Call Centre Analytics

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Introduction

Power BI PwC Virtual Internship is an online, interactive program offered by PwC (PricewaterhouseCoopers), one of the world's leading professional services firms. The internship provides an opportunity for students and aspiring professionals to gain hands-on experience and develop practical skills in using Power BI, a powerful data visualization and business intelligence tool. So, I decided to delve into this program and get exposure to a reputable professional services firm like PwC, especially in the Data field.

Task 1: Call Centre Trend

I received an email from Claire, Call Centre Manager at PhoneNow. To Create a dashboard in Power BI for Claire that reflects all relevant Key Performance Indicators (KPIs) and metrics in the dataset. *Claire wanted creativity, and I was ready to deliver!*
The challenge was clear: craft a dashboard that speaks volumes with KPIs like overall customer satisfaction, calls answered/abandoned, calls categorized by time, average speed of answer, and even a quadrant reflecting agent performance using average handle time versus calls answered.

- ***Data Collection***
  - The dataset was provided by PWC company.

- ***Data Cleaning***
  - Handle missing values.
  - Remove duplicates.
  - Standardize data formats.
  - Rename columns.

- ***Data Analysing***
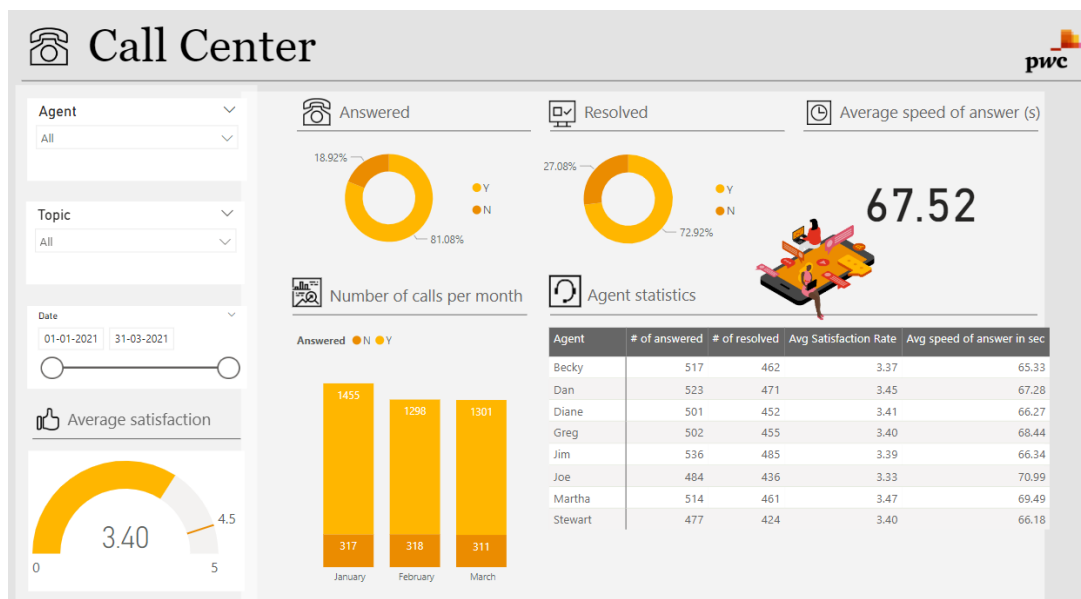
- ***Insights***

1) *Call Volume:*
   - Total Calls: 5000

2) *Abandoned Calls:*
   - Abandoned Calls: 946
   - Abandoned Calls Rate: 18.92%
   - The abandonment rate is a crucial metric indicating the percentage of calls that were disconnected before being answered. A rate of 18.92% suggests a notable portion of callers might be experiencing longer wait times or dissatisfaction. Investigating the reasons behind abandonment can help improve service levels.

3) *Answered Calls:*
   - Total Resolved Calls: 1354
   - Resolution Rate: 33.42%
   - The resolution rate reflects the effectiveness of the call center in addressing customer concerns. A resolution rate of 33.42% indicates that roughly one-third of the answered calls were successfully resolved. Improving this rate could enhance overall customer satisfaction.

4) *Agent Performance:*
   - Total Agents: 8
   - - Calls per Agent: 5000 / 8 = 625
   - On average, each agent handled 625 calls. Understanding this workload helps evaluate agent efficiency and workload distribution. It can guide decisions on staffing levels and training needs.

5) *Operational Efficiency:*
   - Total Answered Calls: 4054
   - Operational Efficiency: 81.08%
   - Operational efficiency measures the percentage of answered calls out of total calls. An efficiency of 81.08% suggests a relatively high volume of calls were successfully addressed. Further analysis can uncover peak operational hours and potential areas for improvement.

6) *Customer Interaction:*
   - Total Calls: 5000
   - Average Speed of Answer: (Sum of wait times for all calls) / Total Answered Calls
   - Calculating the average speed of answer provides insights into how quickly calls are being addressed. A lower average speed of answer is generally preferable and contributes to improved customer satisfaction.

7) *Customer Satisfaction:*
   - Average Satisfaction Rating: 2.76
   - The average satisfaction rating of 2.76 provides a numerical representation of customer contentment. While the scale of the satisfaction rating may vary, a

rating below the midpoint (e.g., 3 on a 5-point scale) suggests room for improvement.

- **Conclusion**
  - Reviewing the Call Centre Trend Analysis in the Power BI PwC Virtual Internship, the call centre managed 5000 calls. It's performing decently, but there's an area that needs attention, particularly with an 18.92% abandonment rate.
  - The average satisfaction rating is 2.76, indicating customer feelings. Although the resolution rate is 33.42%, the high abandonment rate suggests a need for quicker handling of calls.
  - Achieving equilibrium between operational efficiency and customer satisfaction emerges as the critical focus for enhancing the call center's performance.

- **Recommendations**
  The following are recommendations, when implemented cohesively, will not only address the identified areas for improvement but also foster a dynamic and customer-focused call centre environment.

  1) *Swiftly Address Abandonment Rates:*
     Given the abandonment rate of 18.92%, a priority should be placed on optimizing call response times. Implement measures to ensure quicker answers, potentially through additional staffing during peak hours.

  2) *Refine Resolution Strategies:*
     To enhance the resolution rate (currently at 33.42%), consider refining strategies for more efficient issue resolution. This might involve targeted agent training programs or improvements to the knowledge base.

  3) *Seek Direct Customer Feedback:*
     Establish a direct feedback loop with customers to understand the nuances behind the average satisfaction rating of 2.76. Direct insights from customers will guide precise improvements and foster a customer-centric approach.

  4) *Optimize Agent Workload:*
     Evaluate the workload distribution among our 8 agents to ensure a balanced and manageable workload. Redistribution of tasks or additional support during peak times may be necessary to prevent burnout and maintain efficiency.

Task 2: Customer Churn Analysis
Create a dashboard in Power BI for the Manager that reflects all relevant Key Performance Indicators (KPIs) and metrics in the dataset.
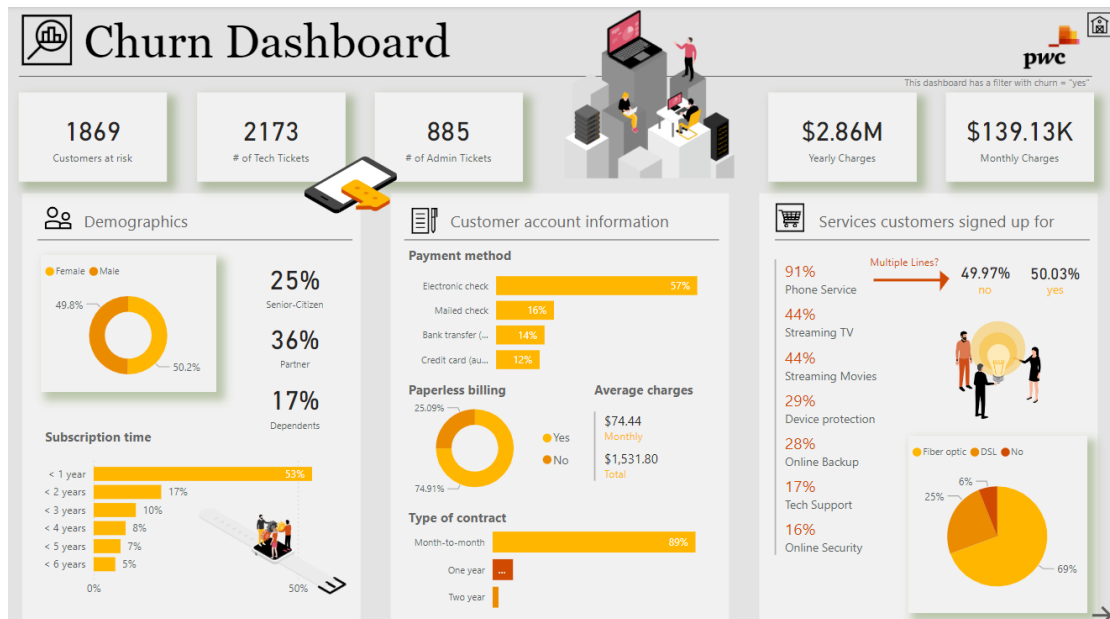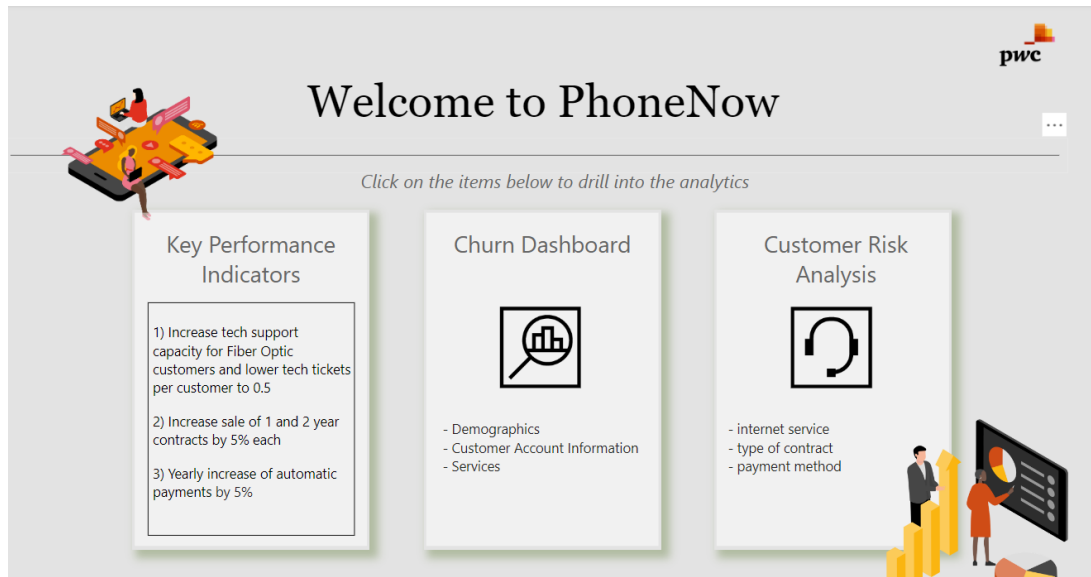
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- ***Data Analysing***

Customer Risk Analysis

- ***Insights***
  - *Customer Demographics:*
    The total customer base stands at 7,043, with a fairly balanced distribution between genders. Females make up 49.5% (3,488), while males constitute 50.5% (3,555). Understanding these demographics is crucial for tailoring retention strategies to diverse customer profiles.

  - *Retention and Churn Rates:*
    The overall retention rate is a commendable 73.46%, suggesting that a significant majority of customers are sticking around. On the flip side, the churn rate of 26.54% signifies a portion of customers who've decided to part ways. Exploring the reasons behind this churn can uncover valuable insights for proactive strategies.

  - *Revenue at Risk:*
    The total revenue at risk due to churn, calculated at 26.54%, amounts to 2.86 million. This figure underscores the financial impact of losing customers. Strategizing to reduce churn can not only preserve current revenue but also open doors for potential growth.

  - *Total Charges and Revenue Insights:*
    The sum of total charges reaching 16.06 million provides an overview of the revenue generated from the customer base. Comparing this with the revenue at risk emphasizes the significance of customer retention in preserving a substantial portion of this revenue.

- ***Conclusion***
  - In concluding the comprehensive analysis of customer retention and churn rates, the telecom industry stands at a pivotal juncture. The gender-based examination

has revealed subtle variations in retention and churn rates between male and female customers. However, it is crucial to emphasize that these differences are marginal, suggesting that gender alone might not be the predominant factor steering customer decisions.

- The telecom industry should view this insight not as a call for gender-specific strategies but rather as an opportunity to refine and reinforce customer retention initiatives universally. Both genders share common ground in their preferences, and recognizing these shared elements can contribute to a more inclusive and effective approach.

- **Recommendations**
  1) *Universal Customer Engagement:*
     Develop customer engagement strategies that cater to universal preferences while respecting gender-specific nuances. Ensure that marketing campaigns and communication resonate with a diverse customer base.

  2) Continuous Feedback Loop:
     Establish a continuous feedback loop that encourages customers to share their experiences. Both retained and churned customers, regardless of gender, can provide valuable insights into the strengths and weaknesses of existing services.

  3) Employee Training on Diversity and Inclusion:
     Provide training programs for customer-facing employees on diversity and inclusion. A workforce that understands and respects the diverse backgrounds and preferences of customers can contribute to a more empathetic and effective customer engagement.

Task 3: Diversity and Inclusion Analysis
- **Data Collection**
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- **Data Cleaning**
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- **Data Analysing**
  Below is a step by step of how I analysed and visualized the data.

  1) *Gender Distribution:*
     The workforce comprises 60% men (295) and 40% women (205). While men currently form the majority, it's essential to note the existing diversity within the organization.

  2) *Hiring Practices:*

The hiring practices showcase a balanced approach with 52% women and 48% men being hired. This reflects a commitment to gender-neutral recruitment and a conscious effort to ensure diversity in the incoming workforce.

3) *Retention Rates:*
Despite efforts to maintain a gender-balanced workforce, 47 employees have left the organization. Analyzing the reasons behind these departures can provide crucial insights into potential challenges affecting retention, allowing for targeted interventions.

4) *Employees Promotion Rate:*
In 2020, 7% of employees were promoted, reflecting a commitment to recognizing and nurturing talent. In 2021, this promotion rate increased to an impressive 10%, indicating accelerated growth and a continued investment in the professional development of employees. These trends not only highlight the success of individual employees but also underscore the organization's dedication to fostering a positive work environment and encouraging long-term career investment.

Diversity & Inclusion

- **Conclusion and Recommendations**
  1) *Leadership Development Programs:*
     Strengthen leadership development programs to groom and support individuals from all backgrounds for higher roles. This contributes to a pipeline of diverse talent ready to take on leadership positions.

  2) *Transparent Communication:*
     Maintain transparent communication about promotion criteria, processes, and opportunities within the organization. This clarity can empower employees to proactively engage in their career development.

  3) *Employee Satisfaction Surveys:*
     Conducting employee satisfaction surveys, with a specific focus on gender-related experiences, can unveil qualitative insights. Understanding how men and women perceive the workplace culture and opportunities for advancement is crucial for addressing any potential disparities.

  4) *Inclusive Policies:*
     Review existing HR policies to ensure they are inclusive and accommodate the diverse needs of all employees. This includes considerations such as flexible working arrangements, parental leave policies, and initiatives promoting work-life balance.

  5) *Periodic Diversity Audits:*
     Conduct periodic diversity audits to track progress over time. Regular assessments ensure that diversity and inclusion initiatives remain a priority and provide valuable insights for ongoing refinement.