



MAY 2016

RATING GLOBAL CITIES' ABILITY TO ATTRACT AND SUPPORT HIGH POTENTIAL WOMEN ENTREPRENEURS





Dell Women Entrepreneur Cities Index

INDEX RANKINGS

- #1 New York
- #2 Bay Area
- #3 London
- #4 Stockholm
- #5 Singapore
- #6 Toronto
- #7 Washington D.C.
- #8 Sydney
- #9 Paris
- #10 Seattle
- #11 Munich
- #12 Austin
- #13 Beijing
- #14 Hong Kong
- #15 Taipei
- #16 Shanghai
- #17 Tokyo
- #18 Mexico City
- #19 Sao Paulo
- #20 Seoul
- #21 Milan
- #22 Delhi
- #23 Johannesburg
- #24 Jakarta
- #25 Istanbul

Data provided by IHS



TECH

- #1 Stockholm
- #2 Beijing
- #3 Singapore
- #4 Austin
- #5 Shanghai

CULTURE

- #1 Toronto
- #2 New York
- #3 Sydney
- #4 Munich
- #5 Singapore

CAPITAL

- #1 New York
- #2 Bay Area
- #3 London
- #4 Shanghai
- #5 Washington D.C.

MARKET

- #1 New York
- #2 Bay Area
- #3 London
- #4 Seattle
- #5 Paris

TALENT

- #1 Bay Area
- #2 Munich
- #3 Washington D.C.
- #4 New York
- #5 Paris



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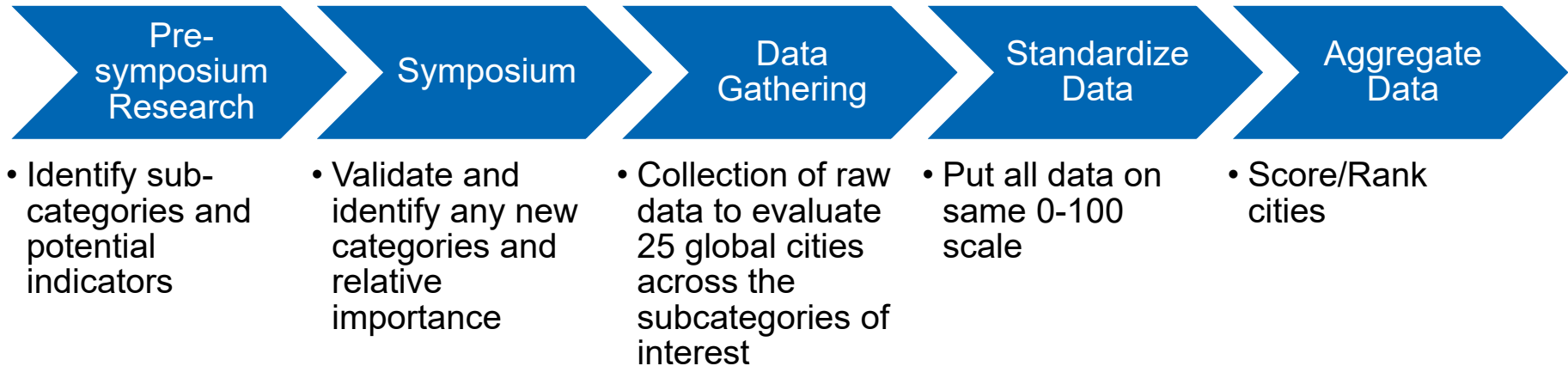


Part I: Scoring 25 Global Cities

Overview

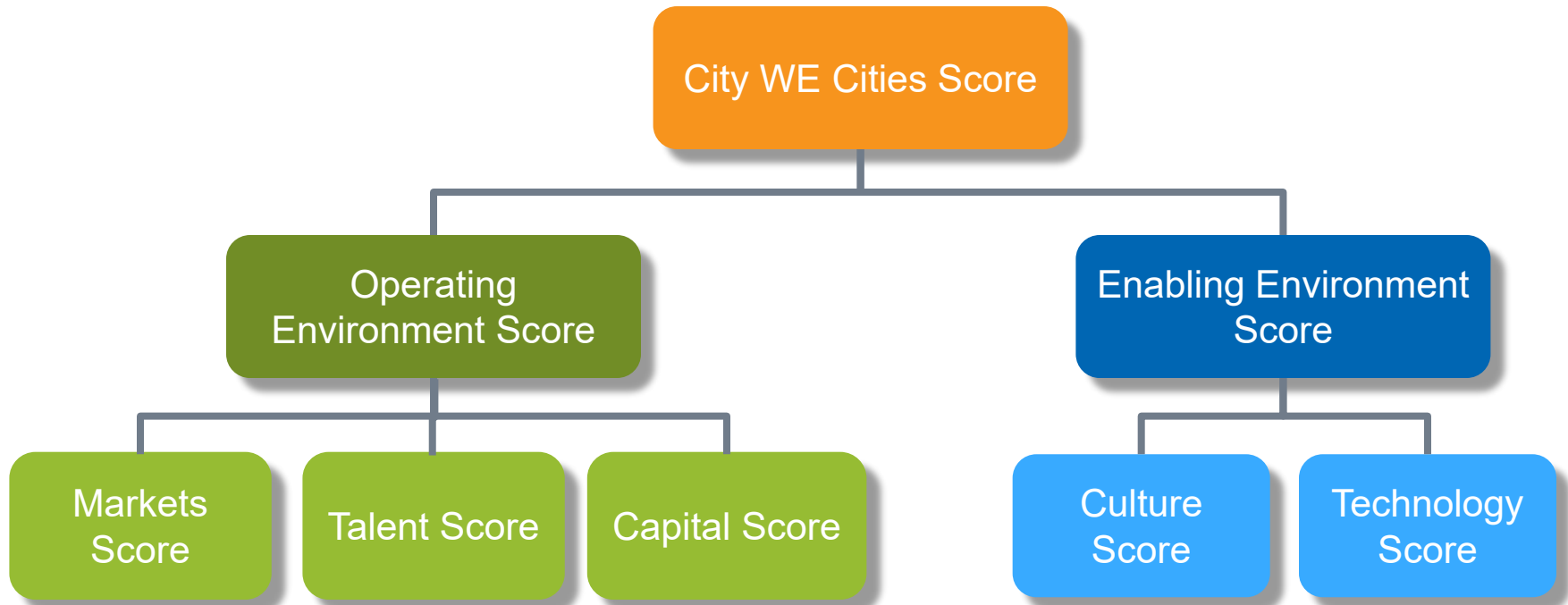
- The Dell Women Entrepreneur Cities Index (WE Cities) is a measure of a city's ability to attract and support high potential women entrepreneurs (HPWE) – i.e., women that want to grow and scale their business.
- The 25 cities in the rankings were chosen from the list of 50 global cities in the Dell Future Ready Economies (FRE) Model in order to make comparisons between the two indices, with geographic diversity utilized as a key criteria in city selection.
- Johannesburg, though not on the Global 50, was added because South Africa will host this year's Dell Women Entrepreneur Network (DWEN) Summit.
- The 50 global cities of the FRE were chosen for that study based on their size as well as their average growth over the last 5 years.
- As such, cities included in the WE Cities rankings are already strong, as compared to global peers, in the commercial aspects of *future readiness*.
- The second part of this report correlates a city's WE Cities rating with its FRE score. The high correlation between the two shows that attracting and supporting high potential women entrepreneurs could be an important part of a city's ability to be Future Ready.

Methodology*



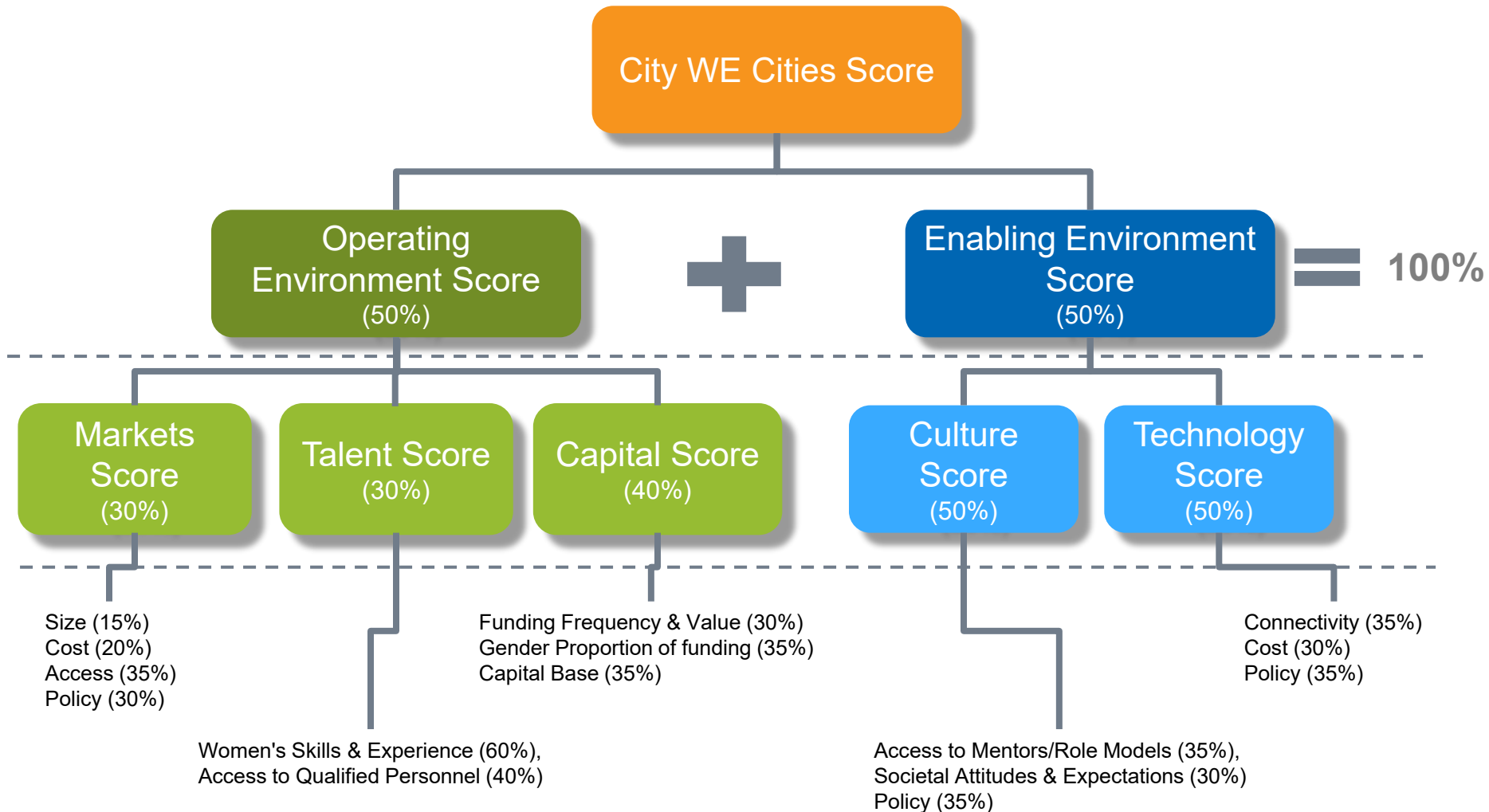
***See Appendix A for complete details on the methodology.**

The Rating Construction



- The rating has 5 pillars, divided into 2 categories, *Operational Environment* and *Enabling Environment*:
 1. Capital (Operational Environment)
 2. Markets (Operational Environment)
 3. Talent (Operational Environment)
 4. Culture (Enabling Environment)
 5. Technology (Enabling Environment)
- Almost all pillars contain a *Policy* sub-category that captures many of the important policies that help level the playing field for women entrepreneurs.
- The rating has 70 indicators. Of these:
 - Almost two-thirds (44) have a gender-based component.
 - The vast majority (87%, or 61 indicators) were specific to the city/MSA level (rather than country-level).
 - All indicators use the most current data available, with almost all using data from 2014 or later.
- Individual indicators were weighted based on 4 criteria:
 1. Relevance
 2. Quality of underlying data
 3. Uniqueness in the index
 4. Contains a gender specific component
- Using robust data-driven analysis covering a multitude of factors, the rating is meant to highlight *relative* strengths and weaknesses, which can help cities leverage their strengths to improve areas where they are less competitive.
- Many of the indicators measure the *inputs* (or drivers) that attract and support HPWE rather than *outcomes* (the presence of HPWE in the city) in order to provide a tool for cities that helps provide insight to develop actionable strategies for improving cities' ability to attract and support HPWE.

The Rating Construction Showing Factor Weights*



*The weights in the rows and groups sum to 100. For example, the *Capital Base* makes up 35% of the overall *Capital Score*, which is 40% of the *Operating Environment* score, which is then 50% of the overall city WE Cities score.

Why these Categories and Sub-Categories?

WE Cities

Operating Environment

MARKETS

The Markets category measures whether the female entrepreneur operates in a market with sufficient size such that scale can be achieved, the cost of being a profitable business in that market, the transparency and clarity of steps or ladders to gain access to potential customers in that market and the local policies that help level the playing field for women owned businesses.

TALENT

The Talent category measures both the likelihood of finding women with the training and experience required to run and scale a business and the availability of a local labor force with the skills and education necessary for a woman entrepreneur to build a well functioning team.

CAPITAL

As financial Capital is fundamental for businesses seeking to scale but is often particularly hard for women entrepreneurs to access, this category measures the frequency and value of funding received by women led businesses, the proportion of funding that businesses run by women (compared to men) receive, and the capital base that women can draw on.

Enabling Environment

CULTURE

A city's Culture, while less tangible, is believed by women entrepreneurs to be a critical enabler for their participation in commerce. This category measures the prevalence of relevant mentors, networks, and role models, the predominant attitudes & expectations of that society toward women entrepreneurs that help shape their own expectations, and the policies that enable women to assume leadership positions and business success.

TECHNOLOGY

Often taken for granted until it is not there, Technology has become critical for running nearly all business operations. This category measures women entrepreneurs' global connectivity via the internet and social media channels, the cost of staying connected, and policies that enable women to access and utilize information, data and technology.

Results

NYC tops the list, ranking first for *Operational Environment*;
 Stockholm is first for *Enabling Environment**

Top 10 Market Scores
New York
San Francisco Bay Area
London
Seattle
Paris
Austin
Toronto
Washington, DC
Sydney
Milan

Top 10 Culture Scores
Toronto
New York
Sydney
Munich
Singapore
London
Bay Area
Paris
Stockholm
Sao Paulo

Top 10 Technology Scores
Stockholm
Beijing
Singapore
Austin
Shanghai
Munich
Hong Kong
Taipei
Delhi
Mexico City

Top 10 Capital Scores
New York
Bay Area
London
Shanghai
Washington, DC
Seattle
Beijing
Austin
Hong Kong
Stockholm

Top 10 Talent Scores
Bay Area
Munich
Washington, DC
New York
Paris
Beijing
London
Singapore
Toronto
Shanghai

Overall WE Cities Ranking
NEW YORK
BAY AREA
LONDON
STOCKHOLM
SINGAPORE
TORONTO
WASHINGTON, DC
SYDNEY
PARIS
SEATTLE
MUNICH
AUSTIN
BEIJING
HONG KONG
TAIPEI
SHANGHAI
TOKYO
MEXICO CITY
SAO PAULO
SEOUL
MILAN
DELHI
JOHANNESBURG
JAKARTA
ISTANBUL

*Cities highlighted in bold are cities not in the top 10 overall ranking.

Comparison of US Cities

Metro Area	Overall Rank	Operating Environment Rank	Markets	Talent	Capital	Enabling Environment Rank	Culture	Technology
New York	1	1	1	4	1	5	2	17
San Francisco Bay Area	2	2	2	1	2	6	7	11
Washington, DC	7	4	8	3	5	18	19	13
Seattle	10	5	4	13	6	16	13	15
Austin	12	8	6	18	8	14	23	4

While US cities are generally strong in their operating environment, they are relatively weaker in their enabling environment. The Bay Area is the only metro area that scores in the top half of the rankings in all categories, but NYC is stronger in two critical areas, *Capital* and *Culture*. Seattle and Austin score in the top 50% of cities on half of the categories.

Highlights from the Rating

At the Top:

- NYC ranks 1st overall among the 25 cities for its ability to attract and support HPWE with a top-ranked *Operating Environment* and an *Enabling Environment* ranked 5th. While NYC ranks first for *Markets and Capital*, it is 2nd in *Culture* and 4th in *Talent*. It tops the list for its performance in *Policy Enabling Market Access* and 2nd for the *Frequency & Value of Funding* to businesses with women entrepreneurs.
- The Bay Area (consisting of the San Francisco and San Jose metro areas) ranks second overall, ranking 2nd for *Operating Environment* and 6th for *Enabling Environment*. It ranks 1st for *Talent* and 2nd for *Capital & Markets*, with a #1 rank for *Access to Markets* and the *Frequency & Value of Funding* to businesses founded and led by women.
- London ranks 3rd overall, performing 2nd for *Access to Markets*, 3rd for the *Operating Environment* and *Capital* (and 1st for *Capital Base* specifically).

Other top performers:

- Stockholm and Singapore round out the top 5 in the overall ranking.
- Stockholm is 1st for the *Enabling Environment* foundational pillar ranking 1st for *Technology* and 9th for *Culture*.
- Singapore performs in the top third of the 25 cities ranked for *Talent*, *Culture* and *Technology*.

Highlights from the Rating

Cities to watch:

- Toronto (6th overall) ranks 1st for *Culture*; ranking 3rd for related *Policy* and 4th for *Access to Mentors/Role Models*.
- Washington, DC (7th overall) excels in the *Operational Environment* foundational pillar (4th), ranking 3rd for *Talent* and 5th for *Capital*. It tops the list for *Market Access Costs*, *Women's Skills & Experience*, and *Gender Proportion* of funding.
- Sydney (8th overall) ranks 4th for *Enabling Environment*, ranking 2nd for both *Access to Mentors/Role Models* (in *Culture*) and *Connectivity* (in *Technology*).
- Seattle (10th overall) ranks 1st in the *Access to Mentors & Role Models* (in *Culture*) and 2nd in *Gender proportionate funding* (in *Capital*).
- Munich (11th overall) ranks 3rd for *Enabling Environment* overall, ranking 1st for *Policy* (in the *Culture* category); it also ranks 2nd for *Women's Skills & Experience* (in *Talent*).
- Beijing (13th overall) ranks 6th for *Talent* overall, ranking 3rd for *Access to Qualified Personnel*; it also ranks 2nd for *Technology*.
- Austin (12th overall) ranks 4th overall in *Technology* and #1 in technology-related *Policy*.
- Tokyo (17th overall) ranks 1st in *Market Size*, followed by Shanghai.
- Sao Paulo (19th overall) ranks 3rd for *Attitudes & Expectations*.
- Delhi (22st overall) ranks 1st for *Technology Cost*.

Highlights from the Rating

Areas to Improve:

- Relative to the 25 cities evaluated (which already outperform their peers in a number of areas), notable steps could be taken to support and attract HPWE in Jakarta & Istanbul, ranked 24th and 25th, respectively. Jakarta ranks last for all *Talent* categories and 17th or below for all *Culture* categories.
- Access to *Capital* is a particularly large challenge for women entrepreneurs (WE) in Munich, Istanbul, Sao Paulo, Milan and Johannesburg.
- Improving education and training (both for WE and the population at large) could help Jakarta, Delhi and Istanbul to attract and support the *Talent* required for HPWE.
- Providing access to female mentors, role models and WE networks could go a long way in Mexico City, Tokyo and Jakarta toward improving the *Culture* surrounding HPWE.
- Improving *Technology* (including internet connectivity and policies enabling greater use of technology by women) in Istanbul, Johannesburg, Milan and Jakarta would help support & attract HPWE.
- While strong in other areas, the *Size of Markets* in Stockholm, Johannesburg, and Munich hold them back from being able to support the growth of HPWE as rapidly as some of their global peers.
- Three Asian cities (Seoul, Tokyo and Taipei) could do more to increase *Access to Markets* for women owned businesses.

Part II: How a city's ability to attract and support High potential women entrepreneurs affects 'future readiness'

Recap: The Future Ready Economies Index



DELL GLOBAL FRE RANKING

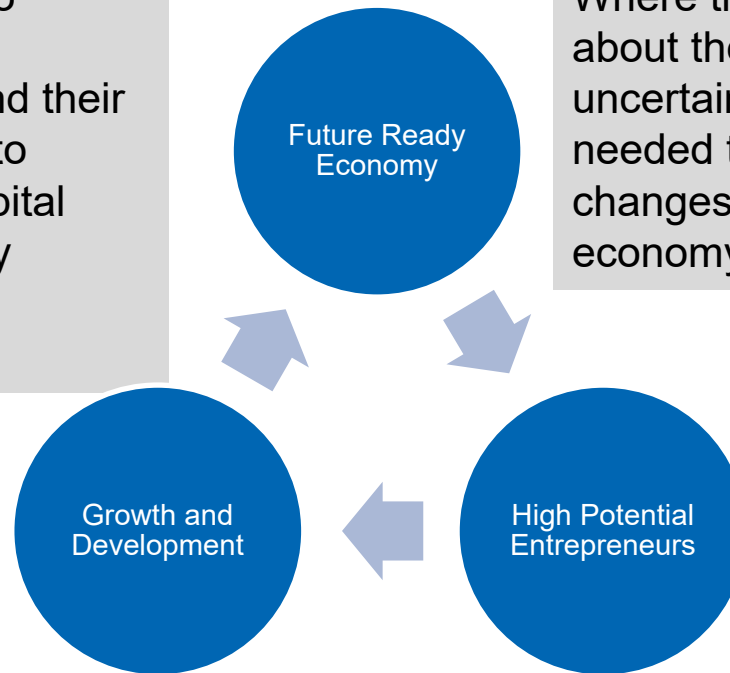
- The 50 cities were chosen based on average growth over the past 5 years and size of the economy.
- The Global Index combined the US and International rankings.
- A global score was calculated by using the indicators that were the same or very close on both the US and International ranking; for indicators that were not compatible, a new indicator was found to reconcile the US and International cities.
- See full list at: <http://www.futurereadyeconomies.dell.com/the-top-50-ranking-future-ready-cities-around-the-globe/>

Rank of the 25 of 50 Global FRE
San Jose
San Francisco
Singapore
London
New York
Beijing
Sydney
Austin
Washington DC
Hong Kong
Toronto
Stockholm
Seoul-Incheon
Shanghai
Seattle
Paris
Taipei
Munich
Tokyo
Sao Paulo
Delhi
Milan
Jakarta
Istanbul
Mexico City

Future Ready Economies attract innovative people that help their economies grow and adapt to the ever changing future.

Women are more likely to reinvest their profits in education, their family and their community, contributing to bolstering the human capital pillar of the Future Ready Economies Rating (*Brush, 2013*).

Where the only thing certain about the future is uncertainty – innovators are needed to make the adaptive changes that will help an economy continue to thrive.

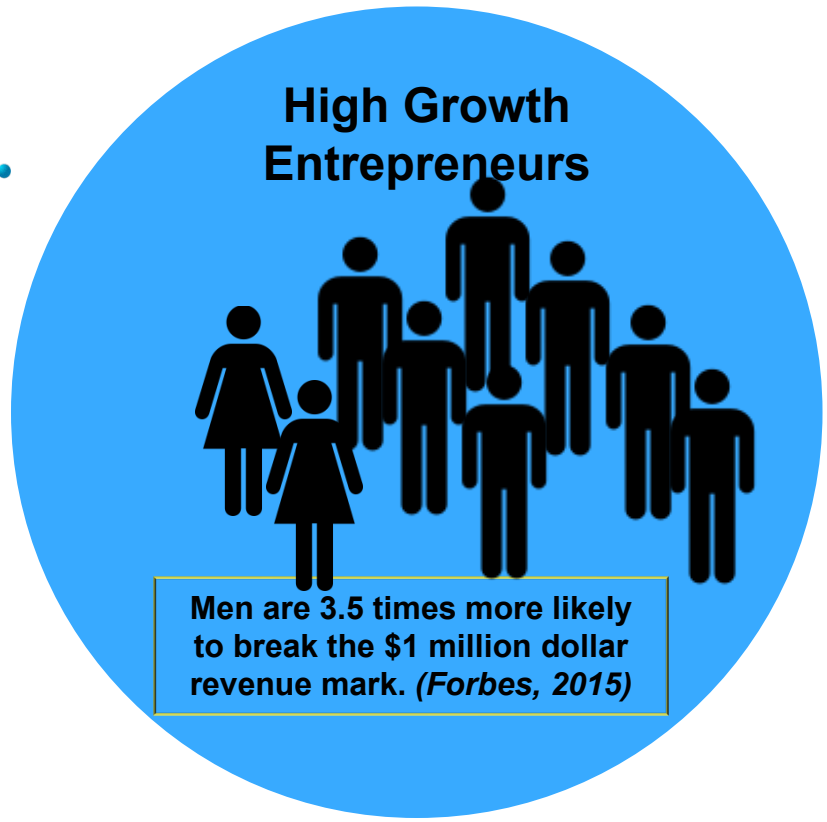


High potential women entrepreneurs grow business revenue on average 20% or more per year, creating jobs and economic growth (*NWBC, 2014*).

Entrepreneurs (both men and women) are innovators. Innovation is what drives new growth and development.

Future Ready Economies attract innovative people that help their economies grow and adapt to the ever changing future.

Women represent untapped potential - **Only 2% of women owned businesses cross over to break the \$1 million revenue mark**



What we found: A cities ability to attract and support high potential women entrepreneurs is 86% correlated with its Future Ready Score*

The Ratings Correlations	
Category †	Correlation
Future Ready Economy (FRE) Score	0.863
Human Capital Score	0.754
Labor Force Engagement	0.619
Learning	0.718
Cultural and Lifestyle	0.623
Civic Engagement	0.550
Commerce Score	0.353
Public/Private Collaboration	0.327
Innovation/Investment	0.659
Infrastructure	0.384
Transparency	0.404

*Only 6 of the 69 indicators used to score cities on their ability to attract and support HPWE were also used to score cities on their ability to be Future Ready.

† Sub-categories with a correlation above 0.3 reported

WE Cities scores are most highly correlated with the *Human Capital* category of the Future Ready Economies (FRE) ratings, with its all sub-categories correlated by more than 50%. Among these *Learning*, *Labor Force Engagement*, and *Culture & Lifestyle* have the highest correlation.

There is a positive correlation between almost all FRE categories and the overall WE Cities score, with the *Commerce* and *Infrastructure* pillars showing more than 30% correlation. Perhaps unsurprisingly, the WE Cities score is correlated 3rd most highly with *Innovation/Investment* in the FRE *Commerce* pillar.

Correlating the rankings on the WE Cities and FRE Indices

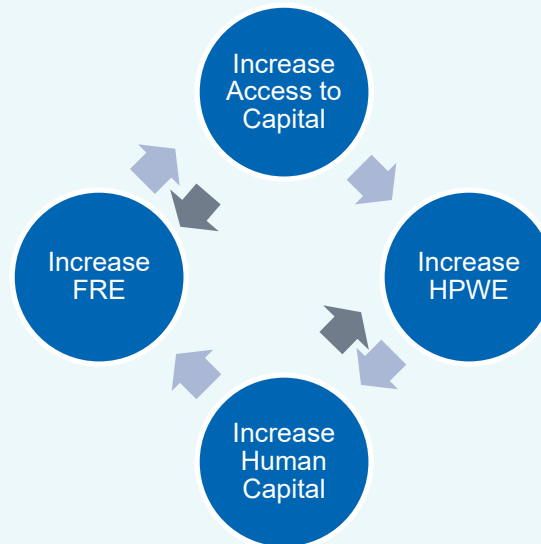
➤ **7 of the top 10 cities** in the WE Cities rating are in the top 10 metro areas of the FRE Rating*:
NYC, Bay Area, London, Singapore, Washington DC, Sydney, Toronto

➤ **7 of the bottom 10 cities** in the WE Cities rating are in the bottom 10 metro areas of the FRE Rating*:

Tokyo, Mexico City, Sao Paulo, Milan, Delhi, Jakarta, Indonesia

Channels through which attracting HPWE can help cities become Future Ready:

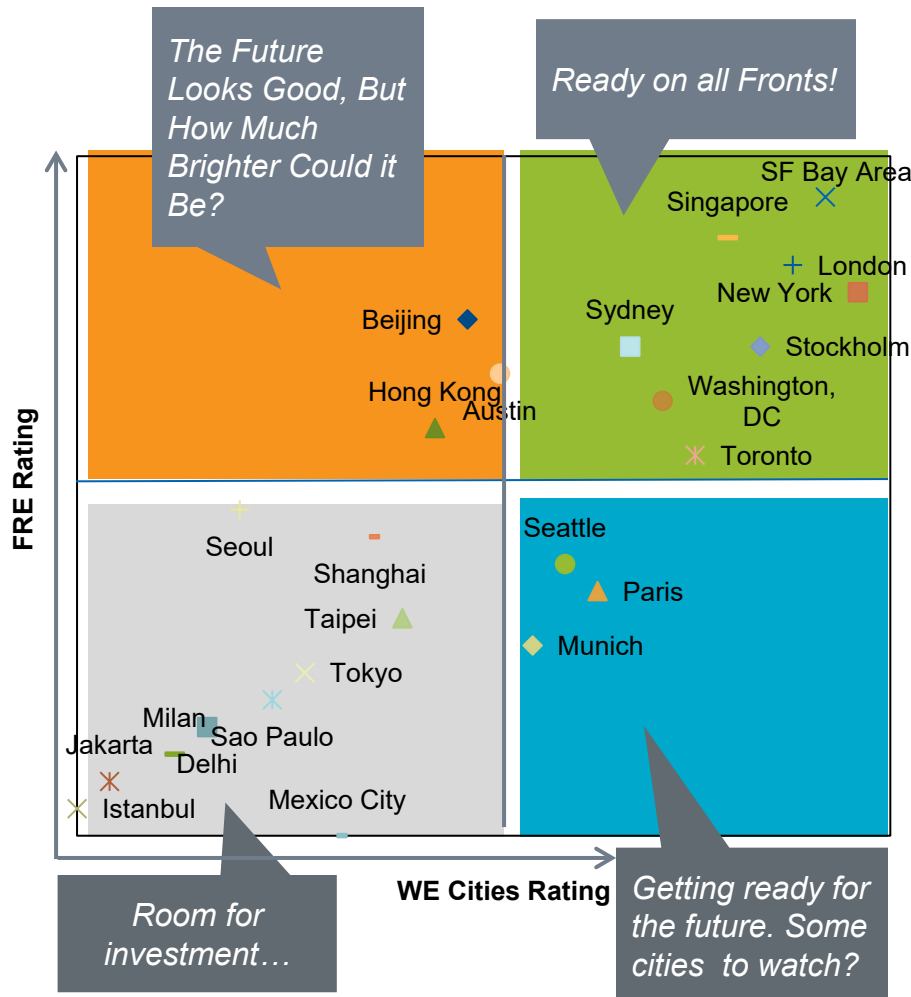
Invest in your people:
9 of the top 10 cities in the WE Cities are in the top 10 for Human Capital sub-category in the FRE (Paris is the exception).



Follow the money:
Beijing, Austin and Hong Kong rank in the top 10 for Access to Capital in the WE Cities rating and rank in the top 10 of the FRE (along with London, NYC, the Bay Area and Washington DC).

*of the 24 cities that are scored in both the FRE and WE Cities

How do the ranks of the 25 global city rankings compare between WE Cities and FRE?



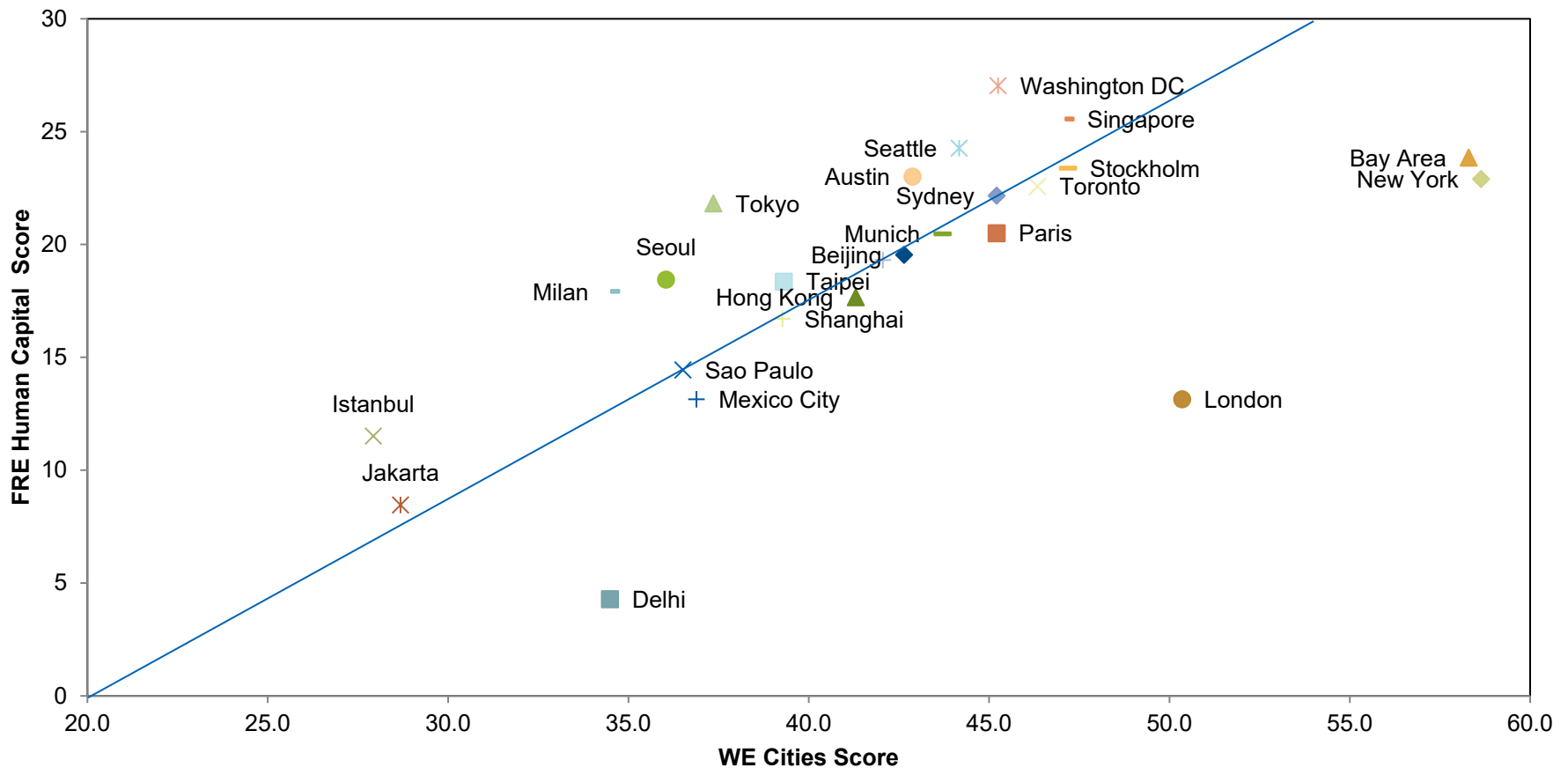
- Cities ranking high on both WE Cities and FRE have good momentum for continuing to attract and support innovators. For example, Toronto scored high in *Markets, Culture, and Technology* for WE, even exceeding its strong performance in the FRE Index as 11th among 50 global cities.
- Cities ranked high on WE Cities but low on FRE may be missing opportunities in other areas that could help them prepare for the future. For example, Munich provides a great *Enabling Environment* for WE but could do a lot more to improve *Human Capital* and *Commerce* overall. Paris has set goals to increase HPWE and is creating a technology hub; it might become more future-ready if it can translate this into economic growth.
- Cities ranking higher in FRE but in the bottom half of the WE Cities may be missing out on the extra boost HPWE could give their economies. For example, Hong Kong's *Infrastructure* drove a high FRE score, but it was much weaker in WE Cities *Markets* and *Talent* indicators.
- Cities ranking lower in both WE Cities and FRE have some work to do, but can use their scores in both to find areas of focus. For example, Mexico City, though faring poorly across a broad range of FRE categories, might build on its strengths in *Technology* enabling HPWE.

Future Ready trends

- ❑ The next three slides show the trend lines (the quantitative relationship between the two indices, as described by a regression line).
- ❑ The trend line indicates which cities have WE Cities scores (measuring cities' ability to attract and support high potential women entrepreneurs) that are commensurate with their performance on the FRE (based on the three categories of Human Capital, Commerce and Infrastructure).
- ❑ It provides a visualization of the strong positive association between the categories of the FRE and WE Cities.

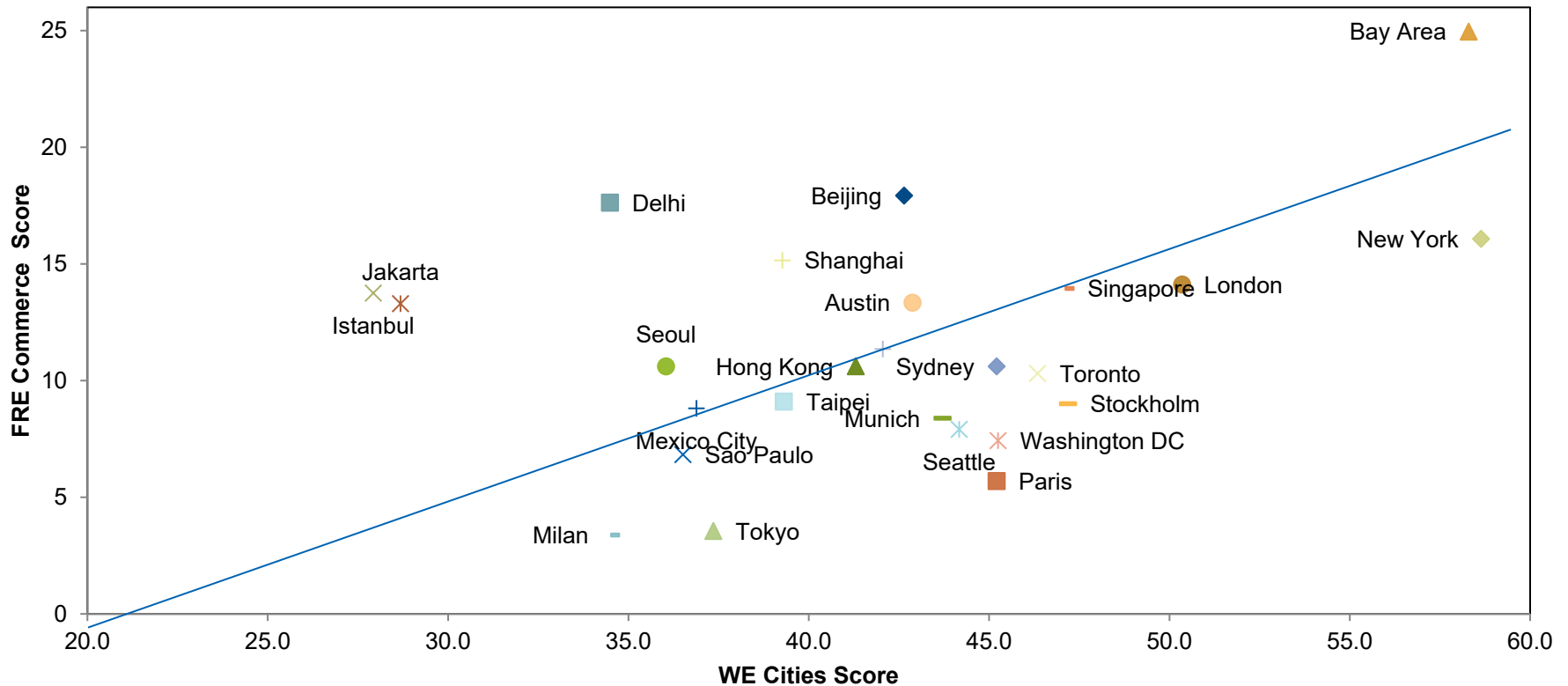
Future Ready Trends: A closer look at the correlation between WE Cities scores and FRE Human Capital scores.

The relationship between the WE Cities score and the FRE human capital score is particularly strong, with the majority of cities falling on or near the trend line.



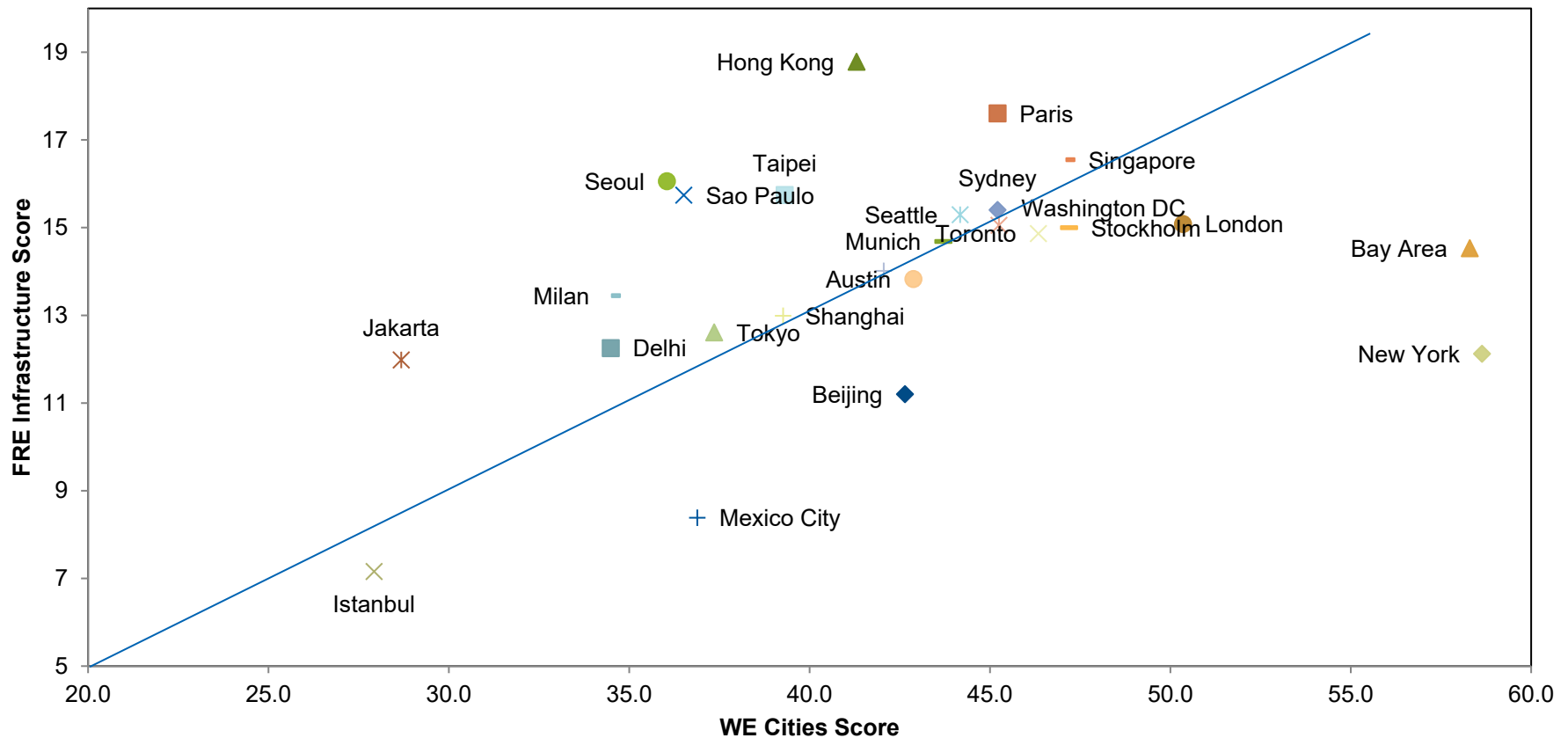
Future Ready Trends: A closer look at the High Potential Women Entrepreneurs Scores with the Future Ready Commerce Scores.

Rapid growth in Asian economies and the recent tech sector boom propelled cities above the trend line to have higher economic performance (FRE Commerce scores) than one would have expected given their WE Cities score. However, a strong economic foundation can pave the way for increasing WE Cities scores in the future (provided a city's leverage its growth in an inclusive way).



Future Ready Trends: A closer look at the High Potential Women Entrepreneurs Scores with the Future Ready Technology Scores.

Based on the trend line, it appears Hong Kong, Paris and Seoul have lower WE Cities scores than would be expected from their relatively strong infrastructure performance in the FRE; the converse is true of the Bay Area and New York City.



Appendix

- A. WE Cities Scoring Methodology
- B. How this rating differs from other entrepreneurship measures
- C. How to read the Rating Workbook
- D. Using the Rating
- E. Acknowledgements

Methodology

A. Scoring Methodology – Indicator Selection

- Building on Dell's years of research on High Potential Women Entrepreneurs (HPWE), IHS identified five important categories of city characteristics (pillars) that influence them.
- IHS conducted a literature review to identify important sub-categories within those pillars as well as potential indicators that could be used for measuring those sub-categories.
- Dell, Harvard TECH Professor David Ricketts, and IHS convened a Research Symposium bringing together women entrepreneurs, funders, thought leaders, policy makers and researchers to discuss what cities need to attract and support HPWE.
- IHS took feedback from DWEN Symposium participants into account when determining which indicators to include in the rating. The Symposium surfaced three new indicators that hadn't previously been proposed: paternity leave, initiatives to collect gendered data, and safety of transportation systems (which relates to the city safety/security overall).
- *Culture* (including mentoring/networking, internal mindsets/expectations and relevant nondiscrimination/ level playing field policies) carried much of the discussion. *Capital* was identified as the biggest constraint in the survey and discussed as critical to business scaling; crowd-funding in particular emerged as a growing source of capital for WE. *Talent* (both in terms of the entrepreneurs' own talent, including education & experience) and getting the right team in place (staff skills) also came out as highly important. All of these were thus given higher weight in the final index scoring.
- A higher order categorization of city characteristics emerged from the symposium: factors that influence the *Operating Environment* and factors that influence the *Enabling Environment*. The five pillars were thus re-organized to fit into these two foundational pillars, with related Policy included as a component of each.

A. Scoring Methodology – Data Collection

- IHS identified indicators and proxy indicators to measure the important categories (*Markets, Capital, Technology, Talent and Culture*) and individual components of each.
- IHS colleagues around the globe supported data collection, as they were able to leverage their familiarity with the city, the local language and available data sources.
- Social media analytics and website scraping were used to get city level data for the Talent, Technology and Culture categories. Key sources include: Twitter, LinkedIn, Crunchbase, genderize.io, and 2020wob.com.
- Data was leveraged (where possible) from organizations that participated in the NYC Symposium and the organizations and websites mentioned there. These include:
 - the headquarters of the member companies of the Open Compute Project (<http://opencompute.org/>)
 - the headquarters of member companies of WEConnect (companies that have committed to instituting vendor programs for WOB that are certified through this organization)
 - 2020WOB.com (lists global companies and the percent of women on their boards)
 - Chapters of WPO, WeConnect, Women Who Code, Girls in Tech, PWN, etc.

A. Scoring Methodology – Scoring & Ranking Cities

- IHS weighted indicators based the four criteria described on slide 3:
1) relevance, 2) data quality, 3) uniqueness, and 4) gender-specific focus.
- The few instances of missing data were handled by either giving the city the average of all the other cities (this neutralized the impact on the city when the data is standardized) or using a proportion found in a related data source to adjust the data point of interest (e.g., using the ratio of female to male literacy rates in New Delhi to come up with an equivalent ratio of tertiary educational attainment for women in New Delhi).
- IHS standardized all data using the method $x - \min / (\max - \min)$ to put all scores on a 0-100 scale so they could be added together.
- IHS aggregated the weighted data to get sub-category, category and overall WE Cities ranking scores for all 25 cities.

B. How this scoring differs from other entrepreneurship ratings

- The WE Cities Score is different in that:
 - It is city level
 - It is a global rating (many city level studies rank US cities only).
 - It specifically focuses on women entrepreneurs versus all entrepreneurs.
 - It specifically focuses on women who have the potential to grow and scale their business (versus all women owned businesses and versus women's ability to start a business).
 - Indicators are chosen to be actionable (things that reflect drivers of a city's ability to attract and support HPWE versus outcomes – looking at the current state of whether a city is in fact attracting HPWE).
 - Many indicators were uniquely constructed (via social media and website scraping) using 2016 sources and data.

C. How to read the Scoring Sheet

- There are two Foundational categories: *Operating Environment* and *Enabling Environment*. They are equally weighted at 50% and an overall score for each is provided for each of the 25 cities.
- Within the two Foundational categories are five High Level Pillars (with the weights of each indicated in parentheses):
 - in Operating Environment: *Capital (40%)*, *Talent (30%)*, and *Markets (30%)* and
 - in Enabling Environment: *Culture (50%)* and *Technology (50%)*
- Sub-categories scores within each of the pillars (with the weights of each indicated in parentheses) include:
 - Markets: *Size (15%)*, *Cost (20%)*, *Access (35%)*, *Policy (30%)*
 - Talent: *Women's Skills & Experience (60%)*, *Access to Qualified Personnel (40%)*
 - Capital: *Funding Frequency & Value (30%)*, *Gender Proportion (35%)*, *Women's Capital Base (35%)*
 - Culture: *Access to Mentors/Role Models (35%)*, *Societal Attitudes & Expectations (30%)*, *Policy (35%)*
 - Technology: *Connectivity (35%)*, *Cost (30%)*, *Policy (35%)*

D. Using the Rating

- The WE Cities rating is useful for highlighting relative areas of strengths and weaknesses within a city that can help it improve by leveraging existing strengths and improving areas that are less strong.
- Indicators were selected that had an action component (e.g., increasing tertiary education; instituting Vendor Diversity programs, etc.)
- While the WE Cities rating can point to areas that a city could strengthen to increase its overall WE Cities score, further analysis is required to identify the context and develop appropriate improvement strategies.

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Ege Seckin

David Wilson

Edwin Wong

Yating Xu

Steve Zabak

Yajing Zhao

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Methodology (full)



Dell Women Entrepreneurs Index Methodology: Measuring a city's ability to attract and support High Potential Women Entrepreneurs

Introduction

As part of its thought leadership and commitment to Women Entrepreneurs, Dell has set out to benchmark and rate cities on their ability to attract and support High Potential Women Entrepreneurs (HPWE), defined as women entrepreneurs that are scaling and growing existing businesses with the potential to break through the \$1 million or more mark in annual revenue.

In order to gain more insight and perspective on what HPWEs need, Dell partnered with Dr. David S. Ricketts of the Technology and Entrepreneurship Center at Harvard (TECH), Palisades Media Ventures, and IHS to host a research symposium on April 5, 2016 at the Harvard Club in New York City. The symposium was invitation only and convened key stakeholders and experts including: successful women entrepreneurs, policymakers with a focus on supporting women owned businesses, venture capitalists that invest in companies with female founders, organizations that train entrepreneurs and media professionals and researchers who study entrepreneurship, women's issues, and global cities' economic performance.

The symposium provided new insight into the ways that female entrepreneurs' needs differ from those of their male counterparts and the importance of specific aspects of the operating and enabling environment in which they live and work, e.g. access to crowdfunding, paternity leave policies, women's own expectations about their ability to succeed in business, and the collection of gendered data.

Building on themes highlighted in previous literature on this topic and the April NYC Dell Research Symposium, IHS, Inc. was commissioned by Dell to develop an index (WE Cities) to compare the following 25 global metropolitan areas on their ability to attract and support HPWE:

Austin
Beijing

Delhi
Hong Kong

Istanbul
Jakarta

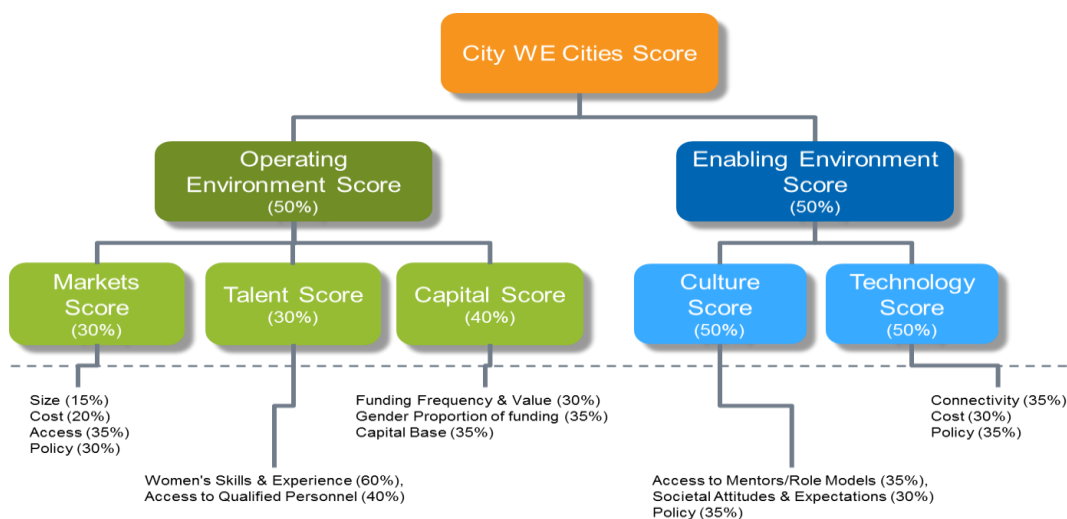
Johannesburg
London

Mexico City	San Francisco	Shanghai	Tokyo
Milan	Bay Area	Singapore	Toronto
Munich	Sao Paulo	Stockholm	Washington DC
New York City	Seattle	Sydney	
Paris	Seoul	Taipei	

Previous research by Dell in conjunction with their Dell Women’s Entrepreneur Network (DWEN) found four critical pillars for HPWE: Markets, Capital, Talent and Technology. Subsequent to the Symposium and IHS’ own research on the sub-components of these pillars (and corresponding metrics or indicators that could be used to measure each), IHS proposed the inclusion of a fifth pillar: Culture. This pillar captures women’s role models, networks, attitudes and expectations as well as the policies that help shape a culture where women are seen as equal and have a level playing field.

Construction of the Rating

The rating was constructed to measure the Operational and Enabling Environment each city provides for women entrepreneurs. Between these two foundational categories, more than 60 indicators are divided among 5 main pillars as follows:



The data collected to support each of these indicators was undertaken by IHS consultants, analysts, and country experts drawing from more than 10 global IHS offices and their own familiarity with that city or country’s local language, culture and

databanks. Further, to offset the challenge of finding globally comparable, government sanctioned, city-level, gender-specific data, IHS developed proxy indicators where necessary, and used innovative social media analytics and website scraping techniques to draw information from Twitter.com, Factiva's database of news articles, Crunchbase.com, and other websites that play a role in supporting the growth of women owned businesses.

The overall enabling and operational environment, as well as the pillars, sub-categories, and individual indicators were weighted using four (4) criteria:

1. The relevance of the indicator for measuring what it is intended to measure (e.g. its ability to reflect city versus country level characteristics).
2. The quality of the underlying data for that indicator (e.g. comparability across cities, data collection methodology, etc.)
3. Its uniqueness in the index (e.g. whether it is measuring something that is also captured by other indicators included in the rating).
4. The gender-specific component (e.g. whether it is measuring something important to *women* entrepreneurs rather than entrepreneurs in general)

Indicators and Sources

SUB-CATEGORY Indicator	Year, Source
MARKETS	
City population	2016, IHS, Inc.
GMP	2016, IHS, Inc.
Forecasted economic growth rate of city/region or country over next 5 years	2016, IHS, Inc.
Corporate Income Tax Rate	2015, PWC <i>Cities of Opportunity</i>
Transportation cost (average of taxi, liter of gas and public train ticket)	2016, expatistan.com
% Company Boardmembers that are Female (country level or avg from sample of city's top employers)	2015 MSCI Women on Boards, 2020wob.com
Accelerators (with WOB)	2016, Seed-DB's list of Seed Accelerators
Presence of a city portal/website for business creation (transparent process, centralized information, etc.)	2016, IHS, Inc.
Corporate Vendor Diversity programs.	2016, WeConnect International Corporate Member list HQ and Staff Locations
Government goals for WOB procurement	2016, city government websites
Most female entrepreneurs as % of startups in city	2015 World Economic Forum
Ease of starting a business	2015, PWC <i>Cities of Opportunity</i>
Number of Women founded VC firms	2016, techcrunch.com <i>The-first-comprehensive-study-on-women-in-venture-capital</i>
Number of VC firms with greater than 20% female partners	2016, techcrunch.com <i>The-first-comprehensive-study-on-women-in-venture-capital</i>
TALENT	
Female labor force participation rate	2016 IHS, Inc. (using most recent data available)

Business management or finance training courses or programs for WE or women executives	2016, Goldman Sachs 10000 Women partner locations, PWN locations, US SBA Women's Center locations
Average % Business school enrollment in that city that is female	2014-16, MBA program websites, brochures and direct contact with MBA program admissions staff
% of population with tertiary education or above	2016, IHS, Inc. (using most recent data available)
% of Labor Force in Professional Services (finance, marketing, accounting, law) within city	2016, LinkedIn.com
Number of accredited business schools in city	2016, FindMBA.com, MBA program websites
Number of globally top-ranked business schools in city	2016, <i>The Financial Times</i> Global MBA Ranking
Number of top ranked global universities in city	2016, <i>US News & World Report</i> , Best Global Universities
% of Labor Force who are IT professionals	2016, LinkedIn.com
% of female population with tertiary education or above	2014-2016, IHS, Inc.
Top Ranked University in that City (out of 750 globally)	2016 <i>US News & World Report</i> , Best Global Universities
Female mentorship programs in place	2016, IHS, Inc.
CAPITAL	
Value of VC funds given to businesses with at least 25% female executives	2016, Crunchbase.com
Number of female founders or executives in 2nd round or higher funding round in the city	2016, Crunchbase.com
Most active Corporate VC Firms (top 25)	The 2015 global corporate venture capital year in review, CB Insights
Number of potential investors (population of High Net Worth Individuals)	2015, Frank Knight Wealth Report; Phoenix Marketing International
% of total investment companies with at least 1 female executive	2016, crunchbase.com
% of city businesses in 2nd round or higher funding round with a woman founder or executive	2016, crunchbase.com

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Number of weeks of paid maternity leave (full pay or partial pay)	2016, IHS, Inc.
% of VC funds given to businesses with at least 25% female executives	2016, crunchbase.com
Top 20 Most Active Crowdfunding Sites	2016, thecrowdfundingcenter.com/
Measure of Equality: Women/Men who saved to start, operate or expand a farm or business (max =1)	2014, World Bank
Number of crowdfunding platforms (country level)	2016 "Global-list-of-crowdfunding-sites" thesoholoft.com
CULTURE	
Presence of role models: # of globally recognized successful WE	2016, IHS, Inc., Fortune, Forbes, Wealthy Gorilla, Techcrunch, IWEC, Fortune 500
Female Mayors in last 3 terms	2016, IHS, Inc.
Number of national level networking, advocacy or supplier dev't groups specifically for WE or businesswomen	2016, IHS, Inc.
Number of city level organizations specifically for WE or businesswomen	2016, IHS, Inc.
Number of city level organizations specifically for entrepreneurs	2016, IHS, Inc.
% of women on boards of major business associations' (e.g. Chamber or other influential business group)	2016, IHS, Inc.
Number of female leaders of major city business associations	2016, IHS, Inc.
% of major city business associations headed by female leaders	2016, IHS, Inc.
Frequency of City events for WE or businesswomen	2016 IHS, Inc.; Meetup.com
Number (per capita) of recent Tweets on successful "women entrepreneurs" (or related)	2016, Twitter/ Janys
% of relevant articles on successful "women entrepreneurs " in media for that city over last 5 years	2011-2016, Factiva

Intentional Homicide Rate (homicides per 100,000 population)	2016, IHS, Inc.; 2014, FBI Crime Stats, UNODC
Numbeo.com Crime Index	2016, Numbeo.com
Numbeo.com Safety Scale	2016, Numbeo.com
Collection of city level data on income or employment by gender	2016 IHS, Inc.
Presence of city and/or national level policy advocacy organization specifically for WE or women's equality issues	2016, IHS, Inc.
Policy for "equal remuneration for work of equal value" (fair pay)	2016, World Bank Group, IHS, Inc.
Policy for "nondiscrimination based on gender in hiring"	2016, World Bank Group, IHS, Inc.
Paid maternity leave	2016, IHS, Inc.; World Bank Group
Paid paternity leave policy	2016, IHS, Inc.; World Bank Group
Requirements for women on boards or executive leadership	2016, IHS, Inc.
% of women in parliament	2016, Inter-Parliamentary Union
Women leader in the last generation	2016, www.guide2womenleaders.com
TECHNOLOGY	
% of women who use the internet	2016, consumerbarometer.com (country level); 2015, Pew Research Survey state level (US cities)
% of women with smart phones	2016, consumerbarometer.com (country level); 2015, Pew Research Survey state level (US cities)
Female/male used an account to make a transaction through a mobile phone (country level) (max =1)	2014, World Bank
Gender equality in Twitter use: ratio of female/male (max = 1.0)	2016, twitter.com
Inverse of Average Monthly Cost of Internet (8MB speed) USD	2016, expatistan.com
Inverse of Average Cost 1 min. of prepaid mobile tariff (no discounts or plans) USD	2016, expatistan.com
Open Data Initiatives	2016, IHS, Inc.

Access to open and flexible technology	2016, opencompute.org (HQ cities of member companies)
Technology training organizations for women	2016, Women Who Code, Girls in Tech, other
Does the city collect use of technology by gender	2016, IHS, Inc.

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About IHS

IHS (NYSE: IHS) is the leading source of information, insight and analytics in critical areas that shape today's business landscape. Businesses and governments in more than 165 countries around the globe rely on the comprehensive content, expert independent analysis and flexible delivery methods of IHS to make high-impact decisions and develop strategies with speed and confidence. IHS has been in business since 1959 and became a

publicly traded company on the New York Stock Exchange in 2005. Headquartered in Englewood, Colorado, USA, IHS is committed to sustainable, profitable growth and employs approximately 8,000 people in 31 countries around the world.

Global Insight, now known as IHS Economics, was formed in May 2001 through the merger of DRI, founded as Data Resources, Inc. in 1968 and WEFA, founded in 1963 as Wharton Econometric Forecasting Associates – two companies that were created to provide quantitative economic research to business and government agencies. DRI was co-founded in by Donald Marron and Otto Eckstein. Marron is best known as the former CEO of PaineWebber and founder of Lightyear Capital and Eckstein was a Harvard University economics professor, economic consultant to Lyndon Baines Johnson and member of the Council of Economic Advisors. WEFA was founded by Nobel Prize winner Dr. Lawrence R. Klein and was a spinoff of the Wharton School of the University of Pennsylvania, where Klein taught. Global Insight was acquired by IHS, Inc. in October 2008.

The IHS Technology is the unique combination of strong legacy brands and proven research methodologies. Brands include Infonetics, Root Metrics, Displaybank, IMS Research, iSuppli and Screen Digest operating across the entire technology value chain. Leveraging proprietary market data, forecasts, and analyses, IHS Technology provides comprehensive industry coverage across all key technology sectors and supports client market intelligence in the areas market share, revenue, and profitability; company performance and competitive strategies; supply, demand and inventory; and intellectual property and technology adoption.

Dell is a client of IHS Economics and IHS Technology research, data and consulting services.



Press Release

DWEN WE Cities Research - 2016

Press Release

From High Potential to High Growth: Dell 2016 Index Ranks Top 25 Global Cities for Women Entrepreneurs

PALO ALTO, Calif. - June 22, 2016 /Businesswire/ --

- The Dell Women Entrepreneur Cities Index (WE Cities) is the only global gender-specific index that looks at a city's ability to attract and foster growth of women-owned firms
- New York, the San Francisco Bay Area, London, Stockholm and Singapore are the top five cities for high potential women entrepreneurs
- Extensive data and analysis says that when impediments to female entrepreneurship are removed, there is a dramatic uplift in a city's economic prospects
- Dell's Index provides a diagnostic tool to advise leaders and policy-makers on how to improve conditions to enable businesses founded by women to thrive
- Dell has partnered with 1776 to launch "Union," an international startup platform

Today at the White House's Global Entrepreneurship Summit, Dell announced findings of the 2016 Women Entrepreneur Cities Index (WE Cities), revealing the top 25 global cities fostering high potential women entrepreneurs (HPWE). WE Cities is the only global gender-specific index that looks at a city's ability to attract and foster growth in firms founded by women entrepreneurs. Cities, instead of countries, were identified in order to show the impact of local policies and programs in addition to national laws and customs.

Findings from WE Cities will be used as a springboard for conversation and change at the seventh annual Dell Women's Entrepreneur Network Summit (DWEN)—a global gathering of 200 of the top female entrepreneurs, business leaders, media and Dell partners that is set to take place in Cape Town, South Africa, June 27-28, 2016. The theme for this year's summit is "Innovate for a Future-Ready World."

"Innovation and job creation by women entrepreneurs is critical for a thriving global economy, yet our research shows some cities and countries are doing far more than others to encourage and support this important subset of the startup community," said Karen Quintos, senior vice president and chief marketing officer at Dell. "Our index provides insights to move the conversation with policymakers and city leaders from awareness to action and, in turn, to empower women entrepreneurs to have the greatest economic impact on the world."

continued

"Women entrepreneurs are our Country's best bet for economic growth," said Elizabeth Gore, entrepreneur-in-residence for Dell. "It's time for women to be politically engaged to ensure the right ecosystems are in place for them to scale. If politicians and entrepreneurs partner, dynamic policies can be put in place to close the circle and enhance the process from idea to enterprise. WE Cities can be used as a diagnostic tool to help ensure lawmakers are listening to their needs."

Top 25 WE Cities Ranking & Methodology

Building on the past four years of Dell's research on HPWE, five important categories of city characteristics were identified: capital, technology, talent, culture and markets. These pillars were organized into two groups – operating environment and enabling environment. The overall rating has 70 indicators, and, of these, 44 have a gender-based component. Individual indicators were weighted based on four criteria: relevance, quality of underlying data, uniqueness in the index and gender component.

Overall Ranking

1. NEW YORK
2. BAY AREA
3. LONDON
4. STOCKHOLM
5. SINGAPORE
6. TORONTO
7. WASHINGTON, DC
8. SYDNEY
9. PARIS
10. SEATTLE
11. MUNICH
12. AUSTIN
13. BEIJING
14. HONG KONG
15. TAIPEI
16. SHANGHAI
17. TOKYO
18. MEXICO CITY
19. SAO PAULO
20. SEOUL
21. MILAN
22. DELHI
23. JOHANNESBURG
24. JAKARTA
25. ISTANBUL

continued

Index Highlights

- New York City ranks No. 1 overall among the 25 cities for its ability to attract and support HPWE with a top-ranked Operating Environment and an Enabling Environment ranked No. 5. While New York City ranks No. 1 for Markets and Capital, it is No. 2 in Culture and No. 4 in Talent. It tops the list for its performance in Policy Enabling Market Access and is No. 2 for the Frequency & Value of Funding to businesses with women entrepreneurs.
- The Bay Area (consisting of the San Francisco and San Jose metro areas) ranks No. 2 overall, ranking No. 2 for Operating Environment and No. 6 for Enabling Environment. It ranks No. 1 for Talent and No. 2 for Capital & Markets, with a No. 1 rank for Access to Markets and the Frequency & Value of Funding to businesses founded and led by women.
- London ranks No. 3 overall, performing second for Access to Markets, third for the Operating Environment and Capital.
- Stockholm and Singapore round out the top five in the overall ranking. Stockholm is No. 1 for the Enabling Environment foundational pillar ranking No. 1 for Technology and No. 9 for Culture.
- Singapore performs in the top third of the 25 cities ranked for Talent, Culture and Technology.

About WE Cities

Dell partnered with IHS—a leading source of insight and analytics that shape today's business landscape—to launch first-of-its-kind, global research that will measure a city's ability to attract and support high-potential women entrepreneurs. The 25 cities in the ranking were chosen from the list of 50 global cities in the Dell Future-Ready Economies (FRE) Model in order to make comparisons between the two indices, with geographic diversity utilized as key criteria in city selection.

Research for WE Cities began during the 2016 DWEN Future Ready Research Symposium chaired by Dr. David Ricketts from the Technology and Entrepreneurship Center at Harvard. The research symposium brought together 40 global thought leaders, women entrepreneurs, academics and media to develop insights for the model. Key takeaways from the conversations at the Symposium included:

- Access to capital is still the No. 1 challenge that women entrepreneurs face, although the numbers are showing a slight improvement
- Creating robust ecosystems with incubators, accelerators and mentors makes a world of difference for entrepreneurs—it's all about the network
- Cultural norms and their policy implications put serious binds on female entrepreneurs

continued

1776 and Dell Announce Startup Federation

To help entrepreneurs in cities and economies that may not provide adequate resources for scaling businesses, Dell has partnered with 1776 to launch an international startup platform, Union, aimed at enabling the next billion entrepreneurs by supporting, connecting and removing barriers for entrepreneurs regardless of their location.

Accessible through the Startup Federation—a worldwide network of startup campuses and mega-hubs—or virtually for entrepreneurs in remote areas, Union will provide entrepreneurs anywhere in the world the ability to reach the people, resources and education they need to take their ideas from seed to scale. Designed by 1776's team of engineers and aided by insights from incubators, accelerators, experts and hubs around the world, the platform enables entrepreneurs to:

- Find content & courses in business-building
- Tap elite mentors in their industries for advice
- Consult experts in skills like marketing, sales, engineering and human resources
- Connect with potential investors, customers and business partners

“Dell’s WE Cities research proves that millions of entrepreneurs are hampered by conditions in their local economies and policies,” said Donna Harris, co-founder and co-CEO of 1776. “Entrepreneurs should be free to live wherever they want and have access to the same incredible resources. Our Union platform brings that idea to reality.”

About the Dell Women’s Entrepreneur Network

As the visionary outcome of a true entrepreneur, Dell is committed to help power the success of entrepreneurs by developing technology solutions that enable human potential. Through the Dell Women’s Entrepreneur Network, Dell supports and nurtures a community of female entrepreneurs by providing access to technology, networks and capital. Learn more here.

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<https://www.businesswire.com/news/home/20160622005065/en/From-High-Potential-to-High-Growth-Dell-2016-Index-Ranks-Top-25-Global-Cities-for-Women-Entrepreneurs>