**2029 Job Market Evaluation Proposal**

1. **Project Request:**

Ten years from now, in 2029, there are likely to be significant changes in the make-up of the United States workforce. Two unique questions come to mind:

1. Approximately what percentage of the United States workforce will be working in the gig economy?
2. What percentages will be working remotely, in contract, freelance, or in some other form of a non-traditional on-site position?

The goal of this project is to gather an understanding of the existing market and trends to forecast out ten years into the future.

1. **Stakeholder(s):**

The primary client is the Amazon Senior Executive VP of Human Resources. She is primarily responsible for the planning of facilities and workspaces needed as part of the HQ2 expansion. The Executive VP wants to make effective use of resources and minimize expenses while ensuring there is adequate workspaces available.

If considerably more talented workers will be found in the gig economy within the next ten years, dramatic changes will need to be made in HR policies. Some of these changes include flexible short-term compensation and benefits packages, an increase in wireless connectivity and security options and infrastructure to support remote operations, tax concerns related to free-lance employees, the redefinition of a team and how to achieve team cohesion, etc.

If more permanent future employees expect to have partial or full remote working capability this has a significant impact on the extent of the construction of the HQ2 facilities. If more employees will wish to work remotely, Amazon will want to accommodate the needs of the workforce and can save considerable expense in construction, rent, and utilities. Amazon can utilize the findings of this analysis to better decide how many facilities and the dimensions of the facilities needed to accommodate its onsite HQ2 personnel.

In addition to the construction and ongoing expenses related to urban workspaces, Amazon may wish to lead the effort to employ more gig and remote workers, to obtain other benefits. These benefits include access to a bigger talent pool not limited by geographical location, tapping into less inflated high salary job markets, and accessing remote workers who are generally happier and more productive.

If there is a significant trend to more flexible working options, HR will want to begin long-range planning. The planning could include hiring and training leaders that can effectively manage virtually with the right balance of autonomy and accountability, determining the best options for setting up high capacity remote systems connectivity, legal employee contact changes, and several other considerations.

1. **Data Sources:**

Some of the initial data sources, which are subject to change, as the analysis progress are listed below:

* **Department of Labor**:Closely watched measures of employment and unemployment. https://www.dol.gov/
* **Employment by U.S. Census**: Data that measures the state of the nation’s workforce, including employment and unemployment levels, as well as weeks and hours worked. https://www.census.gov/topics/employment.html
* **US ​Government ​Open ​Data**: United States open source software government site making data open and machine-readable on a variety of topics. https://www.data.gov/open-gov/
* **Bureau of Labor Statistics**: U.S. government’s data collection of employment-related stats across regions, states, and local areas. <https://www.bls.gov/opub/mlr/2018/article/electronically-mediated-work-new-questions-in-the-contingent-worker-supplement.htm>
* **JP Morgan Chase Online Platform Economy in 2018**: JP Morgan Chase’s evaluation of the global economy which provides gig economy findings <https://www.jpmorganchase.com/corporate/institute/document/institute-ope-2018.pdf>
* **MIT Technology Review**: MIT online article that addresses how the US Bureau of Labor Statistics is likely undercounting alternative work arrangement employees. <https://www.technologyreview.com/s/611381/the-us-government-is-seriously-underestimating-how-much-americans-rely-on-gig-work/>

1. **Approach:**

The general approach to answering the 2029 United States gig and remote workers percentages questions is listed below.

1. Obtain data on current gig and remote workers makeup
2. Gain an understanding if the trend is increasing or decreasing and by what percentages
3. Employing the statistical classification model to classify employment data points into increases or decreases in gig and remote employment.
4. Employing the clustering classification model to group like employment data points into increases or decreases in gig and remote employment.
5. Employing multiple regression analysis models to estimate the relationship between employment data points to determine an upward or downward trend in gig and remote employment.
6. If all three models (classification, clustering, and regression show a consistent upward or downward trend) gain an understanding of the factors behind the trend.
7. Adjust the data points, using the factors behind the trend, to obtain new 2029 data points.
8. Calculate the percentage increase or decreases in the 2019 and 2029 data points.
9. Employ multiple regression models to visualize the differences between the 2019 and 2029 data points.
10. **Deliverables:**

The deliverables are below:

1. Slide deck with an understanding of the project, a summary of original data points, slides showing classification, clustering and regression analysis of original data points, slide showing estimated 2029 data points alongside 2019 data points with percentage differences, slides showing 2019 and 2029 regression analysis side by side, and a final slide showing findings.
2. Any programming and data munging code.