Megan Moore
Buff ID 1014735
Summer 1 – 2021. CIDM 5310. Babb

HW 1 - Due Date Sunday, June 6, 2021

My responses to each step is in purple below.

Establish Problem Domain

The purpose of this assignment is to brainstorm the problem domain for the BI/DSS you'll design and implement.

Step 1: Find your Data Domain

From data.gov : https://catalog.data.gov/dataset/computational-science-and-engineering-software-sustainability-and-productivity-csessp-chal

Step 2: Why is this Domain Important

Once you've identified a data set there, write 250 words about how that data would be of interest and what sorts of questions you'd want answered from that data. Also include the type of storytelling narrative and persuasion you'd anticipate being able to execute by building a BI Dashboard.

For this assignment, I wanted to see if there were any data sets regarding challenges and opportunities in computer science and engineering which describe or measure how those challenges are ranked, prioritized and how progress is reviewed. Computational Science and Engineering (CSE) is transforming scientific discovery and engineering design. CSE plays a unique and indispensable role in today's society and will only grow in importance and impact over time. In my current employment as a business analyst, developing and maintaining a project prioritization system for business intelligence is key. Just as important is a well-designed method used across functional areas to help derive insights.

Building a BI dashboard for this dataset would help breakdown all the complexity involved with individual projects to simplicity and common metrics in order to provide a snapshot. Data changes and updates constantly which could feed into a properly designed dashboard so executives or other users experience a real time view to help review various analytical needs or questions. Productivity and sustainability improvements require fundamental research and development, metrics and new approaches. All of these things cost both time and money so having data sets track new initiatives and display progress towards them would be crucial. Gaps might be noticed sooner in staffing, skillsets or ecosystems.

Coming from an engineering background myself prior to working as a business analyst, I found many products never make it out of the concept or research phase into the hands of those who could benefit the most from the product's use in order to solve important problems. Effective dashboards would help manage the research to production process and potentially increase the output of effective products to broader communities.

Step 3: Planning for a BI/DSS Project based on this Data

What larger BI/DSS system could you develop with this data? Reflect on what Sherman says in chapters 1-3 and provide another 250 words that describes what planning and provisions are necessary for you to plan a wider BI project based on your answers to Step 2 above.

Megan Moore
Buff ID 1014735
Summer 1 – 2021. CIDM 5310. Babb

A much larger DSS system could be developed from the original dataset to take into account related revenue projections or models, sales metrics, or health records to determine effectiveness and scalability. Sustainability is a large focus in the current world thankfully as more industries realize while developing something new is good, it is far better to create something more sustainable and long term to avoid waste. Business requirements could be refined in greater detail or scope alongside necessary key performance indicators.

Other dashboards could be developed along a BI road map to be more purpose-built to support specific decisions or projects. Per the data set I picked to review for this assignment, "Science and engineering will benefit substantially by increasing the productivity and sustainability of CSE efforts. CSE has emerged as such an important element in the overall scientific and engineering endeavor that any substantial improvements in the quality of our software efforts will have multiple and large impacts on any endeavor where CSE plays a role."

The largest pitfalls to avoid are defining too narrow data quality and making an assumption that data quality responsibility falls to that of the source system. Good data is not just removing missing or inaccurate entries, but also ensuring data provided to programs is relevant and consistent. Per Sherman, the following dimensions which must be considered are: Business Value, Business Processes, Business Group, Data Sources and Analytical functionality. All of these must be considered to ascertain if projects are being optimized within strategic business plans.