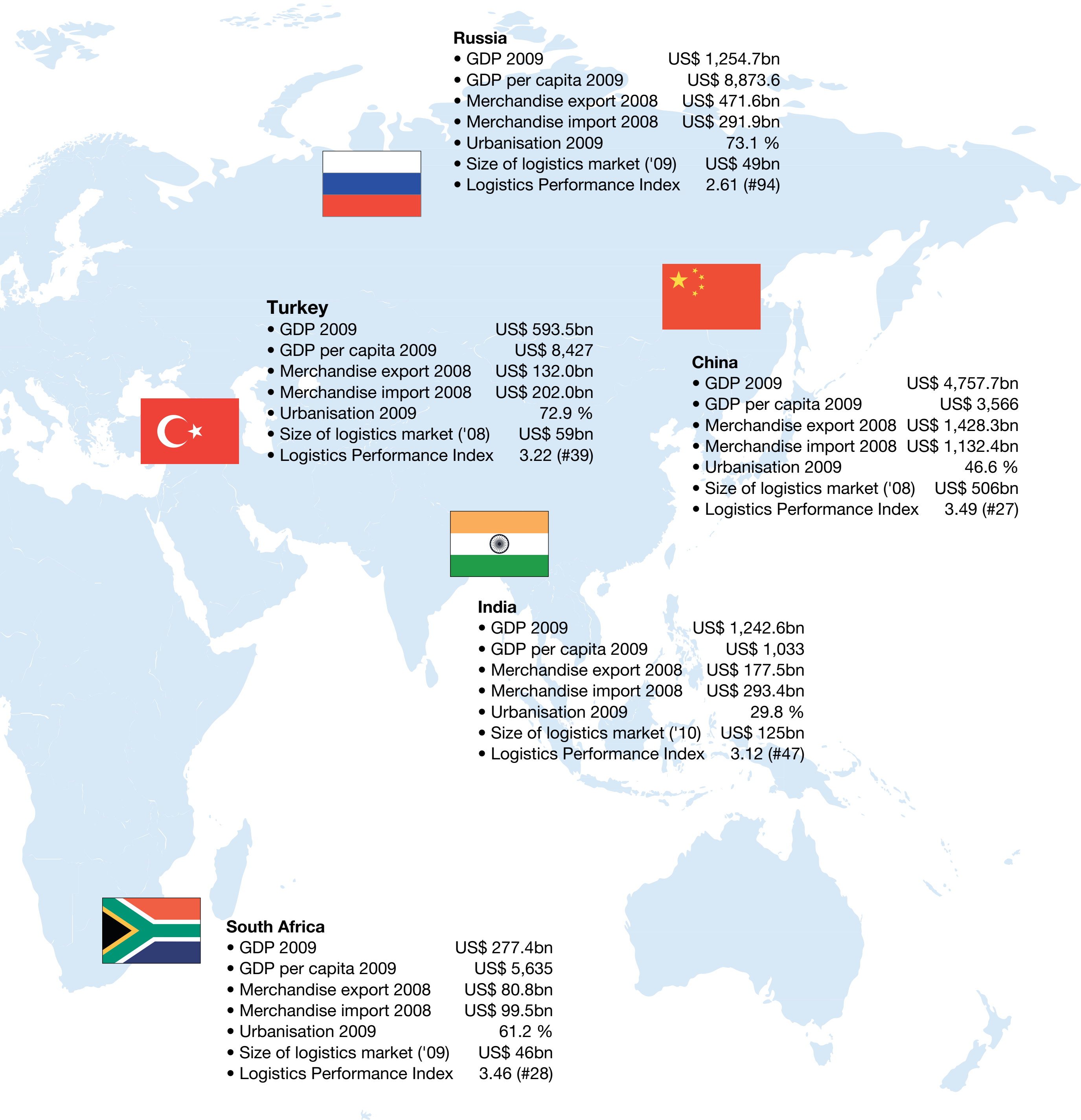
Seven routes to one goal: growth.

Mexico

• GDP 2009	US$ 866.3bn
• GDP per capita 2009	US$ 8,040
• Merchandise export 2008	US$ 291.7bn
• Merchandise import 2008	US$ 323.2bn
• Urbanisation 2009	77.5 %
• Size of logistics market ('03)	US$ 50bn
• Logistics Performance Index	3.05 (#50)

Brazil

• GDP 2009	US$ 1,481.5bn
• GDP per capita 2009	US$ 7,737
• Merchandise export 2008	US$ 197.9bn
• Merchandise import 2008	US$ 182.4bn
• Urbanisation 2009	85.4 %
• Size of logistics market ('10)	US$ 150bn
• Logistics Performance Index	3.20 (#41)



Russia

• GDP 2009	US$ 1,254.7bn
• GDP per capita 2009	US$ 8,873.6
• Merchandise export 2008	US$ 471.6bn
• Merchandise import 2008	US$ 291.9bn
• Urbanisation 2009	73.1 %
• Size of logistics market ('09)	US$ 49bn
• Logistics Performance Index	2.61 (#94)

Turkey

• GDP 2009	US$ 593.5bn
• GDP per capita 2009	US$ 8,427
• Merchandise export 2008	US$ 132.0bn
• Merchandise import 2008	US$ 202.0bn
• Urbanisation 2009	72.9 %
• Size of logistics market ('08)	US$ 59bn
• Logistics Performance Index	3.22 (#39)

China

• GDP 2009	US$ 4,757.7bn
• GDP per capita 2009	US$ 3,566
• Merchandise export 2008	US$ 1,428.3bn
• Merchandise import 2008	US$ 1,132.4bn
• Urbanisation 2009	46.6 %
• Size of logistics market ('08)	US$ 506bn
• Logistics Performance Index	3.49 (#27)

India

• GDP 2009	US$ 1,242.6bn
• GDP per capita 2009	US$ 1,033
• Merchandise export 2008	US$ 177.5bn
• Merchandise import 2008	US$ 293.4bn
• Urbanisation 2009	29.8 %
• Size of logistics market ('10)	US$ 125bn
• Logistics Performance Index	3.12 (#47)

South Africa

• GDP 2009	US$ 277.4bn
• GDP per capita 2009	US$ 5,635
• Merchandise export 2008	US$ 80.8bn
• Merchandise import 2008	US$ 99.5bn
• Urbanisation 2009	61.2 %
• Size of logistics market ('09)	US$ 46bn
• Logistics Performance Index	3.46 (#28)

Brazil, China, India, Mexico, South Africa, Turkey - all 'emerging', but with unique fundamentals for growth in logistics.

A multitude of groupings of countries that are regarded as 'emerging markets' exists, prepared by institutions like Dow Jones, Financial Times Stock Exchange Group or Morgan Stanley Capital International.[69,70] According to these, the number of emerging markets varies between 21 and 35; other reports analyse more than 50 separate markets. There is no one definition or set of criteria for 'emerging' markets, however there are some commonalities. Generally, these are countries where business activities or populations are in the process of rapid growth and where industrialisation is occurring.

However, 'emerging' doesn't equal 'emerging'. Emerging countries differ significantly from each other with regard to the size of the economy, the political and regulatory framework, the geographic location, the structure of the population and many other macro-economic factors. These determinants form the basis for domestic and international trade and are critical for the logistics industry.

In order to provide a thorough sense of how emerging countries are evolving, we take a closer look at individual economies, using the overall analysis undertaken in the previous chapters as a starting point. We chose seven emerging markets: Brazil, Russia, India, China, Mexico, Turkey and South Africa. The first four, often referred to as the BRIC countries, represent the largest emerging economies and are foreseen to overtake some of today's leading industrialised economies over the coming decades. Their importance for the global logistics industry today and in future is beyond question. Mexico, Turkey and South Africa likewise are among the group of well-advanced emerging countries. In terms of international trade and exchange of goods, each of them represents an important link between different regions of the world: Mexico links North and South America, Turkey bridges Europe and the Middle East and South Africa is a key point of entry to the African continent, especially from Asia and the Americas.

On the previous page, we have provided an overview of some key indicators for these 7 countries which vividly illustrates how diverse they are with regard to their economies and logistics industries. The Chinese economy, measured by its GDP, is about four times bigger than those of India or Russia and about 17 times bigger than the South African economy; the same is true for China's import and export volume. Still, these levels are fairly low when seen in relation to China's vast population – China's GDP per capita is the second lowest in this peer group. Lower per capita GDP seems to correlate with a lower level of urbanisation. India is the only country lagging behind China in terms of GDP per capita and exhibits an even lower level of urbanisation. In contrast to this, some of the smaller economies show significantly higher GDP per capita and rates of urbanisation, especially Brazil, Russia, Turkey and Mexico. Urbanisation levels have a significant impact on logistics structures, given that greater concentrations of population in urban centres facilitate centralised distribution strategies for manufacturers.

We analysed the World Bank's 'Logistics Performance Index' (LPI) which summarises the performance of countries in six areas that capture the most important aspects of the current logistics environment: Customs, Infrastructure, International shipments, Logistics competence, Tracking & Tracing and Timeliness. The LPI uses standard statistical techniques to aggregate data from interviews with nearly 1,000 logistics professionals from international logistics companies into a single indicator.

According to the LPI, China leads our group of 7 regarding overall logistics performance, followed by South Africa. China is ranked 27th among the 155 countries covered by LPI, placing it higher than many developed countries listed in the index. China scores higher on the quality of its transport infrastructure than any of the other six countries in our focus. South Africa, ranked 28th, takes the lead in the competence and quality of logistics services, as well as the ability to track and trace consignments.

These facts and figures characterise the situation today. Precise projections of future growth levels are difficult to make. The economic crisis of 2009 has taught us that the accuracy of econometric forecasts can be severely undermined by unexpected external shocks and such forecasts may have to be adjusted significantly.

The following country chapters discuss the key logistics issues and future challenges in each of the 7 selected emerging countries. We worked with industry leaders in our global network, who drew upon their insights into local markets, their experience with transportation and logistics clients and their familiarity with national legislation and regulation in order to identify and prioritise the key logistics trends and issues on their countries and offer insights into future developments. The analysis draw upon the results of selected Delphi theses where they proved applicable and offer a number of recommendations for companies operating in their markets – or thinking about doing so.

The choices for more detailed discussion spanned the entire range of our Delphi theses. Our teams from Brazil, Russia and India focus particular attention on the development and future of free trade zones or special economic zones in their regions, while the importance of foreign direct investment and its future outlook is a key concern for China, India and Brazil. Foreign direct investment is closely linked to the presence of multinational logistics players and their future in India, Russia and Mexico provides food for thought. Privatisation was also a hot topic, with India and Turkey paying especially close attention. In Turkey we also examine the country's future growth prospects, with the courier, express and parcel services (CEP) market receiving particular attention – an attribute it shares with China.

Turkey's growth is related in part to its geographic location which serves as an important trade corridor between Europe and the Middle East. Given Asia's increasing economic might, exemplified by rapid expansion in India and China, trade corridors between the region and other parts of the world continue to increase in importance. Both Russia and South Africa expect to benefit from the growth of transport corridors to Asia.

Brazil

The establishment of free trade zones in Brazil has fostered strong economic growth, as these have realised above national average growth and accelerated transport flows in the designated regions. Still untapped potential for further growth is provided by the Mercosur.

Our overall Delphi survey findings suggest that free trade zones lead to above-average growth in emerging markets. They are attractive for international trading partners and investors and have been implemented successfully in different emerging markets such as China, Mexico or Russia.

Brazil has already implemented several free trade zones. The creation of the free trade zone in Manaus in the State of Amazonas (Zona Franca de Manaus e Amazonia Ocidental) is a real success story about fostering economic growth in the Amazon region. Imported foreign goods are tax free, provided they are consumed within the zone or are exported abroad. These fiscal benefits also apply to certain specific areas of the Western Amazon region, which cover the states of Acre, Amazonas, Rondônia and Roraima. Mainly due to the Manaus free-trade zone, the area gradually increased its participation in the Brazilian GDP in recent years, now representing the 4th highest GDP in Brazil. It accounts for 1.4% of the economy of the country (increased from US$1 bn per year in 1970 to US$35 bn in 2004).[71] Its international airport 'Eduardo Gomes' represents the second largest in Brazil measured by freight tonnes and its port is the most important cargo handling port in the whole Amazonas region. Due to the free trade zone in Manaus, the State of Amazonas has grown significantly above the Brazilian national average for the last 10 to 20 years.

Another important trigger for logistics activities can be seen in the Common Market of the South (Mercosur), which includes Brazil, Argentina, Paraguay and Uruguay and further associated members. At present, the member countries form a customs union, but their aim is to become one common market with free movement of labour and capital in the long term.

In August 2010, Mercosur's member states agreed to one external tariff in relation to third parties.[72] The long-awaited agreements mean that transport volumes handled in the intra-Mercosur area will benefit from streamlined customs procedures, as goods destined for external markets will now need to clear customs only once. Consequently, import and export lead times could be reduced. This development should have a positive impact on logistics costs, which represent one of the biggest challenges for the T&L industry in Brazil.

A number of industries should benefit from the region's strong economic growth prospects. For example, some automotive analysts expect Mercosur to attract some US$4 bn a year between 2010 and 2016. That's significantly more than the US$2 bn - $2.5 bn annually raised during the previous six-year period.[73] Logistics service providers serving automotive companies stand to benefit if the investment results in the expected ramping-up of production.

> "One of the fierce problems Brazil's logistics industry faces is a transport infrastructure that is no longer keeping up with the growth in demand, especially in air traffic. The solutions certainly will have to come either through PPP, service concessions or, as a third option, privatisation."

Henrique Luz
Brazil Markets Leader
Transportation & Logistics
PricewaterhouseCoopers

Brazilian logistics service providers should try to collaborate with multinational companies using Brazil as a manufacturing base for exports and should ensure they have networks in place to take advantage of growing trade within Mercosur.

Foreign direct investments will be critical to spurring growth potential in the Brazilian T&L industry. The 2014 FIFA World Cup and 2016 Olympic Games will place the country firmly in the global spotlight, providing significant opportunities.

As noted, many foreign investors rank the T&L industry in emerging markets high on their agendas; indeed our Delphi panel evaluates the industry as an upcoming focus area for foreign direct investment inflows. However, not all emerging markets have been equally successful in attracting foreign capital. Our panellists might have been slightly less optimistic in their assessments, had they considered only the Brazilian market. In recent years Brazil's level of investment averaged only around 17% of GDP, in sharp contrast with a number of Asian emerging markets, where rates of investment sometimes reach double that level.[74]

Studies of the Brazilian National Development Bank estimate that the T&L industry will require approximately US$64 bn for the 4-year period 2010 - 2013, primarily to finance infrastructure investments.[75] Private participation could be an important source of capital, however such arrangements are quite new for the infrastructure sector in Brazil. Important steps taken since the 1990s towards fiscal sustainability, as well as measures taken to liberalise and open the economy – notably Mercosur and free trade zones, as previously discussed – have significantly boosted Brazil's competitiveness and provided a better environment for private-sector development. However, foreign direct investment needs were and continue to be large. Solid regulation and legislation protecting and stimulating this presence are inadequate or missing. While Brazil has passed a few isolated customs regulations in recent years, such as changes to duties on imported advertising materials in 2002, the country remains slow to pass new customs legislation and enforcement can also be a challenge.

According to the Central Bank, during the last 3 years (2007 – 2009), Brazil received approximately US$108 bn in foreign direct investments. Just US$3 bn (~3% of the total) were directed to the T&L industry; in comparison, US$28 bn went to the mining & metals sectors and US$17 bn to financial and related services. A strong, well-functioning regulatory environment that considers the long term nature of infrastructure projects and incorporated risks of such investments is one critical success factor necessary to attract foreign investment to the transportation and logistics sector in Brazil. Increasing concessions and PPP programmes will also be key.

Due to the upcoming sports mega-events (FIFA World Cup in 2014 and the Olympics in 2016) the demand and the urgency for investments is tremendously higher than elsewhere. The Brazilian Government has already initiated a new Growth Acceleration Programme (PAC 2) that will provide US$880 bn in infrastructure, mostly in roads and railways, but also in ports and waterways, as an economic stimulus programme to be invested between 2011 and 2014.[76] Still, this will not close all bottlenecks and there is an inescapable need to recruit the private sector to help fund, build and operate required projects. This is already true for some mega projects such as the High Speed Rail connection between Campinas – Sao Paulo – Rio de Janeiro, where multinational investors from Japan, France and Germany have demonstrated interest.

Logistics service providers will profit from the upcoming mega-events and the increased investment flows in the short and medium term. In order to sustain Brazil's growth rates until 2030, a reliable regulatory framework will need to be implemented. If achieved, such stability would likely trigger massive foreign investments in the T&L industry, lowering logistics cost and fuelling growth.

China

China's T&L industry plays a crucial role in the country's future economic development and promises strong and stable growth opportunities through 2030. Foreign investors will capitalise on resulting investment opportunities.

The participating experts in our Delphi survey confirmed emerging markets in general, and China in particular, as fertile ground for foreign direct investment. Though China's logistics industry had a late start, the industry is benefitting from the rapid development of the national economy and has advanced to become a supporting and driving force for economic and social development.

In 2008, China's T&L market was estimated at over US$506 bn.[77] The industry exhibited growth rates of more than 20% in the first quarter of 2010, following consistent expansion rates of more than 25% since 2006. This strong growth is expected to continue.[78] Indeed, China's T&L industry represents one of the most attractive growth areas in most Chinese provinces and has already attracted significant amounts of capital. Numerous foreign transport and logistics companies have already made direct investments in the Chinese T&L market in recent years. Some are looking for opportunities to set up own businesses, while others seek to create joint ventures with domestic companies active in the express market or to acquire private logistics companies in China in order to expand their networks and provide more value-added services to existing clients.

"The Chinese logistics challenge of the future is to sustainably develop the emerging logistics hubs in the Western upcountry and to successfully connect them to foreign investments and market growth."

Alan Ng
China Industry Leader
Transportation & Logistics
PricewaterhouseCoopers

To date, 400 out of the world's 500 biggest companies already have investment projects in China. Foreign logistics enterprises use their capital, technology and management advantages to enter the Chinese market and serve these large customers.

Business structures range from joint ventures to wholly-owned subsidiaries, from a single-integrated logistics business to logistics as a business unit of a broadly diversified business and from focusing on certain localities to nationwide logistics networks. The bank Credit Suisse assumes that active investments into China will continue and forecasts that foreign direct investments into China will reach a level of US$80 bn by the end of 2010.[79]

While in the past, foreign investments in China's logistics industry were concentrated in developed coastal areas such as the Yangtze Delta, Zhujiang Delta or the Bohai Rim, recently a strong trend towards extending the geographic focus can be observed. In addition, sole ownership is becoming more prevalent. This shift was primarily caused by China's commitment to open up its roadway transportation business after entering the WTO.[80] As a result, foreign investors were able to set up solely-owned roadway transportation and storage businesses.[81]

Enhancing services in comprehensive logistics is an expanding trend and distinctions between different sub-sectors of the logistics industry will be much less clear in the future. Merger and acquisition activity among logistics companies will increase in order to enlarge the scale of enterprises and enhance the value of services provided. Expansion of service coverage and density of service network is also expected.

Even though China's logistics industry has recorded tremendous growth rates in terms of foreign direct investment and has strongly benefited from those investments in the past, their relevance for the country may actually decrease in the future. Since China's domestic economy is growing at a rapid pace, the domestic demand for logistics services will grow strongly in the future. This growth is based on a rising domestic consumer base rather than foreign direct investments. Much of the domestic demand will originate from China's emerging markets, many of which are outside of the three Chinese megacities (Beijing, Shanghai and Guangzhou) which have been the focus for most foreign investors.[82]

Domestic as well as foreign investors should continue to explore investment opportunities outside the established investments paths (i.e. China's megacities).

Since the reform of China's postal system, the CEP market has faced major changes and will rise by a two-digit growth rate. Multinational logistics service providers will not be the only ones who aim to get their piece of the pie.

The CEP segment is already mature in many developed markets such as in the US and no longer exhibits noteworthy potential for growth. In contrast, other markets are underdeveloped and poised to take off. The experts participating in the Delphi survey consider the CEP market as an important segment for future growth in emerging markets.

An even more optimistic assessment might have occurred if only the Chinese market was considered. China is the most important contributor to the enormous growth potential of the Asian CEP market, which is currently booming and expected to overtake established markets such as Germany within the next five years.[83] For more than twenty years, the growth rate of China's CEP market has remained over 20%, which is almost three times higher than the country's GDP growth.[84]

Experts believe that the market will continue to increase in the future and consider on-going growth rates of more than 20% as realistic. The rapid development of electronic commerce has laid a solid foundation for the industry. Approximately 10% of China's 420 million internet users have already purchased products through the internet and thus created demand for CEP services.[85] China's online business and e-commerce will consolidate its position as an important trade and economic platform, creating continued increases in demand in the CEP market.

As part of the stipulations for China's entry in the World Trade Organisation (WTO) in 2001, the country had to fully open its logistics market by the end of 2005. Encouraged by open access to the market and promising growth opportunities, numerous logistics service providers have entered the Chinese logistics market in the intervening years. Companies such as DHL, FedEx, TNT or UPS have been growing by 20% to 40% annually and become important players in the Chinese logistics market. Despite these enormous growth rates, private domestic courier companies occupy the majority of the Chinese CEP market and participate in the market's fast growth.[86]

The Chinese CEP market will change in the future, in terms of both supply and demand. While multinational logistics service providers active in China provide high-end products and services which aim to deliver value to customers by providing timely delivery and reliability, low-cost solutions provided by domestic courier companies currently represent approximately 60% of the logistics market.[87] The demand for those low-cost and low-service logistics primarily originates from thousands of small internet-shops looking for CEP providers able to deliver at very low prices. Since delivery volumes are extremely high, even small logistics companies can realise profits. However, as the size of China's middle class population strongly increases in the next 20 to 30 years, the demand for high-end logistics services will climb simultaneously. As a result of the corresponding reduced volumes, the provision of low-cost services as a profitable business model will diminish in the short- to medium-term. According to the China International Freight Forwarders Association, labour cost advantages of small courier companies will decline over the next five to ten years. Future customers will place a much stronger emphasis on reliable delivery rather than price, an area where multinational logistics services have a strong advantage over small domestic courier companies which frequently dispute with customers over lost parcels. Logistics providers with a service portfolio characterised by low-cost and low-service have to improve the scope of services in order to maintain competitiveness.[88]

China's CEP market promises attractive growth rates for both domestic and foreign logistics service providers. However, logistics service providers which will be successful in the long-term will be those who carefully observe changing customer needs and are able to provide the required products and services.

India

The private sector is likely to play an increasingly important role in India's transportation and logistics industry in the future. However, who will play which role depends on a number of governmental decisions.

Our Delphi panel recognises the important role of privatisation in emerging markets to address increasing challenges of financing in the T&L industry. Nevertheless, the experts are not fully convinced that the private sector will play the leading role in the T&L industry. In India, the importance of privatisation varies significantly between transport modes.

Goods transportation by road is almost entirely in private hands with only a small proportion of it being corporatized. Bus operations on the other hand is mostly in government hands . Forced by a strong need to reduce the country's fiscal deficit, the first wave of privatisation started in the early 1990s. Thus, a segment of India's bus operation is with private organisations. Nevertheless, privatisation of bus transport may not have been entirely beneficial. At present, many State Road Corporations in India have had to take over activities from the private sector as many of them have faced heavy losses and are not able to operate without governmental support such as ones operating in Madhya Pradesh, the state in the center of India. In addition, private road transport organisations are frequently the target of criticism. Levels of dissatisfaction about the reliability, punctuality and quality of services from these organisations seem to be on the rise among users. It will be interesting to observe if the Indian government increases its control over the road transport sector, even though funds for road related investments are scarce.[89]

The private sector is also involved in rail transportation, but continues to play a fairly minor role. The government has involved private players in the operation of container trains and is likely to offer a small portion of passenger operations for private tender as well. India's Railway Minister, Mamata Banerjee, reiterated in 2010 that a full fledged privatisation of Indian Railways in the near future is not planned, although she saw PPPs as a potential means of mobilising revenues for some projects.[90]

India's sea port industry has not yet experienced significant privatisation. Most of India's sea ports have higher loading and unloading times than their international competitors. The average size of Indian ports is much smaller than international standards, resulting in up to 20% higher costs for shippers. The required investments to enhance India's sea port infrastructure are enormous and cannot be met by the government. Consequently, further privatisation of ports is being considered as a possible solution to meet this tremendous financing requirement and to increase performance levels.[91]

Privatisation of T&L operations will play an important role in India in the future. While some parts of the transport network are deemed strategic assets by the Indian government and unlikely to be fully privatised, a wide range of opportunities for the private sector exists. Companies which are able to generate financing and improve performance will have the potential to earn healthy profits.

Gradual reforms in policy should encourage a cautious increase in foreign direct investments in transport services. Multinational logistics companies have started keeping an eye on the market and are already starting to enter it.

The Delphi panel considers the T&L industry in emerging markets as one of the new focus areas for foreign direct investments. The situation in India differs somewhat, with a distinct emphasis on infrastructure-related activities. In the last decade, the focus areas for foreign direct investment in India have primarily been the financial and related services sector with a share of total foreign direct investment of around 21%, followed by the computer software and hardware (9%) and the telecommunication industry (9%).[92] While there have been significant levels of investment in transport infrastructure (construction of roads, highways, ports etc. at approximately 7%), interest in T&L services has remained quite low. In the case of infrastructure investments (for example ports, highways, airports, urban infrastructure etc.) projects are automatically eligible for exemption from the foreign direct investment caps, which may have helped increase interest in such investments.

In contrast, in the airline industry the government still maintains caps on foreign direct investment although there have been some moves towards liberalisation. For example, in the aviation sector the Indian government has increased the limit for foreign direct investment into scheduled air services at 49% and non-scheduled, chartered and cargo air services at 74%. However, with this liberalisation, foreign airlines are not yet permitted to operate in the domestic sector. Press reports indicate that foreign airlines might consider investments into India, if the regulatory environment changes sufficiently.[93]

"Unsatisfied demand for value-added services means there is massive growth potential for the logistics industry in India."

Bharti Gupta Ramola
India Industry Leader
Transportation & Logistics
PricewaterhouseCoopers

The Indian Government has already eliminated foreign direct investment caps for the Indian shipping industry, with the result that 100% foreign direct investment is now permitted in this sector, although the first such investment was made only a number of years after the regulatory changes took effect.[94]

Despite their cautious investment behaviour, multinational logistics companies are eyeing the Indian T&L market, anticipating excellent business opportunities in the future. India's GDP is growing by around 7-9% annually, while its manufacturing sector is seeing strong double-digit growth rates. Planned infrastructure investments of over US$300 bn should also provide a solid foundation for outstanding growth rates in the T&L industry.[95] Indeed, the T&L industry in India grew at compounded annual growth rates of more than 16% from 2007 to 2010, resulting in an overall market size greater than US$100 bn.

In particular, India's third-party logistics (3PL) market is an attractive business opportunity for logistics service companies and should provide further impetus for growth. The 3PL market makes up more than 50% of the total logistics market in developed countries, but is still at a nascent stage in India. Today, Indian 3PL service companies often do not possess sufficient capabilities to provide any services beyond conventional transportation contracts. Many are not able to respond to the increasing demand for value-added services such as customs clearance, cross-docking, reverse logistics, labelling or packaging.

The strong growth in manufacturing industries is likely to intensify competition and many Indian companies will need to optimise their supply chain mechanisms. Manufacturing companies may place greater focus on their production activities, with the result that many may begin outsourcing logistics processes to 3PLs. As a consequence, strong outsourcing-activities will be observable in the Indian market over the next two decades.

Not surprisingly, multinational logistics companies are carefully observing the dynamics of the Indian T&L market and seeking opportunities to participate in the growth story of the country. Attractive business opportunities will arise not only due to the increasing demand for logistics services, but also from the market's high inefficiency and fragmentation. The cost of logistics as a fraction of India's GDP is extremely high. While logistics costs of Western Europe and North America make up 8-10% of their GDP, India currently spends more than 13% of its GDP on logistics.[96] Those logistics service providers which are able to help companies increase efficiency in their logistics processes may realise significant profits.

Some multinational logistics companies have already started to enter the Indian market. In 2009, a major French global shipping company bought equity in India's Continental Air express. A venture capital fund bought 35% of the Mumbai-based courier company Elbee Express. Likewise, DHL and FedEx consider India as their next major frontier after China and are in the process of buying their way to market leadership. For example, DHL acquired India's local express service provider Blue Dart Express in 2005. Shippers are taking note as well; the acquisition of controlling stakes in a private container terminal in Gujarat by Maersk and P&O is another indicator for intensified arrival of foreign companies in the Indian T&L market.[97]

Increasingly, investor friendly frameworks and outstanding growth opportunities in the Indian logistics industry are attracting the attention of multinational logistics companies. Many of them have already entered the market successfully and the number and pace of further entries will increase. The enormous market size and low competition for reasonably priced, quality service provision will act as a magnet for foreign logistics providers. Value-added logistics services also look set to increase in importance. Overall, the Indian T&L market is likely to be even more hotly contested in the future.

Foreign logistics companies will need to closely observe the political developments in India, adapt their business models and value creation processes according to the specific requirements of the market and must not miss the optimal timing for entry into the fast growing and changing market place. Indian domestic logistics companies should aim to improve service and efficiency levels to become equal competitors of multinational logistics companies.

Mexico

Multinationals dominate the logistics demand in Mexico and have driven its growth significantly. Mexico's logistics market will continue to expand in upcoming years.

The experts on our Delphi panel agree that by 2030, multinational companies will have a significant presence in emerging markets. This trend has already been observed in Mexico, one of the most advanced emerging countries in hosting multinational logistics companies.

Indeed, there is a strong level of interest in Mexico from multinationals across industry sectors. According to a survey conducted by the UN, Mexico is the 6th most attractive location worldwide for multinationals. The strong flow of foreign direct investments, and estimated US$15 bn to US$20 bn 2010, confirms the country's popularity as an investment destination.[98] It is expected that the rate of investment will rise from current levels of around 20% to 25% of GDP by 2020.[99]

This investment landscape is also reflected in the Mexican logistics market. Multinational players dominate the demand for logistics services, which has grown quickly in recent years and should continue to do so. Mexico's logistics market is split into two distinct segments: the export economy that relies on cross-border logistics for 95% of its traffic and the domestic economy. The logistics market servicing Mexico's exporters is sophisticated and relatively mature with consolidation of suppliers ongoing. Three hundred multinationals are responsible for 90% of Mexico's exports. Cross border logistics in Mexico have achieved their efficiency levels thanks to the investments by players like UPS, FedEx and DHL as well as YRC, Kühne+Nagel, Panalpina and others. Their technology and global best practices have been essential in raising competitiveness.

Multinational logistics companies continue to invest heavily in Mexico. In April 2008, DHL announced the expansion of its logistics services in Mexico, totalling an investment of US$112 m over five years. UPS has already invested in fifteen new operation centres in Mexico and is opening a further eight.[100] These investments have been justified by the fact that Mexico represents an important market and a key driver of growth, with expansion in both domestic markets and exports. The country's domestic express market experienced dynamic growth during the global economic crisis, when demand in most other regions dropped sharply. Mexico's free trade policy in recent years has further supported its export-oriented economy. More than 90% of Mexican trade is under free trade agreements with more than 40 countries and regions, including the European Union, Japan, Israel and much of Central and South America.

Changes in Mexico's customs regulations in recent years have greatly expanded programmes similar to free trade zones and well beyond conventional 'Maquila' operations previously available to importers. Maquiladora or Maquilas are assembly operations in the North of Mexico which import material and equipment on a duty-free and tariff free basis for assembly or manufacturing purposes. The more elaborate Strategic Private Bonded Warehouse programme (the REFIE) has existed since 2003 and offers benefits similar to those of the US free trade zones and the EU Processing under Customs Control (PCC) programme. The REFIE regime affords attractive tax advantages. The main benefit consists of exemption of VAT triggered by sales of goods subject to the regime. As it relates to income tax, REFIE locations are not deemed to be a permanent establishment for foreign parent companies and therefore, reductions or exemptions for income taxes may be allowed for activities performed within the REFIE.

"Mexico's logistics industry has to invest heavily in technology and high-tech know-how in order to stay competitive against upcoming global competition."

Martha Elena Gonzalez
Mexico Industry Leader
Transportation & Logistics
PricewaterhouseCoopers

The EU-Mexico free trade agreement is one of the most comprehensive in the global economy. Most critically, the North American Free Trade Agreement (NAFTA) revolutionised trade and investment in North America, representing 82% of Mexican exports. Moreover, the close proximity to the US and NAFTA membership gives Mexico an important advantage when trading in the US market. The country has signed a number of additional free trade agreements in recent years, fostering rising international trade and investment. Mexico is supported by an independent central bank and is now well-placed to register sustainable growth.

Mexico's growth and export rates have been negatively impacted by the entrance of China to the World Trade Organisation, though. The United States are Mexico's most important export partner and the country has lost notable market share to China in a range of areas, including textiles and electronic devices such as televisions or personal computers. Due to low production costs, some US-headquartered manufacturing companies relocated their production facilities from Mexico to China. Nonetheless, as noted, Mexico's overall investment flows are still set to increase over a 10-year forecast period.

Mexico has a number of competitive advantages which relate to logistics. The close geographic proximity to the US means that logistics costs for US-headquartered companies are generally quite low. Mexico also has a good functioning network of feeder plants serving the manufacturing industry. Its logistics service companies will need to build upon these advantages and continue to drive technological advances in their service offerings in order to stay competitive.

Mexico needs to push the process of reforming its regulatory policies and institutions in the logistics industry in order to move the economy closer to the leading BRICs.

Law enforcement is still a hot topic for logistics companies in emerging markets, although our Delphi experts are optimistic that its importance as a constraining factor will have diminished by 2030. Other challenges will remain, though. Many emerging markets also need to reform archaic regulations, automate manual systems and overcome political differences to achieve regional integration.

Mexico faces a number of these hurdles. The Global Competitiveness Report of the World Economic Forum points out that "Mexico's inefficiencies of public institutions, together with high insecurity due to spiralling and widespread violence and crime, are reasons for concern." [101]

Over the past few years, the Mexican government has addressed the criticism raised in the Global Competitiveness Report and has made good progress in reforming its regulatory policies and institutions for the T&L sectors. These attempts have also been supported by the US government and enhanced cooperation with US law enforcement agencies. By means of the Merida Initiative, the US and Mexico are working together to break the power and impunity of criminal organisations, strengthen border, air and maritime controls and improve the capacity of justice systems in the region to conduct investigations and prosecutions.[102] Further efforts concentrate on the strengthening of institutional and infrastructure capabilities of law enforcement and judicial sectors, with a strong focus on counter-drugs and security along the US and Mexican land border zone.

Due to the strong dependence on the US as the main export destination, an underperforming export sector has significant negative implications for Mexico's trade balance and its economy. The cancellation of the cross-border trucking programme in March 2009 provides a huge challenge for Mexican trucking companies. The programme, which allowed Mexican trucks to operate freely on US roads, was introduced by the US Congress in September 2007 before being withdrawn in March 2009. Calls by Mexico's government to reinstate the agreement have so far fallen on deaf ears. Consequently, rapid improvements in law enforcement are needed and would create a double return for the country.

Long-term competitiveness in a global context will require greater public and private action to spur regulatory improvements in regions throughout the country. At the national level, greater attention to policies for regional development, anti-corruption and bribery and functioning law enforcement would drive important and sustainable growth for the logistics industry in Mexico.

Russia

In the future the logistics industry in Russia may benefit more from its geographic location connecting East Asia and Europe. Introduction of port special economic zones will stimulate internal and external trade flows between Asia, Europe and North America.

We asked our Delphi panelists to evaluate whether global trade flows will have shifted by 2030 so that new transportation corridors develop. Our experts ranked the probability of this projection as well as its impact on the logistics industry as fairly high.

Thinking about new transportation routes is especially important for Russia due to its geographic location. Russia physically connects the Chinese and European markets and represents the shortest way from Europe to Asia. Nonetheless, Russia today is not considered as an important transportation corridor, as the main trade between Europe and Asia takes on seaways. Russia will aim to take advantage of its beneficial position in the future. In order to realise this vision, Russia needs to develop its railways and roads in order to ensure rapid and cost-effective transportation options. Russian Railways is already planning to build several high-speed railways. The first one will be constructed between St. Petersburg and Moscow.

Currently the Russian economy is rather vulnerable to oil market fluctuations and dependent on the world economic situation. The Russian government is drafting policies directed at changing the state's export structure from exporting primary products and resources to exporting integrated and advanced technology products and services. If this policy succeeds, it will be necessary to develop new markets and ways of selling these products and goods. New transportation corridors will need to be developed and existing ones significantly improved.

Russia is already looking at options. One plan under consideration would 'revitalise' the Northern Sea Route as the shortest seaway between Europe and Eastern Asia, along with the development of land routes connecting Asia and Europe. The Shanghai Cooperation Organisation (SCO) aims to facilitate the international road transportation between its member states, especially between Russia and China. Since China is interested in using the land connection to accelerate its exports to Europe and Russia, both countries are interested in this new 'Silk Road'. The continuing work of the SCO member states aimed to develop "international transportation and simplify border crossing procedures in the region" is regarded as a first step towards the realisation of this plan.[103] At the same time Russia actively takes part in different summits devoted to international trade problems and cooperation (for example, within the bounds of G20, CIS summits, APEC, Black Sea Economic Agreement etc.). Efforts are also underway to enable Russia to join the World Trade Organisation.

The Russian government sees the T&L industry as one of the key priorities for the economy. The government is willing to actively use public private partnership (PPP) tools to develop infrastructure projects. In order to help facilitate PPP activity, the government has introduced a law on concessions and has established a special investment fund to finance infrastructure projects. Russia is planning to build toll roads by securing private investment. The government is also aiming to attract foreign players as a means of accessing modern technology and expertise along with financial resources.

Russia also plans to use special economic zones as a lever to achieve its objective to create new transportation corridors. Russia has established around 20 special economic zones; major objectives are to create optimal conditions for foreign and domestic investments and to develop modern industrial complexes able to produce high-quality products. The resulting production is intended to stimulate the economy and the Russian export base. Four special economic zones have been created at transport hubs with the intention of attracting both domestic and foreign investment as well as to develop regional transportation and logistics infrastructure. The zones are located at the airports of Krasnoyarsk in East Siberia and Ulyanovsk in the Volga area, at the Sovetskaya Gavan port in the Khabarovsk Territory, in the Far East and at the Port of Murmansk in the North.

Krasnoyarsk airport is aimed to develop a large multimodal transport hub with expected investments to reach US$800m. The Ulyanovsk special economic port zone is aimed to develop the airport Ulyanovsk – with a major focus on the production and maintenance of light airplanes and the creation of a logistics hub. About US$300 m of investments are planned by 2020.

Even greater levels of investment are being made in enhancing sea routes. Around US$3.5 bn of investments are planned for Sovetskaya Gavan - sea port special economic zone located in Khabarovsk region, including participation from private investors.[104] Development of this port is important for Asia and Russia overall. Sovetskaya Gavan will serve as the transport outlet of Baikalo-Amurskaya Magistral (major railway, connecting Russian East and West), facilitating intermodal transfers. It will also develop

"Russia has to actively trigger and promote the future development of transportation corridors through Russia by intensively investing in its transport infrastructure (via public-private partnership tools, attracting international finance and experience) and improving its customs regulation."

Alexander Sinyavsky
Russia Industry Leader
Transportation & Logistics
PricewaterhouseCoopers

transportation connections with China, Japan, North America and the rest of Asia Pacific.

Murmansk, another sea port special economic zone, is strategically situated to develop traffic within and outside Russia and revive the Northern Sea Route which serves as a transport corridor between Russia, North America, Europe and South-East Asia. Cargo turnover in the port Murmansk is expected to increase by more than 100 million tonnes by 2025.[105]

The upcoming Sochi Winter Olympic games in 2014 have already triggered the development of transport and logistics infrastructure in Central and Southern Russia, including along the coast of the Black Sea. The government is using PPP tools to finance the development of mega-projects in seaports and airports, as well as road and railways development.

Russia's beneficial geographic position allows the country to connect the economic heavyweights Asia and Europe. Logistics service providers offering efficient and effective services on the emerging transport corridors will serve as an enabler for intensified trade between Asia and Europe.

The level of competition of multinational logistics service providers on the Russian logistics market is expected to grow in coming years.

Experts of our Delphi survey achieved consensus that multinational logistics service providers will enter the domestic logistics markets in emerging countries. In Russia, multinational logistics companies are active in some areas, but a full penetration of the marketplace has not occurred as rapidly as it might be expected.

During the last decade the Russian economy has been booming and experiencing outstanding growth. The logistics industry has also recorded impressive turnover gains in the same time period. Growing investments by the government, expanding consumer and commodity sectors and booming industrialisation, in some instances led by the entry of foreign players, have helped fuel the increases. Notwithstanding the recent economic breakdown in 2009, the Russian logistics market is still promising, with continued strong future growth potential.

The logistics market in Russia is not yet saturated. Indeed, Vice Prime Minister Sergey Ivanov has estimated its potential at US$150 bn by 2015.[106] The overall number of players in the market is fairly small, particularly in comparison with Europe or even China. The market is currently dominated by Russian companies, although some foreign players are very active in Russia and are constantly increasing their presence on the market. Many experts are optimistic about the prospects of multinational logistics service providers in Russia, because leading international logistics service providers are more competitive than Russian domestic players due to bigger financial resources and leading experience, especially in the 3PL and 4PL sectors.

There are some logistics sub-sectors where international companies have been successful in gaining market share. For example, the CEP market in Russia is already dominated by foreign companies DHL, Federal Express, TNT Express, UPS etc. Many specialists predict that in the near future the domestic Russian CEP market will be more influenced by large multinational companies. Such companies are seen to have significant competitive advantages in comparison with Russian domestic companies, particularly in terms of access to financing and technology. These companies may increase their investments in the domestic express market as they are currently doing in China.

International logistics service providers will have enormous business opportunities in the Russian logistics market, if they are able to leverage their lead in experience. Expansion will require a detailed analysis of the Russian market in order to effectively assess risks and opportunities. Russian logistics service providers should be aware that foreign competitors are already waiting in the wings to enter their market. They will need to increase their competitiveness in order to sustain their market share and profitability.

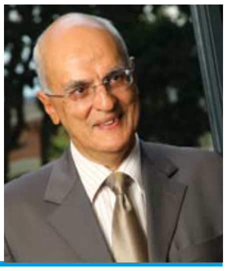
South Africa

South Africa will become the starting point of a new transport corridor to Asia. Significant investments in transport infrastructure and the logistics industry in Africa are needed to develop new transport routes and to expand existing ones.

Global trade in goods and services is likely to rise more than threefold to US$27 trillion in 2030. Half of the increase is expected to come from emerging economies. Our Delphi experts uniformly agree that this development will relocate global trade flows and new transport corridors will emerge.

The African continent, including South Africa, is already experiencing this shift. Emerging markets such as China and South Africa fared relatively well during the recent economic downturn. In consequence, freight flows between these emerging market countries continued to strengthen. Asia's heavy industry has been an important source of demand for iron ore and coal and South Africa remained an important source of these commodities. At the same time, European demand for these commodities weakened.

"Logistics service providers which are open-minded and prepared for the consolidation process in South Africa's road transport sector will benefit from the hidden market opportunities."



Akhter Moosa
South Africa Industry Leader
Transportation & Logistics
PricewaterhouseCoopers

The emergence of China as one of South Africa's main trading partners has had a tremendous impact on the economic feasibility of certain hub and spoke initiatives. Some of these initiatives revolve around linking South Africa's Waterberg region to major export points. The Waterberg coal basin contains almost half of South Africa's coal reserves and extends into Botswana as well. The basin currently suffers from insufficient rail connectivity to ports and faces essentially three export options. The first option involves extending the existing rail connection to Richard's Bay – a major coal export point with capacity of 91 m tonnes per annum. However, this option may not be a priority for the rail infrastructure owner, Transnet, nor for most of the mining owners of the Richard's Bay Coal Terminal, who do not have an interest in the Waterberg basin. The second option is to connect the coalfields westwards to the Namibian coast. The Port of Walvis Bay has been identified as a potential end-point of this trans-Kalahari connection. However, the shift of coal demand from Europe to Asia raises serious questions about directing the coal westward during its land-based journey. The same shift of demand, however, provides additional support to the third option – moving the coal eastwards to Mozambique. The two primary port options for coal exports from Mozambique are ports in Maputo and Beira. The importance of developing at least one of these transport routes will grow as coal mines located elsewhere in South Africa will deplete and coal demand from Asia will continue to grow.

The historical continuity of demand for South African commodity resources has also played a role in substantial investments being made in pre-existing freight routes. The OREX is an example of this. It is a dedicated iron ore rail track connecting the Sishen mines to the port of Saldanha. It is 862 km long and designed to support some of the heaviest trains in the world. The heavy rail can handle loads up to 30 tonnes per axle, which is unique for a 1067 mm rail gauge. The trains operating on the line are 4 km long and are comprised of over 340 wagons. The net tonnage carried by each train is 34,300 tonnes – tenfold the tonnage hauled by the heaviest European trains. Substantial additional investment in this route is being planned to create more capacity to satisfy expected growth in iron ore demand – mainly from Asia.

African logistics service providers who actively operate on the new transport corridor Africa - Asia will be able to profit from tremendous growth, leading to a competitive marketplace for logistics in the region.

South African road-based logistics service providers are affected by consolidation processes driven by the fast-moving consumer goods sector. Other modes of transport are still dominated by a state-owned enterprise.

Our Delphi panel agrees that a growing middle-class, larger consumer markets and an increasing engagement of multinationals, as well as the large number of domestic logistics service providers will facilitate a strong process of consolidation in several emerging markets.

The T&L sector is split into two parts in South Africa. Overall the sector is dominated by Transnet, the state-owned operator and custodian of South African port, rail and pipeline infrastructure. Increased competition is now being provided by a vibrant and growing domestic road haulage and warehousing subsector. The process of consolidation has affected mainly road-based logistics service providers. The largest of these road transport operators have grown through a process of acquiring their competitors and now command truck fleets in excess of 5,000 vehicles, excluding subcontracted fleets. This process saw the emergence of local conglomerates: Bidvest, Imperial, Unitrans, Supergroup, Grindrod, Crossroads, Fuel Group, Value Logistics and Laser Logistics, to name some of the largest in the market. There are also about two dozen privately-owned mid-size logistics companies operating fleets of 100 to 300 trucks.

The degree of competition in the road-based logistics sector is high and has served as the primary driver of consolidation. By far the highest degree of competition exists in intermodal road haulage, containers which can easily be carried using various modes of transport, where service provision typically does not require specialised and expensive vehicles. In consequence, the barriers to entry in the intermodal road haulage business are quite low leading to depressed margins. The intermodal road haulage market is also not based on contracts, but is rather a spot market where the lowest-cost provider typically secures the business.

Beyond intermodal road haulage, the degree of required asset specialisation has been higher, leading market players to build up their fleets along industry requirements and often also along the requirements of specific clients. In these cases consolidation has helped service providers diversify their fleets and widen the portfolio of clients that they could effectively target.

But consolidation in the sector has not only been fuelled by the providers of logistics services. The users of such services have also integrated vertically into the transport sector by taking control of distribution centres. This is particularly the case in the fast moving consumer goods sector. In consequence, South African logistics companies have found themselves competing not only amongst themselves, but also with their clients. This process of vertical integration could continue depending on the level of control over supply chains that retailers wish to have. It is possible, for example, that the large retailers will in the foreseeable future absorb drivers and will require only truck rental services from logistics providers.

In either case logistics service providers in South Africa will encounter fierce competition in the sector in the future which will continue to put downward pressure on margins, especially in primary transport designed to link major transport hubs.

Turkey

Turkey's third-party logistics providers and CEP service providers are advanced compared to their counterparts in other emerging markets. The country's market dynamics still encompass growth potential.

"Turkey's young and dynamic population structure will increasingly demand high-tech logistics services, representing significant growth potential for 3PLs and CEP providers."

Cenk Ulu
Turkey Industry Leader
Transportation & Logistics
PricewaterhouseCoopers

Our Delphi panel agreed that the CEP market represents the highest growth potential in the logistics industry in emerging countries until 2030, although the rate of growth varies between the various emerging markets. In Turkey, the CEP segment is showing rapid growth. Due to changing consumer behaviour, growing e-commerce, urbanisation and a young population, CEP services seem to be a promising market segment. One robust segment is driven by the Turkish textile and clothing industry, which relies heavily on international CEP services. As a result of these services, samples of ready-to-wear items and new designs can be delivered quickly to potential customers in Europe, avoiding delays in the race against competitors.

Logistics overall is a young sector in Turkey which has made progress in recent years. Turkey, being advantageously positioned between the Middle East and Europe, serves as a transfer centre between these regions. Many authorities claim it will become a logistics base; some assert it already serves this role. The Turkish logistics market has experienced a 20% growth rate during the last five years and is forecast to increase to US$ 120 bn by 2015.[107] Double digit growth rates in the industry have attracted many international players; indeed all major multinationals are already active in Turkey. While many establish joint ventures with local companies in order to learn the local industry dynamics, some of the large players such as UPS, TNT and DHL have already bought out their joint venture partners or acquired local companies as a sign of their commitment to stay in Turkey and grow in the surrounding regions.

Fierce competition exists and is on the rise in the market, both between domestic and international logistics service providers and within each group. Consequently, all logistics companies have tried to differentiate themselves by offering different and extended services to their customers. Quality improvements in logistics services and constantly rising service standards were the results. The logistics industry in Turkey has already developed significantly past the point where logistics is regarded as mere transportation. The market has acknowledged that logistics management can deal with all aspects of the supply chain, including packaging, labelling, recycling, warehousing etc. Leading domestic logistics companies such as Omsan, Horoz, Borusan, Balnak, Reysas and Ekol Logistics provide supply chain management, insurance, customs clearance, warehousing and inventory management as full scale 3PL companies.

In the domestic market, increased efficiency, transparency and accountability on the part of government administration offices (for example, during customs clearance) could help remove current growth obstacles of the logistics market in general and the CEP segment in particular.[108] Probable legislative reforms within the framework of the EU integration process will tip the balance in favour of liberalisation and have a profound impact on the domestic market.

While the logistics market has expanded threefold since 2002, the share of third party logistics service providers has increased only marginally. Large players providing value added services are leading the market, with revenue gains of more than US$100 m. There is still room for growth, though, for 3PLs which are able to market their extended services more effectively. According to forecasts about the sector, 3PLs will focus their efforts on structuring and public relations activities in the near-term.[109] Outsourcing is expected to continue.

The markets for CEP and 3PL services are not yet saturated and both segments are likely to extend the range of local service offerings significantly by 2030. Turkey has a great deal of potential with its young population and its dynamic market conditions. Traditional consumer behaviours which rely upon using the national post office seem to be changing as CEP services become available countrywide.

The logistics industry in Turkey experiences a wave of privatisation, boosting tremendous growth of the sector.

As markets mature and competition grows fiercer, the process of privatisation often follows. Our Delphi panel sees the role of governments as likely to shift from a major player to a 'watchdog' in emerging markets. Still, each emerging market has its own individual characteristics, so more in-depth analysis is necessary.

In Turkey, privatisation in the transportation & logistics industry is a key trend driving on-going discussions. Following a package of legislative reforms, the legal framework for international road transport is now consistent with the EU policy.[110] The market is fully liberalised and the private sector is highly involved in road transport operations. Backed by political stability and economic improvements, the Turkish government launched a nationwide privatisation programme covering a number of industries. Turkey basically aims at minimising state involvement in industrial and commercial activities and maximising private sector participation. Different factors are intended to support the privatisation process, e.g. Turkey's potential integration to the European Union, the establishment of independent regulatory and supervisory authorities and recent developments in the investment climate. Several organisations have already been effectively privatised, e.g. Turkish Telecomm and Turkish Petroleum Refineries.[111]

Regarding the logistics industry, privatisation started with the sale of operational rights of seaports through public tenders which accounted for US$20 bn.[112] A consortium led by PSA and Akfen Holding agreed to pay US$755 m for Mersin Port, while Çelebi Holding is paying US$175,5 m for Bandırma Port, Turkerler OGG US$195,25 m for Derince Port and Ceynak Group US$125,2 m for Samsun Port. There are also further port privatisation tenders in the pipeline including the Galata, Alsancak-Izmir and Iskenderun ports. Bids for these ports reached levels of EUR3.5 bn, US$1.28 bn, and US$80 m respectively in first tenders.

Public ports are undergoing a fundamental change in status, at a time when growing demand for service is creating pressure. Turkey is pursuing a port privatisation process with the aim of increasing efficiency and infrastructure capacity. The anticipated continuation of this process of commercialisation and privatisation of ports should have a beneficial impact on service capacity and efficiency. In a few years' time, private ports are expected to handle around 50% of the container traffic.[113]

The official privatisation schedule of the Turkish government begins with ports, but additional waves of privatisation are also planned. Highways, maritime operations, bridges, railroads and many other state-owned structures are scheduled to be privatised. For example, the plans of Turkey's Privatisation Administration include privatisation of 8 highways and 2 Bosporus bridges by the end of 2010.

At least for transport infrastructure, the privatisation process will mainly be completed by 2030. The privatisation of ports, airports and the national post will contribute to the competitiveness of Turkish players in international markets.

The privatisation process encompasses enormous market opportunities for strategic investors in transport infrastructure or for transport operators. The country's strategic geographic location ensures a prominent role within future transit networks. As an emerging market with a young population, Turkey is ready to provide value added services in different business areas. Liberalised regulatory arrangements are improving access to foreign capital to the market in which local and international companies compete, although some additional requirements still exist.

Logistics service providers should start to strategically diversify their service portfolio since competition might get even fierce after the privatisation process. They need to implement dynamic and adaptive company structures in order to respond to changing market dynamics.

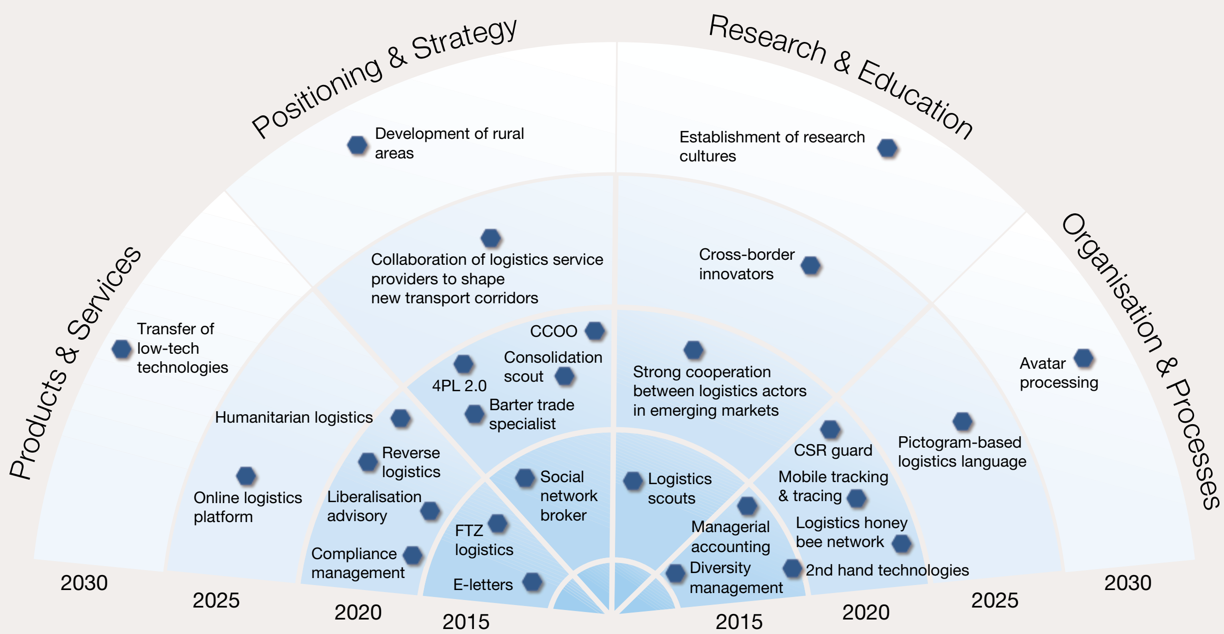
Opportunities

Emerging markets provide outstanding opportunities for logistics service providers, both in terms of overall growth rates and in response to rapidly changing market trends.

This chapter looks at some promising future opportunities for companies operating in emerging markets. We present opportunities in the areas of 'Products & Services', 'Positioning & Strategy', 'Research & Education' and 'Organisation & Processes'. Some of the opportunities presented may be most attractive to logistics service providers from emerging countries, while others might be more relevant for logistics service providers from developed countries. Naturally some opportunities will also be of interest for all logistics service providers operating in the relevant markets.

It is important to highlight that the 'opportunity radar' is the subjective outcome of several future workshops, based on the scenarios described in previous chapters. The radar is designed to provide a pragmatic, but creative perspective into the future. In order to provide a tool which supports decision-making, the radar presents opportunities with different degrees of innovativeness. While some of them are almost near implementation, others remain visions by current standards.

Figure 3
Opportunity Radar



Products & Services

E-Documents / E-Letters
When implementing new technologies, emerging countries have in some cases been able to leapfrog technological intermediate steps in favour of the most up-to-date technologies. The classic example of this phenomenon has been observed in telecommunications, where a number of emerging countries did not establish comprehensive landline telephone infrastructures. Instead, widespread proliferation of mobile phone technologies became the norm.

Postal delivery services may follow a similar pattern. Effective e-document transfer could replace the need to deliver physical mail to households in urban and rural areas in emerging countries. Even official and legal documents could be transmitted virtually, minimising the need for physical delivery, or perhaps even eliminating it completely.

Logistics services in free trade zones
Free trade zones are of major importance for the economic growth of a country or region and provide numerous advantages to companies active in those zones, such as reduced regulatory procedures. An increasing number of companies are likely to take up residence within or around such free trade zones, creating intensified levels of trade. These localisations of trade activity could create increased demand for specialised logistics services – for example, cold chain transport for pharmaceutical products shipped from a pharma free trade zone – offering new business opportunities for logistics service providers.

Compliance management
Sustainability and corporate social responsibility (CSR) considerations play an increasingly important role and exert significant influence on the selection of supply chain partners. Companies from emerging markets will also be affected by this trend, as trade activities between companies from emerging and developed countries continue to increase and governments push forward sustainability and CSR related regulation. Companies which have already established deep competencies in these topics could assist players in developing techniques to manage their CSR activities, for example, developing standardised key performance indicators which can be used to provide a comprehensive overview of a company's sustainability and CSR activities.

Liberalisation advisory
Many countries have already experienced several waves of privatisation, including transportation and logistics organisations, such as airlines, posts, ports and airports. Some developed countries have a lead over many emerging countries in this respect. Entities which have already undergone privatisation may be able to draw upon their experience and act as 'liberalisation advisors,' in effect sharing their best practices and lessons learned with those in charge of privatisation in emerging countries.

Reverse logistics
3PLs in developed countries have been able to realise profits of around 12-15 % by offering reverse logistics services.[114] Reverse logistics does not only encompass the return of goods from customers to producers. It can also include the handling of recycling and waste-management activities. Logistics service providers which offer effective reverse logistics, recycling and waste-management services could profit from new business opportunities in emerging countries, particularly if environmental regulations and legislation become more stringent in the future.

Humanitarian logistics
When disasters happen, such as hurricane Katrina in New Orleans, the 2010 earthquake in Haiti or the last tsunami in Thailand, professional logistics services are needed to minimise the ensuing negative consequences and to rebuild pre-catastrophe conditions as quickly as possible. Logistics companies operating in these types of catastrophes generally do not aim at realising profits from their activities, but rather see their support as necessary to maintain economic stabilities and social welfare. Even though a few logistics companies have already set up disaster response teams, a comprehensive and professional management of the topic is needed. The institutionalisation of such humanitarian logistics efforts will become a requirement in emerging markets which should be addressed by logistics companies.

Online platform to organise logistics
The market for logistics services is currently somewhat fragmented, lacking in transparency and inefficiency in most emerging markets. Online platforms may be an option to better coordinate logistics services. In some developed countries, these platforms have already been implemented successfully. They include relevant information about logistics service providers in the market and serve as freight exchanges or tendering platforms. An online platform which integrates comprehensive information would facilitate the rapid identification of optimal providers for required services. Customers could also tender their mandate on the platform and allow logistics service providers to bid and potentially win the contract.

Transfer of low-tech logistics services
Low-tech logistics services from emerging markets will not flood developed markets. However, logistics service providers from developed countries could try to include low-tech logistics solutions within their service portfolio in order to meet unsatisfied customer demand for very cheap and simple logistics services. Although this market segment may be considered as rather limited, serving market niches can be very profitable.

Positioning & Strategy

Social network broker
Professional social network brokers (SNB) could assist in 'getting to know the right people'. Social networks and personal contacts will continue to be crucial in doing business successfully in the future. Foreign companies which aim to enter an emerging market could contact SNBs and share their ideas on future business plans in the respective emerging countries. In turn, SNBs will arrange and initiate the first contact between the new market entrants and relevant individuals in the emerging country.

Barter trade specialist
Barter trade will probably not represent the most prevalent financing mode for emerging and least developed countries. However, there is good reason to believe that barter trade could still offer great opportunities for doing business in emerging markets.

Companies which position themselves as 'barter trade specialists' could help to make this form of trade more effective and efficient. Barter trade specialists assist in evaluating the articles of exchange and structuring the exchange. Countries and companies active in barter trade often appreciate the additional levels of security implicit in such transactions. While conventional, cash-based trade often includes some uncertainty as to whether the counter-party is able to pay, exchanging parties in barter trade are often better able to evaluate the availability of the agreed barter product.

Consolidation scout
Consolidation scouts could develop an attractive business opportunity in emerging countries. They could use their experience and knowledge about the logistics markets in specific emerging countries and assist in identifying potential acquisition targets for companies aiming at growth through mergers and acquisitions. Consolidation scouts would check not only financial situations and product portfolios, but would also assess cultural fit, distribution networks, and strategies in order to spot optimal acquisition targets. Consolidation scouts might also serve as advocates for the deal, once they have identified a suitable M&A partner.

4PL 2.0
Fourth-party logistics service providers (4PL) coordinate and manage delivery or supply networks to achieve efficient, agile networks and support other service providers. Such companies could play an important role in emerging markets, where they could help to increase currently low levels of efficiency. 4PL 2.0 would provide a facilitating role in fragmented markets, as they offer a service portfolio based on the combination of logistics services provided by sub-contracted logistics service providers. 4PL 2.0 would incorporate even the smallest logistics service providers and their service offerings within an emerging market into their networks, providing small logistics service providers with jobs which they might not have received without the 4PL's support and activity in the logistics market. Companies benefit from 4PLs' extensive networks and experience, which will help them select for the best logistics service solution for each individual customer.

Customs in country of origin (CCOO)
When quickly perishable cut-flowers have to be transported for several thousand kilometres around the globe there is no time to waste at customs desks. Thus, when cut flowers are transported from the Netherlands to Japan, for example, a Japanese customs officer conducts all the required customs procedures in the Netherlands so that the flowers can be imported into Japan without any delays. In this system, customs procedures are conducted in the country of origin. This concept could be transferred to other industries in emerging countries as well. In many emerging countries, companies report problems with customs handling and complain about time consuming and annoying customs procedures. Efficiency improvements could be realised if corresponding procedures are already completed in the exporting country, eliminating the need to queue at the customs counter of the country into which products are to be imported. The accelerated customs clearance could reduce costs of employed capital as high-value goods and assets would be moved faster between countries. In order to achieve such improvements, participating countries will need to negotiate new agreements regarding customs procedures.

Collaboration of logistics service providers to shape new transport corridors
The design and shape of new trade corridors will be strongly affected by the new players actively using them. Logistics service providers should work closely together in order to shape those new transport corridors, i.e. identify future transport corridors, seek ways to build up required infrastructures, actively contribute to their establishment and develop services which are optimised for transportation activities taking place in those corridors.

Development of rural areas
In the past, logistics service providers in emerging countries have strongly focused their activities on urban areas leaving rural areas comparatively underdeveloped. Appreciable growth potential in rural areas looks likely, though. Logistics service providers which extend their activities to those areas and establish effective distribution networks within them could realise first-mover advantages. By opening up these new markets, logistics service providers could successfully contribute to the design of new supply and procurement markets.

Research & Education

Logistics scouts
Logistics scouts could aim to identify logistics experts in developed countries. Working on behalf of logistics companies in emerging countries, they could aim to secure qualified logisticians and supply chain experts willing to relocate to emerging markets. Logistics scouts would serve to help to close the talent gap in some emerging markets.

Strong cooperation between logistics actors in emerging markets
Logistics service providers in emerging markets could increase their ability to shape and design the future of logistics industries in emerging markets if they cooperate in a stronger way than in the past. By more intensively engaging with logistics associations such as the China Logistics Club or the Association of Russian Freight Forwarders or by conducting intense lobbying activities, even smaller logistics service providers could increase their ability to influence the market. Participating in such panels could also be interesting for logistics service providers from developed countries aiming to operate in emerging markets.

Cross-border innovators
A number of organisations and companies in emerging countries possess good ideas for effective innovations, some of which may even represent real breakthroughs. However, those innovation projections often lack sufficient financing. Actors in both emerging and developed countries could establish institutions with the mission to finance outstanding examples of innovations, thus assisting in the realisation of important projects. By providing the required funds to turn ideas into reality, they would significantly accelerate industry development and ensure the sustainable improvements of the logistics industries in emerging markets.

Establishment of research cultures
The importance of logistics research and research oriented cultures in emerging countries is still lower than in many developed countries. Nevertheless, as research is a driver for sustainable development and innovation, ways to promote research in emerging markets will need to be found. Logistics companies in emerging countries should aim to increase research activities in their markets by establishing concrete incentive systems. For example, logistics companies in emerging countries could collectively announce attractive research prizes or reward best practices in the logistics industry.

Organisation & Processes

Managerial accounting and performance measurement
Many logistics processes in emerging countries are rather inefficient today. In many emerging countries, logistics costs represent a much higher proportion of overall GDP than in developed nations. Advanced managerial accounting and performance measurement processes could assist in better understanding cost drivers in logistics processes and becoming more efficient. Activity-based costing, KPI reporting or the application of internal transfer prices are just some examples of accounting processes which could help in better analysing and managing logistics processes and thereby reducing costs.

Second hand technologies for emerging markets
Instead of investing into new and cutting-edge logistics technologies, a market for second hand logistics technologies could enable logistics service providers in emerging markets to acquire technologies which represent good value for money. Today, numerous projects in emerging countries are being put "on-hold" as necessary technologies cannot be financed. The acquisition of expensive IT systems is another major problem for logistics service providers in emerging countries. Opportunities to purchase second hand technologies for lower prices could be a valuable lever to attract required investments.

Logistics service providers which operate in both developed as well as emerging markets could use their market knowledge to function as a broker. They could facilitate contacts between companies willing to sell and those willing to purchase used technologies.

Logistics honey bee network
The original honey bee network is an organisation founded in India made up of like-minded individuals, innovators, farmers, scholars, academicians, policy makers, entrepreneurs and non-governmental organisations (NGOs). It functions on the premise that members exchange knowledge and innovative ideas in a fair and just way. The goal thereby is to establish a sustainable knowledge sharing organisation in which each member benefits from other members' ideas and skills. In the past, numerous innovations have been realised within the network which are used by a large number of network members today. Similar networks could be established for logistics industries in emerging markets. Within these networks, logistics service providers could share innovative ideas, best practices and knowledge in order to improve their logistics industries.

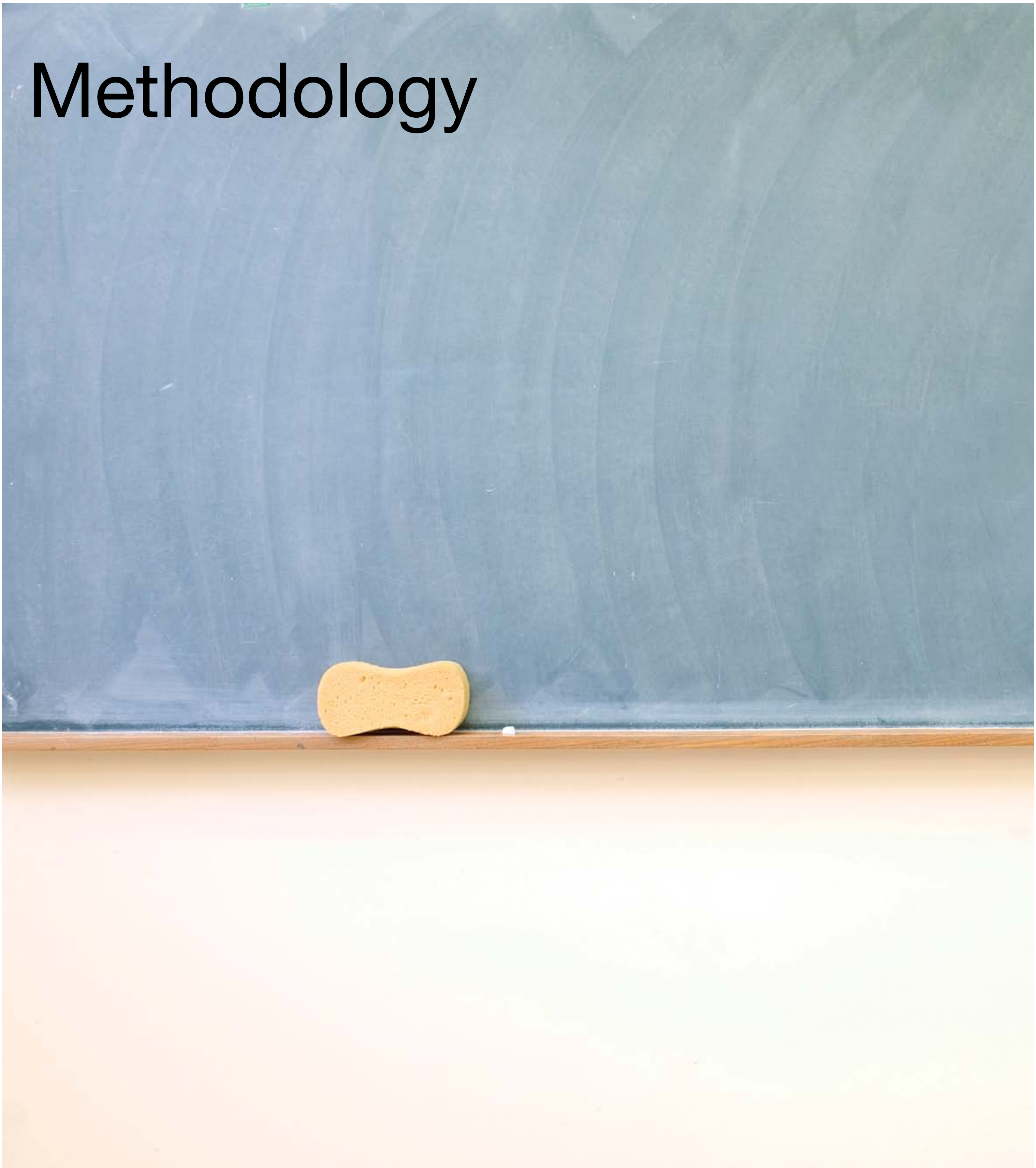
Mobile tracking and tracing
The usage of mobile phones is well-established in certain emerging markets, with coverage rates in some cases exceeding those of developed markets. This trend is likely to continue and could support new areas of application, such as the use of mobile phones as simple tracking and tracing devices. For example, truck drivers could be localised via their mobile phones which would give information about the location of the transported goods and products. Using established and widely-used technologies such as mobile phones would lessen the requirement to install cost-intensive tracking and tracing systems.

CSR guard
Many companies are increasingly aiming to operate in a responsible way and are highlighting their CSR activities, often as part of a strategy to protect and build valuable brands. Achieving real sustainability usually means monitoring the activities of supply chain partners as well, however many companies report challenges around monitoring the extent to which supply chain partners are also complying with CSR guidelines. This difficulty is especially acute when suppliers are located in other regions. Many LSPs already have a core competency in connecting companies across the supply chain. They may be able to leverage valuable knowledge about partners' activities and develop service offerings which would monitor whether supply chain partners stick to CSR related agreements.

Pictogram-based logistics language
Pictograms are already in use for traffic planning and regulation in some countries (e.g. Japan). These easy to understand 'pictures' can be interpreted by individuals regardless of reading and writing skills or language. A similar concept could be transferred to the logistics industry and help to improve logistics processes. A standardised, pictogram-based logistics language would simplify logistics processes between regions or countries in which different languages are spoken, overcoming language barriers. Moreover, a pictogram-based logistics language would not only be interpretable by human beings, but also by machines and computers. Implementing such a language could help companies realise higher degrees of automation and compatibility between different systems.

Avatar processing
Artificial intelligence has become an essential part of the computer science and technology industry over the last decade. In the future, artificial intelligence could also find its way into the transport and logistics industry. Thus, intelligent machines could control different avatars which take over various assignments related to logistics processes and replace the necessity for human beings to make decisions. Furthermore, these intelligent machines could potentially manage the planning, scheduling and controlling of logistics processes.

Methodology



RealTime Delphi Innovation

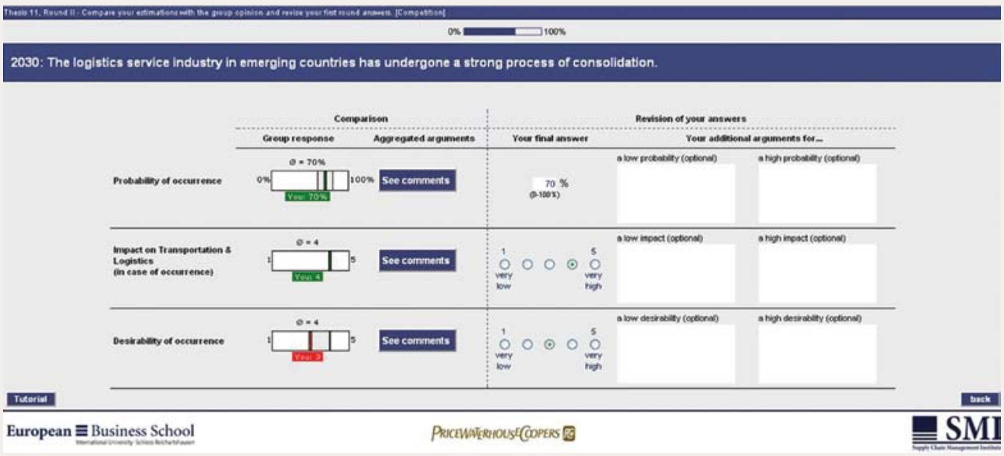
Our global thought leadership programme “Transportation & Logistics 2030” employs a future methodology known as the Delphi technique. A new innovation of the Delphi technique developed by the Supply Chain Management Institute (SMI) of the EBS Business School was applied with significant advantages for both surveyed experts and the monitoring team.

The classic Delphi technique was developed at U.S. RAND Corporation in the 1950s in order to overcome general group inefficiencies, such as bandwagon, underdog and halo effects, and to systematically develop expert opinion consensus concerning future developments and events. The usual Delphi forecasting procedure takes place in the form of an anonymous, written, multi-stage survey process, where feedback of group opinion is provided after each round. We designed our Delphi as an Internet-based, almost RealTime survey that increases the validity of results by streamlining the classical procedure and making the whole process more interesting and comfortable for the surveyed experts. Using this technique, much of the analysis of the data results can also be automated.

Based on extensive desk research, expert consultations and workshop sessions, PwC and SMI developed 16 key Delphi projections for the future of emerging markets (see overview of theses p. 57). Invited experts were asked to rate the theses‘ probability of occurrence (0-100%), the impact on T&L if occurred (5-point-Likert scale) and the desirability (5-point-Likert scale) as well as to provide (optional) reasons for all answers. After the first round, answers for a projection had been given, the statistical group opinion of all participants was calculated immediately and visualised in a second round screen (see Figure 4).

The final results of the RealTime Delphi survey formed the framework for the opportunity analysis. Further expert workshops drew upon the extensive qualitative survey data and desk research to develop a nuanced view of future trends.

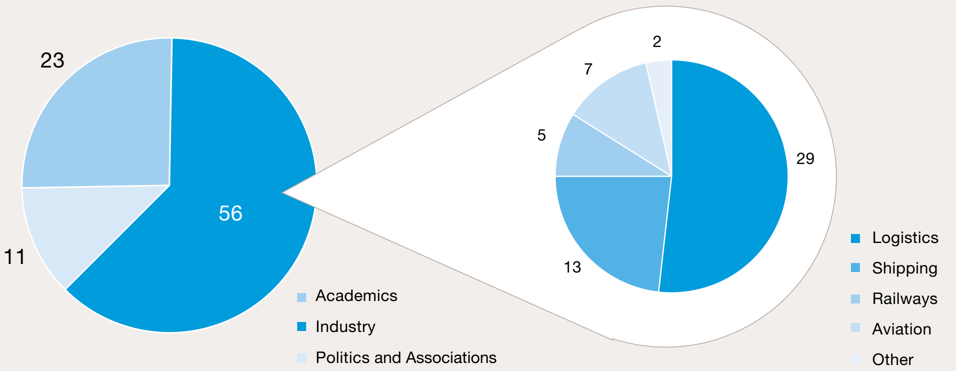
Figure 4
RealTime
Delphi screen



The objective of Delphi studies is not to obtain a representative sample of a population, as with most conventional surveys. Rather, Delphi research aims for a high inclusion of expertise. Our panel included a significant number of experts from business, mainly C-level executives and decision makers from global companies. Key selection criteria for our selection of RealTime Delphi participants were industry and educational background and work experience, as well as function in and outside the organisation.

Overall 90 of the invited experts participated in the study, of which 56 (62%) were industry experts, 23 (26%) were academics and 11 (12%) came from politics or associations (see Figure 5). The industry share included representatives from all modes of transport, enabling us to develop a multifaceted picture.

Figure 5
Segmentation of Delphi experts



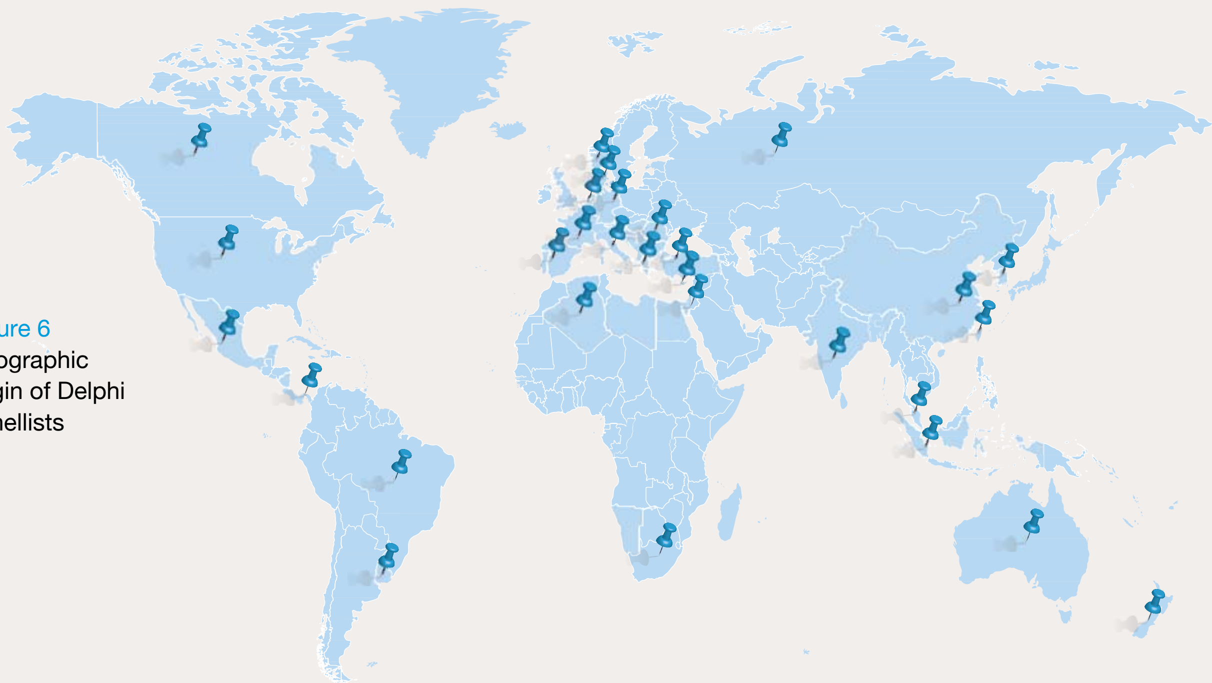


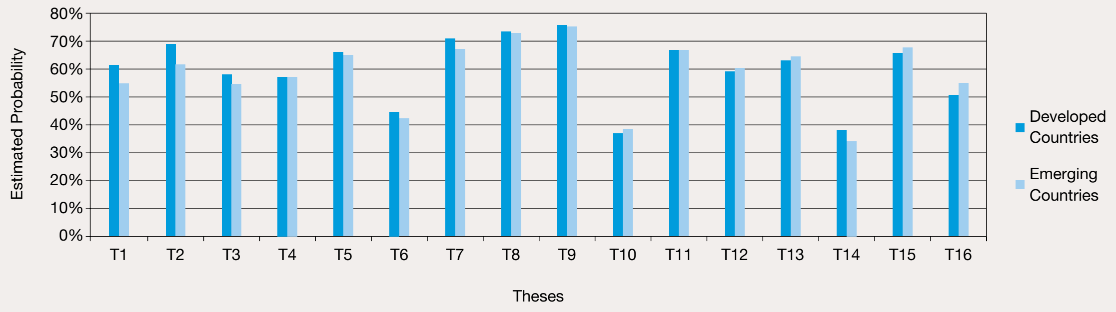
Figure 6
Geographic origin of Delphi panellists

Represented countries: Algeria, Australia, Austria, Belgium, Brazil, Canada, China, Cyprus, Denmark, France, Germany, Jordan, India, Italy, Malaysia, Mexico, Netherlands, New Zealand, Panama, Russia, Singapore, South Africa, South Korea, Spain, Taiwan, Turkey, Uruguay, United States of America.

The study also aimed to achieve a comprehensive global perspective. Participants were based in 28 different countries, ensuring a balanced and global view of the future (see Figure 6). In total, 51% of the respondents came from developed countries. A significant share of 49% of the respondents originates from emerging countries, which assures that this perspective is equally represented as well.

Figure 7

Response behaviour of Delphi panellists



A group comparison of future estimations from developed and emerging countries did not reveal any significant differences (see Figure 7). This result can be considered a good indicator for our panel's expertise since experts were able to provide an objective assessment on the future regardless of whether they were from emerging or developed countries.

The Delphi process was very dynamic. During the survey process of 8 weeks each participant took part on average in 2.1 Delphi rounds, i.e. first and second round per thesis as well as 1.1 further logins for revision purposes. The maximum number of rounds measured was 7. The statistical group opinion per thesis was provided in form of a box plot, also known as a "box-and-whisker plot". It represents a diagram showing a row of univariate numerical data (e.g. from 0 to 100%) as well as several characteristics of the series of data (e.g. median, distribution, outliers). In addition to the statistical group opinion, the comments and arguments – already submitted by the experts for each projection – could be reviewed. After conclusion of a full survey cycle, i.e. first and second round screens of all theses, a consensus portal was activated which gave an overview over the current divergences from the group. From this point on, the respondent could access each thesis separately at any time until closure of the portal in order to check for updates and to revise own estimates. The group discussion came up with 840 written arguments equaling 9.3 comments per expert on average. The large number of comments underlines the quality of the data.

Overview of theses

EP = estimated probability; I = Impact; D = Desirability
Measures of C = consensus (interquartile range <= 25); dissent (interquartile range >= 25)

No.	Theses for the year 2030	EP	C	I	D
1	Logistics companies in emerging markets continue to suffer from inadequately designed mechanisms for law enforcement (e.g. customs, capital collection etc.).	58%	20	3.6	1.6
2	The establishment of free trade zones has fostered strong economic growth in emerging markets.	66%	20	3.9	3.8
3	Social networks and personal contacts (e.g. Blat in Russia and Guanxi in China) have become key determinants of the supply chain structures in emerging markets.	56%	20	3.4	2.5
4	Privatisation of state-owned transport organisations has reduced the role of government from major player to 'watchdog' in emerging markets.	57%	20	3.9	3.8
5	The transport and logistics industry has become a focus area for (foreign direct) investment in the emerging markets.	65%	12	4.0	4.0
6	Major infrastructure projects between emerging markets and least developed countries are primarily realised via barter trade (i.e. swaps of goods and services rather than cash).	44%	30	3.2	2.8
7	Global trade flows have shifted such that new transportation corridors between emerging countries and least developed countries have been established.	69%	20	4.0	3.9
8	Logistics service providers in emerging countries have strongly increased their depth of added value (i.e. they offer value-added services such as packaging, labelling, mounting).	73%	10	4.0	4.0
9	Multinational logistics service providers have entered the domestic logistics markets in emerging countries.	75%	10	3.9	3.7
10	Logistics service providers from emerging countries have gained significant market share in developed countries.	37.6	20	3.4	3.2
11	The logistics service industry in emerging countries has undergone a strong process of consolidation.	67%	20	3.8	3.7
12	Promising career perspectives in emerging countries have attracted large numbers of skilled logistics professionals from developed countries.	59%	20	3.6	3.4
13	The CEP market (Courier. Express. Parcel) in emerging countries has experienced the highest growth rate in the logistics industry.	63%	25	3.6	3.3
14	Low-tech logistics solutions from emerging countries have flooded the markets in developed countries.	36%	27	3.4	2.2
15	Domestic logistics service providers in emerging markets have significantly increased the level of automation in their logistics processes.	67%	20	3.9	3.9
16	The centres of gravity in transport and logistics (e.g. innovations, technology, headquarters and standards) have shifted to emerging markets.	53%	25	3.8	3.2

Figure 8 Overview of theses

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