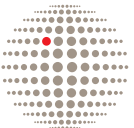




An advanced look

# Cities of opportunity



Partnership for New York City

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Cover photo: Stockholm's Old Town, Gamla Stan

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## As infrastructure transforms, cities revitalize and grow



The World Economic Forum in many ways provides a laserlike look at a world of promise—brimming with ideas, energy and opportunities. But there's another world, just as exciting and a lot bigger, that many of us will be working in every day when attention in Davos returns to skiing.

In the past few months and the next ones to come, I will have traveled extensively in developed and developing countries, meeting clients and PricewaterhouseCoopers professionals who are busy conceptualizing, planning, implementing and managing a range of infrastructure and capital projects. Throughout, I'm being struck by one thing: The infrastructure landscape is energized now, but its promise is only just beginning to burst out. Sound economics and healthy societies demand greatly increased attention to infrastructure. And a wave of action is about to break worldwide with cities riding the crest.

Here I want to share an advance look at one of our relevant, current research projects—*Cities of Opportunity*, a quantitative and qualitative study of 21 capitals of finance, commerce and culture to be released later this winter in collaboration with the Partnership for New York City.

This third edition of *Cities* revolves around a robust foundation of quantitative research on the attributes that make cities strong: transportation and infrastructure, intellectual capital, economic clout, ease of doing business, cost and lifestyle, among them. The study this year shows that livability works as an economic asset, adding to a city's overall economic health and well-being. Chicago, Stockholm, Sydney, Toronto and Singapore

are all good examples. On the other end of the sustainability scale, less well-balanced models for city economies, such as Dubai's, proved less resilient in the economic storm.

The quantitative research detailed in *Cities of Opportunity* is scheduled to be released later this winter at a forum in New York. But the study also includes in-depth interviews that substantiate and bring the numbers to life. Here I would like to share a few of those discussions that focus on infrastructure.

Why examine cities in particular in the infrastructure context? Cities are moving center stage in every way. By midcentury three out of four of us will live in them. In developed nations, the mass transit, energy, water and waste systems of mature cities are being reimagined and rebuilt sustainably and intelligently. In the emerging world, adequate infrastructure will provide the critical key for fast-growing cities as they battle everything from burgeoning populations to floods, to choked transit systems, to lack of education, health care and clean water.

This preview of *Cities of Opportunity* presents in-depth insight on cities and their infrastructure issues from leaders at the heart of thought and action:

**On capital projects**—Johan Karlström, President and CEO of global builder Skanska, offers a firsthand view of sustainable construction worldwide and the other transformations affecting infrastructure, transportation and water supply. Karlström traces the maturation of environmentalism starting from compliance, moving to ethical responsibility, and finally to its current state as a business imperative driven by energy efficiency.

**On policy developments**—Bruce Katz, founder and director of the Brookings Institution Metropolitan Policy Program, gives his perspective on changes now occurring that will transform metropolitan areas in the US and around the world. Key among them, he sees US cities poised to revitalize themselves with sustainable approaches.

**On the basic challenges**—Dr. Jairaj Phatak, Mumbai's recently serving city manager, discusses that city's efforts to deal with pressing issues like flood protection, water supply, migration and slum control, as well as his vision for Mumbai's future. He envisions his city in 50 years looking like Shanghai but challenged by waves of immigration and the need for adequate infrastructure to support growth.

**On harnessing the green possibilities**—Gunnar Söderholm, city director of environment and health, profiles the long-term commitment to sustainability that this year made Stockholm Europe's first Green Capital. Söderholm details Stockholm's holistic approach to sustainability as well as its "once-in-a-lifetime story" of congestion charging for autos in the center city. Before the program, residents opposed the scheme as a public enemy; after adoption, citizens did a U-turn and welcomed improved air quality and traffic flows.

**On catapulting a huge city into the future**—Gilberto Kassab, mayor of São Paulo, details the city's continuing campaign to improve quality of life in everything from education to pollution to mass transit in Brazil's capital of finance and industry. He sees the city as a gateway to Latin America that will continue to upgrade its intellectual capital, shore up its physical infrastructure and use everything from PPPs to perseverance to cement its position in the ranks of the world's leading cities.

At the end of the day, all of these leaders are sending clear messages. And mine runs parallel: Infrastructure is transforming. The time is right for many reasons to seize opportunities.

Old economies need to rethink, repair and revitalize. New economies need to handle staggering population growth. And with much of the world seeking to put the economic downturn firmly into the past, infrastructure transformation offers a real chance to build jobs and to fuel ongoing prosperity. Every dollar invested in infrastructure will yield manyfold returns for governments, businesses and citizens. And that is what the promise of infrastructure is all about.

At PricewaterhouseCoopers we're privileged to play a role in many of these developments through our work with governments, policymakers and corporations worldwide. Please contact me to discuss any of the issues raised here, as well as all the others involved in infrastructure investing, funding or project management.

Yours truly,



R. Carter Pate  
Global Managing Partner—Capital Projects,  
Infrastructure and Government

# Infrastructure in transformation: A view from the cities

| Tower Bridge, London



| Apple Store, New York

To be released later this winter in New York, *Cities of Opportunity* takes an in-depth, quantitative look at 10 indicator categories and 58 variables that determine the economic and social well-being of 21 world centers of finance, commerce and culture. The numbers are substantiated and brought to life by interviews with leaders at the heart of thought and action.

#### **About *Cities of Opportunity*: Fundamentals**

##### 21 cities provide global balance:

Beijing  
Chicago  
Dubai  
Frankfurt  
Hong Kong  
Johannesburg  
London  
Los Angeles  
Mexico City  
Mumbai  
New York  
Paris  
Santiago, Chile  
São Paulo  
Seoul  
Shanghai  
Singapore  
Stockholm  
Sydney  
Tokyo  
Toronto

##### 10 indicator categories reflect each city's standing as a center of finance, commerce and culture:

Intellectual capital  
Technology IQ and innovation  
Economic clout  
Transportation and infrastructure  
Ease of doing business  
Cost  
Health, safety and security  
Sustainability  
Demographics and livability  
Lifestyle assets

## A robust look at the world's hubs of finance, commerce and culture

### Study context

The collaborative nine-year effort by PricewaterhouseCoopers and the Partnership for New York City that developed *Cities of Opportunity* began in the wake of 9/11. The enormous impact on companies and citizens caused a reassessment of what needed to be done to keep New York—and, by extension, other cities like it—vibrant engines of a globalizing economy.

Where do cities stand today? What direction might they go in? What key ingredients will be needed to keep cities strong? What factors make a city more resilient to weather storms like the recent economic crisis? Which cities are actually doing things correctly, and what can be learned?

The third edition of our report will answer these questions and take steps ahead—expanding and changing the mix of 21 cities, enriching the data with more variables and complementing the quantitative nature of the report with insight from world authorities on the issues from business, government and culture. In addition, the *Cities of Opportunity* Website ([www.pwc.com/cities](http://www.pwc.com/cities)) will allow users to model the data interactively, enabling comparison of one or

more cities with any selection of variables. Readers will also find complete texts of the interviews that have been condensed in the printed study posted in full on the Website.

### Three key factors governed the cities we chose:

- **Capital market centers.** Many of the cities included are hubs of commerce, communications and culture. But all are financial capitals of their region—meaning each plays an important role not only locally but also as a vital part of a globalizing economic fabric.
- **Distributed over a broad geographic sampling.** While each city is a center of finance and commerce in its own region and in many cases the world, collectively the 21 cities form a representative international distribution.
- **Balanced between mature and developing economies.** Twelve mature cities and nine newly growing ones are included.

Some intuitively compelling cities were left off the list because they failed to meet all three criteria. For instance, Bangalore is a center of technology, and Zurich is a headquarters city, but neither is a true financial capital.

In terms of the data indicators selected, we constructed a robust sampling of variables, each of which had to be: relevant; consistent across the sample; publicly available and collectible; current; free of skewing from local nuances; and truly reflective of a city's quality or power.

These criteria eliminated cities like Milan, which lacked some of the data needed. The study's result is an unbiased, quality controlled and rich look at the pulse of key cities at the heart of the financial, commercial and cultural world.

The study will be released in New York later this winter.

A panorama of  
thought, action...  
and transformation



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Johan Karlström at a Skanska project.

## Johan Karlström of Skanska

**...discusses changes that will transform city infrastructure, transportation and water systems**

Skanska, one of the world's largest construction companies, stands at the forefront of green project development. The Stockholm-based builder focuses on infrastructure, transit systems and residential and commercial property in Europe, the US and Latin America. Here, President and CEO Johan Karlström talks about major issues cities face: explosive growth and the need for sustainable buildings, more intelligent transit systems and clean and available water.

Skanska attaches special importance to cities with the highest growth. Which ones are you particularly optimistic about in the next 10 years?

Most cities and most urban areas will expand because we see a trend around the world of people moving from the countryside or the smaller cities into the big metropolitan areas. That's one of the most important trends right now. So I expect that all cities will expand because of immigration. Then, of course, growth really increases faster in developing countries because the population is exploding.

The focus areas for us are the big metropolitan areas in the US: the New York area, of course, the Los Angeles area and other big cities in the US. The London area is also very important for us. There will always be a

lot of activity going on even if the population isn't increasing, because you have to renew the infrastructure, renew the buildings even in the developed world.

**You are active in Latin America and Eastern Europe, correct?**

Absolutely. In Latin America we are more active in the energy and infrastructure sectors, which we see as a very important part of the market there. In Central and Eastern Europe we are active in Poland, the Czech Republic, Slovakia and Hungary. That's a very interesting part of Europe right now because they are now part of the European Union, but they're still on a journey from the Communist world, so to speak.

If you go back 10 or 15 years, these countries were in the eastern part of Europe. But if you look at the map today, it's as though

The whole environmental area has developed over time. It started as compliance, “you had to do what you had to do.” Then it evolved into “do the right thing for the next generation,” be a good citizen. Now it has clearly moved to a business case. And it more or less focuses on energy efficiency.

they are in the middle of Europe, even if it's the same geographical location. The western part of Europe has moved east.

#### Has that opened new opportunities?

The need for infrastructure has increased. There is a lot of investment going on, especially in Poland, the Czech Republic and Slovakia, because there is more interaction between the east and west. So there's a need for regular corridors, highways and so on.

#### Do you see a new financial center emerging in Central or Eastern Europe?

No, but other things are coming up. Poland is expanding very fast and may be the most interesting country in the cluster. It has a big population, hard-working people, and it's spread over a number of regional cities. I'm very positive long term about Poland. Its importance as an economy will increase.

#### Do any cities stand out as doing things right in terms of the total picture of costs, lifestyle assets, health issues, sustainability and the intellectual foundation of the city?

A big trend now is sustainability. The whole environmental area has developed over time. It started as compliance, “you had to do what you had to do.” Then it evolved into “do the right thing for the next generation,” be a good citizen. Now it has clearly moved to a business case. And it more or less focuses on energy efficiency.

#### Can you elaborate?

I can see, for example, differences in the US between various cities. There are some bigger cities or states that are saying that if a building is not environmentally friendly, you won't get the permit to build.

And there are different regulations and different ways to promote environmentally friendly buildings in various states. In one state it can be that you don't have to wait until you get the building permit. In the Northwest, in Portland and Washington, there are tax incentives if you build an environmentally friendly building. In other areas, I think it is in Washington, DC, all office buildings over a certain size have to be LEED<sup>1</sup> certified. I can clearly see that the US has started to be more proactive than western Europe in the environmental respect.

#### Does that surprise you?

I wouldn't have said that before Obama took over the presidency. It was definitely not. But even then there was a lot of activity in the various states.

But it's basically the same trend that has pushed the automobile sector—energy efficiency. People want to drive something that is, from an environmental standpoint, a good thing. It's basically the consumers that propel energy conservation. They're putting pressure on companies. And companies want to sit in environmentally friendly buildings because they want to be perceived as environmentally friendly.

So in a sense there are two things that are driving change. One is a business case for energy efficiency. But, two, consumers prefer to buy a Prius rather than a Hummer.

Yes. Companies want to stand for strong values. It's consumer driven, in that sense.

#### What cities are in the forefront of environmental progress in building and infrastructure?

There are a lot of things going on in London in the residential sector. There's a big push in the UK for new residential areas beyond what we are building here in Stockholm. A lot of UK politicians are coming over to Stockholm to study what we have done here—not only what Skanska's done but the society as a whole.

They want to push it even further. They want to build something that is carbon neutral. I can also see a big push in the UK for waste to energy. You have to do something with the waste, and I think it's going to come in the conversion to energy. The environmental agenda in the UK is very important.

#### Does a green contractor like Skanska have an interest in encouraging cities to promote non-automotive transportation—subways, trams, bicycles?

Absolutely. We have tried to work together with politicians and to show them alternatives. I think it's important to have good

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<sup>1</sup> Leadership in Energy and Environmental Design, a green ratings system used by the US Green Building Council.

## Developing cities can jump directly to new technology. ...Why build out transit systems for cars first and then go over to mass transit? Developing cities can go directly to mass transit.

examples that they can study. If they are interested, we can also go into public-private-partnership [PPP] solutions where private monies will be a part of the investment.

**Are any cities most successful in using PPPs to develop large-scale projects in transportation or other critical city systems—energy grids or water systems, for example?**

The PPP market is more mature in the UK, especially if you talk about the big cities like London. They're using it for hospitals, waste-to-energy projects, schools, for all types of infrastructure like roads and railroads. They definitely know how to handle it. It's a mature market.

**What is your view on the US PPP market?**

The US is behind in the PPP sector. It's very fragmented. It has to be developed in each state. And it's a little bit of trial and error. I believe that it will come, but it will take some years before we really see the market increase in the US.

**Looking to the future, do you see anything about to change transformationally in the technologies and the systems that make cities work, like the way steel paved the way for skyscrapers?**

We have a couple of trends that are going to impact big cities. First, people are moving into cities. Another trend is environmentalism.

Because of city growth and environmental sensitivity, we cannot continue to take our cars when we commute. Mass transit has to play a bigger part for commuters. Otherwise, the cities can't expand.

**What would you recommend that cities do in planning their future transportation and infrastructure?**

Plans for mass transport should consider the various advanced technologies that have been developed in many cities; and there are some good examples in the Western world. But there is a long way to go. It takes a long time before you have systems developed and in place.

**What are the best examples now?**

I would say Stockholm and London. They are building out their mass transport, or at least they have plans for it. And they've also introduced the toll during the rush hour, so you have to pay if you go into the city with a car. There was big resistance here in Stockholm just before it was introduced. Today everybody likes it.

**Why?**

It has increased the income stream, and you can use the funds to build out the infrastructure and mass transit. And there are fewer cars. So with fewer cars in the street the traffic is going faster, which means that they don't have to stand there and pollute. It's definitely a win-win situation.

**What opportunities will advanced technologies give cities in the emerging world? Will these rapidly developing cities be able to plan in a more intelligent, forward-looking way and learn from developed cities?**

Developing cities can jump directly into new technology. It's like setting up the telephone system in Africa. They didn't have to start with fixed lines. They can go from nothing directly to cell phones. It's the same way if we talk about infrastructure in the emerging world. Why build out transit systems for cars first and then go over to mass transit? Developing cities can go directly to mass transit.

**Do you think new technologies might speed up the ability to have a better quality of life in China, in India or in Latin America?**

Yes. Water, for instance, is going to be a big focus in developing cities on both the clean side and the waste side.

Water resources are going down. People are moving rapidly into developing cities, and in some areas water is going to be a scarce resource. Not up here in the Nordics but in many other places, especially in the developing world. I think that the technology and the way to handle water in an effective way—not wasting a lot of clean water—is going to be very important going forward. If cities can't get access to water, that will definitely limit the possibilities for them to grow.

And that's when water is clean. Returning to the environmental aspect, a big question will be: How can dirty wastewater be cleaned in a way that it can be reused and not pollute the environment? That's going to be very important in many areas.

#### **Is Skanska active in water projects?**

We are active on the clean side and on the dirty side. For example, we are building big facilities in New York. And we can see that there is a market growing.

#### **Does Skanska benefit from being located in Stockholm in terms of the city's strong reputation for sustainability, health and safety, quality of life, technology and innovation?**

To some extent. In some countries there is a perception that if you're from Sweden you are environmentally friendly and you have certain values. Right or wrong, that's the perception, especially in the UK. And that makes it easy to get access. Just to be from Sweden can actually be a door opener. But once you are in, you have to back it up. You have to deliver.

#### **Skanska has grown from local roots in southern Sweden to be one of the largest international builders. What factors are critical in construction to be a multinational today?**

You have two different synergies. First is the financial synergy within the company. When you are building large megaprojects

for billions of dollars—it can be a highway, it can be the new football stadium outside New York—you need an enormous balance sheet backing that up. That's a request from the market, from the banks and from the clients. And you can use the parent group's balance sheet to back the subsidiaries.

If you have a competitor in that country the same size as your subsidiary there, their balance sheet will be too small for the megaprojects. We can back the project with financing. That's the financial synergy.

Then there is an operational synergy. We can use experts from various areas and transfer them across geographies. For instance, we're building a huge new hospital here in Stockholm. Sweden hasn't built a big, new hospital for many, many years. In the UK we are building several hospitals, and in the US we have hundreds of hospital projects going on right now. So now with the big hospital coming up in Stockholm, we can offer a combined organization with both Swedes, who know the local market, and experts in the hospital sector around the world coming in for the project. That's critical. We combine financial and operational synergies.

#### **For city dwellers, how a building looks or how a streetscape unfolds can be uplifting. When you design and build, whether it's transportation systems or buildings or infrastructure, do you consider the aesthetics?**

Absolutely. I hate ugly buildings. Of course, we build them once in a while, because the design is done and because of other

factors. But why should we? Infrastructure and buildings are there for many generations. Don't we have a responsibility to leave something behind us that we can be proud of?

It's both a personal and a company value, a code of conduct. If the company's doing beautiful or environmentally friendly projects, the employees are proud. And if the employees are proud, then it's easier to attract people. And if we attract people, then we can choose the best ones, which is important because there's a war out there—a war for talent.

#### **In other words, Skanska possesses a sense of long-term responsibility?**

The values that the company is based on are fundamental for us: our business ethics, our code of conduct, environment, safety for our workers and subcontractors. We want people who are proud of Skanska. Personally I feel good about this, and it definitely can be a strength for the company long term. I think that you can put it in that perspective. We are extremely proud of building beautiful, sustainable structures.

The technology and the way to handle water in an effective way—not wasting clean water—is going to be very important going forward. If cities can't get access to water, that will definitely limit the possibilities for them to grow.

# Bruce Katz of Brookings

...looks at the assets in metropolitan regions that will revitalize economies and at the transformation that metro US may be poised to begin

Bruce Katz, founder and director of the Brookings Institution Metropolitan Policy Program based in Washington, DC, regularly advises officials and writes and speaks on policy reforms that advance the competitiveness of metropolitan areas, particularly focusing on the revitalization of central cities and older suburbs. He served as chief of staff to Henry G. Cisneros, secretary of the US Department of Housing and Urban Development, and won the Heinz Award in public policy for his contribution to urban America. Here, Katz discusses cities from Seattle to Frankfurt and from Pittsburgh to Birmingham, England, and sees governance and infrastructures transforming in metropolitan hubs.



You've said that metropolitan areas will lead us out of the global recession. What cities do you particularly see leading the way?

Looking at how the next economy is going to shape up, it's becoming evident that it will be low-carbon, or at least lower-carbon, more export and less consumption oriented, and fueled by innovations in everything from clean energy to infrastructure, to health information technology. And the places that have the human capital, innovation and infrastructure assets that drive the economy will lead the nation, because the starting points matter tremendously.

We are not a nation with one single economy. We're a network of metropolitan economies. We are a metro nation and we need to start acting like one. We need to focus on the kinds of smart policies and targeted investments to achieve productive, inclusive and sustainable growth, and enhance our competitiveness globally.

In the US, I would say metropolitan areas like Seattle, Austin, Minneapolis and obviously Boston and New York have the talented workers, as well as the high-end, innovative firms, educational institutions and top-flight medical institutions, that are vital to the economy. Certain places in the Midwest—Pittsburgh, for example—may actually perform a lot better in the next 25 or 50 years than in the past because of the presence of superb research institutions and the ability to attract talent from abroad.

Do you see any Pittsburghs internationally—cities in the developed or developing world that are poised to go on the upswing?

I think about older, industrial cities in Europe—Torino particularly and probably Manchester and Birmingham. Clearly, there's a group of northern England and northern Italian cities, and then maybe some cities in Spain, which have transitioned beyond their industrial collapse.

It doesn't mean they will get back to their heyday, but it does mean that they will be stable and well-functioning, vital places. That's partly because of their intrinsic human capital and innovation assets. And it's partly because the EU and their individual countries have spent so much on restoring their cores. So, on the quality-of-place metric, these places are off the charts compared to a lot of American cities.

*Quality-of-place metric*—meaning it's a nice place to be?

I mean that they have the sort of strong, vital cores that only a few metros in the US have.

Conversely, what cities do you see at risk of stagnating because they're not paying attention to these assets?

It's not a matter of not paying attention. It's just that they may not have the same reservoir of assets to begin with, or the assets are there but underdeveloped. It will take time for older industrial cities, for example, to dig out of what we have just gone through.

The US is about to understand the benefits of density. Part of that is an economic proposition and a physical proposition. Part of it is around sustainability. As we begin to move toward a lower-carbon economy there are huge benefits to be gained from density.

The challenges are diverse. On one hand, we have the bubble real estate economies of Florida and portions of California, and maybe some of the Sun Belt cities. And then, of course, there are the auto communities. I don't write Detroit or Cleveland off for dead. I think these places have a lot of assets. They've just been hit so hard that to come back they're going to have to play by the European playbook.

#### Which is?

In many older industrial cities, it's to diversify their economies in smart and sustainable ways and respond aggressively to the reality of sustained population loss. These cities need to target their resources toward their economic and natural assets—like downtowns, anchor institutions, and waterfronts—and effectively manage their vacant land. They need a new vision for how to become smaller but healthier places, with a 15- to 25-year effort that is financed, in part, by the national government.

What would a Cleveland or a Detroit, say, have to do in terms of policies and infrastructure to get that done?

They'd have to have zoning and land-use policies appropriate to this century as opposed to the last one. Many of the old Rust Belt cities of the Midwest and New England have experienced dramatic population declines. They need a new vision of how to grow their economies that recognizes and works within that reality. And they need a zoning and land-use plan

that conforms to the vision. They have to have public and private investment around reclaiming their waterfronts, leveraging their institutional assets, and creating more density in their downtowns.

And they have to add in some kind of infrastructure—rail transit, for example. It depends on where they are. If you're Springfield or Holyoke [Massachusetts] then the issue is a commuter rail into Boston or Lawrence or Lowell. Those are smaller places, but if you're Cleveland, I don't know if it's high-speed rail as much as it is metropolitan-oriented transit. But TOD [transit-oriented development] is a defining growth strategy.

You've predicted that national economies will start to dim in importance as a network of sophisticated, hyperlinked, globally connected metro economies rises. Do you see a fluid global economy with many centers of commerce and finance without a few core cities? Or, do you see history repeating the pattern of the last 400 years with Amsterdam as a finance capital in the 1600s giving way to London and then New York?

I disagree with the way people think about the present. I think we have dominant finance centers, which is really what the Amsterdam, London, New York transition is about. Maybe today you can include Frankfurt and Tokyo. But in the broader picture now we have many centers in the world that perform different functions because they have different clusters that are globally

integrated, particularly around the flow of goods, the production of goods and more complicated supply chains and services.

We've primarily thought about global cities around the flow of capital and headquarters functions, but I think that minimizes how globally integrated a much broader network of cities and metros is in the world. We have to lay out a very different mental map, one that shows that a much broader group of American cities and metros is globally connected—not just through imports at the Walmart but through their tradable sectors.

That's a big deal. I think it will compel American business and political and civic leaders at the metro scale to think very differently about their relationship to the world.

Do you think that internationally, many cities are already thinking that way because they didn't have as big a piece of the pie as America has had for the last century?

I think, generally, cities outside the United States think of themselves in the global context in terms of flows of trade, capital and people. I think the US is a pretty insular country culturally.

Do you see US attitudes changing now as more Americans from big companies and universities move around the world, and with the rise of the Internet?

Yes, there's a global elite who get this. I think the US has a lot of individuals and firms that are globally fluent within the context of what

If we change the dial by 30 percent in the US over the next 25 years, that's enormous because of how big we are. The shift to a low-carbon economy is going to unleash innovation that we can't even begin to imagine.

they do. They understand what their firm is doing, they understand how they operate, but they don't really translate that into their community. Seattle is a big exception to that since it's always been a very export-oriented economy because of Boeing and because it orients to Asia and the Pacific Rim in a dramatic way.

The port cities tend to think a little bit more like this, whether they're a seaport or a freight hub or an air hub. I think over time the US will become much more globally fluent, in part because the national government is more engaged now in trying to shift us away from hyperconsumption to more export-oriented work.

**You've said that crisis begets innovation. Will the cities that are being hit hardest right now by the recession take action to come out ahead in the long run? Or will they just take a body blow and wait and see what happens?**

There are different kinds of responses. Many industrial cities in the US, for example, have taken a body blow but are trying hard to adjust. There are people in Rochester now doing advanced work on medical imaging because of their history in photography. There are people in Akron doing work on polymers because of that region's history in tires. And there are people in Toledo who are making solar panels because of what they were doing with auto glass. There's always a natural iteration of economies.

But government in the US doesn't do a very good job at supporting this. In other countries government is more focused on helping accelerate the transition. The issue for the US is whether, at the community level, you're going to see more dramatic transformation—we are in fact already beginning to see it. The shrinking-cities movement has come to the United States. For example, you are going to see a whole bunch of cities in the Rust Belt begin to rethink their physical landscape. And you'll see cities in the Sun Belt begin to rethink their landscape because of water policy and the housing crisis.

**When you say rethink, do you mean adopt a different mind set—perhaps having less but with higher quality, stressing ideas that work?**

I don't know if it's generally less, though certainly some communities have a far smaller population than they once had. I think it's more compact and denser, with a broader multiplier effect. I think the US is about to understand the benefits of density. Part of that is an economic proposition and part of it is a physical proposition. Part of it is around sustainability. As we begin to move toward a lower-carbon economy there are huge benefits to be gained from density.

There are also demographic preferences, particularly with people under 35. Many of them have a more positive view of urban living, whether it's in traditional cities or whether it's in remade suburbs. Different

parts of the country will have different impulses. The Sun Belt will be motivated by water and environmental issues and by the need to diversify beyond real estate economies.

You're already seeing innovation, and for those cities that have really been hit hard there's a nothing-left-to-lose quality to this. Again, if the federal and state governments are immersed in fiscal crises, then the impact will be to propel more systemic and effective interventions.

**What are the most important systemic interventions?**

They run the gamut. They're around changing the physical landscape—more density around assets like transit and anchor institutions, more environmental reclamation, and more central core vitality. They're around school reform, because if you don't have a quality educational system, you'll never really succeed as a city and as a metro. And they will be around infrastructure.

We're going to see a different kind of infrastructure in the US, one that is less auto dependent, more transit oriented, more collaborative. You'll see more car sharing. Change will be balanced. But because of the size of the US, small shifts will have dramatic effects.

If we change the dial by 30 percent in the US over the next 25 years, that's enormous because of how big we are. The shift to a

Developing cities are challenged by scale more than anything else. You don't even know how many people live in these places because the rural to urban migration is so large and so fast that you can't begin to respond to it.

low-carbon economy is going to unleash innovation that we can't even begin to imagine. Renewables, infrastructure, the way we build housing, office facilities—all that's in for a step change in innovation.

**Do you see opportunities for developing cities worldwide to leapfrog past yesterday's infrastructures and cut right to what they need today?**

Developing cities are challenged by scale more than anything else. You're talking about cities of 10, 15 and 20 million people and with informal settlements. You don't even know how many people live in these places because the rural-to-urban migration is so large and so fast that you can't begin to respond to it.

Even if you had a vision of rapid bus or some other means of transport, you're dealing with settlement patterns that have no particular logic because of the informality of growth in many of these places. I just spent a day going through the informal settlements of Istanbul, which was basically just a tutorial in real estate corruption, as far as I could tell.

Whatever they think of their economy, their real estate economy apparently is just mired in graft. It reminded me of a political machine from the early 20th century in the United States. So, I don't know if developing cities will leapfrog us. They are challenged beyond belief by the scale and the speed of urbanization.

**That was certainly the picture given to us by the city manager of Mumbai. He's most worried about people drowning every year.**

Yes, and climate change makes it that much more complicated.

**On sustainability, you've hypothesized that new metropolitan economies will emerge from a financial crisis with lower carbon emissions, and this will be powered by innovation and better transportation. What are the transitions needed to make this happen?**

In the US we need to take back our national government and have a new, federalist compact, because in the past 30 years we have suffered from a lack of a national focus—on innovation, on freight and transport, on climate. This failing cuts across party lines and multiple administrations, and is with a Congress that is not entirely reformist oriented.

We need the federal government to play a leadership role again, to make targeted investments on a sustained basis. Then it must set a framework of rules so that you can create markets, because markets tend to emerge from standardization and uniformity. We have a great advantage here, because we are a very large market with a common currency and hopefully, in some segments of the economy, common rules.

**What do you think will spur national leaders to action?**

I think Obama is already moving toward this. The question is not whether they're going to do it but to what extent and how soon? These are serious people and they understand that to address the carbon or the climate goals that we're about to set in Copenhagen and beyond, we need innovation and market creation.<sup>1</sup>

Obviously there's going to be a lot of change in consumer behavior, but this is ultimately not about subsidy—it's about embedding change in daily transactions and unleashing innovation in the market. It won't have an even effect across the country because we don't have common energy sources, and some places are more distended than others.

**Johan Karlström, CEO of Skanska, told us he sees the US moving ahead of even Europe internationally in sustainable construction and development. Do you see the US taking a lead?**

I'm not sure that the US is ahead of Europe yet, but I do think that we have the ability to leapfrog Europe fairly quickly. We have the most advanced network of research institutions in the world. We have an innovative capital sector that for a period of time sort of lost its mind—it was innovating about the

<sup>1</sup> The United Nations Climate Change Conference was held in Copenhagen December 7–18, 2009.

Germany is a good country for the US to look at because it has a federalist approach to many things. We're going to copy the iconic clean energy actions, like those around solar panels and wind turbines.

wrong things—but with the right financial regulatory structure it can innovate about the right things.

I am optimistic about the United States and our ability to transition very quickly to a new economic order. That's partly because power is so diffused in the country. You've already seen the investment community radically shift toward clean energy and renewables. It's like the light went on. And, I think in the same way with the right set of incentives and mandates from the national government and the states, you could see us creating very different kinds of building standards, design and materials.

The US is very good at rapid change and adaptation. Look at the technology sector: 15 years ago we weren't even using the internet. China's trying to do the same thing in a completely different model—top-down, hierarchical. That may actually serve a dictatorship form of capitalism. But we both may end up in similar places with very different systems.

**Do you see any “best cases” from cities around the US that really give you hope?**

I see a lot of “best cases” in Europe that we're going to copy and that we're going to probably outperform. The great thing about the US is that we're insanely competitive. And we're very viral in the sense that, for all of our entrepreneurialism, we learn from one another and do tend to copy each other. You see it in everything from stadiums to convention centers. Now you'll see it with green building.

**What do you think the US will copy from Europe?**

The greening of the economy, first and foremost. Germany is a good country for the US to look at because it has a federalist approach to many things. We're going to copy the iconic clean energy actions, like those around solar panels and wind turbines. These are just highly visible in Germany. In Europe overall, there are also a lot of very interesting interventions at the neighborhood scale and at the city scale, around the grid and around green enterprise zones.

All of that is going to come to the US in a big way very fast. If Obama has two terms, then the accelerating effect will be even more dramatic. Mayors have actually been leading the climate change conversation in the US. They have climate action plans all over the country. They had been waiting for some level of federal engagement and state responsibility, which they're now beginning to get.

**Will the suburbs throughout the US—the Robert Moses America that sprouted mid-20th century—inevitably wither as cities grow, economies change and the environment causes us to do things differently?**

Communities built in the '30s and '40s look more or less the same whether they were built within a city limit or built in a suburban community. So, no, I don't think the suburbs are going away, but I think they are going to have their landscape remade. I think you will

see a lot more dense centers, some connected by transit or rail built within suburban communities.

You've already seen it in Washington, DC, in Arlington [Virginia] and Bethesda and Silver Spring [Maryland]. I think the Washington model could become the model for about a third of American metros, which are sort of suburban anyway. Take Phoenix, where the whole place is a suburb. So you'll see a dramatic remaking—a more urban landscape, more clusters, and more compact nodes connected by transit of some kind, whether it's rail or bus.

In short, American suburbs will look different 50 years from now. Suburbs and cities are beginning to morph demographically and socially, and they will become more like each other in form. I think the majority of the country will still live in suburbs 50 years from now. Everyone talks about the back-to-the-city movement, but it will not be the dominant trend. We'll shift to a balanced development pattern from the mono one we've had in the US.

The media tends to be downtown-centric, city-centric, and there are a lot of vocal advocates of this who dominate the blogosphere. But the bottom line is that the suburbs will be the dominant settlement choice of most Americans. It's just that they will look different than they do today; they'll look more like cities. In fact, cities and suburbs are no longer the correct geographic terminology—it's a limiting focus. Today cities and suburbs, and even many rural

## Europeans can teach the US a lot about having coherent freight and rail and transit policy, as they are moving more rapidly on new infrastructure for the low-carbon economy.

areas, merge into metropolitan areas. That's why Brookings calls its program the Metropolitan Policy Program.

**The US infrastructure is crumbling in some places with the cost of renovation or replacement put at \$2.2 trillion in the next four or five years. Is this threatening the vitality of US cities?**

I'm not sure I agree with that figure because it tends to be civil engineers who put out the numbers, and they often have a "Let's pave anything that doesn't move" mentality.

I think there's a traditional infrastructure in the United States, where we've overbuilt to some extent because decentralization was so dramatic. That existing infrastructure obviously needs to be maintained and preserved, but the bigger issue is whether we can move toward a different kind of infrastructure.

There's no reason why the top 50 metros in the US, all of which have populations over a million, should not have state-of-the-art transit. And that doesn't necessarily mean light rail; it could be rapid bus, which probably is more suitable to the American form. There's a lot to learn from Latin America. Curitiba [Brazil] and Bogotá are where they've done it best.

High-speed rail is probably appropriate for a few places in the US, but I wouldn't go completely crazy over high-speed rail,

because we shouldn't be connecting places that are not connected economically. Someone told me they wanted to build high-speed rail from Chicago to St. Louis. I think that's insane.

I think we'll see within cities and metros over a certain size more of a balancing of traditional road and bridge infrastructure with rail and transit. Then, in some cases, we'll see the introduction of inter-metro connections beyond air and car. And that will be dramatic.

The other piece is energy distribution via the smart grid. The biggest infrastructure challenge we have may be to take the natural energy sources of sun in the Sun Belt or wind in the middle portions of the country, and have that energy distributed cheaply and efficiently.

The traditional US road lobby has to be broken. It will still play a very large part in our economy, but we need to grow across very different kinds of infrastructure. This may be the hardest thing to do, because there are very entrenched interests, and we are going to have to think through public and private financing for this. We definitely have to move toward congestion pricing in many of our major metros, and that may be the way we fund a lot of the transit that I'm talking about.

**Do you see political power in the US tipping toward the cities and metropolitan areas as they grow in importance?**

It will be uneven. That's what's both wonderful and frustrating about the US. If you have a governor like Ed Rendell of Pennsylvania, suddenly the cities and the significant urban counties get the attention they deserve as the major engines of prosperity. If you've got a governor who's not attentive to these economic engines—I won't name any names, but that probably could describe a whole portion of the country—it's another matter.

Similarly, if you have an anti-urban sentiment rooted in your state legislatures, then you won't make as much progress. But part of the issue in the US is that metros don't act like metros, so they're less than the sum of their parts. To the extent that cities and suburbs come together around major interventions on new kinds of infrastructure, they have the votes to push their state legislators.

**In other words, areas of common interest like nearby Long Island and New Jersey joining forces with New York City?**

That's absolutely right. It's a canard that state legislatures are dominated by rural areas. In most states they're dominated by urban and suburban legislators who don't get along with each other, who are not acting in the broader interests of the metro, but keep dividing the pie endlessly in very small interventions that don't add up to anything.

By promoting metropolitan consciousness, cities and suburbs will have a unified vision on the future of their economy and the big infrastructure and innovation investments needed to drive that vision. And, if that happens—and it will happen unevenly in the country—policies will change. In fact they already are changing. But, the US won't grow uniformly; there'll be innovations in Denver and Colorado, and then there'll be innovations in Austin and Texas, and then somewhere else.

Probably New England will never get its act together because it's the land of little towns. So what will always bedevil Americans is that the country is so varied and uneven. The federal government will probably provide a lot of the supporting framework for doing the right thing. But ultimately, the federal government doesn't, and shouldn't, deliver state and local innovation, or jobs, or new land-use patterns. It will be up to states and localities and metros to do it.

**What are US cities doing right that the world should be paying attention to? And what should the US be paying attention to around the world?**

There's a lot to learn from abroad. The European industrial cities can teach American ones how to recover their footing and then provide a base from which to grow. A lot of that is around the physical remaking of the city cores. There are also a lot of innovations

in governance being implemented around the world that Americans can learn from, and a lot of metropolitan focus. You see cities like Istanbul or São Paulo that have a really metropolitan level of government.

And then there are subdistricts that are like little cities within the metropolitan frame. Germany has clearly moved to some of that, and so have France and Italy. Occasionally we'll have the Louisville example of the city and county consolidating, but I think governance reform is more dramatic outside the US.

Europeans can teach us a lot about having coherent freight and rail and transit policy, as they are moving more rapidly than we have on new infrastructure for the low-carbon economy. But the US will catch up, and then surpass them. We've been off track for about three decades now. We went crazy into consumption, and lost the sense of what we needed to produce. Our national government took a detour. But we will get back on track.

It won't be a bipartisan love fest. It will be done in an intensely polarized political environment, with tea parties and people on the extremes on both sides sometimes drowning out the center. But the center will hold and we will move toward a low-carbon, export-oriented economy.

**You said older European cities could teach the US lessons in the way they recovered their footing. Please explain.**

Cities like Manchester, Sheffield, Saint-Étienne, or Bremen and Leipzig never lost the sense of their center. They always knew that the core of the city—the cathedral, the city hall, the downtown, the waterfront, the iconic building—was their core culturally. US cities ran away from their cores partly because of industrialization and partly because of racial segregation.

Europe's cities, which had been tempered by two World Wars, restored their centers lovingly. That gave them a strong, dense, compact base off of which to build the next economy. They also nurtured the universities and human capital that ultimately will be the foundation for revitalization.

The US just ignored all that for the last 30 years, but I think we're about to copy it at some level. And we don't have to be completely right. If we're 30 percent of the way right or 50 percent, that will make a dramatic change in this country, create markets, and stimulate private-sector engagement.

**If you could live in any world city, where would it be?**

I would live in London. I went to school there, and I teach there, and that's my favorite city in the world. It's at a human scale.

By promoting metropolitan consciousness, cities and suburbs will have a unified vision on the future of their economy and the big infrastructure and innovation investments needed to drive that vision.

# Mumbai's Dr. Jairaj Phatak

...addresses the challenges and opportunities of one of the world's most densely populated and fastest growing cities

Dr. Jairaj Phatak has had a 30-year career in senior civil service roles in India, holding high posts in urban development, education, food and civil supplies and rural development. From May 2007 to October 2009 he served as Mumbai's municipal commissioner, or overall city manager responsible for planning, development and governance. In November 2009 he took over as additional secretary, Ministry of Panchayati Raj, Government of India, responsible for a range of business and governance initiatives. We spoke with Dr. Phatak about the opportunities and challenges Mumbai faces, ranging from flood prevention and road upkeep to improving health care and education, as well as the strategies being used to address them.



Opening an exhibit at the National Center for Science in Mumbai.

**Can you rank the greatest opportunities and challenges Mumbai is facing?**

The most pressing challenge for Mumbai city are the floods during monsoon. In July 2005 we had 900 millimeters of rainfall in a single day and the city flooded. For the future, we must provide drains that ensure that in a heavy rainfall the water runs to the sea very quickly.

The second priority in almost all Indian cities is adequate water supply, because as populations are increasing water supply becomes inadequate and the old pipelines often break down. Therefore, we have to increase water supply and replace the older pipelines. The third priority is keeping the roads in good condition because traffic is increasing manifold as compared to 20 years back.

**Do you see the city making real progress against those three challenges, both near and longer term?**

The water supply challenge will continue as long as the city's population is growing. Every five years we have to add about 100 million gallons per day additional water supply. A similar need is true about keeping the roads in good condition, widening the roads and having a good parking policy so that roads are not blocked by parked cars.

I think the challenge of providing adequate storm water drains would more or less be met for a reasonably high rainfall during the next four to five years.

**Mumbai is clearly the most densely populated city in our study. What is the city doing to ensure that it has the resources and infrastructure to support long-term growth?**

Since India is growing economically, and as older buildings are being replaced by modern ones, our property tax base is increasing. Our main source of income is an alternate tax called Octroi, which is like a local customs duty.<sup>1</sup> So when more and more imports come into the city, we get additional income. The third source of income is created by development fees for new construction. So as the city is developing, our income base is also growing and we are able to afford adequate projects to keep pace with the increasing population.

**How can the education system be broadened so more children have access to education and help build future prosperity?**

Elementary education, which in Mumbai or in South India is a full seven years, is provided by the municipal corporation—that is, the city government. About 45 percent of the city children, who are largely from the poorer sections, are in our public schools. Mumbai already has more than 85 percent literacy, so availability of basic education is not a problem, but there is a growing shift from vernacular to English, and even the municipal schools are now shifting to English. This is because almost all high-

<sup>1</sup> Local duties such as Octroi are scheduled to be abolished and revenues replaced by a national system of goods and services tax.

The most pressing challenge for Mumbai city are the storm water drains. The second priority is adequate water supply. Third is keeping the roads in good condition because traffic is increasing manifold.

end jobs in Mumbai, whether in financial services, in IT or in business, go to people with good English skills. So, even the poor people are putting their children in English medium schools.

It is not really access to education that is a problem but, rather, proper language training and regular evaluations to make sure the children are on a level with the best schools. In fact, in Maharashtra, which is a leading state in education, literacy is almost 80 percent and access to education for the younger generation is not a problem. The challenge is to ensure that the teachers teach for a full seven or eight hours a day and that they cover the entire syllabus, and that the students absorb what they have learned. The quality of education is the real issue.

**Is that solely the job of government, or are businesses, universities and nonprofits banding together to improve education?**

In Mumbai for elementary education the city council takes care of about 45 percent of students and the remaining 55 percent go to private schools. About half of the private schools are aided by government, and the remaining are unaided because the parents can afford to pay the fees. These unaided schools become trendsetters for educational development all over the state.

Secondly, as far as the quality of higher education is concerned, the universities are mostly state owned and state run. So although there are private universities

which are coming into play now, private educational provision is much more expensive than government provision. Typically, the medical education in a government college may cost only 10 percent of the private college. Similarly, the government medical college gets a very large number of poor patients, so the students get first-hand experience.

I would say that the role of private unaided institutions of higher learning is somewhat limited in India at present, although it is significant at the secondary school level. The private sector does help in improving the quality available in municipal schools.

**Mumbai has the second most medical schools and the fourth most hospitals of any city in our study but doesn't perform well in public health indicators. What can be done to improve public health?**

Half the population in Mumbai lives in slums. And the health indicators in slums, particularly the malnutrition rate among children, are as bad as they are in the rural areas of India. This pushes down the average health indicators of Mumbai. Also, primary health care is not available to the poorer patients.

The tertiary health care in Mumbai is better than any other city where there are free, municipally run medical college hospitals. Even liver transplant surgery is performed in municipal hospitals. But the primary health care is largely privately provided and many poor Indians are unable to afford it.

In the developed part of the city the indicators are quite good. I compared the age at death through our cremation grounds and burial grounds because we issue the death certificates and there is as much as a gap of 14 years in the age of death between the people dying in the richer wards and people dying in the poorer wards.

**What are you doing to increase the life expectancy and general health of those in the poorer wards?**

Apart from road repairs, a priority for the people in Mumbai is better medical availability. This is being improved by garbage collection and clean water supply, and service and general cleanliness measures. Our solid waste management storage sites have been largely just dumping grounds. The solid waste was just collected and dumped outside the city limits, and that is becoming a nuisance to the parts of the city developing nearby.

Proper disposal has become very important to improve health and to make the city cleaner. We have already scientifically closed a dumping site at Gorai and have begun closure of Deonar because of noxious gases causing health hazards like coughing and respiratory diseases.

**Our study shows that the best and the brightest of Mumbai often leave. What can Mumbai do to keep the best people home?**

People leave Mumbai for jobs in more advanced economies or for IT jobs, and more IT jobs are now available in cities such

I firmly believe that the brain-drain theory is no longer relevant: it's brain circulation today. A number of talented people from Mumbai actually return to the city after working in advanced economies.

as Bangalore, Hyderabad and Chennai. Also, the real estate prices are much lower there than in Mumbai.

Apart from these two careers, talented people do not really leave Mumbai in very large numbers. I firmly believe that the brain-drain theory is no longer relevant: it's brain circulation today. A number of talented people from Mumbai actually return to the city after working in advanced economies for shorter or even longer durations. They bring knowledge about the new technologies in the West to enterprises back home and on the whole make us better aware of what is going on in the advanced world.

**How can Mumbai leverage its great competitive advantage in information communications technology to strengthen its own infrastructure in that area?**

As IT literacy increases and more and more people use information technology, the situation will improve. This will happen as older people retire and younger people take their place. My own family is an example. I do not access my bank account on a computer. I'm quite comfortable either talking to the manager by phone or visiting myself on a Saturday.

My son, on the contrary, accesses his bank account and performs all operations through the Internet. He buys railway tickets through the Internet, but I prefer to send my office assistant to the railway station. So I think this will only change with the younger generation taking the place of the older generation.

**You've already addressed waste and health, but what other areas is Mumbai working on regarding slum improvement and development?**

This is divided into three parts. Slums had been considered a nuisance—a cancer that has to be demolished. But then the thinking was that they are an integral part of the city's economy and offer cheaper service jobs that benefit the people living in the developed parts. A slum improvement program was financed by the government of India to give basic amenities such as toilets and roads and water supply.

In Mumbai, with land prices almost five times construction costs, the Slum Rehabilitation Authority was formed for projects such as the large Dharavi reconstruction. Typically, a slum occupies a broad area, so working with developers, there is an incentive for them to build multistory buildings. If a developer can build 269-square-foot apartments with toilet and water facilities in a multistory building, he can then build larger apartments on the land that is freed up and make a profit. The slum dwellers get new housing free, and the developer gets to profit off of the remaining land.

I would not say that this idea has really covered all the slum builders, but still almost 15 to 20 percent of slums have been rehabilitated or are in the process of rehabilitation through this concept. But we must ensure that new slums do not come up on the land that becomes available.

**You said in 2008 that Mumbai cannot give biodiversity the same attention that it receives in the West because of the tremendous human challenges the city faces. Acknowledging that, do you see anything that can be done to address environmental damage and loss of species?**

What I had responded to was a newspaper survey after elections to the Mumbai Municipal Corporation that placed the priority for more trees at number 11 and more open space and gardens at number 13. Number one through number 10 priorities were really the basic human needs as perceived by the lower middle class and poorer people.

Today almost all projects that are developed costing more than \$1 million are vetted under the Environment Act by the Environment Department of the state government. Similarly, new buildings near the coastal roads are to be approved by an agency called Maharashtra Coastal Zone Management Authority. So, we are trying to ensure that substantial damage to the environment does not take place. We are also trying to ensure that the open spaces and gardens are not further reduced in Mumbai. We are modernizing our zoo. The largest green area in Mumbai, Sanjay Gandhi National Park, is in possession of the Forest Department of the state government. The Forest Department takes care to ensure that no further encroachment and slums come up in this national park.

It has been said that Mumbai will become like Shanghai in 50 years. I agree that we are more likely to resemble the greater Chinese cities. But I am told that China has managed the problem of immigration into cities better than India has. I am not sure that our democratic setup will allow us to stop further migration into Mumbai.

**What do you see as the top challenges for Mumbai to join the ranks of the world's elite centers of business, finance and culture like New York, Paris, London or Tokyo? Do you see that occurring?**

As regards total economic indicators, we are now 37th in the world and number one in India. We expect to be in the top 20 during the next 20 years, and every year a marginal improvement will take place. But I don't really see our economic competitiveness on par with New York, London or Tokyo in that time. We have many basic problems on which to focus our attention.

**What are you doing to attract foreign investment to Mumbai?**

Attracting foreign investment into Mumbai is really a function of the state and federal governments. The Ministry of Industry and the Industry Development Department of the state government offer various incentives to attract industry to Maharashtra, our state. Mumbai is too congested to invite new industry, so growth is generally on the outskirts of Mumbai, but still within our metropolitan area boundaries.

**Looking ahead 10 years, what aspects of the economy in Mumbai do you think will be advancing most rapidly?**

I would say real estate development, because renewal will give way to modern buildings, and also financial services and commercial development. I don't see IT

companies coming in Mumbai because it is far more economical for them to go to areas where the real estate prices are relatively lower, like in Bangalore.

**When you took office in 2007, you said Mumbai is a one-of-a-kind city. It has problems particular to it, and therefore, comparisons to other cities in the world are misleading. Can you elaborate?**

Mumbai is an island city with a very high population density. In fact, in the city proper, it is 50,000 people per square kilometer. It has very high rainfall concentrated only in the months of July and August. So that means for two months our storm water drain system has to be six times bigger than in other places.

Secondly, real estate prices are very high compared to any other Indian city. They are more than twice those of Delhi and more than five times those of Pune or Bangalore. This sets Mumbai apart from all other Indian cities.

**The need for greater efficiency in government services and businesses is often cited as a challenge India faces. Do you agree?**

In Mumbai we try to ensure fair elections, and by and large we have a clean, speedy and efficient administration. As far as Mumbai is concerned there is no major lag in execution of our projects. But I think many times cities in India bite off more than they can chew. If a city takes a project with federal or state government aid—say, five

times their annual budget—and then they don't really have the administrative capability to translate that much of a financial resource into results, the projects fall behind and maintenance suffers.

**As the leader of Mumbai now for several years you have faced many challenges and opportunities. What lessons would you like to share with other cities in the developing world?**

The selection of competent personnel is absolutely necessary for clean, speedy and efficient administration. Then time limits for projects need to be set and followed. When a project is undertaken—our water project, for example—a progress chart is created. Every month there is a target as to how much progress is to be made—for example, how many kilometers of pipeline will be laid. Regular monitoring of monthly targets ensures that the projects do not fall behind.

**You once said it's better to be heartless than mindless. Were you saying that logic rigorously applied is better than deciding things emotionally?**

I made that statement because I was being compelled to make an important decision under emotional pressure. A male child was stolen from a municipal hospital and the parents wanted a compensation of one million rupees from the municipal corporation. In India people crave boys, and many will go to any extent to get a son. We don't really have an insurance system for babies being

stolen. It is really the mother's responsibility to guard against harm to the child. Security guards outside the hospital cannot always check whether the child is being taken out by the mother or an aunt or a perfect stranger. Similarly, the nurses cannot keep watching whether the child is with the mother, or somebody else is playing with the child.

I refused to pay. I felt that in many rural hospitals in India it would set a very bad precedent because hospital management cannot be held responsible for child thefts. I was criticized. The Mumbai mayor said that I was being heartless. It was in that context that I said it is better to be called heartless for a day than mindless for the rest of the career. Because if one city had paid 1 million rupees for a stolen baby, it was very likely that many false stolen-baby cases would be reported. An uncle or grandfather would carry away the child just to claim 1 million rupees, and later return the child to the parents. So I said I will not allow bad decisions to be made just because of an appeal to the emotions.

**What do you see Mumbai looking like in 50 years? What key transformations will take place?**

It has been said that Mumbai will become like Shanghai. I agree that we are more likely to resemble Shanghai or the greater cities in China than the cities elsewhere. But I am told that China has managed the problem of immigration into the cities better than India has. I am not sure that our democratic setup will allow us to stop further migration into Mumbai.

**What is Mumbai or the federal government doing to handle the influx of migration into the city?**

It is very, very difficult. Today India is still predominantly a rural country. In 2001, for instance, 72 percent of our people were living in villages. Now people are migrating to other states and cities in search of jobs. So the government of India is taking steps to create purchasing power within the rural areas under the National Rural Employment Guarantee Act. By creating more purchasing power in the poorer areas, migration to

cities will be discouraged. For example, today Mumbai is not getting migrants from South India because South India has now greater socioeconomic strength. The migration into Mumbai is more from North India, which is poorer. When North India develops like South India, migration to bigger cities will decrease.

**When you wake up and face your day, do you feel energized and optimistic or daunted by the challenges?**

When I wake up in the morning or get up in the night, I often think of the things I ought to have done the previous day. So I jot down in my diary what remains. I often do it in the darkness. I sometimes dream that I have to talk to somebody in Delhi or that I have to talk to one of my subordinates about an issue to follow up on once awake. I write it down, and that is the first thing I do after drinking coffee.

We expect to be among the top 20 [world city economies] during the next 20 years. But I don't really see our economic competitiveness on par with New York, London or Tokyo in that time. We have many basic problems on which to focus our attention.



In Stockholm's Old Town, Gamla Stan, Gunnar Söderholm rides his bike to work as he has for 15 years.

## Gunnar Söderholm of Stockholm

...discusses the Green Capital's successful, long-term commitment to the environment

Stockholm was selected this year as the first Green Capital of Europe based on a holistic vision that combines growth with sustainable development and a plan to be fossil-fuel free by 2050. In the last few years, the city has dramatically reduced its traffic flow, improved air quality and pioneered models for new and reclaimed green housing developments. Gunnar Söderholm, director of Stockholm's environment and health administration, credits long-term planning and widely held consensus for the city's achievements.

Can you tell me about the environmental program in Stockholm, what progress you've made and what you're most proud of.

Stockholm has been selected as the first Green Capital of Europe for 2010. We are very, very proud of that. But it is based on a long track record in Stockholm. To start with, I think we have a name out in the world based on sustainable housing. Hammarby Sjöstad is in the front line there, on the waterfront just south of the inner city in Stockholm. It was a brownfield area, but now it's a fully sustainable city district with 10,000 apartments and with very ambitious environmental goals.

Now we are planning for Hammarby's successors. The biggest is called the Royal Seaport, just north of Stockholm with 5,000 apartments. We are trying a number of

actions to make this part of the city climate neutral in 2030. The basic goal is to reduce energy use by somewhere around 55 kilowatt hours per square meter a year.

Energy use should be totally fossil free, of course, but it's also generated locally. We're now at 50 percent of energy produced locally in the area. And we are moving in the final phase to have 100 percent of the energy produced locally.

We're also working on ways to increase public transport use and encourage biking. Of course, we also promote clean cars. We're running a program for public awareness to make people want to adopt a more sustainable lifestyle.

We have an additional area just south of the inner city, Västra Liljeholm, that we're developing environmentally. Stockholm put up €1 billion extra for renewable energy

Stockholm's most important lesson is the long-term perspective in planning. District heating was in planning from the '50s. Decades ago we began planning for waste-to-energy treatment. No matter what majority was in City Hall, they all made contributions to improve the environment.

and reconstruction of suburban areas built between 1965 and 1975, where we want to reduce energy consumption by 60 to 80 percent. We hope that we can be very successful in this because 200 million Europeans live in apartments like these. Because they were built in an industrial way, it's very easy to scale up sustainable solutions not just for Sweden but also abroad for most countries in Europe.

**In other words, the lessons you're learning translate to other cities in Europe and around the world?**

We hope so. Take, for example, Hammarby Sjöstad along the waterfront. I'm coming from there right now with the French Minister of Environment, and we have people from all over the world visiting from the United States, from China, from Latin America, from Europe, of course, and from different countries in Asia and in Africa.

Hammarby Sjöstad has generated huge international interest for what is possible to achieve with sustainable systems for waste treatment, energy use and improvement in public transportation.

**Tell me about the redevelopment of Hammarby Sjöstad from a brownfield to a green city.**

It was old construction, mainly a brownfield area which had very polluted soil close to the inner city. Stockholm bought the land 50 years ago and started planning for a more

sustainable area in the middle of the '70s. It was meant to be the green Olympic Village when we were running for the Games in 2004. Unfortunately, we lost to Athens. But still the sustainable approach has remained in that area.

**Hammarby got the ball rolling in a sense?**

Yes. It has been an example for the international community, for the rest of Sweden and for the construction of new areas in the city of Stockholm. The successors to Hammarby Sjöstad like the Royal Seaport and Västra Liljeholmoss in the south will have modern planning, more modern technology and also promote the Swedish cleantech industry. We want all the construction companies to make a commitment to inform us totally on the technology used inside the houses. And we're building up an information center in the Royal Seaport to keep track and maintain standards.

**On public transportation, what have you done? What's worked well? What hasn't worked well?**

In peak hours, 77 percent of Stockholmers use public transport when they commute in and out from the inner city. The public transport company, which is owned by the county authorities, covers the region. Stockholm set the goal that all electricity use will be green in the underground system, in the commuter train system, the local train itself and in the tram line. The public transport company also plans to be fossil free in the

bus fleet in 2020. Right now, all buses in the inner city run on biogas and we have the largest fleet of ethanol busses in Europe.

**Is this principally how you're moving toward green electricity in fuel and transport?**

Yes, yes. But we are also digging a new commuter train tunnel right under the center part of Stockholm to increase the capacity of the train lines because our tracks are on the edge of their capacity at the moment. We desperately need both new underground, new tracks for the railroad system and also new tram lines. So we're planning for that.

**You're also renovating the historic 1871 train station in Stockholm with new lines, with lower energy consumption.**

A real estate company is building a new office building for rental close to the central station. And that would be climate neutral where they take the heating surplus from the central station and cool it from the water just outside that building. They have geothermal energy. And they are using different specifications, for instance, in the construction material to decrease energy use in the offices.

**You said that 77 percent of Stockholmers now use public transit to get into and out of the central city. Has that been increasing in the last few years?**

It keeps increasing. Almost every month we top a new record for the public transport system.

Congestion charging is a once-in-a-lifetime story. It started with huge opposition, especially among the citizens of Stockholm. Seventy-five percent were against the scheme. But once it was introduced, people were happy about it. It's the biggest swing in political opinion that ever occurred.

**How has the congestion charge worked on cars entering the city since it was introduced in January 2006?**

That is a once-in-a-lifetime story. It started with huge opposition from both political parties, but especially opposition among the citizens of Stockholm. Seventy-five percent were against that scheme. But once it was introduced, people were happy about it. In a referendum in September 2006 they voted for a continuation. Now all political parties support it, and two-thirds of public opinion favors the scheme. It's the biggest swing in political opinion that ever occurred. Congestion charging has reduced traffic in and out from the inner city by somewhere around 20 percent. It's had an impact on air quality by a 10 to 14 percent improvement in different environmental standards.

**Has congestion management been your biggest victory or is it just part of a bigger puzzle?**

It's part of a bigger puzzle, but it's a good example of what you can do with the monetary method in traffic planning. It's rather unique now also. Only Singapore, London and Stockholm are doing it. It has created huge international interest.

**Do you think the future of automobiles in cities is now grinding to a halt?**

I think we will see cars but they will be running on different fuel. Today the main cleantech in cars with alternative fuel is

ethanol and biogas. But the hybrids and the real electric cars are growing very rapidly; almost every car industry in the world is working extremely hard to change it. And Stockholm is now preparing an infrastructure for hybrids and electric cars to make it possible to charge your car in normal parking lots near offices and close to your home.

I think that in 20 years we will see totally different technology in cars used in the central cities. I don't think we will get rid of the cars, but I think cities like Stockholm or New York in Manhattan will just allow cars with alternative fuel. And the Swedish government has put up a goal to have a totally fossil-free car fleet in Sweden in 2030.

**One thing that strikes me about your success is that you put together a collaborative group of government and private interests to cover everything from transportation to building to energy.**

That's true. When it comes to the congestion charge, IBM built the system and was the general contractor for the entire scheme. And they have done it very well. It's up and running 99.9 percent of the time. I've been traveling all over the world with a representative from IBM actually speaking about the congestion scheme in Stockholm. It has been a very successful cooperation with IBM.

When it comes to energy use, we are working with Fortum, our main energy company. We have a very well developed

system of district heating in Stockholm. Eighty percent of all apartments are connected to the district heating system. And 80 percent of the heating is produced by renewable sources. I think that has been very successful. The goal is to have totally renewable fossil-free production in 2020.

The cooperation between Fortum and the city of Stockholm is one of the basic explanations why air quality in Stockholm has improved so much. We have gotten rid of 95 percent of all the sulfur dioxide emissions.

**Are there any lessons you learned in managing the environmental program that translate to other cities?**

I think it's our long-term perspective in planning, actually. District heating was in planning from the beginning of the '50s. Decades ago we began planning for waste treatment where any waste we burn in an incineration plant outside central Stockholm is used for heating and electricity production.

It has been extremely important that there has been a consensus among the political parties for decades. No matter what majority was in City Hall, they all made contributions to improve the environment. I think that is perhaps the most important thing: We have had an ongoing consensus about the necessity of improving the environment.

200 million Europeans live in apartments like those being redeveloped in Västra Liljeholm built between 1965 and 1975. Because they were built in an industrial way, it's very easy to scale up sustainable solutions not just for Sweden but for most countries in Europe.

**This consensus goes back to the 1950s?**

Yes, yes, it does. And the Conservative deputy mayor of Stockholm, Ulla Hamilton, when we were selected as the first Green Capital, she actually credited the Social Democratic mayor in the 1940s who started the planning, Zeth Höglund, who was on the very left side in politics. That shows the historical track record that we have in Stockholm. Our environmental standards trace not only from the present majority but to the many majorities in the city who have made a contribution over the years.

**Stockholm is a beautiful, sustainable city. But it's small. How do the lessons of Stockholm apply to a big, densely populated city like Tokyo, New York or Paris?**

In many ways we can be an example also for the big cities in the world. The representatives of the city of New York visited us several times to speak about the congestion charge project.

In New York, they started planning to look very much like London in their congestion management approach. But New York is now closer to the city of Stockholm because the geography is much more similar. New York is made of islands. It has bridges and tunnels at the entrances to the city center. That is comparable to Stockholm, where we control traffic from 18 control points into the inner city.

**What has been the greatest challenge you've faced in terms of all the different goals that the program has had?**

I would say the congestion charge scheme because there was such heavy opposition among the man on the street before introduction. That was a really tough project to run. But it ended up as a sunshine story, actually.

District heating and waste treatment have also presented challenges, as has the promotion of alternative-fuel cars, what we call clean or green cars. We have been running a project in the city of Stockholm for 20 years to promote clean cars. And the first 15 years were fruitless. But then we saw an explosion in the sales of clean cars. Today 15 percent of all private car traffic in and out of the central city is green. Among the new cars sold in the city of Stockholm last year, 40 percent were alternative-fuel vehicles. That has had a great impact on the market in the whole of Sweden, actually.

**Has there been a rise in bicycle traffic?**

There has. The last 10 years bike traffic has doubled, actually. I see it in my experience as a regular bike commuter for the last 15 years. The number of bikers has really increased. People are combining daily exercise with a more sustainable way to commute. And we are actually now facing congestion problems on the biking lanes.

**Would you say that the social and political challenges have been harder than solving the operational, scientific and engineering challenges of achieving a more environmentally safe, healthy city?**

It has been a change in political and public attitudes. Compared to when I started in City Hall 20 years ago, it's much more of an urban city. People accept that we are building new apartments very centrally located and that it's important to achieve the ambitious climate goals that we have in Stockholm. We are now heading to three tons of CO<sub>2</sub> per citizen per year. That can be compared to the 5.2 tons of carbon dioxide per person that we produced in 1990.

That is very ambitious. At the moment we are somewhere between 3.7 and 3.8 tons per citizen. Compared to European standards, that is about half. And compared to the average in the United States, about 20 percent of the energy use.

**Are there other cities that you see jumping to the forefront of environmentally friendly, healthy places to live?**

Yes, a number of cities both in Europe and in the United States. The best example in the US is perhaps Portland, with very ambitious goals. In Europe you have Copenhagen, Paris, Berlin, Prague and London, of course. All have programs to get more sustainable. London, and especially the previous majority with Ken Livingstone

as a mayor, had put up extremely ambitious goals to achieve. So I think most cities in some way or another are working to reduce the impact from greenhouse gases and other pollutants.

**Do you see any special challenges or opportunities that developing cities face?**

I'm impressed by the goals in a number of the Chinese cities. Shanghai, Beijing and other cities are improving public transit capacity in different ways. For a small country across the earth, they show great interest in our solutions and try to bring them home. But they are dealing with a scale that we are not aware of here in Stockholm. A factor of something like 10 or 20 times greater. Of course, the whole environmental movement has switched from being a moral issue to being a necessity of survival on the earth. You can't underestimate the Stern Report and the IPCC experts and what they have come up with.

**Do you think the developed world has any special responsibility in promoting sustainability or it's just everyone's shared responsibility?**

We definitely have. And most European countries agree upon that. We have better resources. We have better education, technology and scientists than the developing countries. Of course, that gives us a special responsibility to decrease the greenhouse gases more than in the developing countries.

And still you have to recognize that our energy use per capita—even if we are now heading for an ambitious decrease by 43 percent in 25 years—is still more energy per citizen than the world average, and especially the average in developing countries.

**What do you think the transformational changes will be for the future in buildings or infrastructure or transportation or green space? What developments will change the way we live in the future?**

In the city of Stockholm we will see a totally different car fleet in 20 years. We will see fossil-free heating and electricity production. That actually already goes for Sweden. Half of our electricity is produced by water plants and the rest in nuclear plants. Then we have a growing number of wind plants in Sweden. We will also see a much more developed public transport system, more car sharing and different solutions to transport ourselves in a sustainable way.

**Again looking at the future, are there any top mistakes right now that city planners should avoid?**

The lesson we have learned is that we have to introduce more advanced technology and sustainable approaches in planning for projects like the Hammarby waterfront right from the start. We want to introduce much more public awareness and public inclusion. We also want to communicate our experience so lessons can be mainstreamed into action in the average planning of new housing in Stockholm and elsewhere in Sweden.

**One thing that will affect the future in almost every city in the world, including Sweden's, is the migration of people from the countryside and other nations into cities. And Sweden appears to be going from one of the most homogenous societies to a more diverse one.**

Immigration has changed enormously compared to when I was a kid. Then it was exotic to meet a foreigner in the streets. But today 25 percent of the population of the city of Stockholm has a background—

either themselves or from one of their parents—in a foreign country. And we also have immigration from outside Europe, which we didn't have before around 1975.

**Are you doing anything special to handle the issues of cultural cohesion or social benefits?**

In all the big cities in Sweden there are programs for inclusion. There is ongoing discussion of the assimilation process, how to teach immigrant children in their own language but also teach them in proper Swedish how to develop in the school system so we can provide immigrant children with a strong education that can be useful in the labor market in Sweden. This is, of course, an enormously important part of city planning. We're now trying to both increase inclusion of the population with a foreign background and include a more sustainable way of living in the suburban areas where many immigrants live.

But overall, globalization has changed the lifestyle in Stockholm totally. From the pizzas to the hamburgers to Thai food, it's totally different compared to 50 years ago.

**With its beauty and culture, Stockholm is the most livable city among the 21 we're studying. Do you feel lucky to be living in Stockholm, or would you pick another city to live in?**

I feel lucky to live here. And actually in very recent opinion polls, most Stockholmers feel lucky about living here, too. But at the same time, especially the younger generation is prepared to live abroad for a number of years to learn new cultures and new languages. This is much different than it was 30 years ago.



In a scrum of media, Mayor Gilberto Kassab fields reporters' questions.

## Gilberto Kassab of São Paulo

...targets quality of life, education and social inequality in Brazil's teeming industrial and financial capital

Now serving his second term as mayor, Gilberto Kassab, an engineer and economist by training, is facing many challenges. São Paulo is the world's fourth-largest city and the center of Brazil's financial and industrial sectors. Here Kassab talks about many of the issues closest to him: fighting illiteracy, raising education levels and professional skills and improving the quality of life in the city, especially in its *favelas* or shanty towns. He also envisions the São Paulo of the future—which he sees as today's gateway to a Latin America where “no one feels like a foreigner.”

What are your greatest successes and challenges in São Paulo?

My greatest joy was knowing I had the enthusiastic support of São Paulo's population for the Clean City Act implemented over the course of 2007. In only a few months, we were able to do away with more than 30,000 billboards cluttering more than 90,000 streets and avenues. The greatest challenge facing São Paulo, and also the rest of Brazil, is social inequality. We are a rich and powerful city with terrible pockets of misery. There are more than 1,500 *favelas* in São Paulo, and about 3.5 million people live in precarious housing.

With nearly half the city's households commuting by car, what is São Paulo doing to increase the use of public transit and decrease congestion?

More than 6 million vehicles travel the city's streets, and about a thousand new vehicles

are added to this fleet each day, leading to heavy traffic during rush hour. We are taking immediate steps to reduce congestion, with more bus corridors, an almost completely renewed fleet of more than 14,000 buses, restrictions on trucks and charter buses, and parking restrictions on commercial streets.

These measures will help keep the problem from escalating, but more important are long-term remedies, including expansion of the subway system. I'd like to point out especially the substantial contribution being made by City Hall to expand the metro. We passed on R\$ 1 billion to the state government in 2008, and we will pass on another R\$ 1 billion by 2012 at the latest. Our administration was the first to contribute to enlarging the metro network. We are also helping the state government through funding to finish the Mario Covas beltway expected to drastically decrease truck traffic through the city's busiest streets.

Professional qualification is the most difficult knot that Brazil has to untangle to consolidate its position as an economic power. Education is the key to enhancing the skills of future workers, and in São Paulo we are addressing this challenge in partnership with the state government and with private initiative.

**What do you see as the city's major infrastructure challenges?**

São Paulo's main thoroughfares are saturated. A good example is the Marginal do Tietê loop used by 1.2 million vehicles a day. The state government is working to broaden the Marginal do Tietê by three more lanes in both directions throughout its 23 kilometers. The project includes the construction of new bridges and viaducts. City Hall is a partner of the state government in this project too. Other strategic roadways are also saturated, like the Marginal Pinheiros [another loop], the Radial Leste [east-west crossway], and the entire length of the North-South axis, formed by the sequential Rubem Berta, 23 de Maio and Tiradentes avenues.

**Are public-private partnerships creating any special opportunities to develop São Paulo's infrastructure?**

We are placing high hopes in public-private partnerships. The PPPs—as we call them—should play a major role in issues like making sure there are enough day-care center spaces. At the beginning of our administration, there were 60,000 spaces, and we doubled that to 120,000. We still need 40,000 more spaces, and I intend to use PPPs to eliminate that shortfall by the end of my term in 2012.

**Your administration has targeted education as one of São Paulo's key challenges. What are the results so far, and what are the plans for the future?**

Most exciting is that we have reduced illiteracy among the more than 1.5 million

public school students. When my term began, illiteracy went up to the fourth grade, and today illiteracy reaches just to the second grade, and is decreasing. We achieved this by giving the highest pay raise ever to teachers and improving their working conditions.

Also, we renovated all of the more than 1,300 municipal schools and built more than 200 new ones. We solved the chronic problems of school uniform distribution and providing school lunches. As the son of educators, my goal is to guarantee that investment in education continues. We still face an enormous job and I want to contribute so future administrations continue to invest in the education of São Paulo's children.

**How close a connection do you see between the city's ability to raise the level of education and the growth of São Paulo's intellectual, technological and innovation bases?**

As I see it, professional qualification is the main point and is the most difficult knot that Brazil has to untangle to consolidate its position as an economic power. Education is the key to enhancing the skills of future workers from São Paulo and the rest of Brazil. In São Paulo we are addressing this challenge in partnership with the state government and with private initiative.

We face two opportunities and challenges before us that require a large volume of skilled labor. First, we have to prepare to host the 2014 World Soccer Cup matches.

There are many projects that must be carried out in many sectors in a short time, and this requires well-educated professionals.

The other is the opportunity for Brazil to become one of the five main economic powers by 2020, as several economists and political scientists are predicting. Throughout the 20th century, São Paulo carried out an extraordinary effort to train its workforce, and the result was prodigious growth in industry, commerce, services and technology. We need to make an even greater effort now.

**What do you see as São Paulo's greatest strengths and challenges in providing health care?**

The ability to react quickly and efficiently is São Paulo City's big strength in public health. We found the health sector in a precarious state, to say the least, and we correctly diagnosed the problem as a lack of delivery of basic services. Public health specialists agree that good basic service eliminates more than 70 percent of the cases coming to hospitals and emergency rooms. It still isn't ideal, but it is now much better.

We created AMA [Outpatient Medical Assistance], which consists of units prepared to solve the most routine cases, including small surgeries. We introduced more than 100 AMAs around the city, some of which give 24/7 service, and most of which are open Monday to Friday, from seven in the morning to seven at night. We are increasing the number of specialists

We have problems in education, health, transport, violence, pollution and urbanization, and all are pressing challenges. We are responding, one challenge at a time, aware that we will be leaving the city much better than we found it, but still very far from the ideal.

in our AMAs. At the same time, we renovated all the basic health units and practically doubled the Family Health Program teams.

By investing in basic service, we lightened the load on hospitals and emergency rooms, and for the first time in two decades we built two new municipal hospitals. Also, working in partnership with the main city hospitals, we can give the same quality of care to residents in the city's outskirts and to the lower-income classes as the higher-income classes receive. In brief, our challenge is to rescue public health quality in São Paulo.

**What particular challenges does São Paulo face as a developing city?**

Governor José Serra, with whom I ran in the local government elections in 2004 and whom I succeeded in early 2006 when he stepped down from his post to run for the state governor post, taught me that we need persistence and determination to solve São Paulo's immense problems. We have to work so that today will be better than yesterday and that tomorrow will be better than today.

There is no single challenge that outweighs the others. We have problems in education, health, transport, violence, pollution and urbanization, and all are pressing challenges. We are responding, one challenge at a time, aware that we will be leaving the city much better than we found it, but still very far from the ideal.

**How do you see large pockets of urban poverty and crime in Brazil hurting the development of a healthy society where prosperity is more broadly shared?**

There are more than 1,500 *favelas* in São Paulo. Yes, *favelas* are centers of poverty and sometimes downright misery. But no, they are not pockets of crime. On the contrary, the overwhelming majority of the *favela* population are workers. They are men and women who fill the simplest and most essential jobs in construction, services, commerce, industry, residences and housing projects.

Ever since the Brazilian currency was stabilized in 1994 with the Real Plan, the bulk of Brazil's population was freed of the inflation that eroded its salaries. Little by little, this population is climbing from the lowest levels of poverty. Now we hardly see those makeshift favela huts of cardboard, zinc and wood. Instead, most of the houses in the *favelas* today are brick or stonework. In the *favelas* in which City Hall has promoted urbanization with the support of the state and federal governments, there are now streets, sanitation, water, lighting, health centers and stores. Social inequality persists as Brazil's major challenge, but things are evolving slowly.

**What is the city doing to fight crime, and what are its greatest successes and hardest challenges?**

The Brazilian Constitution makes the federal and state governments responsible for public safety. In the 1980s São Paulo mayor

Janio Quadros set a precedent by creating the Metropolitan Civil Guard to protect municipal facilities, including schools and health units. Our administration is going further by installing surveillance cameras. We started in the downtown region, and we have already reached the region of Paulista Avenue and Ibirapuera Park. Wherever we have cameras there has been a significant drop in assaults, thefts and drug traffic. Also, the presence of street vendors who sell pirated, smuggled or stolen articles has dropped.

**In 50 years what do you think São Paulo's *favelas* will look like? How will change occur?**

We have been following the model of Heliópolis, which has about 100,000 inhabitants and no longer is the largest favela in São Paulo. Heliópolis today is a neighborhood with homes and brickwork, numbered streets, basic sanitation, water and electricity. The same thing is being done in another large favela, Paraisópolis, which has already largely become a true neighborhood. This work is well along in about a hundred *favelas*, and in the next few decades should extend to all the more than 1,500 *favelas* in São Paulo.

**In the Clean City Act, *Lie Cidade Limpa*, you are targeting pollution of all sorts. What are you doing, and what are your successes and challenges?**

The noise pollution downtown decreased substantially ever since City Hall banned the use three years ago of loudspeakers

The Clean City Act is an enormous success in itself and produced two beautiful offspring. One was restoring the self-esteem of the citizens... Along with that came the conviction that we can triumph in other areas.

and megaphones by merchants to hawk their products. Those who work downtown notice the difference. The same ban is in effect at street markets around the city, from Tuesday to Sunday.

In cooperation with the state government, City Hall is developing the Clean Stream Program [Programa Córrego Limpo] designed to clean the 300 streams that flow through the city. In the first three years more than 30 streams have been cleaned, and the work goes on.

On air pollution, in 2008 we began an inspection program for trucks and buses. In 2009, we broadened the inspection to include all motor vehicles made as of 2003. From 2010 on, the entire fleet of more than 6 million motor vehicles in the city will have to be inspected. São Paulo is the first Brazilian city to perform motor vehicle inspections.

We expanded the parks in the city. There are 17 new parks open and 69 currently under way. We also introduced 97 new squares and renovated 545 old ones. Between 2005 and 2008, we planted more than a million trees and a similar number will be planted by the end of my administration, in 2012.

**How and why did you start the clean-city campaign? What are your goals—both tangible, practical ones, and intangible or aesthetic ones?**

My greatest desire—though I know it's distant and perhaps unattainable—is to restore the more human São Paulo where I was

born and raised. It was a region crossed by a street called Estrada da Boiada [Cattle Herd Street], so named because herds actually did cross the town. I know that this dream was trampled by unregulated growth, which began with the industrialization of the first decades of the 20th century.

When I took over City Hall, one of the missions that today's governor, José Serra, entrusted to me was precisely to put an end to the visual pollution. He targeted the billboards, lighted signs, spotlights and other blemishes on the city's landscape. I accepted the mission. Working with experts and city councilmen, we launched a radical project to eliminate a multitude of contradictory laws.

This project was approved by the City Council with only one nay vote. The population has supported it enthusiastically from the very beginning. We were able to eliminate all that advertising in a year's time. The business people themselves, today, are seeking to improve their storefronts. We gained our first victory: our city is no longer ugly. Now we are working to beautify it even more.

**What has been the reaction of the city's residents and businesses before and after the law?**

The reaction of the population and shopkeepers and company owners was the best possible. It is true that we had to deal with some dozen lawsuits, but our argumentation was consistent, our law was constitutional

and the court ruled in our favor in all instances. We received expected support from architects, city planners and intellectuals, and also some unexpected backing, like that of banks, construction companies and multinationals. The media played a decisive role with informative coverage.

**You have targeted visual pollution to improve the city's image and standard of living. What was your goal in focusing on visual pollution as part of São Paulo's cleanup, and what are the greatest results you have achieved?**

In the debates as the Clean City Act was being introduced, it was argued that removing lighted billboards would reduce security. City Hall didn't even have to respond to this claim officially. City planners, architects and intellectuals took it upon themselves to show that, in practically all the cases, the lighted billboards were not in inhabited areas, and their absence would not impair security.

Among the results that excited me the most is that in dozens of neighborhoods in the city's outskirts, small merchants took the initiative of changing their billboards themselves. There were thousands of small establishments that we could not inspect that willingly complied with the law.

**Overall, do you judge the Clean City Act a success?**

The Clean City Act is an enormous success in itself and produced two beautiful offspring. One was restoring the self-esteem

I feel that there's an unshakable belief in democracy among the Brazilian population today, just like all of us have a deep-seated feeling that inflation will not return. The people view dictatorship and inflation as two ghosts that can never come back.

of the citizens. Since the international ecological conscience grew in the 1970s, São Paulo had appeared only on the list of the most polluted cities in the world. Now, with the Clean City Act, we are listed among cities that have achieved an important victory against one type of pollution. Along with that came the conviction that we can triumph in other areas. If we were able to take this decisive step against visual pollution, we can succeed in the fight against other types of pollution.

**How are you addressing related quality-of-life issues such as homelessness, abandoned buildings and deteriorated public areas?**

Addressing the homeless problem is an ongoing project. There are 8,000 spaces in the 40 shelters of the city, 720 of which are currently occupied by the elderly. In Parque Dom Pedro II, there is a space to address the educational and social needs of the homeless. It has bathrooms and showers and offers both social and health services.

The elderly require special assistance. With this in mind, The Nova Luz Home Special Welcoming Center for the Elderly was inaugurated in July to serve self-sufficient senior citizens—that is, those who can get around by themselves, can feed themselves and take care of their personal hygiene. With a capacity for 100 people, this Special Welcoming Center is managed in partnership with the Mercy Alliance Association Social Organization.

**Where has the city been making its greatest gains in reducing solid or atmospheric wastes, and how have you made them?**

We have set up 40 Ecopoints [recycling sites] throughout the city for construction debris, which often ends up on the streets or in the streams. At the units the materials are separated for proper disposal. Concrete, mortar, bricks and stone are sent to the landfill for inert wastes; the recyclables are sent to one of 15 screening centers to be separated and sold; and the nonrecyclables are taken to appropriate landfills.

Any person may deposit, for free, up to one cubic meter of material per day at the unit, the equivalent of a 1,000 liter water tank or 25 percent of a regular-sized disposal bin. For larger amounts, a registered disposal company must be hired, and a list of such companies is available at City Hall.

**What is the city doing to provide sanitation services and adequate, clean water?**

Today, São Paulo supplies 100 percent of its population with drinking water and 97 percent with garbage collection, and 73 percent of its sewage volume is treated. In July a law was enacted authorizing City Hall to sign an agreement with SABESP [a Brazilian state-owned utility, providing water, sewerage and basic sanitation services], authorizing it to provide water supply and sanitation services to the city for the next 30 years, renewable for another 30 after that period. The new legislation regulates what has been done for the past

36 years, ever since SABESP was founded, but stipulates that SABESP must upgrade its services to 100 percent of collection and treatment by 2018.

Investment in basic sanitation and supply of treated drinking water has helped reduce the child mortality rate in São Paulo from 51.6 deaths per thousand live births in 1980 to 12.5 in 2008.

**What has been the pattern of immigration into São Paulo?**

São Paulo was the main destination for the great rural exodus that began in Brazil in the 1940s and that intensified in the 1950s and 1960s. In the first half of the 1950s, entire streets sprang up from one week to the next in what at the time were the city outskirts. In the upscale neighborhood of Morumbi, an average of three new houses were built each day. This migration started waning considerably in the 1970s and over the past 20 years has stabilized. It is important to mention that the immigrants, both domestic and from other countries, played a fundamental role in fostering São Paulo's growth.

**São Paulo's historic center has many of the best features that make city living increasingly sought after—beauty, livability, walkability, history. What is the city doing to revitalize and promote its historic heart?**

Our biggest downtown revitalization project is for the Bairro da Luz [Borough of Light] district, which was known as Crackland because of drug trafficking. It is now known

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as Nova Luz [New Light]. Funded by the Inter-American Development Bank, the urban renewal work began by cleaning up the region and eliminating crime.

Last December the company that won the bid was authorized to begin the renewal work, which is expected to be finished in April 2010. In early 2009, the City Council approved the Urban Concession Law that allows City Hall to sell a given area to private developers. This is good for both City Hall and for whomever buys the area, since the process will be speedier, and good for those being displaced, since price can be negotiated with a minimum set by expert appraisal.

**What key challenges or opportunities does São Paulo face in building a prosperous business hub and attracting foreign investment?**

In one word, I would say, education. This is one of the priorities of our administration, together with health. The lack of systematic investment in education explains the pockets of backwardness that still exist in our country. We have a growing number of areas of excellence in agriculture, industry, services and commerce, which qualify our country as one of the great hopes of the world for the coming decades. But at the same time, pockets of backwardness persist. São Paulo City Hall has been striving to make its contribution to increasing the excellence and to eliminating the backwardness. But there is still a long road ahead of us, even in São Paulo.

**You have described São Paulo as the gateway to Latin America. Why?**

For several reasons, starting with São Paulo City's powerful economy and cosmopolitan population. Although the pockets of backwardness that I mentioned persist, São Paulo is a worldly city. Every day, more than two events of a national and international nature are held in the city, like trade shows and fairs, seminars and conventions, embracing all industries and activities. São Paulo is the ideal gateway for anyone who wants to establish business with any country in Latin America. Also, because São Paulo is made up of citizens from all continents and all over Brazil, no one feels like a foreigner here.

**What is your city doing to make itself more attractive to business investment?**

At the end of the 1950s, a São Paulo advertising man, Caio de Alcântara Machado, began to promote trade shows in Brazil and chose to do this in São Paulo, starting with the industrial sector, with FENIT [the National Textile Industry Trade Fair]. His next promotion was the Car Show. He went on to promote other events, always in São Paulo, while training a body of professionals to run them. The result is that after more than half a century, São Paulo has developed extensive trade show expertise, and along with that it nurtures the right environment to attract business. City Hall has participated in this process from the very beginning.

**How are you encouraging foreign investment?**

The main thing needed to encourage foreign investors is to have clear rules. No matter where a possible investor is in the world, he can learn about the entire financial and legal situation in São Paulo through the Internet. All of the expenditures and agreements made by City Hall are updated on a daily basis and are available to anyone.

**Are public-private partnerships creating any special opportunities?**

Yes, of course. I am a liberal by background and by conviction. I come from private initiative and believe in the force of the market. As a politician, I see the huge capacity that public power has in stimulating, promoting, regulating and creating conditions for the citizens to evolve, and that is always a plus for the community and for the city.

We have several operations under way in partnership with private initiative. I call attention to health care, where the major São Paulo City hospitals are participating in the management of hundreds of smaller hospitals, Basic Health Units and Outpatient Medical Assistance Programs. Working with private initiative, City Hall is providing the same quality medicines free-of-charge to the poorer population that higher-income residents pay for.

I know well that the multinationals did not come here with philanthropic intentions. They came to make money. But the truth is that they brought decisive guidelines for Brazilian development. Building on this foundation, São Paulo began designing its own growth model.

**What is the city doing to promote hubs of high-technology innovation? For instance, the Brooklin section is seen as one potential area rapidly transforming, with new growth, new buildings and new companies.**

We expect the revitalization of the downtown area today known as Nova Luz to result in the development of a service center for technology and information. You might say this is the region's natural calling because the entire Santa Efigênia district is a well-known commercial center for electronic businesses. High-technology companies have also converged in the Brooklin neighborhood, the areas around Berrini Avenue and the neighboring areas of Vila Nova Conceição and Vila Olímpia. These are natural movements, which the city government supports.

**Should business fear the political and social struggles and perhaps instability that have been part of recent history in Latin America?**

My answer is a very strong and firm no. I was born in 1960, when Brazil was living through the last years of the re-democratization process begun in 1945, at the end of the 15 years of authoritarian government [between 1930 and 1937] and dictatorship [between 1937 and 1945]. I grew up under the second long-term dictatorship that plagued Brazil, between 1964 and 1985. I hear from my forefathers what the struggle was like for the re-democratization begun in 1945.

I personally followed the re-democratization process begun in 1985. I am totally convinced that my country has the antidote to the poison of authoritarianism: It is democracy, with all of its virtues and deficiencies. I feel that there's an unshakable belief in democracy among the Brazilian population today, just like all of us have a deep-seated feeling that inflation will not return. The authorities know that the people view dictatorship and inflation as two ghosts that can never come back.

**As a popular, two-term conservative mayor in a nation with a highly liberal national government, do you have any friction in obtaining support for São Paulo from the national government?**

My party is critical of the federal government, and I insist that this oppositionist flame should never be extinguished. We believe that the current federal leaders are letting excellent opportunities to advance and grow slip through their fingers. The strong and ominous influence of nationalization-driven thinking in almost all the federal departments and agencies has slowed national development.

Despite the well-known oppositionist position that we—I and my party—hold, we and the federal government work together smoothly. For example, the federal government is participating in the slum renewal program developed by the local government. There are other cases where the

federal government, and even the state government—which likewise is critical of the federal government—collaborate. We disagree on ideology and doctrine, but we understand each other from an administrative point of view.

**Can developing cities avoid mistakes developed cities made and jump right to the newest and best approaches to problems? What are the advantages of building a fast-growing city such as São Paulo?**

The Brazilian economy in the 20th century and in the beginning of the 21st century has benefited largely from the experiences of more developed countries. I know well that the multinationals did not come here with philanthropic intentions. They came to make money. But the truth is that they brought decisive guidelines for Brazilian development, and Brazilian development is centered mostly in São Paulo. Building on this foundation, São Paulo began designing its own growth model, and today, in addition to gaining from the experience of other big cities, we have taken good advantage of our local opportunities.

A good example of this is the controlling of gas emissions in landfills, enabling São Paulo to auction its carbon credits certified by the UN. We made two auctions—in 2007 and 2008—that earned us over R\$ 70 million, now being used to improve the neighborhoods housing these landfills. Furthermore, by harnessing gas emissions, we generate

enough energy to supply a community of 600,000 people. São Paulo was the first large city in the world to achieve this result.

**What do you think developed cities might be doing better?**

Cities in developed countries set a bad example on traffic congestion and drug abuse. On the other hand, they have excellent city planning, remarkable levels of civility, education and technological advances, and we, from developing countries, see the large cities of developed countries as our models in many of these areas. Here in São Paulo, City Hall is

concerned about helping both the state government and the federal government control traffic and drug abuse. It would be very good if there were tested solutions in developed countries that we could adopt.

**You've said your dream city is New York, with a population and size similar to São Paulo's. What do you most like about New York? If you did not live in São Paulo, would you want to live in New York?**

I was born and raised in São Paulo. I have never lived in any other city because I really like it here. I'm accustomed to things here. There are other cities in Brazil and in other

countries that I find charming. New York is certainly one of the cities that enchant me the most. I feel great pleasure walking through the streets of New York, and I know I'm not the only one who feels this way. I don't remember ever having met anyone who didn't like New York's restaurants, shows, shops, bookstores, museums and New York's life.

Cities in developed countries set a bad example on traffic congestion and drug abuse. On the other hand, they have excellent city planning, remarkable levels of civility, education and technological advances.

To discuss the issues...

On infrastructure, capital projects  
and government:

**R. Carter Pate**

Global Managing Partner—Capital Projects,  
Infrastructure and Government  
PricewaterhouseCoopers  
(703) 918-1111  
carter.pate@us.pwc.com

**Jan Stuesson**

Global Co-Managing Partner—  
Government Practice  
PricewaterhouseCoopers  
jan.stuesson@se.pwc.com  
[46] (46) 286 93 39

On cities:

**Hazem Galal**

Leader, Global Cities and Local  
Government Network  
PricewaterhouseCoopers  
hazem.galal@ae.pwc.com  
+971 2 6946800 (ext. 888)

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Special thanks to Heinz Awards/Jim Harrison photographer for Bruce Katz's photo.

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