**Future Data Roadmap**

Submitted by:

Name: **Nithin Thomas**

**ASSIGNMENT SUMMARY**

**Purpose:**

Technology is changing at a rapid pace. If your Data Plan cannot change with the times, it will have a limited lifetime in your organization. Planning for future trends and identifying where they can improve the pipeline ultimately provides greater value for your organization.

**Assignment Objective:**

Create a future roadmap for your data problem. This will include an analysis of the trends identified in the lesson: Artificial Intelligence, Cloud Computing, and the Internet of Things.

**Instructions:**

Create a future roadmap for your data problem. This will include an analysis of the trends identified in the lesson: Artificial Intelligence, Cloud Computing, and the Internet of Things.

This assignment will be in paragraph form.

1. Write a detailed & organized paragraph describing how each of the trends in the lesson might impact your data problem in the future.

Including:

A. Artificial Intelligence

B. Cloud Computing

C. Internet of Things

2. For each trend listed above, address the following specific topics:

A. Are there any current or historical data challenges the future technology could solve?

B. Are there any privacy or legal implications the businesses would need to consider in adopting the future technology?

# **CONTENTS**

[1. Background 3](#_Toc90656878)

[2. Data Source 4](#_Toc90656879)

[2. Sources of Data and Measures 4](#_Toc90656880)

[3. Tools Used for Data Technology Plan 6](#_Toc90656881)

[4. Future Plan 6](#_Toc90656882)

[4.1 Impact of the trend on the data problem in the future 6](#_Toc90656883)

[4.2 Current or historical data challenges the future technology could solve 8](#_Toc90656884)

[4.3 Are there any privacy or legal implications the businesses would need to consider in adopting the future technology? 10](#_Toc90656885)

[5. Reference 12](#_Toc90656886)

# **1. Background**

NPhone is planning to **expand their global presence** and looking for **new markets**. They are planning **to enter Indian market** with their new smartphone model. NPhone wants to understand **customer demand and current market trend of Indian market**. NPhone also wants to make decision on **features and factors affecting the buying decision** of Indian customers. Also needs to understand **socio-economic characteristics** which affects the **buying behavior** of the potential **customers in India**.

# **2. Data Source**

For carrying out the market analysis, data has been collected from different available and reliable sources:-

* Private Data Sources:
* gsmarena.com
* NIC -National Informatic Centre, India
* Public Data Sources:
* Instagram
* Facebook

# **2. Sources of Data and Measures**

**2.1 Source: gsmarena.com**

**Measures**

* User\_ID
* Age (years)
* Gender
* Country & State
* Reason to change the smartphone
* Top 5 features affecting mobile phone purchase from the list
* Average money spent on smartphones
* Favorite Online Shopping Site

**2.2 Source: Facebook**

**Measures**

* User\_ID
* Facebook\_user\_URL
* Facebook\_Name
* EmailUser\_Birthday
* Post\_Content
* Facebook\_Private\_Message
* Facebook\_Comment
* Facebook\_Comment\_URL
* Facebook\_Post\_Date

**2.3 Source: NIC -National Informatic Centre**

**Measures**

* User\_ID
* Age (years)
* Gender
* Country & State
* Reason to change the smartphone
* Top 5 features affecting mobile phone purchase from the list
* Average money spent on smartphones
* Favorite Online Shopping Site

**2.4 Source: Instagram**

**Measures**

* + User\_ID
  + Facebook\_user\_URL
  + Facebook\_Name
  + Email
  + User\_Birthday
  + Post\_Content
  + Facebook\_Private\_Message
  + Facebook\_Comment
  + Facebook\_Comment\_URL
  + Facebook\_Post\_Date

# **3. Tools Used for Data Technology Plan**

* Python
* RStudio
* Tableau
* PowerBI
* Facebook API
* Instagram Insight
* MySQL

# **4. Future Plan**

# **4.1 Impact of the trend on the data problem in the future**

Artificial Intelligence(AI), Internet of Things (IoT), cloud computing are **cutting-edge technologies** that have been changing the world these days. These technology help in automating the management of queries based on their likely resource consumption, providing a more **stable and reliable system**. These technologies improve **query performance, manual governance, accuracy and also are flexible, affordable, and scalable database management**.

1. **Artificial Intelligence(AI)**

* It helps NPhone to **make business decision** based on outputs from cognitive technologies
* NPhone can make use of AI for **insight to predict customer preferences** and offer them better, personalized experience
* It helps to mine vast amount of data to generate **quality leads and grow your customer base**
* NPhone can increase revenue by identifying and **maximizing sales opportunities**
* AI **increase productivity and operational** efficiencies by which NPhone can save a lot of money
* **Decision can be made faster** using AI which is required in the case of a smartphone company like NPhone

1. **Internet of Things (IoT)**

* It helps smartphone companies to **acquire Sensor Driven Insights**
* Using IoT, NPhone will be able to **reduce their turn-around-times** and hence **enhanced customer service** with the help and integration of AI.
* NPhone can utilize data that can be used as an input for artificially intelligent machines to learn from **past experiences and predict better smartphones**.
* **Inventory Optimization**: Using Internet of Things, NPhone will be able to keep track of every single item at the warehouse which allows to **optimize inventory and sales**.
* **Enhanced User Experience:** NPhone can make use of **distributors of online products** using digital tracking systems and smartphone apps to create added convenience for their customers.

1. **Cloud Computing**

* NPhone is an international brand so **remote cloud servers offer almost unlimited bandwidth and storage space**, which allows businesses to **instantly scale up and down** their capacities to support growth and cope when website traffic increases.
* By investing in cloud computing, NPhone can **reduce the risks due to data lose** during disaster and recovery and backup solutions without the hassle of setting them up on a physical device.
* As a company grows, it is inevitable that more storage space and bandwidth will be **required to cope with increasing traffic** to the website.
* Another key benefit of cloud computing is **software integration**, which occurs automatically in the cloud because NPhone may or may not go ahead with the new technology.
* Cloud computing gives NPhone the ability to **establish access to their applications effectively** in many regions around the world

# **4.2 Current or historical data challenges the future technology could solve**

1. **Artificial Intelligence(AI)**

* NPhone being an old company working with **legacy data and systems which can be solved using AI**. Otherwise, data is stored in disparate siloed systems which is hard to find and aggregate to accelerate data-driven decisions.
* It helped NPhone to define a **data governance policies and rules** that govern that use of data and data operations.
* Data Analyst of NPhone was spending a large part of their workweek **preparing data for analytics** which is resolved to an extend using AI/machine learning (AI/ML) initiatives.
* NPhone access third-party data sources include dealing with disparate data that exists on different systems and **merging data from diverse sources** will be the input to AI, without AI it would be a challenge
* **Bringing a multidisciplinary team** comprising AI/technical, business, regulatory, and domain specialists to establish data practices and strategy that align with the customer organization’s business goals and outcomes was made possible

1. **Internet of Things (IoT)**

* With the help of IoT, NPhone get insights into product use that, in turn, help to spot areas **needing development and improve existing product versions** which was otherwise difficult to identify.
* NPhone can utilize IoT data management to **analyze equipment life cycles and make maintenance plans** for their customer.
* Dealing the **huge volume of data** produced by IoT devices which helps in improvement and analysis the performance of the product.
* NPhone needs to **harvest and stream data** with the help of different protocols and standards.

1. **Cloud Computing**

* Implementing cloud infrastructure allows **building automated data processing pipelines** to filter out duplicate files, unneeded file versions and other outdated data that simply takes up storage and resources.
* Cloud deployment means **leveraging the cutting edge of technology**, both in terms of software and hardware.
* It allows NPhone for **easy upgrade and patches** when required which was otherwise not possible
* Ensuring **data consistency and compliance** of the available data can be made sure
* Data **resides in public, private or hybrid cloud**, managing it can become a easy for IT department.

# **4.3 Are there any privacy or legal implications the businesses would need to consider in adopting the future technology?**

1. **Artificial Intelligence(AI)**

* If the AI of NPhone is hacked by any means then there is a **potential risk to the company to lose the confidential data**.
* With risk of many connected device there is a **risk of data leaks and potential breaches** into the system
* Data is one of the assets is for NPhone so it is equally important that methods are devised to ensure the **privacy of user data**.
* **Regulation of developing technologies is complex**, and it becomes significantly more complicated when crossing borders, as individual **nations set their own rules** which will affect NPhones global operations.
* AI decision-making, and **liability for AI and robotics gone wrong** will have a sever effect on NPhone

1. **Internet of Things (IoT)**

* The first issue in the evolving IoT market is **security related interconnected systems**
* Another key issue in the evolving IoT is **government access to data** collected by IoT devices
* Concerns about the **vulnerabilities of connected products** also continue to grow as the use of these products becomes more prevalent in case of NPhone
* IoT devices generate high volume, real-time data streams which increase the **need for more storage space and memory for computation** which will be an added cost to company
* NPhone has risks associated using **third party IP and IP licensing** which is required in IoT market.
* The potential for IoT devices to converge players from different technology-focused sectors and create powerful data-sets could attract **the attention of competition law regulators**.

1. **Cloud Computing**

* Data stored in the cloud might be **compromised or breached** this is a potential thread to NPhone.
* Make sure you are **aware of the regulations and rights** **changes** from the country you store your intellectual work.
* **Intellectual property rights differ from country to country** so NPhone should be aware of the regulations and rights from the country they store the data.
* **All third parties using a multi-tenant shared cloud** are using the same administration interface, so NPhone has to make sure multi-factor authentication and enhanced security is present.
* NPhone has to **implemented security procedures** in place before implementing cloud computing.
* NPhone should control who will have **access to your corporation's data**.

# **5. Reference**

* Data 1201 - Data Collection Assignment #1
* Data 1201 - Data Collection Assignment #2
* Data 1201 - Data Collection Assignment #4
* Data 1201 - Data Collection Assignment #5
* DC >> Content