SKOLKOVO
Moscow School of Management

WHO IS YOUR COMPANY? WHERE TO LOCATE TO COMPETE IN EMERGING MARKETS

IEMS EMERGING MARKET BRIEF

SKOLKOVO Business School - Ernst & Young
Institute for Emerging Market Studies (IEMS)
Vol. 13-03, February 2013

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I.
Introduction

Who is your city? This question has concerned city planners, local economic development agencies, and senior politicians for decades. Ever since Richard Florida's Who's Your City? appeared in bookstores, businesspersons in the developed world have been trying to figure out which cities offer the best opportunities for high-skilled workers and companies. The data point to the usual suspects in the developed world – London, New York, Paris, Tokyo and a handful of other mega-cities. A company wishing to develop products and sell in the United States should clearly consider New York as a strong candidate. New York provides air, rail, and road access to most of the major markets in the United States. New York has a solid infrastructure, such as a reliable water supply and internet access. New York's universities – New York University, Columbia University, and others – provide a well-educated workforce. London offers similar advantages for companies seeking to market their goods and services in the UK and Europe. But what about companies that want to sell in Medellin, Chelyabinsk, or Surabaya?

Companies that want to enter countries with developing markets need to move away from the old, costly centers and toward the new centers of commercial influence in the emerging world. But where are these centers? In this brief, we identify the most attractive cities in developing countries. These cities, like their older and increasingly less competitive siblings in Europe and North America, offer knowledge-intensive industries, excellent infrastructure, and a high quality of life that attracts the world's best and brightest managers and staff. For the managers of the largest companies in the developing world, such as Petrobras, Hon Hai Precision, or Reliance Industries, location can dramatically affect worldwide revenue. Even large companies in the developed world, such as British bank HSBC, continue to explore the idea of moving to developing countries to take advantage of lower taxes, cheaper labor costs, and more business-friendly regulations. For company boards around the world, the question, "Who is your city?" is tantamount to asking, "Who is your company?"

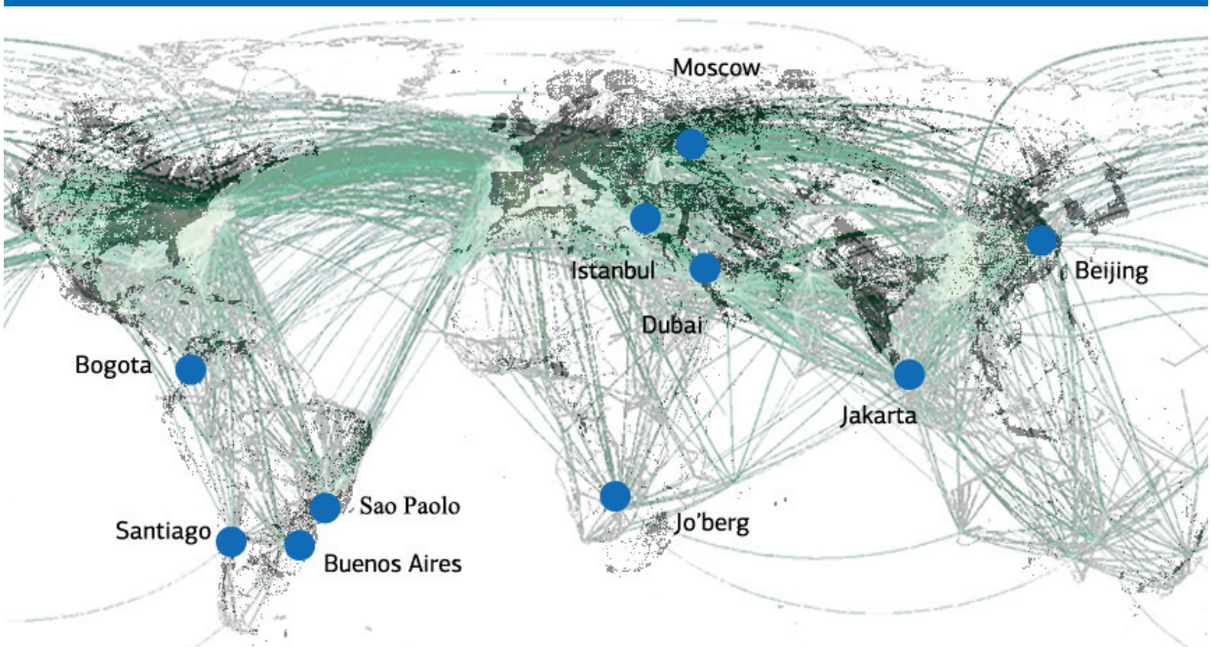
Company boards and directors should strongly consider new and upcoming cities like Istanbul, St. Petersburg, Buenos Aires, Dubai, and Johannesburg for their corporate headquarters. These cities offer what Paris, London, Tokyo, and other true global cities of the developed world offered business in the latter half of the twentieth century. Company staff locating in these cities will have access to innovative colleagues, excellent research facilities, a pleasant urban environment, and access to markets – following the new airborne routes of modern commerce. These locations have nascent business systems with supportive customers, suppliers, and even rivals, which promotes "coopetition," and ultimately brings more potential revenue from the developing world.

II.
Access To Markets And The Business Environment

Airports have revolutionized the way most companies do business. Memphis has become one of the United States' fastest growing cities because of the FedEx routing hub located near Memphis International Airport. Hundreds of thousands of businesses in the United States have chosen to locate in Dallas, Denver, New York, Washington or Los Angeles because of their close proximity to international airports. Businesses on the major airline routes can sell their products worldwide. Guangzhou and Los Angeles airports have made the China-to-California supply chain possible. The Jomo Kenyatta International Airport has made Nairobi a center of the European flower market. The Dubai International Airport serves thousands of corporate headquarters that sell in India (from the Middle East). Proximity to an airport – preferably one connected to the new international network of trade – determines a company's potential market size, cost of sales, and final profits. John Kasarda and Greg Lindsay have described this process extremely well for the developed world. In addition, they describe the decline of many modern hubs such as London's Heathrow and the Los Angeles International Airport. Companies wishing to take advantage of changing trade routes and the movements of the world's top executives will need

Many developing countries' companies might find that locating on a major air route represents a better way to enter a market than locating directly in the country

Figure 1: Major citiies and transport patterns worldwide



The figure shows economic activity (as proxied by lights at night as observed from outer space). Green arcs show air traffic from point-to-point. We match the confluence of air traffic and economic activity outside of the developed world by blue dots.

to consider relocating to the developing world.

An international trade pattern has already started to emerge in the developing world, as Figure 1 shows. Little data exists on the volume of commerce in cities, particularly large cities in developing markets such as Brazil or India. However, following many leading economists, we use the visibility of lights from outer space at night as an indicator of cities' commercial activity (Henderson, 2011). Such a map of economic activity shows that cities like Caracas, Sao Paulo, and Jakarta represent far more important sources of economic activity than official statistics might suggest. We have overlaid on this map the threads of international air traffic routes. The air traffic routes show the nascent emergence of international trade routes, with cities like Dubai linking Asia with Europe. Beijing serves as the hub for most intra-China traffic. Bangkok (and to a lesser extent New Delhi) offer the convenience and connectedness that other more popular cities (such as Bangalore) do not. Sao Paulo clearly serves as South America's air traffic hub. Companies that locate in these cities are able to send senior managers to meet clients in neighboring countries in less than eight hours. Such connectivity makes arranging sales calls much cheaper from Dubai than from Washington or Paris.

The figure shows economic activity (as proxied by lights at night as observed from outer space). Green arcs show air traffic from point-to-point. We match the confluence of air traffic and economic activity outside of the developed world by purple dots.

Many developing countries' companies might find that locating on a major air route represents a better way to enter a market than locating directly in the country. In 2010, for example, companies selling roughly US$14 billion in goods and services in Brazil sent them from Buenos Aires and other parts of Argentina. Latin American companies in Santiago sent roughly US$17 billion in goods to China, rather than setting up shop in Shanghai or Wuhan. Companies preferred to send roughly US$10 billion in goods from Jakarta to India, rather than produce their goods in places like Ahmadabad or Amritsar. Companies – particularly those selling in emerging markets – often prefer to locate on an international trade route rather than enter the target market directly. Figure 2 shows cities from countries that exported the most goods to each of the four BRIC economies for 2010. For example, roughly US$30 billion worth of goods likely passed through Riyadh on their way to China. China offers the most opportunities, as companies located in cities far and wide sell their products in the country. On the other hand, Russia provides the least op-

Figure 2: Want to sell in the BRIC economies? Move to Dubai, Riyadh or Jakarta

Cities which trade with China		Cities which trade with India		Cities which trade with Brazil		Cities which trade with Russia	
Sao Paulo	US$31b	Shanghai	US$40b	Shanghai	US$24b	Sao Paulo	US$4b
Riyadh	US$30b	Dubai	US$28b	Buenos	US$14b	Shanghai	US$30b
Kuala	US$25b	Riyadh	US$19b	Santiago	US$4b	Istanbul	US$5b
Bangkok	US$22b	Jakarta	US$10b	New Delhi	US$4b		
Santiago	US$17b	Kuala	US$7b	Guadalajara	US$4b		
New Delh	US$18b	Jo'berg	US$7b	St. Pete	US$2b		
Jakarta	US$16b	Doha	US$6b	Rihadh	US$2b		
St. Pete	US$20b	St. Pete	US$6b				
Buenos	US$ 5b	Sao Paulo	US$4b				
Dubai	US$ 4b	Bangkok	US$4b				

The data in the figure show the likely value of trade passing through (or likely co-ordinated by) each city on its way to each of the markets shown in the figure. We have used data from the IMF's Direction of Trade statistics for our estimates. We have estimated trade origining from each city as the IMF only provides national averages using national sources. Figures cited may not accurately represent the cities listed due to estimation problems.

portunities for such commerce based on trade routes. Companies from cities like Shanghai and Beijing sent about US$30 billion in goods to Russia in 2010. However, only companies in two other regions – Sao Paulo and Istanbul – sent even a fraction of that amount (roughly US$4.5 billion).

Why do these companies prefer to locate in Jakarta (for example) rather than Mumbai? Why do companies locate in Moscow, but not in Yekaterinburg? These places have very different business environments. According to the World Bank, companies have a far more difficult time doing business in Moscow than in Ulyanovsk. In Moscow, an entrepreneur with a new idea will wait about 30 days to register his or her new company. In Ulyanovsk, an eager entrepreneur needs to wait 21 days. In Bengaluru, an Indian entrepreneur waits about 40 days, as opposed to 30 days in Mumbai. However, the ease of doing business represents only part of the story. Some places, for whatever reason, create clusters of business activity. In these clusters, companies work with their suppliers to shorten supply times. They work with financiers to obtain cheaper and more flexible credit. They even work with competitors to license key patents or develop markets together. Understanding which cities in emerging markets offer the best location requires an understanding of these clusters.

III. Agglomeration Economies And The Creation Of Clusters

Many of today's business clusters sit in emerging markets

Why do many companies prefer to produce in China and send products through Dubai to India rather than produce in India directly? Economists recognize the tendency for companies to group together; these groups are called "agglomeration economies." Management strategists call these groupings "company clusters." Certain types of industries clump together in particular areas. Northern Italy dominates the shoe industry (or it used to). Groups of people come together, learn from each other, and produce products and services, which they often ship to their customers by air. Management gurus like Michael Porter and colleagues advise companies where to locate in developing markets (Delgado et al., 2011). Their study shows where certain types of industries cluster, with a focus on clusters in the US. Academics like Sorin Krammer (2011) and the consulting companies that use his research have mapped creative clusters, though almost exclusively for the developed world. However, such research does not do much to help CEOs looking to move into emerging markets.

Many of today's business clusters sit in emerging markets. Figure 3 shows some of the emerging clusters of the twenty-first century, using a proxy for cluster development used in the World Economic Forum's World Competitiveness Report. Most of these clusters lie in cities one would already expect, as many authors have written about Doha, Tel Aviv, and Bangkok. Some lie in up-and-coming areas about which few pundits have written. Riyadh's technology cities and Bahrain's Manama receive relatively little media attention. Some of the cities the reader might not expect include Hanoi, San Jose, and Nicosia. These scores come from surveys of business executives and so represent rather subjective impressions. However, the overall pattern appears clear: many new sources of new ideas and commercial partnerships will come from emerging markets.

Clusters are particularly important for companies in developing markets. These clusters tend to make up for problems with many developing countries' capital markets, legal institutions, and labor markets. For Michael Porter's Italian shoe markets, local business clusters led to a discriminating customer base, fierce competition from other fashion shoe makers, barriers to entry based around long-lived family secrets of the trade, and other factors. For industrial groups like the related holdings of Egypt's Mansour family or the sprawling pub-

Figure 3: Business clusters show where companies should locate in emerging markets

Source: Global Competitiveness Report (2012). We have averaged each country's University-Industry Collaboration in R&D score (on a scale of 1-7 where 7 is the best) and its State of Cluster Development (which uses the same score). We have divided the resulting averages into three clusters for demonstrative purposes only.

licly-traded holding companies like Turkey's Sabanci Holding, such clusters serve other purposes. The group-held bank helps decides what to finance (when financial reports may not contain the most reliable information). Members of these clusters help educate family members in the best schools and bring them back as managers. They also provide strong incentives to act honestly when judicial systems lack sufficient recourse. These clusters may not transfer advanced technical knowledge – such as those in Silicon Valley do – but they do transfer managerial know-how and Western business practices within the city (by people moving across the organization). In other cases, the relatively highly integrated business combinations of the developing world also help to create what we might deem a true cluster in other ways. Many family-held companies consist of portfolios of companies operating across different jurisdictions. Families in the United Arab Emirates, Saudi Arabia, and, in particular, Qatar buy companies abroad in order to bring their practices back to the Middle East.

IV. Disembodied Knowledge And The Stock Of Tacit Knowledge

Visible signs of clusters – such as technology parks – point to the development of nascent competitive regions. However, hurriedly building a science park does not necessarily guarantee a region's competitiveness. Management theorists in the 1990s saw innovation spillovers in places like San Jose, Boston, and Dallas. They suggested the creation of special areas where scientists, technical engineers and even management consultants could share ideas. Their idea turned out to be only partially successful. According to UNESCO's "Science Parks around the World," the most innovative areas developed the largest number of science parks. The US (the world's foremost innovator) has roughly 150 science parks. France has about 60 science parks and Finland about 25. Turkey – one of the upcoming world innovators – has 45 "technopolises." South Africa, a country less known for its technical and commercial innovation, hosts five science parks. Madagascar hosts one (the Technopole du Toamasina) and Senegal has a couple, such as Dakar's Technopolis. The only thing companies need to do is tap the cluster and send out their products on the regular flights departing from the local airport and through internet links between buyer and seller.

However, the pundits confuse correlation with causality: science parks do not make innovative areas as much as groups of creative companies tend to strategically clump together. We now know companies themselves, rather than government policies or subsidies, create clusters of innovation. Corporate strategy dictates company structure, including where to locate and how to handle relations with the divisions of the company located outside headquarters. The European Union's (EU) Cluster Observatory consistently measures the rise and fall of industrial clusters in the EU. At first glance, we may be tempted to think that companies should not locate in Piedmonte (Italy) or Severovychod (Czech Republic) for automobile manufacturing. Fiat and Skoda already produce enough cars there to fill regional demand. But such thinking ignores the transportation-route mode of thinking we discussed earlier. Companies prefer to locate in an innovative area – and send their goods and services via planes – rather than locate in the local market.

Firms that adopt a profit-oriented strategy in phase I are in a much better position to attain high sales growth; conversely, firms that initially adopted a sales growth strategy are less likely to reach high profitability over time

Figure 4: Locate in Slovenia if you want to make metal and in Lietuva for processed foods

City	Industry	Specialization score	Employees
Rixensart (Belgium)	Pharmaceuticals	22	9,000
Severovychod (Czech Rep.)	Automotive	3	30,200
Brugnera (Italy)	Furniture	8	17,200
Warsaw (Poland)	Telecom	2	31,800
Vigo (Spain)	Shipbuilding	13	40,000

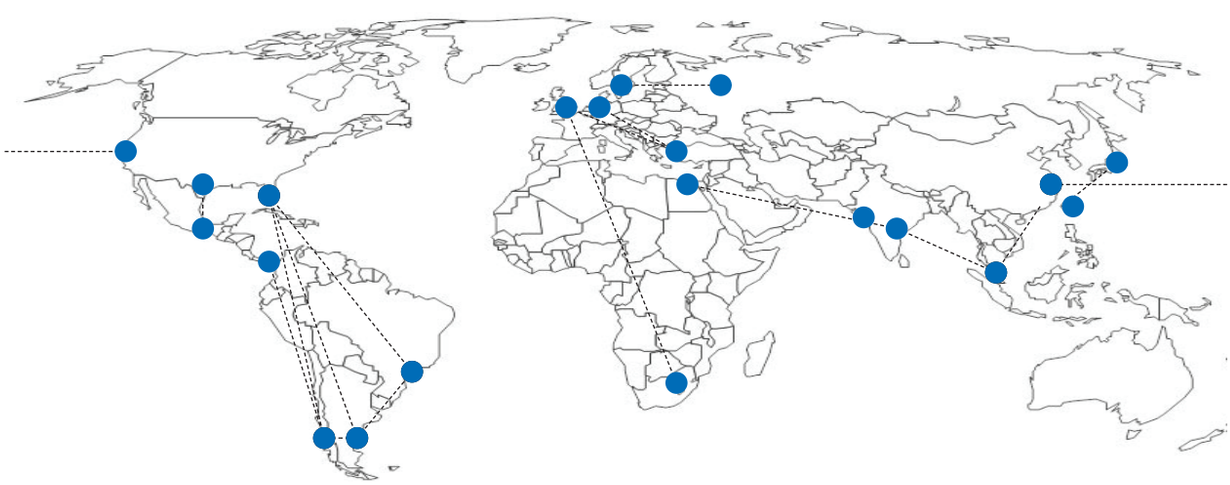
Source: EU Cluster Observatory (2012). Available online. We have rounded the specialization scores and numbers of employees.

For many companies in developing economies, business structure follows strategy. As early as the late 1990s, authors like Nitin Nohria and Sumantra Ghoshal showed that know-how in a company flowed through the arteries of its organizational structure. In the 1990s and 2000s, companies like Baker & McKenzie set up practices in Moscow in order to learn how to do business in the former Soviet markets (Bauman, 1999). By the 2010s, these investments began to pay off. The Ukrainian office could out-bill the Moscow office (adjusting for the size of the relevant market). Companies locating in Moscow could draw on talent from the Higher School of Economics, IBS-Moscow and now the newly established Skolkovo Moscow School of Management. New companies in the Ukraine could draw on the Kiev School of Economics, Kyiv-Mohyla Business School or International Management Institute (IMI-Kyiv). For companies like Baker & McKenzie, the decision is not whether to work in the Ukraine or Russia – internet communications and corporate reporting lines link both markets. Whether a company locates in Kiev, Moscow, or St. Petersburg depends heavily on where local staff want to live, where business runs smoothly and the ease of travel to prospective clients. Other companies like JP Morgan or McKinsey & Co. and other professional services firms follow the same pattern. Internet links often follow organizational links.

Looking at the emerging hubs and spokes of the internet in the developing world can tell us a lot about where businesses prefer to locate. Employees in companies of all sizes use the internet to find customers, transact with business partners and engage in the socializing of the creative class, such as downloading papers and reading online trade journals. Figure 5 shows the volume of site-to-site internet traffic in selected portions of the global internet map. These internet links show the way that commercial and other knowledge flows between urban areas. Relatively heavy internet traffic occurs between Istanbul and the EU. Moscow seems very connected with Stockholm. Buenos Aires and Sao Paulo communicate more frequently via Miami than with each other directly. Such information flows strongly point to the hub-and-spoke nature of international business strategy.

The data suggest that many cities in emerging economies serve as halfway points between

Figure 5: Internet connections show the ways that developing country sites link emerging markets



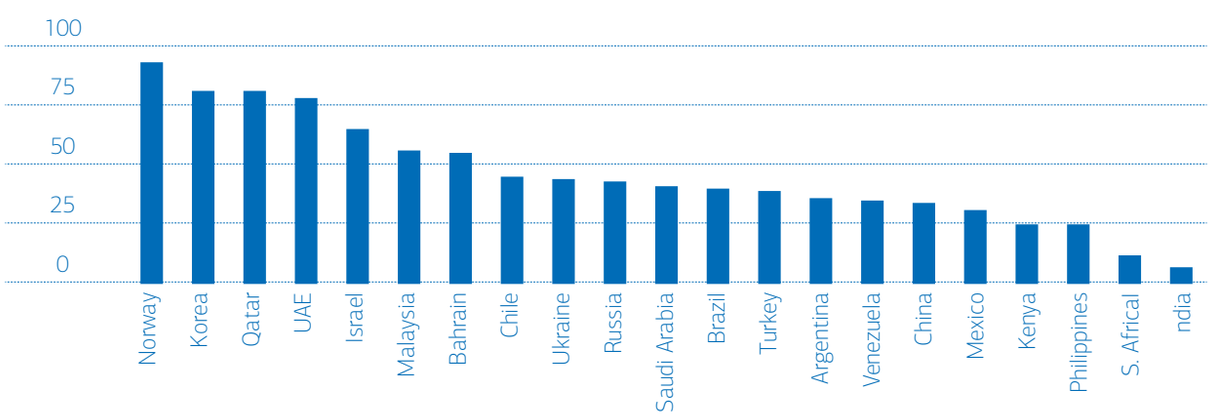
The map shows simplified data from the World Internet Map (2012). We have omitted links within and between developed countries as well as minor traffic links in order to drawn attention to particular data flows between developing markets.

hyper-developed cities in the developed world and markets in the developing world. Istanbul has strong links with several EU countries, and more (but weaker) internet links with several countries in the Middle East. Most Latin American capitals turn toward the US, yet have started to develop weak links between themselves. Japan has many connections with Hong Kong and the US.

Internet use will determine who has access to the latest ideas and highest paying customers. Companies sold over US$500 billion online in 2011 – but only to those with internet access. Figure 6 shows the extent to which potential customers and business partners have internet connections in various markets. Qatar, Dubai, Abu Dhabi and Kuala Lumpur have some of the highest proportions of internet use in their populations. These areas will likely lead in internet sales and partnerships in the upcoming years. Fewer than half of Russians, Turks and Chinese use the internet. Lack of internet connection means less access to new commercial ideas, practices and partners.

These data also point to India as a special case among the developed countries we analyzed. The population of India has the lowest proportion internet users. Indian cities also possess far fewer air linkages with foreign markets than we would expect of a country of its size. Despite all its potential, India remains a relatively underdeveloped commercial opportunity because none of its urban centers offer the infrastructure needed to attract worldwide business. Indian populations can work from much more attractive locations (in the US, Hong Kong or Singapore), rather than live and work in India itself. These data also suggest that the internet provides something more than just productivity – it also brings quality of life.

Figure 6: Who's your city depends on if you are plugged in



Source: World Bank Development Indicators (2012) with data from 2010 or latest year available.

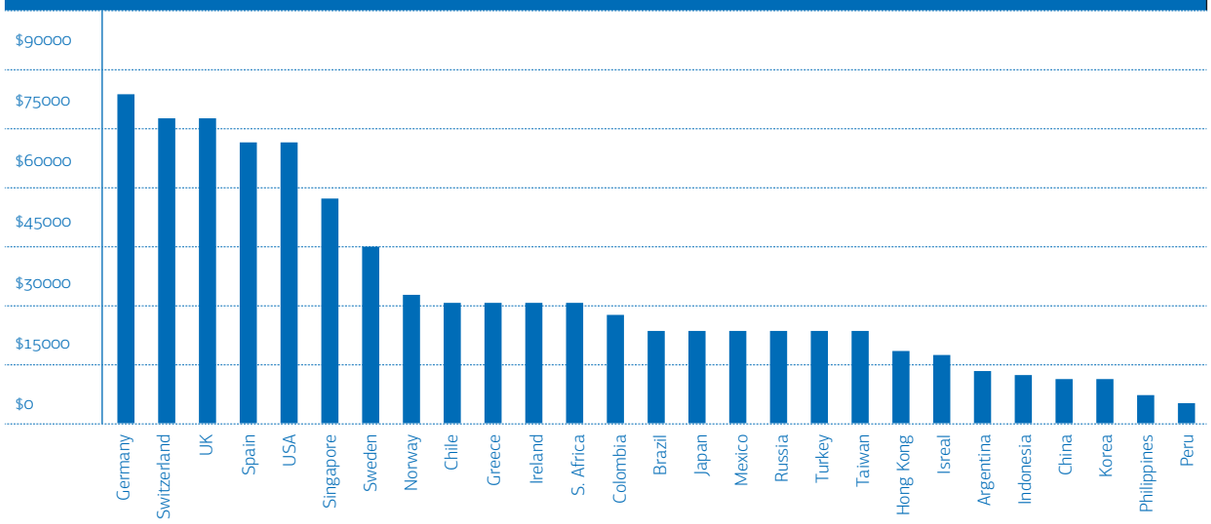
V.
Quality Of Life And The War For Talent

London, New York and Paris no long hold a monopoly on the most talented executives. Many emerging cities in the developing world have managed to attract some of the world's best and brightest – and retain them. In the 1990s, we heard stories of a global war for talent (Michaels et al., 2001). In that war, companies would need to pay an internationally determined wage in order to lure away America's and Europe's most capable managers. Yet, the actual data paint a very different picture. Figure 7 shows the differences in salaries for senior managers in selected developed and developing markets. An executive in the US would earn roughly twice the amount of his or her British counterpart. Yet, the salary for his or her Shanghai counterpart would lie at about 10% of that. Clearly, executives do not all seek to locate in New York, London, and Tokyo. Other cities can produce the same kinds of talent as those in the West.

Connected to the war for talent are university linkages. Universities provide access to new research and commercial ideas. Universities also create a vibrant environment for the arts and a stimulating environment in which to live and raise families. Indeed, many of the upcoming cities in the emerging markets also have linkages with well-established universities. Figure 8 shows the relationship between the location of many of the largest companies in a region and the universities in that city. Places like Sao Paulo foster universities that either develop or attract many of the talented staff that inhabit roughly half of Latin America's largest companies (according to Latin Trade magazine). Beijing has some of the highest-ranked universities on the charts. No wonder these cities produce managers in many of the world's largest corporations. New talent no longer spends the obligatory four to eight years picking up a foreign degree and working in the US or EU.

According to the latest thinking, the creation of dynamic, geographically based clusters depends on the existence of a creative class. The data have not yet confirmed if such a creative class really associates and creates new commercial, scientific and artistic ideas. However, we do know that the amount of "brain circulation" – with highly skilled workers moving from OECD to developing countries – has increased in the 2000s. We know the major driver for migration, after wage considerations, is quality of life.

Figure 7: The level battleground of executive compensation has failed to materialise



Source: Towers Perrin (2006). We used before crisis data (in nominal terms) in order to predict post-crisis long term levels.

Highly skilled workers are no longer required to move to New York or Paris to enjoy a high quality of life. Dubai, Buenos Aires, and Istanbul provide a quality of life not far removed from that of Budapest, Prague, or Hong Kong. Figure 8a shows quality of life scores from a definitive Mercer study. According to the most recent data, opening an office in Vienna would most likely lead to the happiest staff. Companies keen on providing a relatively high quality of life without Vienna's high cost of living might want to consider Kuala Lumpur, Dubai, Buenos Aires, and Abu Dhabi as alternatives. In addition, we know that happier people tend to be more entrepreneurial on average. Figure 8b suggests what most managers already suspect – happier workers generate new marketable products and services. Figure 8b shows the cross-country relationship between the percentage of the population that is very or quite happy and new business registrations per 100 persons. A work force could be happy for a number of reasons: higher salaries, better infrastructure or even national culture. New business registrations can actually cause greater happiness, as individuals who control their own destinies and run their own businesses might feel a greater sense of satisfaction. We do not seek to explain

Figure 8: Table of largest companies and best universities in Latin America and Asia

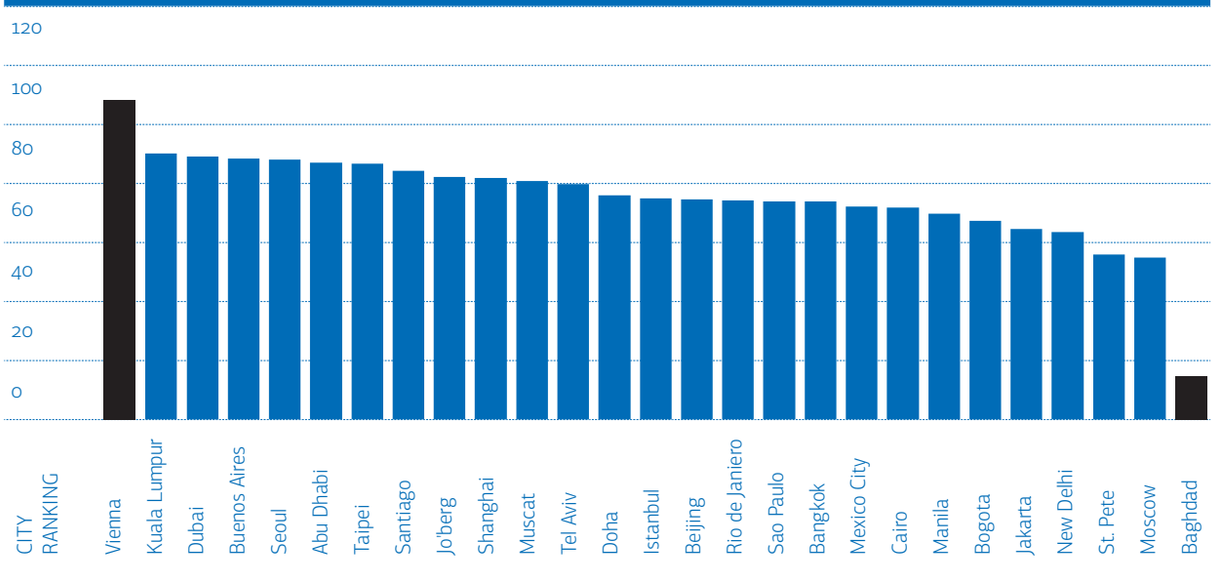
Latin America	
Sao Paulo	Ultrapar (fuels) with sales of US$12b. Ambev (beverages) with sales of US$5.3b or Eletropaulo (electricity) with a turn-over of US$3b. Universidade de São Paulo scores first on US News and World Reports rankings with a perfect score of 100. The Universidade Estadual de Campinas scores third with a 95/100 on the US News and World Report list.
Buenos Aires	Techint (branch of the Italian conglomerate) with turn-over of over US$19b and Telecom Argentina (turn-over of US$3b). Universidad de Buenos Aires scores 82 (out of 100) on the US News and World Report list for the region.
Santiago	AntarChile, a large holding company with revenues of about US$12b and the big-box store Cencosud US$8b. Pontificia Universidad Catolica de Chile scores 99 out of 100 and Universidad de Chile 40/100 on the US News and World Report list.
Mexico City	America Movil (telecom) with US$25b in turnover and Grupo Carso (another large holding company) with a turn-over of US$5.4b form two of the larger local enterprises. The Universidad Nacional Autonoma de México ranks 92/100 on the US News and World Report list.
Bogota	Ecopetrol brings in US$15b in revenues while Bancolombia brings in about US$2.5b. The Universidad de los Andes ranks at 85/100 on the US News and World Report list.
Asia	
Beijing	The Sinopec Group brings in about US$273b in revenues whereas State Grid about US$226b. Literally thousands of other companies make Beijing a centre of world commerce. Peking University scores 93 out of 100 on US News and World Report's list and Tsinghua University lists at 90/100.
Moscow	Gazprom brings in US$158b while Norilsk Nickel brings in US$13b in revenue. Lomonosov Moscow State University ranks 61 out of 100.
St. Petersburg	Leningrad Metal Works at US$1.5b and St. Petersburg University ranks 41 out of 100.
Mumbai	Reliance Industries brings in US$76b in revenues while Tata Motors brings in US$34 billion. The Indian Institute of Technology sits in Mumbai.

Source: US News and World Report. Company data come from the LT500 Latin America's Largest Companies, Forbes Asia's 50 Fab Companies. We did not include large companies whose headquarters are not located in the city indicated.

these data – only to exploit them to point to potential workers for companies looking to locate in developing economies.

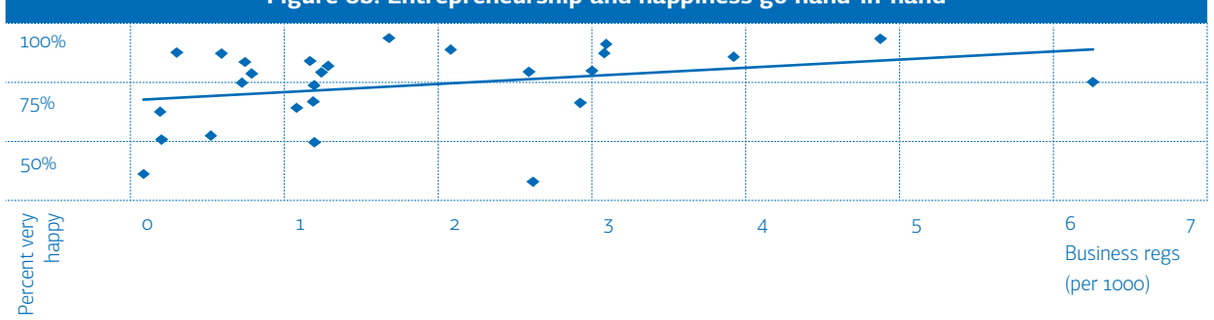
The data also suggest something that most CEOs know instinctively: more connectivity (as well as more happiness) leads to more innovation. In the twenty-first century, locations offering a higher quality of life and more air travel and internet connectivity serve as the hubs of business. Figures 9a and 9b show that many of these hubs exist in the developing world. In Figure 9a, increased connectivity, as proxied by international annual air arrivals, correlates with scientific publication. Business partners and innovators travel to centers of commerce and activity. As shown, many of

Figure 8a: A job in the world's up-and-coming cities no longer a hardship posting



Source: Mercer (2010).

Figure 8b: Entrepreneurship and happiness go hand-in-hand



The data in the figure show the percent of the population either very happy or quite happy as measured in the most recent World Values Survey. We show new business registrations per 100 persons from the World Bank. We delted Mali and Iraq as outliers (they showed far more businesses started per capita than expected).

the centers we have discussed in the developing world, such as Sao Paulo, Shanghai, and St. Petersburg, provide these venues. International travel to emerging market hubs, scientific publications, and high-tech exports go hand-in-hand. Figure 9b shows the relationship between international arrivals and high-tech exports from various markets. In correspondence with their lower level of travel and high-tech production, emerging hubs like Buenos Aires and Johannesburg follow the general trend. More air connectivity provides access to new markets and technologies. In summary, travel, quality of life, and economic production go hand-in-hand.

More connectivity (as well as more happiness) leads to more innovation

Figure 9a:
Arrivals and scientific publications

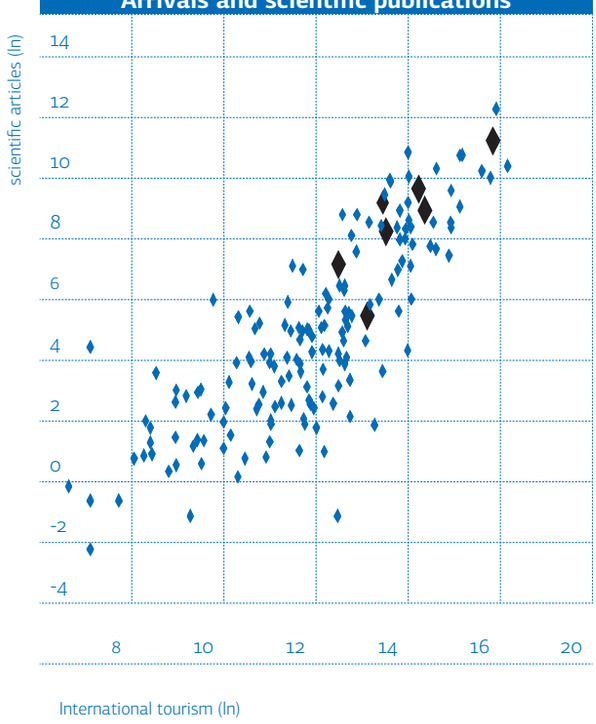
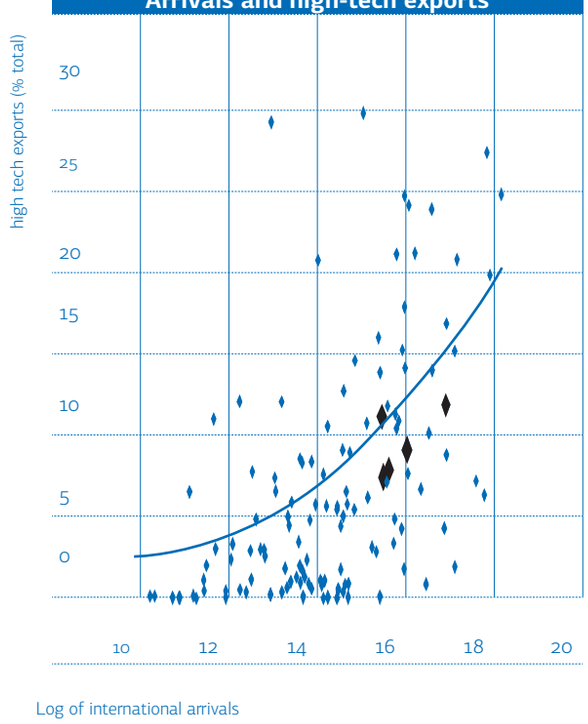


Figure 9b:
Arrivals and high-tech exports

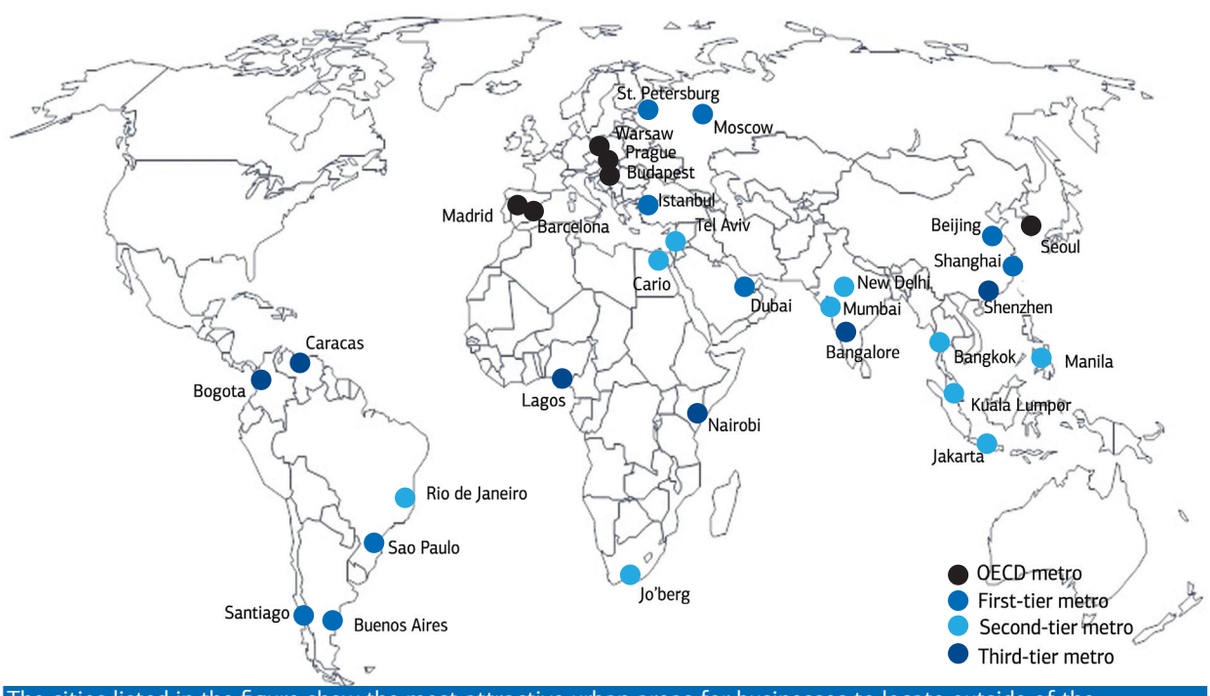


VI.
Where Should A Ceo Put His Or Her Worldwide Or Regional Headquarters?

A company needs four things in order to compete in the new airport-based, competency-centered and people-oriented economy: proximity to an airport and a conducive business environment, access to the innovative ideas of a business cluster, access to expertise (even if only through established relationships in cyberspace), and a decent place one can call home (if even temporarily). We have used proxies for each of these four requirements, as described in Appendix I. Each geographical region has its own cities that promise (if future trends reflect past development) to provide the companies of the twenty-first century with a hospitable home. Figure 10 shows the most attractive destinations for constructing the physical premises of a potential regional or global headquarters. St. Petersburg provides the charm of northern Europe with easy access to the EU by land and air. Dubai offers a launching point into the rest of the Middle East. Buenos Aires offers the convenience and reach of Mercosur. Johannesburg offers access to the rest of Sub-Saharan Africa.

A company needs four things in order to compete in the new airport-based, competency-centered and people-oriented economy

Figure 10: The IEMS guide to the best places to locate in the 2010s



The cities listed in the figure show the most attractive urban areas for businesses to locate outside of the developed world. These cities come from factor analysis of variables which look at each metropolitan area's air travel connectivity, business environment, internetconnectivity, skilled-based commercial activity, and quality of life. We divided the resulting groups of metropolitian areas in four colour-codedgroupings based on our assessment of the metro's attractiveness. See paper for methodology.

Figure 11: Our top 10 destinations for developing world headquarters
Dubai (Middle East)
The center of the contemporary Silk Route, Dubai carried roughly US$28b in goods to India alone. Dubai's pro-Western policies, high Doing Business score, and high quality of life score make the city a great place to live and work.
Buenos Aires (Latin America)
Buenos Aires has maintained a 10% national GDP growth rate since the 1997-2002 recession. With US$14b in trade with Brazil and preferential trade via Mercosur, the city provides many opportunities.
Istanbul (Middle East/ EU)
Istanbul hosts one of the world's most ambitious and extensive airlines. With trade in markets such as Iraq (US$6b) and Russia (US$4.6b) as well as a well-educated, European-oriented market, Istanbul represents a metropolis of the 21st century.
St. Petersburg (FSU/EU)
The city sits one hour from EU markets by plane and has a modern outlook.
Shanghai (Asia)
Shanghai is China's financial and commercial centre. More manageable than Beijing, the Pudong Airport shuttles more merchandise than any other airport in the developing world.
Sao Paulo (L. America)
Sao Paulo is Latin America – as far as pictures from space are concerned. The city has a GMP* of roughly US$390b and serves as a transport hub for the region.
Johannesburg (Africa)
The city serves as the preeminent transport and trade hub for most of Africa. The city handles most of the financial activity for the region and looks like any European capital.
Santiago (L. America)
Want to sell US$17b in goods to China? Move to Santiago. The free-trading Chilean nation has links throughout the Americas and one of the best records of accomplishment for innovation in the region.
Beijing (Asia)
A large company cannot avoid being at the political centre of the largest trader in the developing world. City infrastructure and quality of living has improved dramatically.
Moscow
Russia's capital city has seen large improvements in infrastructure in recent years. As the trade and financial centre of much of the former Soviet Union, the city still attracts the region's best and brightest.
* GMP stands for gross metropolitan product (the measure of GDP for cities)

Our top ten picks for locating a corporate headquarters in the 2010s and 2020s represent relatively large cities in major emerging markets (except India). Figure 11 shows our other city picks and some of the advantages each of these metropolitan areas offer.

Dubai deserves particular mention for its role in intermediating trade between emerging markets. On the trade-show route between Istanbul and Beijing, Dubai serves as one of the pre-eminent trade and investment destinations for companies trading between China, the Middle East, Africa and Europe. Dubai International Airport (DXB) is the second largest router of cargo in the developing world, receiving 2.3 million metric tons of cargo annually. DXB also handles the largest number of passengers in the developing world: about 50 million passengers annually. Many of these passengers are businesspersons, scientists and investors on their way to the various trade shows and conferences the city hosts each year. If Turkey provides a conduit to Iraq (for roughly US$6 billion in goods), then Dubai serves as the hub of trade with Iran. Goods coming from the Emirates to Iran totaled about US$20 billion in 2011.

Despite India's commercial importance, none of its cities made our list. India's infrastructure, quality of life and business regulations simply fall too far down the list to provide any viable candidates for a business hub for non-Indian companies looking for a home abroad. India's Doing Business indicators alone place it in roughly the bottom 25% of countries. The quality of life scores of most of the major Indian cities are higher than St. Petersburg and Moscow, which did make the list; however, India's diaspora and transport hubs to the major Indian markets make bringing goods and people into and out of the country easier than locating them there.

Thailand, specifically Bangkok, is the other area that did not appear in our top ten. Suvarnabhumi Airport has some of the highest volumes of passengers and cargo among emerging markets. Thailand scores high on the innovation indicators and exports a large amount of goods and services around the world. For ex-

Figure 12: Best places to locate to tap hard to reach markets

Market	Preferred HQ city
Eurasia	
Bangladesh	Shanghai (US$6.8b), Jakarta (US$1b), Kuala Lumpur (US$1.3b)
Vietnam	Beijing (US$23b), Kuala Lumpur (US$3.5b), Bangkok (US$5.8b), St. Petersburg (US$1.1b)
Kazakhstan	Shanghai (US$9.3b), St. Petersburg (US$5b), Istanbul (US$819m)
Ukraine	St. Petersburg (US$13.6b), Shanghai (US$5.5b), Istanbul (US$1.2b)
MENA/ Africa	
Nigeria	Shanghai (US$6.7b), Delhi (US$1.9b), Bangkok (US$930b).
Pakistan	Riyadh (US$4.1b), Dubai (US$4.1b), Mumbai (US$2.2b). Kuala Lumpur (US$2.2b)
Algeria	Beijing (US$4b), Istanbul (US$1.5b), St. Petersburg (US$1.2b).
Latin America	
Colombia	Guadalajara (US$3.8b), Sao Paolo (US$2.2b), Buenos Aires (US$1.3b)
Ecuador	Bogota (US$1.8b), Shanghai (US$1.5b), Sao Paulo (US$980m), Mexico City (US$700m)
Venezuela	Brazil (US$3.9b), China (US$3.6b)
Uruguay	Buenos Aires (US$1.6b), Sao Paulo (US$1.5b), Shanghai (US$1.5b).
Peru	Shanghai (US$3.5b), Sau Paolo (US$2b), Buenos Aires (US$1.2b)

The data show export trade according to the IMF's Direction of Trade statistics for 2010. Markets chosen based on absolute level of GDP (as a proxy for their attractiveness).

ample, a company wanting to participate in Thailand's US$1.7 billion trade with South Africa could locate near Bangkok. Bumrungrad International Hospital represents one of the emerging medical tourism centers of the developing world. However, the scale of the other metropolitan areas eclipsed the city, nudging it out of the top ten. Nevertheless, Bangkok and its counterparts, like Mumbai, Jakarta and Kuala Lumpur, certainly represent a second-tier of strong candidates for cities seeking to host global corporations.

Our choice metropolitan areas not only represent excellent launching pads for competing in the large markets, but also provide access to lesser-served markets that New York, London and Tokyo cannot provide

Our choice metropolitan areas not only represent excellent launching pads for competing in the large markets, but also provide access to lesser-served markets that New York, London and Tokyo cannot provide. Figure 12 shows some of the largest and most underserved markets in the developing world. We show the cities in 2011 that will likely serve as conduits for trade with these markets in the future. For example, Bangladesh imported roughly US$1 billion in goods from Indonesia – most of it likely from Jakarta, its capital and largest economic entity. Ukraine received roughly US$1.2 billion in goods from Turkey, most of that almost certainly coming from or through Istanbul, which is a short distance away on the Black Sea.

Some of the cities we have nominated, particularly from what we have called the second tier, provide excellent coverage to these markets. A company setting up in St. Petersburg could join the roughly US$1.1 billion in trade between Russia and Vietnam. Joining with companies that have already made local contacts and partners and have knowledge of a foreign market can significantly ease entry into a foreign market. For companies interested in exposure to Pakistan, Dubai offers a US$4.1 billion conduit for trade to piggyback on. While locating in Istanbul provides an obvious launching pad for a large-scale marketing plan into Algeria, St. Petersburg and Moscow offer roughly the same linkages. In Latin America, the high integration of Mercosur economies means that companies locating in any of the "southern cone" capitals will have excellent opportunities to market their goods and services across Latin America.

VII.
Recommendations for CEOs

What can CEOs do once they arrive in Sao Paulo, St. Petersburg, or even some of our second-tier picks like Bogota, Lagos, or Bangalore? History shows that the most successful metropolitan areas had businesses that worked with local government on attracting companies and making business easier. Local business magnates helped Dallas' local government transform the city into an international center by promoting investment in railroads and later, airports. The tai-pans of Hong Kong worked with local government to transform a village into an international trading center. The bosses of Tammany Hall-era New York worked with the trusts to make Manhattan a world financial center. Similarly, proactive planning by public-private stakeholder boards in cities like Istanbul holds the promise of transformation.

History shows that the most successful metropolitan areas had businesses that worked with local government on attracting companies and making business easier

Locate close to the airport

Businesses – particularly in the developed world – conglomerate around large airports. The Dallas-Fort Worth metroplex probably owes its existence to the area's airport. Nashville owes its revival to airports that carry most of the US's overnight mail. However, in most developing countries, being located near an airport represents a hardship rather than a business facilitator. Until recently, traveling to or from Moscow's Sheremetyevo International Airport sometimes involved six hours to travel only around 30 kilometers. In contrast, a traveler could usually arrive from the center of Istanbul to Ataturk International in less than one hour and be on his or her way one or two hours later. Beijing's new Capital International Airport greeted approximately 79 million passengers in 2011 (almost 20 million more than Hong Kong's world-class airport). The new airport will greatly facilitate Beijing's role in the international airborne trade routes worldwide.

Nevertheless, simply locating near an airport does not help business unless the airport can charge user fees and collect rents from surrounding areas in order to grow. Airports need to scale up as commerce in the metropolitan area increases. Trying to squeeze a bit more productivity out of an airport (rather than add extra capacity) represents one of the famous public goods problems that concern businesspersons and economists. Companies should be willing to pay for privileged access to these airports. Higher land tax assessments around the airport can generate fees needed to improve infrastructure. Business should also pay their fair share for infrastructure from the airport to the city. Congestion at Paris' Charles de Gaulle has impeded the City of Light's development for decades. Unless Brazil's business community acts, a similar fate could await Sao Paulo. Visitors to Sao Paulo's Guarulhos International rated that airport one of their least favorite last year for that reason.

Work with local government on business facilitation

Many of the locations we cite provide attractive places to set up an international headquarters in spite of (rather than because of) government policies. Jakarta offers one of the least hospitable policy environments in the world (ranking 129 on the World Bank's Doing Business index). India's policy environment (and particularly its infrastructure) has kept all its cities off our list. Yet, their location and the innovative business practices brewing inside them make these metropolitan areas attractive candidates for businesses looking to work in developing markets. London, Paris, and New York also represented – at one point in time decades ago – some of the least hospitable environments to live and work.

Yet, compared with business-friendly Bangkok, Kuala Lumpur, and Dubai, some of the cities at the bottom of our list will have a hard time catching up.

Businesses locating in less business-friendly markets can play an important role in helping to improve the policy environment of their city and state. Businesses setting up shop in the developing world can join their local chambers of commerce and submit reform ideas to local political candidates and current government officials. They can support pro-business political candidates (to the extent permitted by law and tradition). They can help educate the public by sponsoring academic speeches at local business schools. In other words, they can become good corporate citizens. Figure 13 shows that even small changes can have relatively large impacts on each market's ability to do business. Simplifying business by even one procedure and one day for the various steps in a business' setup and operation, led to Chile climbing 11 places on the Doing Business index in our simulations. Turkey and China rose 10 places, while Brazil and Indonesia rose 9 places (assuming other countries do not engage in other reforms). Business influence that leads to even these small changes can have large effects on these companies' international competitiveness.

Create a visa-free and pay-at-the-airport visa regime

Businesses have a role to play in encouraging governments to ease visa restrictions. Unilateral visa liberalization often helps business much more than it increases any potential security risk. Ukraine provides an enlightening example. One of the more regulated economies in the developing world, its relatively relaxed visa regime encourages business travelers to come and do business. Ukrainian citizens still need to obtain a visa to go to most countries. Ukraine does not follow the reciprocity principle (im-

Figure 13: Business influence on private sector facilitation can have large impact

	Rank before	Rank after	Rank differences	New equivalent ranking
Saudi Arabia	12	8	4	Korea
Thailand	17	17	-	Thailand
Malaysia	18	17	1	Thailand
United Arab Emirates	33	29	4	France
South Africa	35	28	7	Belgium
Chile	39	28	11	Belgium
Colombia	42	35	7	S. Africa
Mexico	53	45	8	Rwanda
Turkey	71	61	10	Panama
China	91	81	10	Moldova
Russian Federation	120	117	3	Kosovo
Brazil	126	117	9	Kosovo
Indonesia	129	120	9	Russia
India	132	128	4	Honduras
Philippines	136	131	5	West Bank

The simulation shows the effect on a country's Doing Business ranking by shorten government formalities by one procedure and one day for the various requirements measured by the World Bank. Source: World Bank Doing Business Simulator (2012).

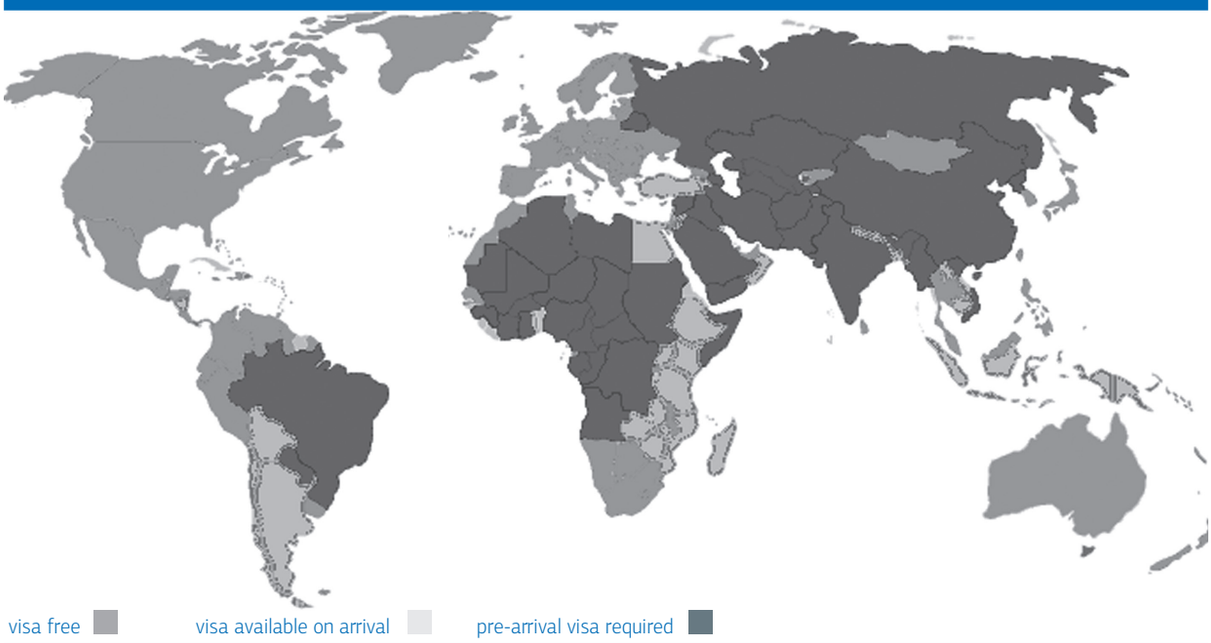
posing visa requirements on foreign nationals similarly to the way foreign governments impose them on Ukrainian nationals). Such a policy only benefits Ukraine. Figure 14 shows the countries for which US citizens need to obtain visas prior to travel. As shown, these represent some of the largest markets in the world. All the BRIC economies require US citizens to obtain visas. While these visas restrictions do not affect employees of the largest US companies (whose companies arrange visas for them), they discourage the internet entrepreneurs or freelance scientists of Silicon Valley and Route 128 from seeking business in these countries.

Sanctions against the free flow of persons work like sanctions against the free flow of goods

Sanctions against the free flow of persons work like sanctions against the free flow of goods: they often hurt the country imposing sanctions more than the target of those sanctions. The principle of reciprocity simply means that more harm is done than good. Yet, the countries where many of our choice metropolises locate still rely on the reciprocity principle rather than self-interest. Such visa requirements discourage many mobile professionals in the creative class from spreading their ideas and finding partners in developing countries. They also discourage companies from locating in these countries. Businesspersons in emerging markets should educate their policy-makers about the commercial harms of the reciprocity principle (the same way they have educated their politicians about the harms of mercantilism and trade restrictions). Only large businesses have the resources needed to lobby political parties and public officials in these large emerging economies.

The benefits of liberalization can apply to

Figure 14: Many developing countries restrict access to potential investors and innovators



Source: Henley & Partners (2012).

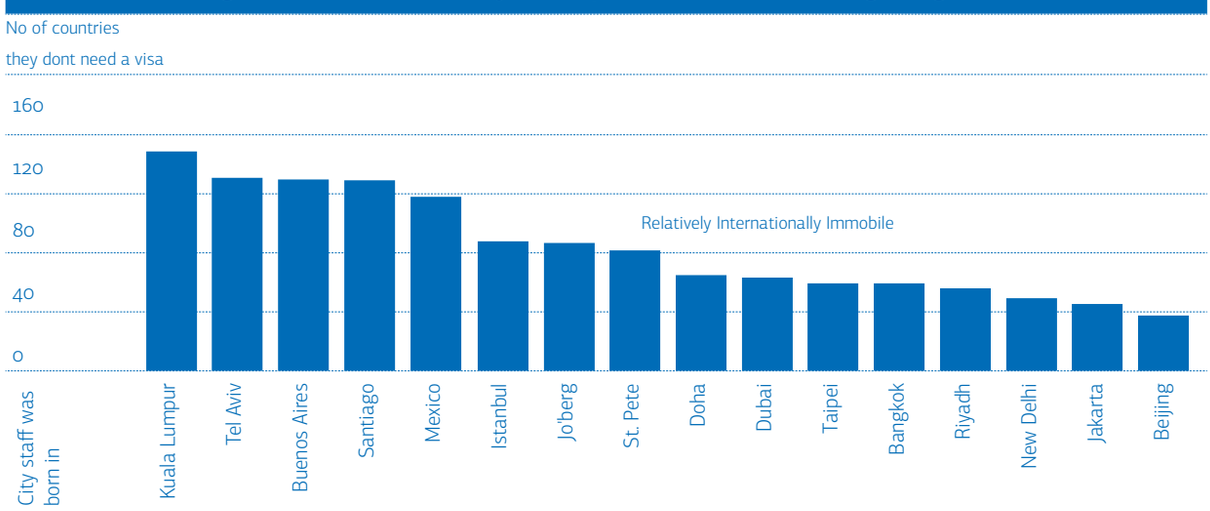
the developed economies as much as to developing countries. Istanbul trades with some of the most difficult to reach markets, including Tajikistan and the Balkans. Yet, Turks need a visa to visit their US or European partners. On the other hand, their US partners do not need a visa to visit them. Figure 15 shows the extent to which nationals from many of the cities we picked will need visas to do business in other countries. Despite visa and cultural barriers, the Chinese have managed to succeed in international business – in both the developed and developing world. However, staff from Jakarta can only travel to about 40 countries without a visa. Even the highly connected businesspersons from Istanbul still need to apply for visas for roughly 120 countries and territories (or about 200 minus the 80 to which they can travel visa-free).

Countries like Indonesia or Argentina looking to host future vibrant metropolises could issue visas upon arrival at the airport for a fee. Such a fee would keep out the potentially undesirable economic refugees and petty criminals that immigration agencies fear most. Such a fee would also cover the costs of processing visitors' data. Countries like Turkey have used such a system successfully for decades. At Istanbul's Ataturk Airport, most foreign visitors can buy a tourist visa at the airport. Istanbul's visa regime has led to it becoming one of the most vibrant cities in Europe. The small-time freelancer from the EU or US needs to queue at embassies abroad to obtain permission to travel to Riyadh, St. Petersburg, Sao Paulo, or Mumbai. In Istanbul, he or she can pay at the airport and go right in.

Bring the airport to you through infrastructure

If you cannot move to the airport, why not bring the airport to you? Businesses can lobby governments' infrastructure decisions. A new airport costs about US$200 million (give or take US$100 million depending on the size of the market served and the amenities provided). Businesses in most emerging markets do not need to spend these sums. Many developing countries have already invested large amounts of money in new airports. Instead, these airports lack infrastructure, such as city connections. Casablanca's airport provides an excellent example of this general issue across the emerging markets. Arriving at Mohammed V International Airport, the visitor would feel like he or she has arrived in Hong Kong or Moscow. However, once the visitor clears customs, the famil-

Figure 15: Staff from many of our picks will have troubles getting visas



Source: Henley & Partners Visa Restrictions Index Global Ranking 2010

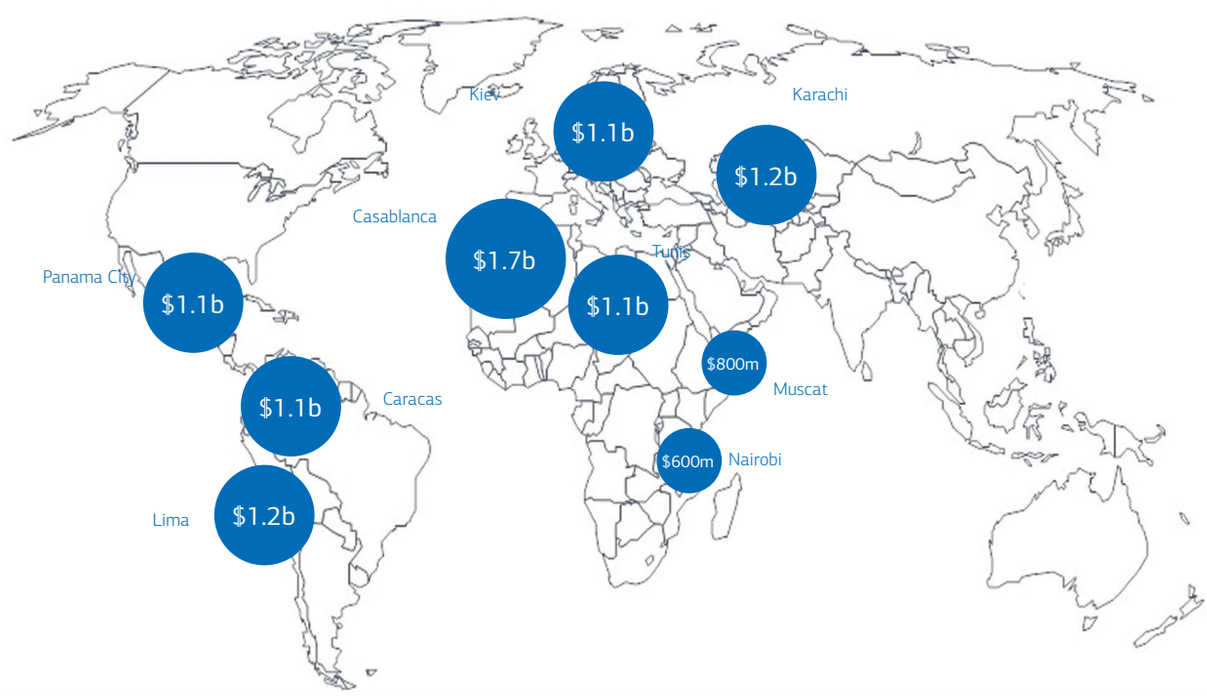
iar chaos emerges. Transport from the airport to Casablanca or Rabat consists of an extremely expensive taxi fare or crowded (though cheap) train ride. Instead of sending their own private drivers for guests, businesses working in Morocco could contribute to infrastructure investment. For the cost of a bit of extra rail and/or a subsidized bus fare for all, businesses could significantly increase tourism and commerce.

Contributing to infrastructure can significantly increase the attractiveness of certain cities in the developing world. Figure 16 shows the effect of increasing passenger air travel by only 10% per year in key markets. Even when assuming that each passenger spends only US$2,000, the overall increases in consumption spending (excluding multiplier effects) can add significantly to the local economy. Casablanca heads the list of potential beneficiaries of additional infrastructure – with an extra US$1.7 billion per year if local infrastructure could accommodate 10% more passengers. Kiev, Tunis, Karachi, Lima, Panama City, and Caracas businesses could expect about US$1.1 billion in extra consumption expenditure by airport capacity (under our simple assumptions). Such minor expansion could do much to solidify the role of new points on the new air-travel Silk Road, such as Muscat and Nairobi.

Work with the local university on a research project

Business has a strong role to play in working with local universities. Route 128 could hardly exist without Harvard and MIT. The City of London owes much of its senior level workforce to Oxford, Cambridge and the London School of Economics. The cities we chose for our list have some of the best universities in their countries and regions. Yet, business and universities in places like Santiago and Kuala Lumpur will

Figure 16: Adding a tiny amount of airport infrastructure can bring millions in extra revenue to developing markets



The data in the figure show the increase in foreign visitor spending in each metropolitan area assuming at 10% increase in air passenger traffic. We have ranked airports by air traffic and assumed that each additional arrival spends a meagre $2000 per person per trip.

Figure 17: Universities mean business

Rank	Country	GCRscore	No. Top 200 Uni.	Top 5 Universities (rank, score)
1	Switzerland	5.8	7	Swiss Federal Institute of Technology (15, 85), Lausanne Federal Polytechnic School (46, 66), University of Zurich (61, 62), University of Basel (111, 52), University of Bern (112, 52).
2	United Kingdom	5.8	32	University of Oxford (4, 94), University of Cambridge (6, 92), Imperial College London (8, 91), University College London (17, 83), University of Edinburgh (36, 72), London School of Economics and Political Science (47, 66), University of Manchester (48, 66)
3	United States	5.7	74	California Institute of Technology (1, 95), Harvard University (2, 94), Stanford University (2,94), Princeton University (5, 93), Massachusetts Institute of Technology (7, 92)
4	Finland	5.6	1	University of Helsinki Finland (91, 55)
5	Sweden	5.5	5	Karolinska Institute (32, 73), Lund University (80, 57), Uppsala University (87, 55), Stockholm University (131, 50), KTH Royal Institute of Technology (187, 43)
6	Singapore	5.5	2	National University of Singapore (40, 71), Nanyang Technological University (169, 45)
7	Israel	5.4	2	Hebrew University of Jerusalem (121, 50), Tel Aviv University (166, 45)
8	Netherlands	5.3	11	Utrecht University (68, 60), Wageningen University and Research Center (75, 57), Leiden University (79, 57), University of Amsterdam (92, 55), Delft University of Technology (104, 53)
9	Belgium	5.3	3	Katholieke University Leuven (67, 61), Ghent University (106, 53), Catholic University of Louvain (169, 45)
11	Canada	5.2	9	University of Toronto (19, 82), University of British Columbia (22, 77), McGill University (28, 76), McMaster University (65, 61), University of Alberta (100, 54)
12	Germany	5.2	12	Ludwig-Maximilians-University Munch (45, 68), Georg-August-University Gottingen (69, 60), University of Heidelberg (73, 59), Munich Technical University (88, 55), Humboldt-University in Berlin (109, 53)
13	Australia	5.2	7	University of Melbourne (37, 72), Australian National University (38, 71), University of Sydney (58, 62), University of Queensland (74, 59), Monash University (117, 51),
14	Denmark	5.2	3	Aarhus University (125, 50), University of Copenhagen (135, 49), Technical University of Denmark (178, 44)

Source: World Competitiveness Report (2012) and Times Higher Education (2012). The figure shows the number of universities in the top 200 of the Times Higher Education ranking. We show the names of the top 5, its rank and score on an 100 point scale. For example, the Swiss Federal Institute of Technology (15, 85) means the university ranks 15th on the list with a score of 85 points out of 100. We have omitted Qatar at 10th place.

need to scale up their cooperation if they hope to generate the same level of innovation, jobs, and business opportunities as those found in the developed world.

Figure 17 shows the countries with the highest amount of university-industry collaboration in R&D (according to the World Competitiveness Report). The figure also shows the major universities in the country as ranked by Times Higher Education. The UK and US rank in the top five on the Global Competitiveness Report's index of university-industry collaboration in R&D. They host 16% and 37% of the world's leading universities, respectively, as reported by the Times Higher Education Index. Even small countries like Switzerland (ranking first) hosts seven of these universities and Finland hosts one of the top 200 universities. The pattern seems obvious: high-ranked universities produce good applied research. Strong businesses encourage academics to produce useful research.

The developing world is quickly catching up in encouraging academics to work with businesses. Israel ranks seventh on university-industry collaboration in R&D. The Technion and Weizmann Institutes have supported research that led to numerous innovations in the 2000s. Qatar ranks 10th and hosts a number of high-ranked foreign universities like Carnegie Mellon and Northwestern. Honorable mentions go to Malaysia (at 21st place), South Africa at 26th, Saudi Arabia at 28th, and China at 29th on the Global Competitive Report's index. Yet, despite its size, China hosts only three of the world's top 200 universities.

Fostering business-university cooperation will require dramatic changes in mentality in much of the developing world. University administrators see funding from businesses as corruptive. Research grants from business ostensibly detract from teaching and research. Businesses tend to see grants made to local universities as philanthropy and academics' research projects as largely irrelevant to their daily business needs. Following the old bureaucratic models from their parents' generation, they sign official letters of cooperation between universities and businesses. Academics and mid-level managers do not need letters; they need freedom to enter into research projects without a lot of red tape.

VIII. Conclusion

For many companies – particularly in emerging markets – their city greatly influences their international competitiveness. Their metropolitan area determines access to suppliers, new commercial ideas, talented staff, and air transport to the most important markets.

Who's your city? For many CEOs in developing markets, the answer should consist of Dubai, Sao Paulo, Santiago, Buenos Aires, Istanbul, Johannesburg, Shanghai, Beijing, St. Petersburg, and Moscow. Yet, many of the new centers of global commerce promise to unseat (or supplement) these new centers. Some of these centers include Tel Aviv, Cairo, Rio de Janeiro, New Delhi, Mumbai, Bangkok, Kuala Lumpur and Manila.

Companies looking to expand their operations in the developing world will need to do more than simply pick a new corporate home. They will need to work with municipal, local and national authorities on improving the business climates in which they work. They will need to pay premium prices for premium access to airports and world-class infrastructure. They will need to host conferences and meetings with public officials at all levels to encourage them to liberalize the business environment. At these meetings, they can help explain the advantages of the free movement of people as well as goods. They can also provide incentives for staff to enter into profitable research projects with local universities and research centers.

IX. Appendix: Study Methodology

We used a four-step process in order to identify the cities cited in our study. We first looked at the previous studies from institutions like Brookings, AT Kearney, McKinsey, and INSEAD in order to identify a series of screening variables. We compared their methods with what we know about the growth of cities from the academic literature. We identified the variables we used in our study and formed judgments about their importance by looking at various scatter plots. We then conducted factor analysis on the panel of data (in order to remove any subjective effects which could occur if we grouped cities based on our own judgment). We finally checked our analysis with other studies and talked with businesses to make sure our quantitative analysis reflected reality.

As a first step, we reviewed previous work on identifying the best cities in which to locate (particularly in the developing world). On the qualitative side, Richard Florida's and Kasarda and Lindsay's descriptions of the rise of cities in developing countries' cities rise. On the quantitative side, Florida's and AT Kearney's city rankings had an importance influence on our work. We consulted a number of city rankings – as shown in Figure 18 – in order to provide us with initial intuitions about the cities we would work with over the next six months. We found that ranking cities based only on growth rates (like Brookings and McKinsey) could not offer the type of deep insights into the ways these cities would likely generate competitive advantage for their companies. When combined with other research these institutions and others have performed on the topic of innovation, we found the results made more sense in figuring out where a CEO might like to place his or her corporate headquarters in the developing world.

Our study assessed cities (and their countries, which served as proxies) on 14 variables. We provided a cursory discussion about most of these variables in the brief to provide the reader with the intuitions behind our selections. In the first section of the brief, we presented the importance of market access. To quantify such access, we used data related to international tourism, number of arrivals, air transport, passengers carried, and the value of goods traded. In the second section, we looked at the role of the business environment. We used the ease of business index and the state of cluster development as proxies for this environment (as the Doing Business index from the World Bank provides rankings and data generally unsuitable for cluster analysis). The third section of the paper looked at the role of knowledge transfer, which we proxy through internet users (as traffic figures could not be easily obtained). In the fourth section of the paper, we look at the quality of life and the role of the "creative class" generally. We used proxies such as high-tech exports, new business density, patent applications, R&D researchers, journal articles, school enrolments, university-industry collaboration in R&D and the quality of life index as proxies of the depth and "quality" of that creative class. The variables we use basically consist of three groups of variables: measures of present or future innovation (such as high-tech, scientific publications and tertiary education, and cluster development), measures of connectivity (internet usage and air traffic), trade (exports), and ease of doing business. We show these variables in Figure 19. We deliberately avoid measures of the growth of GDP. Output growth – even imputed to cities – can change dramatically over time (as the Brookings study shows). Even today's growth can often tell little about tomorrow's centers of sustainable competitive advantage.

Step two consisted of collecting data and looking at relations between these data in order to get a feel for it. Some of the relations in the data surprised us, such as how quickly Oman has been developing as a base for East-West trade. We also wanted to confirm statistically some of the truisms of the literature on cities (such as more international visitors and openness correlate with more scientific and commercial innovation). We also wanted to better understand countries with multiple large commercial centers. Clearly, imputing all of India's growth to growth in Mumbai would lead to erroneous results. On the other hand, countries like Kuwait and Qatar handle large amounts of their GDP in their capitals. In some cases, we

Figure 18: Other studies on the metro areas of the future

Name	Description and difference	Source
Global Metro Monitor	Provides a ranking of major cities based mostly on their economic output and rate of growth of gross metropolitan product. Compiled by the Brookings Institution and the London School of Economics and Political Science.	The Brookings Institution (December 2010). Global Metro Monitor: The Path to Economic Recovery.
Global Cities of the Future	An explanation of some of the factors driving the growth of cities in the developing world. The McKinsey Global Institute's staff provides some lists of cities.	McKinsey Global Institute (June 2012). Urban world: Cities and the rise of the consuming class.
Global Cities and Emerging Market Outlook	Ranks cities according to indicators serving as proxies for business activity, human capital, information exchange, cultural appreciation and political engagement. This study most closely resembles our own. Compiled AT Kearney and Chicago Council on Global Affairs.	AT Kearney (2012). 2012 Global Cities Index and Emerging Cities Outlook.
Global		
Creativity Index	An international index using Richard Florida's 3Ts framework for assessment countries using proxies for their technology, talent and tolerance. Provides data only for nations. Compiled by the Martin Prosperity Institute.	Martin Prosperity Institute (January 2011). Creativity and Prosperity: The Global Creativity Index.
Global Innovation Index	Covers most of the variables covered by the Global Competitive Report – including variables measuring each country's institutions, human capital, infrastructure, market sophistication, business sophistication, knowledge and technology outputs and creative outputs. Focuses at the national rather than metro level. Compiled by INSEAD and the World Intellectual Property Organization (WIPO).	INSEAD (2012). The Global Innovation Index 2012: Stronger Innovation Linkages for Global Growth.
City Size Index	PWC provides estimates of gross metropolitan products for various cities.	PricewaterhouseCoopers (November 2009). UK Economic Outlook
Innovation Cities Emerging Index	Index compiled by the 2thinknow agency. Provides a fee-based listing of cities according to indicators of each city's health, wealth, population and geography.	Innovation Cities (2011). Innovation Cities Index 2011.
Urban Mobility Rankings	Arthur D. Little (the consulting company) assessed the extent of public infrastructure and ease of local transport. The index does not provide extensive enough coverage to serve as a variable for our analysis.	Arthur D. Little (2011). Future of Urban Mobility.

could take advantage of Zipf's law for many: this says that one can rank cities on a geometric scale in terms of their contribution to national output. In many countries, a large metropolis contributes the lion's share to GDP. Because we did not want to miss any unknown up-and-coming star cities, we did not exclude even unlikely cities like Luanda or Victoria. We did not simply want to copy AT Kearney's findings or identify great cities of the past. However, if the entire country scored too low, that means that we did not need to decide which city was responsible for any particular outcome.

Our third step consisted of conducting cluster analysis. This guided our ranking of cities used in Figure 10 (and our headline results). Simply put, we input the 14 variables we described in our Statistica software. We asked the software to use similarities in variances and in our variables to identify groupings. By asking the software to group countries and cities together based on objective factors, we removed much of the subjective, human judgment that could make these rankings questionable. Naturally, grouping based only on relationships in data has problems of its own.

As a fourth step, we did a "reality check" of our analysis. We compared groupings with our own personal knowledge of these cities. We also consulted experts from the various countries in case we had doubts about underlying data (such as the Global Competitive Report rankings for example). We wanted to make sure that business executives working in the cities on our list would also recommend their cities to foreign businessmen and businesswomen. We did not want to find ourselves in a position where we recommended a city that large numbers of readers living in those cities would recommend against.

Figure 19: Description of the variables in our study

Source	Variables
World Bank's Development Indicators	Ease of doing business index, high-technology exports (% of manufactured exports), international tourism, number of arrivals, air transport, passengers carried, new business density (new registrations per 1,000 people ages 15-64), patent applications, non-residents, researchers in R&D (per million people), scientific and technical journal articles, and school enrollment, tertiary (% gross), internet users (per 100 people).
Global Competitiveness Report.	University-industry collaboration in R&D and state of cluster development.
World Values Survey	Extent to which population is very happy or quite happy.
Mercer's	Quality of life index.
IMF's	Value of trade with top trading partners balance of payments database.

Data from the latest year available.

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