2016 Dell Women Entrepreneur Cities Index (WE Cities)
EXECUTIVE OVERVIEW

SECTION 1: Introduction

Dell commissioned the Women Entrepreneur Cities Index (WE Cities) to assess and compare cities around the world in terms of their ability to attract and foster high impact women entrepreneurs. Building on Dell's previous research in 2015 for the Dell Future Ready Economies Model (FRE) as well as studies on the global environment for women entrepreneurs over the last three years (dell.com/women), this new analysis featured some fresh elements, designed to shine light on key opportunities that exist for cities to leverage and improve their operating and enabling environments for women entrepreneurs.

The WE Cities study aggregated the most currently available data (almost all was 2014 or later) to create a scoring system that allowed the IHS research team to rank cities in order of their ability to attract and support high potential women entrepreneurs (HPWE). With the exception of Johannesburg, the 25 cities in the rankings were chosen from the list of 50 global cities in the FRE Model in order to make comparisons between the two indices, with geographic diversity utilized as key criteria in city selection (see Appendix for more on the relationship between FRE and WE Cities).

The WE Cities study differs from Dell's previous research in some important ways:

- Cities, instead of countries, were analyzed and scored in order to show the impact of local policies, programs and characteristics in addition to national laws and customs. The vast majority (87%, or 61 indicators) were specific to the city/metro level (rather than country-level).
- The cities that were chosen, with the exception of Johannesburg, were originally part of the FRE Model and were therefore already identified global centers of commercial activity. This means that these are all good places to be an entrepreneur, but, relative to each other, some are better than others, particularly when evaluated through a gender lens.
- The FRE Model included metrics on innovation, rather than entrepreneurship, and did not have a gender component whereas almost two-thirds of the indicators in WE-Cities have a gender component.

Research Symposium

To inform this research Dell, Dr. David Ricketts of the Technology and Entrepreneurship Center at Harvard (TECH), and IHS convened a research symposium in New York in April 2016, which brought together entrepreneurs, thought leaders, academics, networking organizations, non-profits, journalists and policymakers to determine the scope of the analysis and the important issues to address.

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 of symposium participants and was discussed as critical to business scaling; crowd-funding in particular emerged as a growing source of capital for women entrepreneurs. Talent (both in terms of the entrepreneurs' own talent, including their education and 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.

Future Ready Economies

Future Ready has been a rallying cry and area of focus and study for Dell over the past year. It really is about challenging cities, states, countries and businesses around the world to assess what they need to do to be fully ready for the technological and social advances that will propel their economies and businesses forward. Focusing on a wide variety of considerations, including education, technology, transportation infrastructure, and innovation, Dell's Future Ready Economies Model identified some key areas for cities to focus on to improve their future ready score. The Dell Future Ready Economies Model was developed by IHS Economics and TECH in partnership with Dell.

Given Dell's long-standing commitment to women entrepreneurs, it was important for us to commission an extension to the Future Ready Economies Model that would look specifically at gendered data, asking the question "what could cities around the world do better to attract and support women entrepreneurs who are starting and scaling their businesses?"

Why is this important?

Extensive data and analysis has demonstrated that when the impediments to female entrepreneurship are removed, there is a dramatic uplift in a city's (and country's) economic prospects (and correlative social and cultural progress). Booz and Co. termed this phenomenon "the third billion" highlighting the fact that the untapped potential of women in business globally is equal to the economic output of China and India.

Recognizing that innovation is the key driver for progress and entrepreneurs are the world's primary innovators, Dell championed Goal 8 of the UN's Sustainable Development Goals which were passed at the UN in September 2015. Through its #EntrepreneursUnite campaign, Dell and its partners garnered over $1bn in community support for Goal 8, which focuses on innovation and entrepreneurship with a goal of providing meaningful work (jobs) for all. Women entrepreneurs, of course, are an important piece of the puzzle and need more support in the way of access to capital, markets, networks and technology in order to fulfil their potential and contribute more to their economies.

A key goal is to turn high potential women entrepreneurs into high growth women entrepreneurs – currently men-owned businesses are 3.5 times more likely to break the $1million mark. With more resources and attention, the world could see many more women-led businesses breaking the $1m barrier, thereby creating more economic prosperity and jobs, with a knock-on effect in improving health and education conditions within their communities, given that women typically reinvest more of their wealth back into their communities.

SECTION 2: Results

How were the cities selected?

- 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.
- Johannesburg, though not included in the FRE, was added because South Africa will host this year's Dell Women Entrepreneur Network (DWEN) Summit.

How were the findings structured?

- The WE Cities rating 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.
- Building on Dell's years of research on HPWE, IHS identified five important categories of city characteristics (pillars) that influence HPWE: Capital, Technology, Talent, Culture and Markets. These pillars were organized into two groups – operating environment and enabling environment.
- IHS conducted a literature review to identify important sub-categories within those categories as well as potential indicators that could be used for measuring those sub-categories.
- The overall rating has 70 indicators. Of these, almost two-thirds (44) have a gender-based component.
- 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.
- Individual indicators were weighted based on 4 criteria:
  - Relevance
  - Quality of underlying data

Overall HPWE 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

- Uniqueness in the index
- Contains a gender specific component
- Under Operating Environment, we looked at:

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 local policies that help level the playing field for women owned businesses. Indicators and proxy indicators under Markets included:

- Population
- Forecast metro economy growth rate
- Existence of accelerators including women-owned businesses (WOB)
- Transportation costs
- Percentage of women on corporate boards
- Percentage of city startups run by women
- Corporate vendor diversity programs
- Local government goals for procurement from WOB

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

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.
Indicators and proxy indicators under Talent included:

- Female labor force participation rate
- Existence of business management or finance training courses for women
- Percentage female enrollment in business schools
- Number of top ranked universities
- Percentage of women with tertiary education
- Mentorship programs in place

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

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 received by businesses run by women (as compared to men), and the capital base that women can draw on.
Indicators and proxy indicators under Capital included:

- Value of funds given where at least 25% of the team is female
- Number of women in a second round or higher investment cycle
- Most active corporate VC firms
- Number of potential high net worth investors
- Percentage of investment firms with at least one female executive
- Active crowdfunding environment
- Duration of paid maternity leave

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

- Under **Enabling Environment,** we looked at:

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 and expectations of that community toward women entrepreneurs that help shape their own expectations, and the policies that enable women to assume leadership positions and business success.

Indicators and proxy indicators under Culture included:

- Presence of female entrepreneur role models
- Number of female mayors within last three terms
- Networking groups for women entrepreneurs/businesswomen
- Women leaders in major city business organizations
- Number of tweets on the subject of women entrepreneurs
- Percentage of news/feature articles on the subject of women entrepreneurs
- Policies around equal pay and hiring
- Prevalence of paid maternity and paternity leave
- Percentage of women in government leadership and head of state/president (national)
- Crime rates and safety scores

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

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.

Indicators and proxy indicators under Technology included:

- Percentage of women who use the internet
- Percentage of women with smartphones
- Ratio of male/female use of phones for transactions
- Gendered use of Twitter
- Cost of internet and phones
- Open data initiatives

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

SECTION 3: Insights

Results at a glance:

- 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.
    - While NYC ranked No. 1, its total score out of 100 was 58, leaving considerable room for improvement.

- 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).

- 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*.

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.

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** (22nd overall) ranks 1st for Technology Cost

- 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.

Analysis:

What is most immediately apparent is that a number of cities that are not ranked in the top ten overall do very well within an individual category. So, for example, Munich is ranked 11th overall but places second for Talent, fourth for Culture and sixth for Technology, demonstrating many enablers for women's success in business and society, but not necessarily in relationship to entrepreneurship. And as a smaller, less developed business market, it doesn't provide the best conditions for entrepreneurs to scale their business. This presents Munich with a clear opportunity to improve

its focus on programs or policies for women entrepreneurs as it continues to grow as a major business city. The same could be said for many other cities in the study, which perform strongly in some areas but could improve in others.

No city scored above 58.6 out of a potential 100, demonstrating that all of the cities in the study have a long way to go before they can be regarded as a true leader in fully supporting the growth of women-owned businesses. However, not all cities should be expected to be top performers across every category because part of economic and industry development is about capitalizing on natural competitive advantages, i.e. some cities may thrive and grow by leveraging their culture and attitudes towards business; others thrive and grow because they leverage a high-skilled talent pool.

There is a strong correlation (86%) between the FRE cities and the WE Cities scores, despite the majority of the indicators being different. This appears to demonstrate that more progressive, innovative, future ready cities are also more conducive to female entrepreneurs and, if you look at it the other way, that investing in women entrepreneurship should help a city become more future ready. More analysis could be done in this area to understand the nature of the relationships between the two.

We did not formally correlate the WE Cities research to the previous Global Women Entrepreneur Leaders Scorecard (GWELS) due to the fact that the data sets were different (the former is city level while the latter is country level data, age of data, different methodology/research team and different primary source data). What is interesting, however, is where the cities outperform or underperform the country ranking in the other study, which appears to demonstrate that what happens at the city level has a big impact on the prospects for the women entrepreneurs operating in that location and that policies and programs implemented at the city level are worthwhile, in addition to actions taken at the country level. For example, if "nation" was the biggest factor, you would expect to see the five US cities in the study come in at places 1-5. But the lowest scoring city in the USA (Austin) came in well behind cities outside the USA including London, Paris, Stockholm and Singapore. It is worth noting that Austin is one of the least "mature" commercial markets of all the cities analyzed, so it has a lot of opportunities as it grows in significance as a hub for entrepreneurship. More "apples to apples" research would need to be done to establish a more definitive relationship between cities and countries as it pertains to women entrepreneurs.

While the research doesn't specifically call out why the results are the way they are (or, indeed, what to do about it), some inferences can be made.

The relationship between NYC, the San Francisco Bay Area and the other US cities in the study, for example, yields some potential hypotheses. In the FRE Model, the Bay Area came out on top, not surprisingly, for innovation. But it takes second place to NYC in this study (albeit a very close second), in part because, as a tech hub, there are less women leaders (due to the paucity of women technologists and STEM graduates) and Silicon Valley venture capital has not been equally distributed between male and female-owned businesses (ranking behind the other 4 US cities in its gender proportion of funding). Conversely, NYC has a more equal playing field for women in business and a high proportion of successful women-owned ventures, in part because there is also a greater diversity of business types in this location. Other locations in the US, such as Austin, are conducive on many levels, but scored lower because the market is less developed overall than the bigger, more established business centers.

SECTION 5: Call to Action

The DWEN Research Symposium Panel on Challenges, Needs, and Key Drivers focused on funding challenges for women- owned businesses, including the scope of the problem, the role of bias, and what we can do about it.

By addressing these issues, policymakers could drastically improve the environment for women entrepreneurs and help cities move the needle in overcoming the shortcomings highlighted in the WE-Cities study. Please note that the research itself doesn't indicate the steps needed – the below are actions and next steps suggested at the research symposium from April 2016. These recommendations are taken from TECH's white paper from the event, which can be found here.

1) **Address the disproportion in Venture Capital and external funding**
   Statistics show that only about 2-4 percent of venture capital is awarded to women-owned businesses. With limited access to funding, about 90 percent of women-owned businesses are bootstrapped. While bootstrapping

provides some benefits (for example, it boosts creativity and skill development), limited funds place limitations on the growth of women-owned businesses.

2) **Consider the role of bias**
In trying to explain these discrepancies, panelists agreed that bias plays a role. For example, there are more men in positions of power at VC companies, and funding decisions are often based on gut reactions, where bias may play out. That said, panelists agreed that focusing on bias was not productive. Several other factors contribute to disproportionate VC funding, including that women may lack experience with the VC process, lack access to the right networks, lack the confidence needed to pursue VC funding, and own businesses that typically don't offer the growth potential required by VC investors.

3) **Collect better data so we can understand disparities and the entrepreneurial ecosystem**

4) **Encourage governments to support female entrepreneurship, including certification that opens doors so large companies and governments can work with women-owned businesses**

5) **Better prepare women on how to seek funding and how to negotiate so they can advocate for their businesses**
Educate women about other funding options, including peer-to-peer funding, angel investments, crowdfunding, and women- focused investment groups. While many business practices are taught in business schools and other educational outlets, many of the insights and skills which are needed to become a successful entrepreneur are learned outside of formal education. This presents a barrier for underrepresented groups who are not able to tap into the informal educational system.

6) **Celebrate role models and use the power of the media to tell the story of successful female entrepreneurs in order to change perceptions**. In the research symposium survey, the highest self-defined barriers mentioned by participants were mentorship and leadership training. The mentorship panel targeted these barriers by highlighting several aspects of mentorship. However, at an even more basic level is the need for women entrepreneurs to have access to and to learn from successful entrepreneurs, especially highly successful women entrepreneurs.

7) **Build ecosystems to support women entrepreneurs**
In multiple discussions, the concept of the ecosystem arose, both in the form of educational outlets and also infrastructure, such as incubators, networking areas, accelerators, etc. For example, starting a new company in Silicon Valley or New York City is significantly easier than in other areas.

8) **Implement policies that will have an enabling effect on women-owned businesses**
At the city/country level, there are, unfortunately, still many countries and cultures where women do not enjoy the same freedom and opportunities under the law that we enjoy in the U.S. This is obviously a situation that must change if we are to tap into the immense capability that women can bring to our society and the global economy. In countries like the U.S., policies are in place that assure equal rights for men and women and many policies appear to be gender neutral. However, during the Symposium, participants identified several policy areas that could be leveraged as opportunities to accelerate the growth of women entrepreneurs.

9) **Address cultural "norms"**
Culture is a barrier that is particularly hard to change, as it is rooted in how we think, behave, and experience the world. However, by encouraging a dialog about how culture impacts entrepreneurship, and sharing more stories of successful women entrepreneurs in order to paint a picture of the positive role women-owned and women-led business play in our economies, we can influence an entrepreneurial culture that encourages women and men to dream bigger dreams.

Each of these individual efforts can add up to big changes for women-owned businesses. For each woman entrepreneur we help raise up, perceptions will change and so will actions. One panelist said it best: in the end, "the best change-maker is success."

SECTION 6: Appendix

Data collection methodology

- 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.

Relationship of WE-Cities to FRE

- The 50 cities in FRE (of which 25 were included in WE-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 FRE rankings. See full list at: http://www.futurereadyeconomies.dell.com/the-top-50-ranking-future-ready-cities-around-the-globe/
- 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.
- Our analysis showed that a city's ability to attract and support high potential women entrepreneurs (its WE-Cities score) is 86% correlated with its FRE Score. WE Cities scores are most highly correlated with the Human Capital category of the FRE ratings, with all sub-categories correlated by more than 50%. Among these Learning, Labor Force Engagement, and Culture & Lifestyle have the highest correlation.

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