Amsterdam
A City of Opportunity
Cities of Opportunity’s research thesis – the more well-balanced a city is socially, economically and environmentally, the better it will fare for businesses, residents and visitors.

Amsterdam is a healthy, sustainable and attractive city with an innovative environment and a solid foundation for the digital future, pursuing its growth potential in order to compete globally.
Cities around the world are facing the impact of a series of emerging megatrends like accelerating urbanisation, new technological developments, increased connectivity, demographic shifts, climate change, scarcity of natural resources and many more developments. All of these trends are driving the process of internationalisation for cities.

Cities are engines for growth and the competition amongst urban regions to attract visitors, talent, businesses and investments has increased. But so has the need for cities and regions to collaborate on global issues like climate change and public safety.

In this context it has become important for a city to understand its national, regional and global position. This enables the city and its stakeholders to set appropriate policies, develop an effective strategy and plan for actions accordingly, all aimed at the sustainable development of the city.

To provide cities with a holistic view on their competitive position against other cities around the globe PwC has developed a framework to assess a city’s social, economic and environmental performance against a set of key indicators and variables. In PwC’s global report, Cities of Opportunity, this model has been used to gain insight into how cities around the world are performing and what we can learn from them.

To gain insight and intelligence on the global competitive position of Amsterdam, the Amsterdam Economic Board has asked PwC to conduct a comparative assessment of the city against the 30 cities from the global Cities of Opportunity report. Each of these cities is a global or regional centre of finance, commerce and culture.

We are proud to present to you the results of this research: Amsterdam – A City of Opportunity.

We believe that today’s economy and emerging trends provide Amsterdam with new possibilities and opportunities. To be able to capture these opportunities it is important to understand how urban dynamics work, where Amsterdam is currently positioned amongst other global cities and what city government officials, policy makers, the business community, academics, non-governmental organisations and citizens can do to invest in the future success of the city and the metropolitan region.

As our study shows, Amsterdam has the basic foundations in place for being a successful and well-balanced world city. However, there is also clear room for improvement to capture its full potential and the opportunities it offers. We can proudly inform you that Amsterdam performs really well in this study. The city may pride itself on some of their key achievements in the areas of health, safety and security in the city. As well as the readiness to adopt the new age of technology and innovation and at the same time keep its historical position as gateway city. Each of these areas, and more, will be further elaborated on in this report.

We would like to take the opportunity to thank those individuals with whom we were privileged to conduct an in-depth interview and who have provided us with their valuable insights on the opportunities for the city and Metropolitan Region of Amsterdam.

We would like to address a special word of thanks to the Mayor of Amsterdam, Eberhard van der Laan, for sharing with us his views, his cooperation and enthusiasm. And a thank you to Ton Jonker, Director of the Amsterdam Economic Board, and his team who provided us with their support and guidance during this research initiative.

Anita Nijboer
Senior partner and representative of PwC in Amsterdam

Hazem Galal
Global Cities & Local Government Sector Leader, Partner

Egon de Haas
Global Director Government & Public Services
This report opens a window on the social and economic assets of Amsterdam – A City of Opportunity
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Summary

Amsterdam ranks high amongst the world’s most successful cities

Amsterdam finishes fourth from the top when ranked against the 30 other cities in PwC’s global Cities of Opportunity report. The city’s number one position in Health, safety and security as well as in Sustainability and the natural environment underlines the importance of a good living environment for citizens which is a key to success for global cities.

With regards to Health, safety and security, Amsterdam shows an outstanding performance of its healthcare ecosystem. They are well-balanced with a highly stable political environment and a comparatively low crime rate in the city. Looking at the city’s sustainability measure, a top three score in both Recycled waste and Air pollution are also key factors for Amsterdam’s future.

But it is not just the living environment that puts Amsterdam in a top position. Equally important is the city’s ability to adapt to a changing world. With a top three spot for both Technology readiness and City gateway and a top five score on Intellectual capital and innovation the city shows clear signs that the foundations for the future are in place.

Looking at the city’s readiness to capture the opportunities of new technologies, Amsterdam is a high performer across all variables. It really is a digital city of the 21st century, with a high level of internet access in schools and the good quality of its broadband supporting a strong score on the variable for the Digital economy. All of this offers the opportunity for businesses to develop innovative products and services, amongst others software development and multimedia design.

Within the City gateway indicator, Amsterdam scores a top three position on three variables (Airport to Central Business District access, Top 100 airports and On time flight departures). This shows the key role that Amsterdam Airport Schiphol plays for the city and the metropolitan area. It enables the city to attract businesses and visitors alike, shown by its fifth position on Number of International Association Meetings.

When we take a closer look at the Intellectual capital and innovation indicator, Amsterdam scores a top five ranking across half of the variables. Amongst these, the high level of education and the innovative power of the city are critical success factors for the future.

When you combine all these indicators, you start to get a clearer picture as to why Amsterdam is one of the smartest cities in the world. It is not just about technology, but even more so about a mix of smart government, businesses and citizens, interacting together in an ICT enabled community.
A City of Opportunity

Overall result

4th globally

2nd in Europe

Highest scoring indicators

1st in health, safety and security

1st in sustainability and natural environment

2nd in technology readiness

3rd in city gateway

5th in intellectual capital and innovation

7th in cost

Areas for improvement

12th in demographics and livability

12th in economic clout

16th in transportation and infrastructure

16th in ease of doing business
Opportunities for improvement

City rankings and comparisons should be used as a tool for self-reflection. A comparative assessment with top cities from around the world does not only highlight the areas of strength for a city, but also where the opportunities are for improvement. Even ranked at a fourth position, Amsterdam cannot afford itself any complacency as change is happening at an accelerated pace and any leading position can easily switch to a lagging one. For Amsterdam the key areas of focus are Demographics and livability, Transportation and infrastructure, Economic clout and Ease of doing business.

Across these indicators Amsterdam scores in the middle of a highly competitive pack. But being a world-class business capital today requires an interconnected and smooth urban mobility system, an ecosystem which is easy to do business in, a comprehensive strategic investment (attraction)agenda and a well-balanced and vibrant living environment.

Amsterdam should continuously improve itself to remain attractive for citizens, visitors and businesses.

Towards the future

The key to success for Amsterdam, as can be learnt from other cities, is to have in place a clear, inspiring and shared vision for the future of the city, which serves as a common purpose for all the stakeholders in the city. To achieve its strategic goals, with a balance across the various indicators or ‘capitals’, the city is putting in place an agile municipal organisation with supporting capabilities. All of which should be enabled by collaboration across all stakeholder groups in the city and the wider region, building upon the historical strengths and the present context of the city.

Amsterdam has always been an open, free, inclusive and participative democratic society, placed within a national culture with freedom of speech and respect for other points of view, which has drawn a wide diversity of people to the city. This is engraved in the city’s DNA. Historically Amsterdam is known for its mercantilism and its international entrepreneurial and innovative mentality. The influence of the Dutch East India Company as one of the world’s first multinational corporations can still be seen in the city today. The size of the city provides a close proximity of people, knowledge and ideas which supports an entrepreneurial and innovative spirit which thrives on creativity, complementarity and collaboration.

Amsterdam and the Amsterdam Economic Board (further referred to as the Board) are building upon these historical capabilities, enabling the ‘triple-helix’ collaboration between – businesses, educational institutions and governments – across the metropolitan region. This will mobilise the organising capacity of the city and put in place the preconditions for continued success in the future.

‘Our inhabitants and our businesses can be proud of this result. But this is not only a success for Amsterdam, it is a success for our entire country where people are working hard every day to strongly position the Netherlands on the world map. As a responsible capital we need to continue to position our brand for the city and the country. Therefore I would say – three to go.’

Eberhard van der Laan, Mayor of Amsterdam
‘Amsterdam has been working hard on laying the foundations for the third golden age of prosperity for the city. This result should give all of us the self-confidence that we are on the right track. The report also clearly shows that there is still work to do to achieve our ambitions. But by striking the right balance in all the things we do, making the right choices on where to put our joint efforts, based on partnerships, we can achieve our goals and move from a good to a great city.’

Eberhard van der Laan, Mayor of Amsterdam
About the study

Cities of Opportunity

The first edition of the global Cities of Opportunity was developed in 2007 by PwC in collaboration with the Partnership for New York City. The question which gave birth to this study was what New York had to do to remain competitive on the world stage. The purpose of this study continues to be to comparatively measure the performance of a range of global cities against a set of 10 indicators, which jointly provide a holistic view on how successful cities thrive in sustainable urban development.

Like cities, the research itself continues to evolve and the analysis has grown from the 11 cities included in the first edition to the 30 cities covered today. The group of global cities in the study is determined by three indicators: they are capital market centres, with vibrant economies and a strong quality of life. Each year this set of cities is re-assessed with upcoming cities joining the ranks while those falling back in their development trajectory are taken off the list.

The challenge of developing a city, keeping it on top and evolving with changing needs, is the dynamic we are seeking to illuminate. The hypothesis for this global research is that the more well-balanced a city is socially, economically and environmentally, the better it will fare for businesses, residents and visitors.

The measures we use are selected to develop an accurate reflection of that balanced city. This shows the connection that exists between good economic, social and environmental indicators. Among the ten indicators, five correlate in a close positive pattern – Intellectual capital and innovation; Health, safety and security; Ease of doing business; Technology readiness; and Demographics and livability. In other words, when one goes up, the others tend to do so as well. For example, the indicators from the 2011 global study found that health and intellectual capital correlated to a striking +87%.
The ten data indicator groups are based on 59 variables which jointly provide an image of city success. In this robust sampling of variables, each individual variable has 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. See pages 43–46 for an overview and definitions of the variables.

Data is normalised, where appropriate, minimising the likelihood of a city doing well solely because of its size and historic strength. This eliminates the need to differentiate between the variables that reflect a city’s raw power (such as the Number of Global 500 headquarters or Foreign embassies) and its quality or intensity (such as Percent of population with higher education). More variables are now stated in a way that is normalised for either land area or population than in previous editions.

Understanding the scoring: seeking transparency and simplicity

Because Cities of Opportunity is based on publicly available data supported by extensive research, three main sources were used to collect the relevant data:

- Global multilateral development organisations such as the World Bank and the International Monetary Fund
- National statistics organisations such as UK National Statistics and the US Census Bureau.
- Commercial data providers.

For the Amsterdam study data was collected during the summer of 2014. In the majority of cases, the data used in the study is from 2013. In some cases, national data was used as a proxy for city data. This was only done in cases where consistent, highly reliable sources of publicly available city data were unavailable for all study cities. The scoring methodology was developed to ensure transparency and simplicity for readers, as well as comparability across cities. The output makes for a robust set of results and a strong foundation for analysis and discussion.

In attempting to score cities based on relative performance, we decided at the outset of our process that for maximum transparency and simplicity, we would avoid giving overly complicated weights to the 59 variables.

Consequently each one is treated with equal importance and weighted the same. For each individual variable, the 31 cities are sorted from the best to the worst performing, with each receiving a score ranging from 31 for best to 1 for worst. In ties, cities are assigned the same score. This approach makes the study easily understandable and usable by business leaders, academics, policy makers and the public alike. Once all of the 59 variables had been ranked and scored, they were placed into their 10 indicators (for example, economic clout or demographics and livability).

Within each individual indicator group, the variable scores were summed to produce an overall indicator score for that topic. Here as well, the city order from 31 to 1 is based on these scores. This produced 10 indicator league tables that display the relative performance of the study cities from best performing to worst performing.

This global comparative assessment for Amsterdam is based on the land area covered by the city of Amsterdam, not the greater Amsterdam area or the Amsterdam metropolitan region. This study provides Amsterdam the opportunity to measure its performance against a set of comparator world cities across the range of holistic indicators and variables. How does the city rank amongst its peers, which areas are they key to the cities success and in what areas does the city need to improve to continue to compete globally? These are the questions this study seeks to answer.
How Amsterdam ranks

How the cities rank

Overall 2014 rankings

London
New York
Singapore
Amsterdam
Toronto
San Francisco
Paris
Stockholm
Sydney
Hong Kong
Chicago
Berlin
Los Angeles
Tokyo
Seoul
Madrid
Dubai
Milan
Kuala Lumpur
Beijing
Shanghai
Moscow
Mexico City
Johannesburg
Buenos Aires
Istanbul
Sao Paulo
Rio de Janeiro
Mumbai
Jakarta
Nairobi

A city of opportunity

In this special edition of Cities of Opportunity, PwC looks at a group of 31 cities (adding Amsterdam to the 30 cities included in the latest global edition) that embody the energy, opportunity and hope that draws new people to city life every day and makes urbanisation one of the most powerful megatrends of our time.

Cities in the Netherlands are also impacted by the trends that are unfolding on a global scale and need to adapt to the changing circumstances, be it global migration of people or decentralisation of public services. As the capital city of the country, Amsterdam is one of the frontrunners in adapting its city to a changing world.

To set the direction for the future of Amsterdam, the city developed the 'Structural Vision Amsterdam 2040' for the spatial planning of the city and the region. The Board developed the Amsterdam Vision 2020 and the 2025 Metropolitan Region Amsterdam Scenario’s. This set the aspirational goal to become a Global Business Hub and a top five European Region by the year 2020. With this vision Amsterdam has clearly set its compass on sailing the waters of international competition amongst cities in Europe and worldwide.

To be able to achieve these goals it is important to understand where the city stands today amongst the competition and where are the city’s strengths and areas for improvement are: in other words – where is the opportunity?

To gain insight and intelligence on this global competitive position of the city, we conducted the Cities of Opportunity comparative assessment for the city of Amsterdam, taking as a point of reference the city itself and not the greater metropolitan region.

Amongst the 31 global vibrant centres of finance, business and culture, the city of Amsterdam takes a very strong fourth position right at the top where they are only surpassed by London, New York and Singapore respectively, with Toronto closing the top five.

What each of these cities have in common is their attractiveness to businesses, visitors and residents alike. What characterises the power to draw each of these groups to the city is the holistic balance across the key indicators which constitute the success factors for a city, which are:

- Intellectual capital and innovation
- Technology readiness
- City Gateway
- Health, safety and security
- Sustainability and natural environment
- Demographics and livability
- Transportation and infrastructure
- Economic clout
- Ease of doing business
- Cost

1 Rankings have been recalibrated from the main 2014 global Cities of Opportunity assessment with the addition of Amsterdam. This may cause minor variations for the other 30 cities featured in the global report.
### Technology readiness

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**Highest rank in each indicator**

Each city’s score is the sum of its ranking across variables. The city order from 31 to 1 is based on these scores (31 for the highest to 1 for lowest).

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**‘I would be genuinely proud of this result for the city of Amsterdam!’**

Dr. Louise J. Gunning-Schepers, President of the University of Amsterdam and the Amsterdam University of Applied Sciences

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**‘Amsterdam is a wonderful world city which, as this research confirms, competes amongst the top global cities. The ranking is very good, but we can’t stand still. Successful cities are constantly on the move. In a dynamic world it is important to pursue excellence in those areas where we are currently performing good, for example, technology and innovation.’**

Jos Nijhuis, President and CEO Schiphol Group
These ten indicators represent a set of 59 variables which are used to provide a picture of how the cities perform across three overarching themes: Economics, Quality of life and what we call Tools for a changing world. In this report these themes will be used to further assess the competitive position of Amsterdam against the other 30 cities.

Similar to the other top ranked cities, Amsterdam looks to strike a good balance across the ten indicator groupings. The city performs really well in the areas of Health, safety and security and Sustainability and the natural environment where it achieves the number one spot on both indicators taking a leading position amongst the 31 global cities on quality of life.

The other areas where Amsterdam truly excels is on Technology readiness where the capital ranks second just behind Stockholm and scores a third place on City Gateway where London and Beijing are just ahead in terms of accessibility for and attractiveness to visitors.

On the third indicator that assesses the city’s future readiness under Tools for a changing world, Intellectual capital and innovation, Amsterdam closes the top five. The high score for Amsterdam across these indicators shows that the city has a strong competitive position looking towards the future.

**Lessons to be learned**

Besides key strengths, the Cities of Opportunity comparative assessment also gives insight in those areas where the city could improve its performance and has the opportunity to learn lessons from its peer cities. Besides maintaining its leading position on the indicators above, Amsterdam has room for improvement on its competitive position across a range of indicators where the city falls out of the top ten and sits in the middle of the pack.

In the rankings on Demographics and Livability and Economic clout, Amsterdam ends just outside the top ten – at twelfth position. Transportation and infrastructure and Ease of doing business would clearly also be areas of focus as the city scores an average ranking across the variables included of 16.

To round off the assessment of the indicators we look at another key factor which determines the attractiveness of a city, which is Cost. Amsterdam takes seventh position in the ranking here but could perform even better if the Cost of living in the city would decrease.

Looking at the Quality of life within European cities, we see a similar picture where again only Madrid is able to make it to a top three position, for Transportation and infrastructure. This is also the only indicator in which Amsterdam is unable to score a ranking amongst the leading five cities.

Finally when we look at the Economics side of these European cities we start to get a more mixed picture. Moscow and Milan enter the top five for Economic clout, at third and fifth spot respectively. And within the Cost indicator Madrid and Istanbul make it to the top grouping.

The case of the European cities underlines the earlier statement from Cities of Opportunity – the more well-balanced a city is socially, economically and environmentally, the better it will fare for businesses, residents and visitors.

**European urban areas**

If we now step down from a global to a European perspective, Amsterdam is second after the historic European powerhouse city of London. Paris and Stockholm follow closely with Berlin being the fifth Northern European city at the top.

Madrid, Milan, Moscow and Istanbul each have their individual strengths, but show less balance and end up in the bottom half of our European Cities of Opportunity.

Madrid as a European logistical hub finishes third on City Gateway but the rest of the top five positions amongst Tools for a changing world are all taken by Amsterdam’s Northern European peers.

**DNA of Amsterdam**

As mentioned earlier, it is important for a city to know where it wants to go based on the city’s vision, understanding the current position and managing the city from a holistic point of view to seek balance between social, environmental and economic indicators. Besides these key success factors, recent urban studies conducted by PwC² show that in addition to these success factors, an agile city organisation is also needed, supported by partnerships and in collaboration with its key stakeholders.
Historically, Amsterdam has always been a city to which open-minded people are drawn and has evolved into an open, free and inclusive democratic society. This diversity within the population of the city is one of its key assets, which, placed within a city much smaller than New York and London, enables a close proximity of people, knowledge and ideas driving the city’s entrepreneurial and innovative spirit. The city thrives on creativity, complementarity and collaboration.

London First, Partnership for New York City and the Singapore Economic Development Board are examples of successful city level stakeholder collaboration efforts across the top three cities. Within Amsterdam the collaborative initiatives are channelled through the Board, which enables ‘triple-helix’ cooperation between businesses, educational institutions and governments across the metropolitan region. From the other successful cities we can learn that putting such an organisation in place is a precondition for continued success.

Besides the collaborative power of the city we also referred to the agile city government organisation which is needed to enable the growth and development of the city.

The city of Amsterdam has taken significant steps in this space as it is currently going through a large transformation of their government organisation and culture to become more agile and adaptive in the way public services are provided to citizens, businesses and visitors. In this way the city internally is also positioned to adapt to the trends and changes in society and is able to seize the opportunity space now and in the future.

‘The city of Amsterdam is a heritage spot for the world and should be open for everyone to visit. The challenges Amsterdam is facing are the relatively high cost of hotel accommodation and the lack of an integrated approach for improving the urban mobility infrastructure for all modes of transport. When we reach the capacity limits of the city, out of the box solutions should be considered, such as creating a car free city centre in Amsterdam, which will be the case in the future anyway.’

Hans Bakker, CEO Amsterdam RAI Convention centre

‘Developing the city of Amsterdam is a continuous process. We will have to do this together, through a bottom-up approach, using events as a catalyst for growth and developing the narrative for the future of Amsterdam.’

Prof. dr. Zef Hemel, Professor Urban and Regional Planning, Wibaut Chair, University of Amsterdam
Cities are faced with an ever changing world. Their success depends on the ability to adapt themselves to the changing needs of society. We aim to assess the city’s future readiness through the use of three indicator groupings: Intellectual capital and innovation, Technology readiness and City Gateway.

**Intellectual capital and innovation**

In today’s knowledge driven economy, one of the key success factors for a city is the ability to attract and develop talent and intellectual capital. This enables cities to generate innovation, which in turn serves as the backbone to the city’s economic, social and environmental growth.

Cities with long-standing institutional networks, where they are both locally and globally dominant, tend to be extremely difficult to compete with on intellectual capital. Amsterdam is one of those global cities which has a strong established network of educational institutions which continue to have the power to develop and attract a highly educated workforce. In turn, this enables the innovative strength and entrepreneurial spirit of the city.

With a top five position in **Intellectual capital and innovation** Amsterdam confirms that it has a key asset that positions it well for future competitiveness. The city scores consistently highly across each of the underlying variables, some of which are measured on a country level.

Areas for potential improvement for Amsterdam, where the current rankings are relatively lower, include **Libraries with public access** and the **World university rankings** for the city’s educational institutions. Looking at the Times Higher Education World University Rankings 2013–14, the University of Amsterdam ranks 83rd and the VU University Amsterdam sits at the 144th position. Both of the city’s universities are well established institutions and continue to show an upward trend on this ranking over the past couple of years. Although not included in the measures presented, the 2014–15 rankings show a 77th and 136th rank respectively.

What the ranking does not show is the impact of collaboration between the various educational institutions within the city.
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<th>Math/Science skills attainment*</th>
<th>Literacy and enrollment*</th>
<th>Percent of population with higher education</th>
<th>World university rankings</th>
<th>Innovation Cities Index</th>
<th>Intellectual property protection*</th>
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Highest rank in each indicator *country-level data

‘Amsterdam being number four in this ranking is phenomenal. What will we do to maintain this leading position? In my view we need to take an interdisciplinary approach to the further development of the city, make clear choices on where to put our focus, stand out from the crowd and strive for international excellence across these areas attracting the key talents, including in the educational and cultural sector.’

Jan Raes, Managing director of the Royal Concertgebouw Orchestra

‘The success for Amsterdam can be found in the size of its community and physical proximity. This enables collaboration in a complementary way driven by each stakeholder pursuing their own goals which jointly build the success for the city.’

Dr. Louise J. Gunning-Schepers, President of the University of Amsterdam and the Amsterdam University of Applied Sciences
One of the ways Amsterdam is capitalising on its strong overall position in Intellectual capital and innovation is by utilising collaborative power to drive growth in the city’s Economic clout indicator through mobilising the intellectual clout in the ‘Innovation Exchange Amsterdam’ (IXA) initiative.

The IXA is an initiative launched by five Amsterdam based knowledge institutions – the VU University Amsterdam, VU University Medical Centre Amsterdam, the Academic Medical Centre, the University of Amsterdam and the Amsterdam University of Applied Sciences (HvA). These five institutions have pulled together their individual Technology Transfer Offices into one organisation aimed at establishing a new valorisation centre, which aims to transfer research and technology into economic value.

The collaboration between these knowledge institutions in this new centre of expertise is focused on supporting the Amsterdam research community in transferring their ideas, research results and innovations into concrete applications or services. This is done by facilitating the researchers in their collaboration with other parties like companies, non-governmental organisations and investors. The latter can assist to turn the ideas into clear business plans and profitable products or services, generating scientific results and adding social and economic value.

Looking at the Innovation Cities Index, Amsterdam currently ranks fifth amongst the 31 cities included in this study, which is based on the city’s position in the 2thinknow Innovation Cities™ Index.

However, the city is showing a downward trend as it came from third position in this index in 2010, compared to New York, Paris and London which have shown an upward or stabilising trend in the index. What this shows us is that it not just the effort of getting to the top, but even more so the effort to stay at the top which drives for success.
Technology readiness

With technology being the key enabler for future innovation and development in our assessment, Amsterdam, ranking second just after Stockholm, is well positioned to capture the opportunity as a true digital city of the 21st century. With a place in the top seven for all variables Amsterdam is a high performer across the board on Internet access in schools, Broadband quality score, Digital economy score and Software development and multimedia design.

Amsterdam has also truly embraced the opportunity offered by the position it has established within the technology space. The city is not only a logistical hub but also a technology hub as it sits on the world’s largest internet exchange. Amsterdam Internet Exchange (AMS-IX), established in the early 1990s, interconnects hundreds of networks which provides a world class platform for service development.

The city government itself has also embraced this position and appointed a Chief Technology Officer (CTO) for the city. This is common in the United States, but unique for the Netherlands. The CTO, not to be confused with the Chief Information Officer (CIO), will be responsible for looking at how Amsterdam as a city and not as the governmental organisation, can embrace technological innovation.

Amsterdam Smart City (ASC) is another example of how technology has been embraced by the city. ASC is an innovation platform within the Amsterdam metropolitan region which aims to challenge companies, citizens, municipalities and knowledge institutions to develop innovative solutions for Amsterdam’s larger urban development challenges, like for instance urban safety. ASC won the World Smart City Award in 2012, making it one of the leading Smart City initiatives in the world.

Amsterdam Metropolitan Solutions (AMS) is one of the latest initiatives by the city to realise an internationally leading institute focused on applied technology. It is built by a consortium of public and private partners. AMS aims to attract and retain talent in the field of applied technology, create sustainable connections, drive a positive economic impact for Amsterdam by innovating, developing and marketing metropolitan solutions in urban themes such as water, energy, waste, food, data and mobility.

All these initiatives contribute to the attractiveness of the city and enable social and economic growth. However, as today’s technological innovation goes faster than any developments before, the biggest challenge is to stay ahead of the curve. A top ranking in this indicator should therefore not mean that success is guaranteed. Constant development, investment and innovation is needed to maintain this top position.

### Internet access in schools*
- **Stockholm**: 27
- **Amsterdam**: 31
- **London**: 28
- **Seoul**: 29
- **New York**: 22
- **Hong Kong**: 24
- **Singapore**: 30
- **San Francisco**: 22
- **Los Angeles**: 22
- **Chicago**: 22
- **Tokyo**: 15
- **Berlin**: 14
- **Toronto**: 25
- **Sydney**: 26
- **Paris**: 31
- **Madrid**: 13
- **Dubai**: 23
- **Milan**: 8
- **Moscow**: 9
- **Beijing**: 18
- **Kuala Lumpur**: 16
- **Shanghai**: 18
- **Buenos Aires**: 4
- **Istanbul**: 10
- **Mumbai**: 8
- **Sao Paulo**: 23
- **Mexico City**: 7
- **Johannesburg**: 1
- **Jakarta**: 12
- **Rio de Janeiro**: 3
- **Nairobi**: 1

### Broadband quality score
- **Stockholm**: 28
- **Amsterdam**: 25
- **London**: 30
- **Seoul**: 31
- **New York**: 21
- **Hong Kong**: 29
- **Singapore**: 11
- **San Francisco**: 16
- **Los Angeles**: 19
- **Chicago**: 14
- **Tokyo**: 22
- **Berlin**: 27
- **Toronto**: 15
- **Sydney**: 17
- **Paris**: 23
- **Madrid**: 24
- **Dubai**: 3
- **Milan**: 26
- **Moscow**: 20
- **Beijing**: 10
- **Kuala Lumpur**: 12
- **Shanghai**: 10
- **Buenos Aires**: 18
- **Istanbul**: 7
- **Mumbai**: 13
- **Sao Paulo**: 3
- **Mexico City**: 6
- **Johannesburg**: 8
- **Jakarta**: 5
- **Rio de Janeiro**: 4
- **Nairobi**: 1

### Digital economy score*
- **Stockholm**: 31
- **Amsterdam**: 27
- **London**: 29
- **Seoul**: 23
- **New York**: 30
- **Hong Kong**: 25
- **Singapore**: 25
- **San Francisco**: 30
- **Los Angeles**: 19
- **Chicago**: 19
- **Tokyo**: 18
- **Berlin**: 22
- **Toronto**: 14
- **Sydney**: 9
- **Paris**: 17
- **Madrid**: 10
- **Dubai**: 11
- **Milan**: 15
- **Moscow**: 19
- **Beijing**: 16
- **Kuala Lumpur**: 6
- **Shanghai**: 12
- **Buenos Aires**: 7
- **Istanbul**: 8
- **Mumbai**: 6
- **Sao Paulo**: 13
- **Mexico City**: 12
- **Johannesburg**: 1
- **Jakarta**: 3
- **Rio de Janeiro**: 4
- **Nairobi**: 1

### Software development and multi-media design
- **Stockholm**: 113
- **Amsterdam**: 111
- **London**: 109
- **Seoul**: 105
- **New York**: 103
- **Hong Kong**: 102
- **Singapore**: 94
- **San Francisco**: 93
- **Los Angeles**: 91
- **Chicago**: 85
- **Tokyo**: 83
- **Berlin**: 81
- **Toronto**: 76
- **Sydney**: 75
- **Paris**: 73
- **Madrid**: 63
- **Dubai**: 57
- **Milan**: 57
- **Moscow**: 50
- **Beijing**: 49
- **Kuala Lumpur**: 49
- **Shanghai**: 45
- **Buenos Aires**: 43
- **Istanbul**: 43
- **Mumbai**: 32
- **Sao Paulo**: 30
- **Mexico City**: 30
- **Johannesburg**: 24
- **Jakarta**: 21
- **Rio de Janeiro**: 21
- **Nairobi**: 14

*Each city’s score (here 113 to 14) is the sum of its ranking across variables. The city order from 31 to 1 is based on these scores (31 for the highest to 1 for lowest).*
City gateway

As a major international travel hub Amsterdam is a true city gateway, not just for Europe but for the world. Through the position of Schiphol airport and the city’s ability to attract a strong score on Number of International Association Meetings and International tourists Amsterdam ranks 3rd on this indicator, just behind London and Beijing.

That Schiphol is at the heart of the city is shown by the fact that only Dubai scores higher on Airport to Central Business District access.

Schiphol does not only provide efficient access to the city through a network of direct train connections, buses and taxis. It also connects Amsterdam by train directly to the other main cities in the Netherlands and other major European cities.

The area which needs attention is the way that the city is able to accommodate all the visitors and continue to attract tourists to the city and the metropolitan region. In both areas the city has made clear moves to improve its position over the past year.

To manage the balance between visitors and inhabitants, the city is aiming to host more tourists across the wider metropolitan region, which further enhances the cultural assets for Amsterdam and the surrounding cities. This will also help the city attract more ‘value-adding’ tourists with higher spending power.

More hotel rooms have been added, with various projects currently underway to extend hotel capacity.

Most recently it was announced that the former KPN-building, also known as ‘The Dam’, will be turned into a conference hotel with getting close to 500 bedrooms. This initiative not only adds hotel room capacity to the city, but also pushes forward a regeneration process for the Amsterdam Sloterdijk district, which in the 1990s was a hotspot for telco- and internet companies. Another example is the development of A’DAM Tower on the northern banks of the IJ-river, scheduled to open its doors in 2016. More recently the five star Waldorf Astoria Amsterdam hotel was opened. Located in a series of monumental canal mansions at the Herengracht another high end residence has been added to the mix of accommodation in the city.

‘For the past 700 years Amsterdam has been marketing itself on the world stage. The city’s history is one of its key factors for attractiveness, as well as the compactness of the city, an airport with direct connections to over 300 other cities and being a city where everyone speaks English. We should continue to exploit these strengths.’

Hans Bakker, CEO Amsterdam RAI Convention centre
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<th>Hotel rooms</th>
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<th>Number of international association meetings</th>
<th>Incoming/outgoing passenger flows</th>
<th>Airport to CBD access</th>
<th>Top 100 airports</th>
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Each city’s score (here 170 to 34) is the sum of its ranking across variables. The city order from 31 to 1 is based on these scores (31 for the highest to 1 for lowest).

’Schiphol aims to be Europe’s Preferred Airport and we wish for Amsterdam to become Europe’s Preferred City for citizens, businesses and visitors. To achieve both goals, a modern and adequate infrastructure – roads and rails – is of utmost importance.’

Jos Nijhuis, President and CEO Schiphol Group
Quality of life

People who live, work and play in a city look for the highest quality of living for themselves and their children. It is not only about the economic or educational opportunities, but even more so about the overall quality of life a city has to offer.

Through the following four indicators we look to provide a picture on the quality of life in the city: Health, safety and security, Sustainability and the natural environment, Demographics and livability and Transportation and infrastructure.

Health, safety and security

Looking at cities, the same principles can be applied as to individuals when you consider the Maslow Hierarchy of Needs\(^3\). Health, safety and security as an indicator addresses the basic requirements citizens need to have in place for a city to be able to move further up the hierarchy of urban development.

Amsterdam performs really well on this indicator and tops the rankings for the 31 cities when it comes to Health, safety and security. When you look at the underlying variables, it is striking that the city does not come out at the top on any of them, but shows a strong balance across the top ten for all of them. The highly stable political environment and a comparatively low crime rate for the city are well-balanced with the city’s healthcare ecosystem variables.

One of Amsterdam’s key assets is its intellectual clout and the culture of collaborative spirit. To continue to improve the quality of health and healthcare in the city, the city is combining its key assets and is setting up two initiatives which should ensure Amsterdam will remain a healthy city.

The first initiative is the Sarphati Institute, which is a ‘triple-helix’ collaboration between government, represented by the Amsterdam municipality and the Public Health Services Amsterdam (GGD), knowledge institutions, represented by Amsterdam Medical Center, University of Amsterdam and the VU Medical Center and the private sector. This initiative is aimed at promoting a healthy lifestyle and preventing obesity amongst the Amsterdam youth population which is one of today’s lifestyle disease that we see impacting citizens in cities all across the world.

The second initiative is the Amsterdam Health & Technology Institute (AHTI). AHTI’s goal is to improve the quality of healthcare in the city and make the cost for healthcare manageable. This is to be achieved through education – a master programme for technology in healthcare, applied research – focused on enabling technology in healthcare, and integrated innovation – to stimulate economic activity in this field. Also here the key to success is collaboration.

Through the Amsterdam ‘Living Lab’ a variety of stakeholders from the private sector work together to improve the quality of life in the city.


‘The forward-thinking, innovative vision of the city of Amsterdam was a key driver for us to become involved in AHTI. The vision of Amsterdam is to connect initiatives that improve the health of the city and the health of its citizens. Thereby they recognise that cities are only as good, only as healthy, and only as successful as the people living in them.’

Mike Merson, Director, Duke Global Health Institute, Durham, North Carolina USA
and the public sector, including local, national and international knowledge institutions (e.g. Duke University Global Health Institute) are cooperating to improve healthcare in the city.

These are just a few initiatives which the city has initiated to continuously improve on one of the key indicators for a successful city – *Health, safety and security*.

*country-level data

The city of Amsterdam has taken this unique Sarphati Institute initiative on one hand to further improve the health of their citizens and on the other hand to strengthen the position of Amsterdam as a strong knowledge centre on new emerging epidemics in public health. I expect we will be able to develop this institute as one of the leading research centres in public health in the world.*

Prof. dr. Arnoud Verhoeff, Manager Cluster Epidemiology and Health promotion GGD Amsterdam
The city of Amsterdam is working on an integrated transportation infrastructure plan aimed to optimise urban mobility within the city and the region. The focus will be on sustainability, channel integration, the image of public transport and the use of new technology. Amsterdam should certainly aim to learn from other cities like London and Copenhagen.

Alexandra van Huffelen, CEO GVB – Public Transport for Amsterdam

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Each city's score (here 127 to 37) is the sum of its ranking across variables. The city order from 31 to 1 is based on these scores (31 for the highest to 1 for lowest).
**Sustainability and the natural environment**

Amongst the 31 Cities of Opportunity Amsterdam comes out at the top on environmental sustainability for cities. Similar to Health, safety and security the city does not top any of the individual variables, but shows a strong balance across the Sustainability and the natural environment indicator.

With an environmentally conscious population that is world-famous for using bicycles, Amsterdam ranks amongst the top three cities in both Recycled waste and Air pollution, which are key factors for Amsterdam's top position. Through the municipal waste and energy company (AEB), 99% of the municipal waste is recycled and reused in new raw materials as well as turned into sustainable electricity and city heating. The AEB is not the only partner for the city which supports the city in achieving its sustainability targets. A wide range of stakeholders operating within the city also have their individual sustainability targets. Amsterdam Airport Schiphol for instance aims to be the most sustainable airport worldwide and recently won a 2014 Airports Going Green Award. The city's harbour has also set clear targets to become a sustainable port as well as the Amsterdam RAI, the city's largest convention facility, which has set clear 'green' ambitions with their credo – 'Creating a great environment to meet'. Through their policies, the Amsterdam RAI achieved their target of 100% waste recycling and reduced their general waste production by 30%.

The Air pollution variable shows that global rankings should not be taken out of their local context. Even when the city ranks third globally on this indicator amongst the other 30 cities, air pollution is the number three health risk in Amsterdam. The city should therefore continue its efforts to reduce pollution through innovative solutions and partnerships.

Besides the waste recycling and air pollution reduction initiatives, Amsterdam should cherish the city's green and Public park space. Today, citizens, visitors and businesses alike are attracted to green and sustainable cities as they provide a high quality living environment.

4 website Amsterdam Energy Company, www.aebamsterdam.com
6 website city of Amsterdam, clean air for Amsterdam, www.amsterdam.nl/parkeren-verkeer/luchtkwaliteit/
Demographics and livability

The variable Cultural vibrancy is based on data which has not yet taken into account the cultural buzz which Amsterdam generated during the years 2013–14 when the city held its jubilee celebration of some incredible milestones like the 400th anniversary of the Amsterdam Canal Ring, the opening of the renovated Rijksmuseum, the 125th jubilee of the Royal Concertgebouw Orchestra, 175 years of Artis Royal Zoo and the reopening of Stedelijk Museum Amsterdam. The year was full of exciting events and has boosted the city's cultural awareness, which can enhance its standing in future assessments.

In general culture is a driving force for the success of city life. ‘The town/region that has the most ballets, theatres and symphony orchestras wins.’ – Arthur Bienenstock, Professor at Stanford University, former science policy advisor to Bill Clinton. This statement is supported by the World Cities Culture Forum, a major new global initiative on culture for creating thriving cities. In 2014 Amsterdam hosted the World Cities Culture Summit, attended by more than 25 global cities. At this summit Dr. Benjamin Barber argued that cities and culture are inseparably linked as they share the same essential dimensions defining both: the public, democracy and interdependence. The summit therefore not only addressed the issue of the contribution of arts to the world and city economies but also its essential role in the success of society in the 21st century. This underlines the importance of cultural assets in a city to create attractiveness.

With the upgrade of the cultural sector through the renovation of some of the world renowned museums and its established artistic climate, Amsterdam now is reclaiming its leading position in this field. To capitalise on this cultural upgrade the city should ensure that all other facilities within the city and the region are supportive to this position. For example, the amount and quality of hotel rooms should be aligned to the increase of people visiting the city.

Culture however is only one element of the livability. Looking at the Quality of living for Amsterdam it rates well in the top 10, joined by three other Northern European capitals (Stockholm, Paris and Berlin). Similar to these cities Amsterdam is facing a challenge around the Working age population (defined as portion of a city’s population aged 15–64 to the total population). This shows the importance for Amsterdam of attracting young talents to their city and engaging seniors more actively in the labour process.

Finally, as part of the livability, we also looked at the mobility of the city and specifically at Traffic congestion. Here Amsterdam ties with Rio de Janeiro and Hong Kong for the 16th spot. The city and the region have their challenges based on historical developments, but to maintain a thriving city it is critical not to grind to a stand-still. As we will see, initiatives are underway to improve in this area, but the challenge for the city will be to strike a balance between all modes of mobility within the city and the region, including rail, cars and bicycles.

‘I am proud of Amsterdam and the city should pride itself on its distinctive DNA with freedom of religion and spirit of trade. To compete as a global metropole Amsterdam should first and foremost be a liveable city, with a distinctive offering to its inhabitants, visitors and businesses. To achieve this we should exchange more knowledge within and across cities in the region, nationally and globally’

Cathelijne Broers, Director at De Nieuwe Kerk and Hermitage Amsterdam

Oudezijds Voorburgwal Amsterdam

7 The European Spallation Source in Lund - its effects on regional developments (p13), PwC Sweden, 2009
8 Keynote speech by Dr. Benjamin Barber, author of the book ‘If Mayors Rule the World’, World Cities Culture Summit, 2014
Each city's score (here 147 to 25) is the sum of its ranking across variables. The city order from 31 to 1 is based on these scores (31 for the highest to 1 for lowest).
Transportation and infrastructure

One of the clear challenges for Amsterdam is its urban transportation and infrastructure development. The city reaches its lowest score across all indicators on Transportation and infrastructure, at 16th place. And when compared to the other Northern European cities in this assessment, Amsterdam scores far below its peers.

One of the key issues is the Cost of public transport. In Amsterdam, city government only has limited influence over the cost for public transport as prices are set on a national level. The introduction of the national Public Transport (OV) chipcard is not helping in making things more cost efficient for the user, if anything it has complicated things for visitors who need to buy expensive day passes. Initiatives are being developed to address this issue. For instance, Amsterdam has introduced the iCard which can be used for transport and access to museums. To become truly successful this card should expand its reach into the region. Similar initiatives are being developed by Schiphol together with the National Railway organisation. Other ways to compete on city’s public transport are through excellent quality and efficiency of the public transport system.

Another measure to determine if a city is on the move is Major construction activity. Here Amsterdam ranks virtually at the bottom together with Nairobi and Johannesburg. From our interviews it is clear that there is a need for investment in infrastructure projects to connect key parts of the city. Schiphol shows that continuous investment in this area is needed as for the next three years the airport will invest 1.5 million euros per day in expanding infrastructure capacity to meet continued growth in demand. For the city it is important to link this indicator to the Attracting FDI variable and see what funds could be attracted to support infrastructure development.

The quality of Public transport system and Housing in Amsterdam also falls outside the top ten of indicators and is clearly an area which needs to be improved compared to the top ten cities. Combining Licensed taxis and sustainability, Amsterdam Airport Schiphol has introduced 167 electric Tesla-taxis to the mix of urban transport, which is a pioneering initiative and one that is brand defining for the city. The city and other stakeholders can use this as an example to further ‘green’ mobility in Amsterdam.
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Each city’s score (here 144 to 32) is the sum of its ranking across variables. The city order from 31 to 1 is based on these scores (31 for the highest to 1 for lowest).

‘Amsterdam needs to increase its scale and focus on an integrated regional approach. It is critical to further unlock the Northern parts of Amsterdam and put emphasis on one of the city’s key asset – our five distinctive neighbourhoods – all with their own strengths, attractions and challenges. Infrastructure is the key to tap into this potential.’

Cathelijne Broers, Director at De Nieuwe Kerk and Hermitage Amsterdam
Economics

Cities are the engines of economic growth but this growth needs to be sustainable in a social, environmental and financial sense. Urban regions are looking to improve their attractiveness for visitors, talent and not least businesses and investments. This has led to increased competition amongst cities on a global scale.

As a final part to our assessment we provide our insights in the Economics of a city by looking at the following three indicator dimensions: Economic clout, Ease of doing business and Cost.

Economic clout

As we have seen, Amsterdam is performing really well with a top ten position in the majority of the indicators we have looked at so far. Within Economics, however, for two out of three indicators Amsterdam drops out of the top ten.

Economic clout reflects, to some extent, the economic history of a city. This is one of the reasons why we see world cities like London, Beijing and New York top the rankings here. Amsterdam ranks at a reasonable 12th place, close to leading the middle part of the ranking.

Taking a deeper look at the variables which give an indication of the historical economic power of the city, we see that Amsterdam ranks number 12 when it comes to Number of Global 500 headquarters, Amsterdam has four, with just one company out of the Global 500 Top 25 headquartered in the city – ING Group. Having these headquarters based in your city draws in a lot of economic activity which in turn helps to drive growth and create jobs not only in the relevant sector but also affiliated sectors.

This is underlined by the Financial and business services employment variable where Amsterdam ranks fourth. With its historical roots as a global financial centre and having one of the world's oldest stock exchanges based in the city, it shows that the financial sector is one of the key drivers for growth in the city.

And together with companies like Philips and Heineken, both Global 500 companies, this draws in many professional services firms too.

One of the areas where Amsterdam shows an average performance and could increase its activity is in Attracting Foreign Direct Investment. Based on the data used for this variable, which took into consideration a ten year period between 2003 and the end of 2012, Amsterdam ranks 15th. Within the Dutch context Amsterdam is performing comparatively well, but on a global level the city has room for improvement.

To continue to effectively attract Foreign Direct Investment and businesses on a global scale, where Amsterdam is competing with other world cities, the city needs a strategic investment agenda with a clear plan in place as to which businesses and investments the city wishes to attract. This should be jointly and pro-actively pursued by the city and its stakeholders and supports the wider vision and focus areas for Amsterdam.

‘To maintain a leading global position Amsterdam should have a long term holistic view on the city’s development, integrating the views of government, citizens, students, expats, businesses and NGOs. Available resources should be channelled to position an interconnected diversified offering of culture, leisure, housing, education and public service. The city should facilitate this process through an agile government, which acts with speed based on a long term consistent approach. This will result in a stronger economic clout.’

Cathelijne Broers, Director at De Nieuwe Kerk and Hermitage Amsterdam & Jan Raes, Managing director of the Royal Concertgebouw Orchestra
Another example is a trend we see around the world that not only on a national level, but more and more so on a city and regional level international trade missions are being set up. These are increasingly led by mayors to open doors in other cities and to show how serious the city is in attracting businesses.

Finally, the Productivity score for Amsterdam also remains in the middle with a 12th ranking. This position is influenced by a low score for Amsterdam on the Rate of real GDP growth. Not surprisingly most of the Northern European cities, except for London, are at the bottom of this ranking due to the economic crisis that the continent has gone through.

Important to note here is that Amsterdam falls behind Stockholm, Berlin and Paris. It shows that historical performance does not guarantee future success and that the city needs to continue to work on its economic resilience.

In this context we have spoken about the impact of Global 500 companies. However, we should not forget the significance of the Small- and Medium-sized Enterprises (SMEs) which are the driving force behind a city’s economic growth and enable the diversification of its economy, which is a key asset for urban economic resilience. This again indicates that for Amsterdam it is important to strike the right balance.

‘Amsterdam is missing the benefits of agglomeration to enable the city to develop critical mass in a global setting on, for instance, the economy and transportation. The key to success lies in creating seamless connectivity within the Amsterdam Metropolitan Region.’

Prof. dr. Zef Hemel, Professor Urban and Regional Planning, Wibaut Chair, University of Amsterdam
Ease of doing business

In today’s global environment businesses have become more mobile and can relatively easily move their operations to another city in another country. Ease of doing business is one of the determinants for a company to settle within the city’s boundaries, and stay there, creating employment opportunities, attracting FDI and driving growth. The ease by which a business can operate within a city is often determined by regulations on both a national and local level.

Ease of doing business is a clear indicator for a city’s competitive advantage, but amongst the cities within this research Amsterdam has not been able to make this one of its strong assets and sits in 16th place.

As mentioned some of the elements of Ease of doing business are determined on a national level, for instance Employee regulations and Level of shareholder protection. For both of these variables Amsterdam is in the lower parts of the ranking. Not surprisingly on employee protection Amsterdam is joined by its Northern European peers given the generally more social approach to the position of employees.

Other examples of nationally determined factors are Resolving insolvency, Ease of entry with visa waiver and Operational risk climate. For each of these indicators Amsterdam is within the top ten and has a competitive advantage in this space.

One indicator in which Amsterdam is towards the bottom together with Johannesburg is the variable of Foreign embassies or consulates. As this measure indicates the ease for foreign companies to connect with their own embassies and get support in their business activities, Amsterdam is unlikely to reach a higher level on this indicator variable given that The Hague is the countries political capital. This is similar to Johannesburg which has Pretoria and Cape Town as its political peers.

One of the areas where Amsterdam could significantly increase its competitive advantage is on Ease of starting a business. Currently the city is punching below its weight and ends up at 17th. This position is determined by the bureaucratic and legal hurdles an entrepreneur must overcome to register a new firm, including the number of procedures, the amount of time and the cost incurred to register a firm.

As can be seen throughout the quotes included in this report, and further insights gained from the interviews it is believed that the city government has room for improvement in providing an environment where it is easy to do business. It is perceived that there is an unnecessary administrative burden put upon businesses given the various departments that one has to deal with as a business.

As there is a significant correspondence between Economic clout and Ease of doing business this should be one of the priorities for the city to provide a well-balanced public service through which it can boost economic activity.
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Each city's score (here 227 to 53) is the sum of its ranking across variables. The city order from 31 to 1 is based on these scores (31 for the highest to 1 for lowest).
Cost

Another indicator of the competitive advantage of a city is Cost. This is a key factor for businesses, citizens and students to determine where they wish to be located.

On this final indicator Amsterdam shows its competitivenes and finishes in seventh position. And looking at Europe only, Amsterdam takes the number one spot, just above Berlin and well above the rest of the European cities included in this study. This indicates that if the city could improve on its Ease of doing business it would be well positioned in the global competitive economic landscape.

The Total corporate tax rate and the Cost of business occupancy are clear areas where Amsterdam stands out and achieves tenth and seventh place respectively. This certainly influences the attractiveness for businesses to settle themselves here.

However, if we then look at the Cost of living Amsterdam scores extremely low, finding itself in the bottom six. We have seen a similar high level of Cost for public transport under the Transport and infrastructure indicator.

To remain competitive the high level of cost is a challenge the city will need to face if it wishes to continue to attract talents to the city who shape the future workforce for the businesses based here.

The good news is that this Cost of living is relative to inhabitants Purchasing power which is also measured through the iPhone index. Both of these put Amsterdam amongst the top ten cities in this important part of the indicator reflecting affordability. The iPhone index measures the amount of working hours required to buy an iPhone, which for Amsterdam on average is just over a working week.

The question often asked here is how does one measure cost? Is cheapest the best? Or is it a matter of striking a balance between wages and prices in the most efficient and productive manner? Looking at the top ten ranking on this indicator, where we see a majority of Northern American and Northern European cities which have a high cost of living, we can clearly see the latter conclusion is most probable.

This underlines the hypothesis for this research that the more well-balanced a city is socially, environmentally and in this case economically, the better it will fare for businesses, residents and visitors. Or to put it in the words of Frans van der Avert, CEO Amsterdam Marketing, ‘we should aim for a livable, lovable and profitable Amsterdam’.
‘The metropolitan region of Amsterdam has a huge challenge to get ready for the future. To be a livable city for inhabitants, a lovable city for visitors and a profitable city for business. How to find a balance between these three demands is a public-private task. Government, cultural institutes, universities, shops, companies and the tourism & conventions industry have a joint responsibility to meet this challenge and to share the solutions.’

Frans van der Avert, CEO Amsterdam Marketing
Implications
To conclude, we summarise the key implications which can be taken from this study for the city of Amsterdam and the Amsterdam Economic Board (the Board). These are aimed to support the development of a shared agenda for action for the city.

The study was performed in the context of the internationalisation agenda of Amsterdam and the Board.

The aspirational goal for Amsterdam is to become a Global Business Hub and a top five European Region by the year 2020.

This vision has determined the mission for the Board – a ‘triple-helix’ approach aimed at collaboration, innovation and growth, which is to be achieved through four focus areas or themes:

- Knowledge & Innovation
- Human Capital
- International Connectivity
- Basic preconditions (Sustainability, Livability and Business Climate)

With this in mind we see the following implications for Amsterdam – A City of Opportunity.

1. **Be proud, but not complacent**
   Amsterdam and the Board can be proud of this ranking which is a result of the collaboration amongst the stakeholders in the Metropolitan Region Amsterdam. However, there is no time for complacency and more effort should be put on cross sector collaboration, for example, by connecting the technology sector with the transportation sector to develop smart mobility.

2. **Tell the story of Amsterdam**
   Amsterdam should have a compelling story and tell it to its citizens, businesses and the world. The city holds a lot of key assets which enable its competitive advantage, proximity being one of them. This story should continue to be communicated to local, regional and global stakeholders. The city should develop the narrative for the future of Amsterdam. And this narrative should be told by each of the city’s ambassadors, which are not only the Mayor and the city Aldermen, but includes all key stakeholders from the directors of cultural institutions to the CEO’s of multinational and small- and medium-sized companies. Singapore would be a good example on how all stakeholders are aligned to the story of the city.

3. **Adopt a balanced approach to city development**
   Cities of Opportunity is based on the hypothesis – the more well-balanced a city is on its social, economic and environmental scales, the better it will fare. To maintain its leading position Amsterdam should further adopt this balanced approach as a baseline for the city’s further growth. The city has initiated the programme ‘Balans in de stad’ which aims to achieve a sustainable balance in the city, with a primary focus on the balance between all those that live, work and visit the city. As argued in this report balance is essential to the success of the city. The focus of this programme in Amsterdam should be extended to the wider balance in the city across social, economic and environmental indicators. For instance, the city has a need for a further integrated and balanced urban mobility plan – public transport, cars and bikes.
4. Reimagine regional collaboration
The Board holds responsibilities in the city of Amsterdam and the wider Metropolitan Region Amsterdam, with the goal to be a top five European region by 2020. What will be the construct of future regions - regionally, nationally and internationally? For example Amsterdam sits in the middle of a very strong Northern European region, which is reflected in our study by the cities of London, Paris, Berlin and Stockholm. The city and the Board should reflect upon the circuit of cities with whom Amsterdam should seek to collaborate and who are their main competitors, now and in the future. This can be done through an issue based approach – what are our key challenges, which cities can we learn from and which ones do we compete with, for instance, on culture and leisure, examples being Berlin or Vienna.

5. Develop city intelligence
To achieve their vision and goals and the city and the Board should gather city intelligence to understand their own regional performance and gain insight in the best practices other peer cities have tested. The Board initiated the MRA dashboard which provides insight on (inter)national, regional and Board performance. Besides these performance measures Amsterdam should also gain further insight in ‘good options’ and lessons which can be learned from other cities. Continued data gathering will assist in making better informed policy decisions and action planning to drive successful implementation thereof. Being part of global comparative assessments like Cities of Opportunity is therefore essential.

6. Exploit Amsterdam’s excellence
To maintain the current position and grow further, Amsterdam needs to move from good to great across a range of indicators and strongly improve on some of the lagging positions. The city and the Board will need to make strategic choices on those areas where they want to invest and excel in. One of the starting points will be the economic clusters as prioritised by the Board. The Cities of Opportunity assessment shows the following areas where the city can move from good to great:
- the city should continue to invest in talent development and attractiveness and be a leading innovator;
- remain a front runner on technological developments;
- maintain its leading position as a gateway to Europe; and
- remain a healthy and liveable city with a strong cultural vibrancy

The city should also put effort in the following areas that need to be improve:
- the urban connectivity and ease the congestion;
- strengthen the economic clout by improving the ease of doing business, attracting start-ups and mature businesses; whilst
- remaining affordable for all.

The city will have to make strategic choices based on a true holistic and integrated vision for the future of the city. The key questions here will be: in which areas does the city truly excel, what does the city want to be known for to differentiate itself from their competition? And how do we ensure full integration of all these elements with the before mentioned key indicators for success?

7. Attract and retain talent
The key to future success lies in the ability of Amsterdam to continue to attract (inter)national talent within its region, physically, but also virtually connect them to the city. To attract today’s talent the city needs to have a balanced offer. It is not only the quality of the educational institutions or businesses located in Amsterdam. Affordable housing, cultural activities, good urban transportation and an entrepreneurial environment amongst others are the indicators which attract people to the city. An integrated approach across the different sectors is key to remain an attractive region. Universities are offering scholarships to attract top talent to the region. Have these programmes been aligned to the requirements from businesses in the region?

8. Become a leading test bed for innovation
Innovation is a driver for growth and urban development. Innovative start-ups and leading innovation businesses need an environment in which they are enabled to be pioneers and innovate. Besides initiatives like Startupbootcamp, the innovation ecosystem should include an enabling market where new products and services can be tested and commercialised. By providing a platform to adopt innovation within the city itself, like utilising new technologies for a safer city, Amsterdam enables economic growth. New York and San Francisco are the well-known examples in this space, but Berlin would certainly be a city to watch.

9. Stay on the move
The city needs to stay on the move to become a greater city and don’t grind to a hold. Physical and virtual infrastructure should continuously be improved - movement delivers progress and growth. The cost of public transport is an issue in the city. But besides initiatives to lower the cost, the quality, efficiency and connectivity of the different modes of transport are key. And is there a truly integrated transport system?

The Board should seek to answer and act upon together with its partners.

10. Amsterdam open for business
The comparative assessment indicates that the city needs to look at how they can lift the burden on businesses and create an environment where it is clear that it is easy to do business in Amsterdam. At the same time it is important to continue to attract businesses and foreign direct investments into the city. To do this effectively on a global scale, where Amsterdam is competing with other world cities, the city needs a strategic investment agenda which is jointly and pro-actively pursued by the city and its stakeholders and supports the wider vision and areas for excellence for Amsterdam. The approach Singapore is taking through its Economic Development Board and business account management is one of the ‘good options’ to look into.
View on ‘Zuiderkerk’ and in the back the ‘Zuidas’ business district
Bijlmer public transport station
Acknowledgements

We would like to thank the following people for sharing their insights with us on the results from the comparative assessment study Amsterdam – A City of Opportunity

**Amsterdam Economic Board**

Eberhard van der Laan  
Mayor of Amsterdam and Chairman  
Amsterdam Economic Board

Kajsa Ollongren  
Alderperson Economic Affairs, City of Amsterdam and member of the Amsterdam Economic Board

Ton Jonker  
Director of the Amsterdam Economic Board

Antonio Carretero  
Strategic Advisor of the Amsterdam Economic Board

**Interviews**

Frans van der Avert  
CEO Amsterdam Marketing

Hans Bakker  
CEO Amsterdam RAI Convention centre

Cathelijne Broers  
Director at De Nieuwe Kerk and Hermitage Amsterdam

Dr. Louise J. Gunning-Schepers  
President of the University of Amsterdam and Amsterdam University of Applied Sciences

Prof. dr. Zef Hemel  
Professor Urban and Regional Planning, Wibaut Chair, University of Amsterdam

Alexandra van Huffelen  
CEO GVB – Public Transport for Amsterdam

Jos Nijhuis  
President and CEO Schiphol Group

Koos Noorloos  
Senior Manager, Airport Strategy & Corporate Development Schiphol Group

Roberto Payer  
General manager Waldorf Astoria Amsterdam

Jan Raes  
Managing director of the Royal Concertgebouw Orchestra

**Additional contributions**

Mike Merson  
Director Duke Global Health Institute, Durham, North Carolina USA

Prof. dr. Arnoud Verhoeff  
Manager Cluster Epidemiology and Health promotion GGD Amsterdam

Sebas van der Sangen  
Press & Communication, Amsterdam Marketing

The following individuals in PwC contributed to the production of this report:

**Strategic direction PwC**

Johannes Boelens  
Peter van Driel  
Richard Goldstein  
Peter Teunisse

**Core editorial team**

Hazem Galal  
Egon de Haas  
Nick C Jones  
Anita Nijboer

**Research team**

David Archer  
Russell Donaldson  
Sabrina McColgan  
Colin McIlheney  
William Sand

**Design**

Victoria Jennings
Appendix
Appendix A

Key to the variables

Air pollution
Combination of measures of PM10 (particulate matter 10 micrometers) outdoor air pollution levels from the World Health Organisation (WHO) and the Numbeo Pollution Index of overall pollution in each city. The WHO’s Public Health and Environment database provides annual mean concentrations of PM10 in diameters or less that reflect the degree to which urban populations are exposed to this fine matter. The Numbeo Pollution Index is generated via survey-based data. Numbeo attributes the biggest weight to air pollution, then to water pollution/accessibility as the two main pollution factors. A small weight is given to other pollution types.

Airport to CBD access
A measure of the ease of using public transit to travel between a city’s central business district (CBD) and the international terminal of its busiest airport in terms of international passenger traffic. Cities are separated into categories according to whether a direct rail link exists, if so the number of transfers required, and if not whether there is a public express bus route to the airport. Cities with direct rail links are preferred to those with express bus service. Cities with rail links with the fewest transfers are ranked higher than those with more. Within categories, cities are ranked against one another according to the cost of a single one-way, adult weekday trip and the length of the trip, with each factor weighted equally.

Attracting FDI
Combined variable ranking of the number of greenfield (new job-creating) projects, plus the total US$ value of greenfield capital investment activities in a city that are funded by foreign direct investment (FDI). Data cover the period from January 2003 through December 2012 provided by fDi Intelligence.

Broadband quality
Based on millions of recent test results from Pingtest.net, this global broadband index from Ookla compares and ranks consumer broadband connection quality around the globe. Quality is reported in R-factor, an industry-standard measurement for connection quality (crucial for applications that require a steady connection such as VOIP and online gaming). The value is the mean R-factor over the past 30 days. Only tests taken within 300 miles of the server are eligible for inclusion in the index.

Cost of business occupancy
Annual gross rent divided by square feet of Class A office space. Gross rent includes lease rates, property taxes, maintenance and management costs. Data produced by CBRE Global Office Rents in US$.

Cost of living
A relative measure of the price of consumer goods by location, including groceries, restaurants, transportation, and utilities. The relative Consumer Price Index measure does not include accommodation expenses such as rent or mortgage. Figures provided by Numbeo.

Cost of public transport
Cost of the longest bus or rail trip within a city’s boundaries to the CBD. The cost of a bus trip is used in the cities where there are no rail systems.

Cost of business occupancy
Annual gross rent divided by square feet of Class A office space. Gross rent includes lease rates, property taxes, maintenance and management costs. Data produced by CBRE Global Office Rents in US$.

Crime
Weighted combination of Mercer Quality of Living 2013 reports crime score (50 percent); Intentional homicide rate per 100,000 of the city population (30 percent); and the Numbeo Crime Index, which is an estimation of the overall crime level in each city based on how safe citizens feel (20 percent).

Cultural vibrancy
Weighted combination of city rankings based on: the quality and variety of restaurants, theatrical and musical performances, and cinemas within each city; which cities recently have defined the “zeitgeist” or the spirit of the times; and the number of museums with online presence within each city. The zeitgeist rankings take into account cultural, social, and economic considerations.

Digital economy*
Economist Intelligence Unit Digital Economy Rankings 2010—Beyond E-readiness report provides an assessment of the quality of a country’s information and communications technology (ICT) infrastructure and the ability of its consumers, businesses, and governments to use ICT to their benefit. When a country uses ICT to conduct more of its activities, the economy can become more transparent and efficient.

Ease of commute**
PwC employees in each of the 30 city offices were asked, “On a scale from 1 to 10, where 1 is difficult and 10 is easy, please rate your commute to work.” Data provided by PwC Employee Survey.

Ease of entry: Number of countries with visa waiver*
Number of nationalities able to enter the country for a tourist or business visit without a visa. Excludes those nationalities for whom only those with biometric, diplomatic, or official passports may enter without a visa.

Ease of starting a business***
Assessment of the bureaucratic and legal hurdles an entrepreneur must overcome to incorporate and register a new firm. Accounts for the number of procedures required to register a firm; the amount of time in days required to register a firm; the cost (as a percentage of per capita income) of official fees and fees for legally mandated legal or professional services; and the minimum amount of capital (as a percentage of per capita income) that an entrepreneur must deposit in a bank or with a notary before registration and up to three months following incorporation. Assessment scores gathered from Doing Business 2013, The World Bank Group. US cities were differentiated from each other using the United States Small Business Friendliness 2013 Small Business Survey by Thumbtack.com in partnership with Kauffman Foundation.
Employee regulations***
Sum of three assessment scores from the World Bank’s Doing Business 2013 study, including: ratio of minimum wage to average value added per worker; notice period for redundancy dismissal (for a worker with 10 years of tenure, in salary weeks); and paid annual leave for a worker with 20 years of tenure (in working days).

Relocation attractiveness**
PwC employees in each of the 30 city offices were asked, “Of the other 29 cities in Cities of Opportunity, please rank the top three cities that you would like to work in most.” Data provided by PwC Employee Survey.

End-of-life care*
Ranking of countries according to their provision of end-of-life care. The Quality of Death Index by the EIU scores countries across four categories: basic end-of-life healthcare environment; availability of end-of-life care; cost of end-of-life care; and quality of end-of-life care. These indicator categories are composed of 27 variables, including quantitative, qualitative and “status” (whether or not something is the case) data. The indicator data are aggregated, normalised, and weighted to create the total index score.

Entrepreneurial environment*
Measurement of the entrepreneurial attitudes, entrepreneurial activity, and entrepreneurial aspirations in a country. The Global Entrepreneurship Index (GEDI) integrates 31 variables, including quantitative and qualitative measures and individual-level data.

Financial and business services employment
The number of jobs in financial and business services activity as a share of total employment in the city. Financial services includes banking and finance, insurance and pension funding, and activities auxiliary to financial intermediation. Business services includes a mix of activities across the following subsectors: real estate and renting activities, IT and computer related, R&D, architectural, engineering and other technical activities, legal, accounting, bookkeeping and auditing activities, tax, and consultancy, advertising, and professional scientific and technical services and business services where not elsewhere classified. Data sourced by Oxford Economics.

Housing
Measure of availability, diversity, cost and quality of housing, household appliances, and furniture, as well as household maintenance and repair. This measure is based on the Mercer Quality of Living 2013 reports. US cities were differentiated from each other by their annual rise in house prices.

Incoming/outgoing passenger flows
Total number of incoming and outgoing passengers, including originating, terminating, transfer, and transit passengers in each of the major airports servicing a city. Transfer and transit passengers are counted twice. Transit passengers are defined as air travellers coming from different ports of departure who stay at the airport for brief periods, usually one hour, with the intention of proceeding to their first port of destination (includes sea, air, and other transport hubs).

Foreign embassies or consulates
Number of countries that are represented by an embassy or consulate in each city. Figures sourced from GoAbroad.com.
iPhone index
Working hours required to buy an iPhone 4S 16GB. Data sourced from UBS Prices and Earnings 2012.

Level of shareholder protection***

Libraries with public access
Number of libraries within each city that are open to the public divided by the total population and then multiplied by 100,000.

Licensed taxis
Number of officially licensed taxis in each city divided by the total population and then multiplied by 1,000.

Literacy and enrolment*
Measurement of a country’s ability to generate, adopt and diffuse knowledge. The World Bank’s Knowledge Economic Index is derived by averaging a country’s normalised performance scores on variables in three categories—education and human resources, the innovation system, and information and communications technology. The variables that compose education and human resources are adult literacy rate, secondary education enrolment, and tertiary education enrolment. Adult literacy rate, per UNESCO, refers to the percentage of people aged 15 and above who can, with understanding, read and write a short, simple statement on their everyday life.

Major construction activity
The count of “planned” and “under construction” buildings in the Emporis database for each city as of November 21, 2013. This includes structures such as high rise, skyscrapers, low rise, halls and stadia.

Mass transit coverage
Ratio of kilometres of mass transit track to every 100 square kilometres of the developed and developable portions of a city’s land area. A city’s developable land area is derived by subtracting green space and governmentally protected natural areas from total land area.

Math/science skills attainment*
Top performers’ combined mean scores on the math and science components of the Program for International Student Assessment (PISA), an Organisation for Economic Co-operation and Development (OECD) assessment of 15-year-olds’ academic preparedness. Top performers are defined as those students who achieved in the top two proficiency levels (Level 5 and Level 6) on the math and science portions of the test. Comparable examinations are used wherever possible to place cities not included in the OECD assessment.

Natural disaster risk
Risk of natural disasters occurring in or near a city. Counted hazards include hurricanes, droughts, earthquakes, floods, landslides, and volcanic eruptions.

Number of Global 500 headquarters
Number of Global 500 headquarters located in each city, as per the CNN Money Fortune Global 500 list.

Number of international association meetings
Number of international association meetings per city per year that take place on a regular basis and rotate between a minimum of three countries. Figures provided by members of the International Congress and Convention Association.

On-time flight departures
Average percentage of flights that departed on time from each city over three months (May–July 2013).

Operational risk climate*
Quantitative assessment of the risks to business profitability in each of the countries. Assessment accounts for present conditions and expectations for the coming two years. The operational risk model considers 10 separate risk criteria: security, political stability, government effectiveness, legal and regulatory environment, macroeconomic risks, foreign trade and payment issues, labour markets, financial risks, tax policy, and standard of local infrastructure. The model uses 66 variables, of which about one-third are quantitative. Data produced by Economist Intelligence Unit’s Risk Briefing.

Percent of population with higher education
Number of people who have completed at least a university-level education divided by the total population. A university-level education is set equivalent to a bachelor’s degree or higher from a US undergraduate institution.

Political environment
Measure of a nation’s relationship with foreign countries, internal stability, law enforcement, limitations on personal freedom, and media censorship. Data are from the Mercer Quality of Living 2013 reports.

Productivity
Productivity is calculated by dividing the gross domestic product (GDP) in 2013 US$ by employment in the city. Data provided by Oxford Economics.

Public park space
Proportion of a city’s land area designated as public recreational and green spaces to the total land area. Excludes undeveloped rugged terrain or wilderness that is either not easily accessible or not conducive to use as public open space.

Public transport systems
Reflects the efficiency, reliability and safety of public transport networks as defined and rated by the Mercer Quality of Living 2013 reports. Cities also received additional points for each multi-modal transport system available to the public including: subway, bus/us rapid transit, taxi, light rail, tram/trolley/ streetcar, commuter rail and bike share systems. Each city received a tenth of a point for the modes of transport available within the city to differentiate between the 1–10 scores awarded by Mercer. Cities that had a fully operational Bus Rapid Transit (BRT) system received 0.05 points (in addition to the tenth of a point for a public bus system). Ferry systems were excluded to not penalise land-locked cities for their absence.
Purchasing power
Domestic purchasing power is measured by an index of net hourly wages (where New York=100) excluding rent prices. Net hourly wages divided by the cost of the entire basket of goods and services, excluding rent. The basket of goods relates to 122 goods and services. Data sourced from UBS Prices and Earnings 2012.

Quality of living
Score based on more than 30 factors across five categories: sociopolitical stability, healthcare, culture and natural environment, education, and infrastructure. Each city receives a rating of either acceptable, tolerable, uncomfortable, undesirable, or intolerable for each variable. For qualitative indicators, ratings are awarded based on the Economic Intelligence Unit analysts’ and city contributors’ judgments. For quantitative indicators, ratings are calculated based on cities’ relative performances on a number of external data points. Data produced by The Economist Intelligence Unit Livability ranking.

Rate of real GDP growth

Recycled waste
Percentage of municipal solid waste diverted from landfill.

Resolving insolvency***
This topic identifies weaknesses in existing bankruptcy law and the main procedural and administrative bottlenecks in the bankruptcy process. Assessment scores gathered from Doing Business 2013, The World Bank Group.

Software development and multimedia
Combination of scores for each city from fDi Benchmark’s Software Development Centre and Multimedia Design Centres profiles and The World Bank Knowledge Economy Index (KEI). Both fDi Benchmark indices weight a city’s performance 70 percent based on the quality of the location and 30 percent based on the cost of the location. The Software index is based on an assessment of 120 quality competitiveness indicators. These indicators include availability and track record in ICT, availability of specialised skills professionals such as scientists and engineers, access to venture capital, R&D capabilities, software experts, quality of ICT infrastructure, and specialisation in software development. The Multimedia Design Centre rankings are based on an assessment of 120 quality competitiveness indicators, including the size of the location’s leisure and entertainment sector, its specialisation and track record, information technology infrastructure, quality of life, and skills availability. The World Bank KEI is noted as the simple average of normalised scores of three key variables: telephone, computer, and Internet penetrations (per 1,000 people).

Thermal comfort
A thermal comfort score was created for each city by calculating the average deviation from optimal room temperature (72 degrees Fahrenheit). January, April, July, and October heat indices were calculated for each city using an online tool that integrates average high temperature and corresponding relative evening humidity during each month. A final thermal comfort score was derived by first taking the difference between a city’s heat index for each month and optimal room temperature and then averaging the absolute values of these differences.

Top 100 airports
Each city receives a score based on the ranking of that city’s top airport in the World’s Top 100 Airports ranking, compiled by Skytrax.

Total corporate tax rate
The total tax rate measures the amount of taxes and mandatory contributions payable by the business in the second year of operation, expressed as a share of commercial profits. The total tax rate is designed to provide a comprehensive measure of the cost of all the taxes a business bears. Data provided by PwC UK from Paying Taxes 2014, taxes are accurate for year ended 31 December 2012. Some cities which were not included in the Paying Taxes 2014 study were calculated separately by our PwC local office using the TTC methodology. The Paying Taxes 2014 report can be found at http://www.pwc.com/gx/en/paying-taxes/.

Traffic congestion
Measure of traffic congestion and congestion policies for each city scored on the level of congestion, as well as the modernity, reliability, and efficiency of public transport. Assessment based on Mercer Quality of Living 2013 reports and adjusted using IBM Comuter Pain Index.

Traffic congestion
Ranking based on staffing risk in each city associated with recruitment, employment, restructuring, retirement, and retrenchment. Risk was assessed based on 30 factors grouped into five indicator areas: demographic risks associated with labour supply, the economy, and the society; risks related to governmental policies that help or hinder the management of people; education risk factors associated with finding qualified professionals in a given city; talent development risk factors related to the quality and availability of recruiting and training resources; and risks associated with employment practices. A lower score indicates a lower degree of overall staffing risk. Rank scores sourced from the 2013 People Risk Index produced by Aon Hewitt.

Working age population
Proportion of a city’s population aged 15–64 to the total population of the city.

World university rankings
The Times Higher Education World University Rankings 2013-2014 powered by Thomson Reuters are the only global university performance tables to judge world-class universities across all of their core missions—teaching, research, knowledge transfer, and international outlook. The top university rankings employ 13 carefully calibrated performance indicators to provide the most comprehensive and balanced comparisons available, which are trusted by students, academics, university leaders, industry, and governments.

* Country-level data
** Data based on PwC Employee Survey 2013.
*** Data based on countries’ most populous city except in the case of employee regulations and ease of starting a business, which have been differentiated for US cities.
Appendix B
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