Assignment 6

Possible Design Options

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| Section | 5 |
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| Due Date | March 10, 2024 |

Catalyst Driving Business Excellence

Kitchener, Ontario

Generative AI Powered Voice Assistant Customer Service at Rogers

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# Introduction

In response to challenges faced by Rogers Telecommunications in customer service, we propose the implementation of an AI-driven platform. This initiative seeks to transform the traditional customer service experience by leveraging artificial intelligence technologies. Our goal is to address issues such as extended wait times, resource inefficiencies, and customer dissatisfaction. As part of the Business Analysis team, we are tasked with exploring and evaluating potential solution options and establishing clear evaluation criteria to guide the selection process.

# Summary of Existing Functionality

Rogers currently encounters significant issues in its customer service system, marked by long call queues, delayed issue resolution, and a notable volume of complaints. Manual handling of these complaints results in inefficiencies and inconsistent problem resolution. The project aims to introduce an AI-powered complaint-resolution platform, addressing these pain points and enhancing overall customer satisfaction.

# Requirement Details

The AI Customer Service Call Platform must intelligently handle a diverse range of customer queries using Natural Language Processing, efficient call routing, and seamless integration with existing systems. Compliance with federal and provincial legislation, robust infrastructure and security measures, and a focus on an enhanced user experience with personalized features are imperative. Secure digital identity verification and authentication processes ensure data protection, while comprehensive testing and seamless integration with financial organizations. Adherence to customer service standards and continuous alignment with industry benchmarks are essential, providing a foundation for the platform's success in reducing wait times, improving service efficiency, and optimizing resources, aligning with Rogers Telecommunications' strategic goals.

# Assumptions and Prerequisites

## Technical Assumptions

1. Availability of required hardware resources for the development and deployment of the voice assistant system. For deployment, cloud infrastructure such as AWS EC2 or Azure VMs will be utilized.
2. Access to necessary software tools and development environments for AI model development, testing, and deployment.
3. Compatibility of the chosen technology stack with the client's existing infrastructure and systems.
4. Compliance with relevant regulatory requirements and standards for data privacy, security, and accessibility.

## Organizational Assumptions

1. Availability of skilled personnel with expertise in AI development, natural language processing (NLP), and software engineering for option 1.
2. Willingness of the client to allocate sufficient resources, including budget and personnel, for the development and maintenance of the voice assistant system.
3. Openness to collaboration and communication between the client's team and external vendors or partners for option 2.

## Data Assumptions

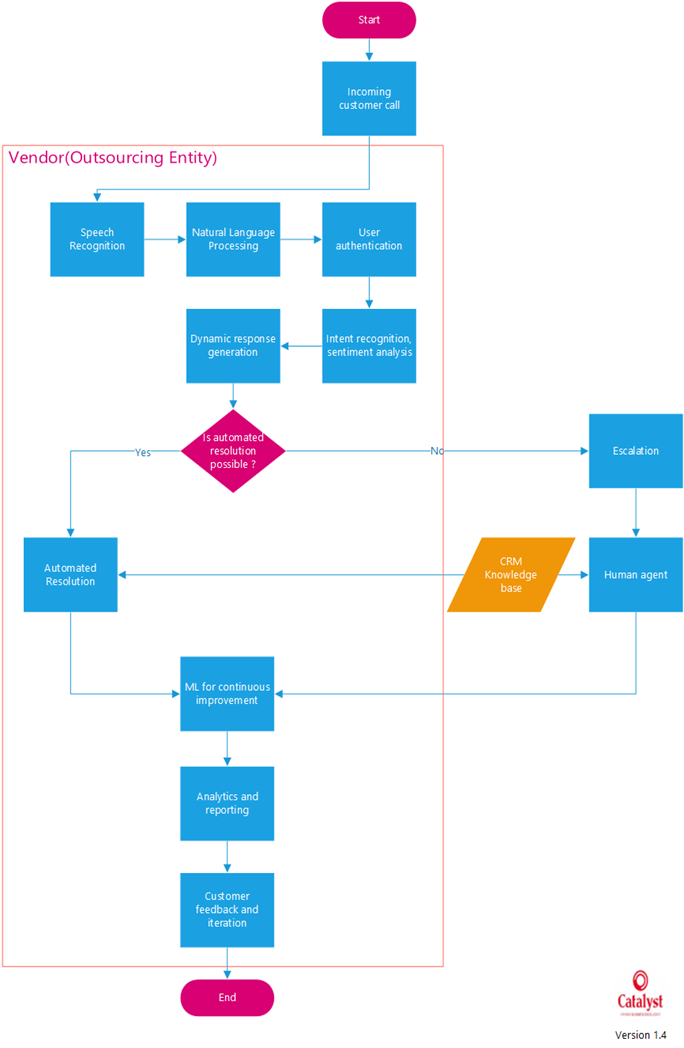
* + - 1. Availability of labeled or annotated training data for training custom AI models, especially for option 1.
      2. Access to relevant customer data, knowledge bases, and other information sources for training and testing the voice assistant system.
      3. Compliance with data protection laws and regulations, ensuring that sensitive customer information is handled securely and ethically.

## Operational Prerequisites

* + - 1. Definition of clear use cases, objectives, and success criteria for the voice assistant system to guide development and evaluation.
      2. Identification of key stakeholders and decision-makers within the organization responsible for overseeing the implementation and adoption of the voice assistant system.
      3. Development of a deployment plan, including rollout strategy, user training, and support mechanisms to ensure successful adoption and utilization of the system.

# POSSIBLE SOLUTION #1 – (Outsourcing AI Customer Service Call Platform)

## High-Level Design



This solution entails contracting with a third-party vendor to develop, implement, and manage an AI customer support call platform. The supplier shall bear liability for (Trowbridge, n.d., para 1-8):

1. **AI Development & Integration:** Construct and integrate AI chatbots to answer standard questions and perform simple troubleshooting, trained on Rogers’s customer service data.
2. **Platform Management:** establishing and overseeing the infrastructure of the AI call platform, including regular updates and maintenance.
3. **Call Routing & Overflow Handling:** creating a system that would transfer calls from customers to the AI platform for simple questions and to Rogers' internal support agents for more complicated issues.
4. **Performance Monitoring & Reporting:** delivering frequent performance reports to Rogers on the platform, including data on call deflection rates, customer satisfaction ratings, and agent productivity.

## Impact Analysis

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### Impact on People

1. **New Skill Set:** More training might be required for Rogers' agents in order to work with the AI platform and manage escalated problems.
2. **Change in Jobs:** Depending on the volume of calls deflected by the AI, there might be a decrease in the number of calls handled by human agents, which could necessitate a change in job responsibilities or a reduction in workforce size. This eventually means that human agents have to either let go of them or learn new, pertinent skills.
3. **New Hires:** Rogers might have to bring on more employees with experience in analytics and AI management to supervise the contracted platform.

### Impact on Process

1. **Call Routing and Triage:** The AI platform will add a new level of call routing and triage, which could simplify the procedure and shorten client wait times.
2. **Knowledge Management**: The AI platform will need strong knowledge management procedures to guarantee that the knowledge base is accurate and up to date, reflecting modifications to the policies, services, and products.
3. **Performance Monitoring:** It will be necessary to set up new procedures for tracking the AI platform's effectiveness, getting user input, and enhancing its features over time.

### Impact on Technology

1. **Integration with Existing Systems:** The AI platform must be seamlessly integrated with the current call center infrastructure, billing systems, CRM systems, and other pertinent data sources of Rogers Telecommunication.
2. **Data Security and Privacy:** To secure customer data and guarantee compliance with pertinent regulations, strong data security and privacy measures must be put in place.
3. **Infrastructure and Scalability:** More infrastructure and processing power might be needed for the AI platform to manage the expected call volume and maintain scalability as demand increases.

## Out of Scope

The following aspects are considered out of scope for this solution:

1. **In-house development of the AI Customer Service Call Platform:** This solution only concentrates on contracting with a third-party vendor to develop and implement the AI platform.
2. **Hardware procurement and setup:** Unless otherwise stated in the contract, the vendor will be in charge of providing the infrastructure and hardware needed for the AI platform.
3. **Integration with other business units or departments outside of customer service:** Future integrations with other business divisions will be handled separately, with the AI platform's primary focus being customer service operations.

## Risk and Mitigation

1. **Vendor Selection and Performance Risk**: Making the incorrect vendor choice or running into problems with the vendor's AI platform performance could cause delays, extra expenses, and a less than ideal customer experience.

**Mitigation:** Make sure to evaluate vendors thoroughly, obtaining references and documentation of successful implementations in comparable settings. Implement strong performance monitoring systems and service-level agreements (SLAs).

1. **Data Security and Privacy Risk:** If customer data handling and system integration are not handled appropriately, there may be security and privacy risks.

**Mitigation:** Adopt stringent measures for data security and privacy, such as encryption, access controls, and adherence to pertinent laws (such as PIPEDA). Perform penetration tests and security audits on a regular basis.

1. **Integration and Compatibility Risk:** There may be delays and operational disruptions as a result of difficulties integrating the AI platform with Rogers Telecommunication's current systems and infrastructure.

**Mitigation:** Make sure the vendor has expertise in integrating with comparable systems and carrying out extensive compatibility testing. Create backup plans and rollback techniques in case there are integration problems.

1. **User Adoption and Change Management Risk**: The AI platform may not be implemented as effectively or as profitably as it could if customers or customer service representatives are resistant to using it.

**Mitigation:** To address concerns and encourage user adoption, put in place thorough training programs for customer service representatives and create efficient communication and change management plans. Obtain input, then adjust as necessary.

1. **Vendor Lock-in Risk:** The AI platform's heavy reliance on one vendor may result in vendor lock-in, which makes it challenging to move providers or adjust to shifting market conditions.

**Mitigation:** Strike flexible terms in the vendor's contract to guarantee that systems and data can be moved if necessary. In the future, look into possibilities for open-source alternatives or multi-vendor support.

# POSSIBLE SOLUTION #2 – (Using Third-party AI products)

## High-Level Design

A screenshot of a computer screen

Description automatically generated

## Impact Analysis

1. **Better customer satisfaction:** Implementing an AI customer support system can greatly improve customer experiences by responding quickly and accurately. Customers benefit from instant support, which increases satisfaction and thereby loyalty.

2**. Increased efficiency in handling routine queries:** Routine queries can be automated, freeing up customer support personnel’s time to focus on resolving only more challenging complaints. This can also reduce the manpower required to efficiently run the operation.

3. **Time and Cost Savings**: The automated resolution ends up saving costs for customer support operations. The resources can also be scaled easily according to future needs with minimal overhead.

4. **Cost of implementation:** The upfront expenditures of deploying an AI customer service system, which include technology purchase, development, and training will involve sizeable investment.

Out of Scope

1. **Not a complete replacement:** This AI technology is supposed to supplement and improve the existing customer service, rather than to completely replace it. Human empathy and complex problem-solving abilities are critical in certain situations.

2. **Does not have complete autonomy:** The AI system functions under supervision whenever needed and is not assumed to have complete autonomy. Human interaction will be required for key decisions and escalated complaints.

## Risk and Mitigation

1. **Inaccurate Responses:** The AI providing inaccurate or inappropriate responses is a very evident risk. This can be overcome by regularly updating the knowledge base, conducting extensive testing, and implementing user feedback mechanisms.

2. **Integration challenges:** Since this implementation is retrofitting the existing customer care system, parts of the new system must be well integrated with existing databases and systems. This could prove a potential risk. To mitigate the same, we must conduct thorough compatibility assessment tests and use standardized integration protocols.

3. **Legal and Compliance Issues:** Since the responses are dynamically generated, there is always a risk of not being compliant with regulatory policies. This can only be handled using a robust governance framework and adequate testing and training.

4. **Dependency on External Services:** A critical chunk of the process depends on the products of external services. This could risk being overdependent. Diversity of vendors, wherever possible, should be established, and comprehensive SLAs must be drafted to deal with the same.

# POSSIBLE SOLUTION #3: Do Nothing Method

## Impact Analysis

### Impact on people

**Hiring Requirements:** If AI automation is not implemented, Rogers may need to hire more employees to handle the increasing workload. This could result in increased operating expenses and resource pressure.

### Impact on Processes

**1. Inefficiencies and Service delays:** Customer service procedures may continue to be ineffective and error-prone in the absence of AI automation. Customer satisfaction might drop, and response times may increase when queries are handled manually.

**2. Scalability Problems:** When customer demands increase, manual processes may find it difficult to grow efficiently. This could result in backlogs, a lag in problem solving, and eventually, the loss of customers.

**3. Absence of Data Utilization:** AI-powered systems have the capacity to collect and examine enormous volumes of client data, offering insightful information for forecasting customer demands and enhancing services. Rogers might lose out chances to improve client experiences and drive company growth in the absence of such technologies.

Impact on Technology  
  
**1. Lack of Innovation:** Not utilizing AI voice assistant technology means passing on chances to use advanced solutions to enhance customer support. This might cause the market to stagnate and give Rogers a competitive edge over rivals.

**2. Dependency on Outdated Systems:** Rogers may be forced to continue using antiquated systems, which are expensive to maintain and inefficient, if new technology is not adopted. This could hinder creativity and make it more difficult for the company to adjust to changing customer demands.

**3. Danger of Falling Behind**: Companies who do not adopt AI and automation run the risk of lagging behind their rivals in the quickly evolving technology world of today. In order to be competitive and draw in new business, Rogers can find it difficult to stay up to date with developments and trends in the market.

## Risks and Mitigation

### Risks

**1. Increased Operational Costs:** In the absence of AI automation, Rogers may still place a significant emphasis on using human customer care agents to answer questions. The need for more employees to handle the same volume of requests could lead to higher operational expenditure.   
  
**2. Reduced Efficiency:** Responding to consumer inquiries manually can be laborious and error-prone, which reduces the speed at which problems are resolved and responses are given. Customers may become unhappy as a result, harming the business's reputation.   
 **3. Limited Scalability:** As customer demands increase, manual customer support procedures could find it difficult to grow as efficiently. This may result in bottlenecks, extended wait times, and trouble managing periods of high client traffic.

**4. Missed Opportunities for Personalization:** AI voice assistants can analyze client data and offer responses or recommendations that are tailored to the individual. In the absence of this technology, Rogers would lose out on possibilities to customize their offerings to suit the unique preferences of each client, which would lower client satisfaction and loyalty.   
  
**5. Competitive disadvantage:** Customers expect quick and effective service in the digital age. In comparison to rivals that provide automated and simplified customer care solutions, Rogers may face a competitive disadvantage if it chooses not to deploy AI voice assistant customer service.

### Mitigations Strategies

**1. Continuous Process Improvement:** To cut down on inefficiencies and simplify manual customer service procedures, put continuous process improvement efforts into action. This could entail streamlining processes, cutting out pointless effort, and putting best practices for providing customer service into effect.   
  
**2. Investing in Training and Development:** To improve the skills and talents of customer service agents in efficiently managing consumer questions, offer them extensive training and development programs. This can lessen the impact of not having AI automation by giving staff members the tools they need to provide excellent customer support.   
 **3. Improved Customer Self-Service choices:** To enable customers to independently find solutions to their questions, invest in self-service choices including online FAQs, chatbots, and self-service portals. This can enhance overall service efficiency and lessen the workload for human customer support staff.

**4. Emphasis on Customer Experience**: Prioritize providing outstanding customer experiences by means of tailored interactions and anticipatory correspondence. By encouraging client loyalty and satisfaction, this can help set Rogers apart from competitors and reduce the negative effects of not having an AI voice assistant for customer support.   
  
**5. Keep an Eye on Industry Trends:** Keep up with developments in the field of customer service automation and upcoming technologies. This can assist Rogers in finding fresh chances for innovation and sustaining its competitiveness in the quickly changing market.

# Evaluation Criteria

People

1. **Performance:** Determine how well the AI platform performs by analyzing the percentage of accurately responding to customer inquiries to indicate how well it can comprehend and reply to queries.  
   Accuracy rate of correctly addressed inquiries:
   * <80% - Poor
   * 80% - 90% - Fair
   * 90% - 95% - Good
   * 95% - Excellent
2. **Proactive:** Evaluate the platform's capacity to anticipate typical problems and offer preventive solutions to assess how proactive it is in meeting customer needs.  
   Percentage of preventive solutions provided:
   * <30% - Low
   * 30% - 50% - Moderate
   * 50% - 70% - High
   * 70% - Very High
3. **Intuitive:** Assess the AI platform's user interface and interaction flow for intuitiveness, considering user input about the easy nature of menu navigation and feature access.  
   User satisfaction with UI and interaction flow:
   * <6/10 - Below Average
   * 6/10 - 7/10 - Average
   * 7/10 - 8/10 - Good
   * 8/10 - Excellent
4. **Responsive:** Measure how long the AI platform takes to start and finish customer interactions.  
   The average time taken to initiate and complete customer interactions:
   * 2 minutes - Slow
   * 1 - 2 minutes - Moderate
   * 30 seconds - 1 minute - Fast
   * <30 seconds - Very Fast
5. **Adaptability:** Assess how well the platform accommodates users with various technical and language proficiency levels and their preferences and communication styles.  
   User satisfaction with adaptability:
   * <70% - Low
   * 70% - 80% - Moderate
   * 80% - 90% - High
   * 90% - Very High
6. **Empathy:** Assess how well the platform communicates empathy and comprehension throughout customer interactions, offering comfort and emotional support as needed.  
   Customer satisfaction with empathy conveyed:
   * <70% - Low
   * 70% - 80% - Moderate
   * 80% - 90% - High
   * 90% - Very High
7. **UI/UX:** Analyze the platform's user interface (UI) and user experience (UX), the overall ease of use and satisfaction of users with this platform service, using metrics such as the average time required to complete a customer call, the percentage of users who can operate the system successfully without assistance, and the user satisfaction ratings from surveys or other channels.

Process

1. **Productivity:** Determine how productive the platform is by counting the number of calls it handles in an hour. The higher the number, the more effective the platform. Number of calls handled per hour:

* <500 - Not productive
* 500 - 1000 - Little productive
* 1000 - 1500 - Productive
* 1500 - 2000 - Highly Productive
* 2000 - Max productivity

1. **Efficiency:** Evaluate how well the platform handles calls, considering variables like call duration, resolution time, and resource usage per call.

Average call duration:

* + 7 minutes - Lengthy
  + 5 - 7 minutes - Moderate
  + 2 - 5 minutes - Efficient
  + <2 minutes - Very efficient

1. **Automation:** Determine how much the call-handling process is automated by considering the percentage of regular questions handled without human participation.

Percentage of routine inquiries handled without human intervention:

* + <50% - Low
  + 50% - 70% - Moderate
  + 70% - 90% - High
  + 90% - Very High

1. **Flexibility:** Assess the platform's flexibility in various customer service situations and ability to handle various question types efficiently. Additionally, the process's flexibility to accommodate changes in it for future demands and changes will be assessed.

User satisfaction with the platform's ability to handle various query types:

* + <70% - Low
  + 70% - 80% - Moderate
  + 80% - 90% - High
  + 90% - Very High

1. **Scalability:** Evaluate the platform's capacity to grow by increasing call volumes and customer service demands. The platform's potential to handle more calls than standards without affecting performance will be checked.  
   Percentage increase in call volumes before performance degradation:

* <50% - Low scalability
* 50% - 100% - Moderate scalability
* 100% - 150% - High scalability
  + 150% - Very high scalability

1. **Reliability:** Evaluate the platform's reliability in providing consistently excellent customer service by considering variables, including error handling capabilities, call drop rates, and system uptime.  
   Uptime percentage:
   * <99% - Unreliable
   * 99% - 99.9% - Reliable
   * 99.9% - Highly reliable
2. **Incident Management:** Assess the incident management features of the platform, such as ticketing systems and escalation protocols, to guarantee prompt customer service and efficient resource utilization.  
   Average resolution time for critical issues:
   * 1 hour - Slow
   * 30 minutes - 1 hour - Moderate
   * 15 - 30 minutes - Fast
   * <15 minutes - Very Prompt
3. **Knowledge Management:** Evaluate the platform's knowledge management system to ensure that an extensive collection of FAQs, troubleshooting manuals, andproduct/service details is arranged and updated to assist with customer inquiries.  
   Accuracy rate of provided information:
   * <80% - Low
   * 80% - 90% - Moderate
   * 90% - 95% - High
   * 95% - Very high
4. **Quality Assurance:** Evaluate the platform's quality assurance procedures for monitoring call quality, conformity to service guidelines, and legal compliance to preserve service excellence.  
   Average quality score based on customer feedback and call monitoring:
   * <80% - Low
   * 80% - 90% - Moderate
   * 90% - 95% - High
   * 95% - Very high
5. **Compliance:** Check if the platform complies with industry standards and legal obligations, such as GDPR, to safeguard customer privacy and data security.

Technology

1. **Security:** Assess the platform's adherence to industry standards and laws, including GDPR and HIPAA, and its security procedures for safeguarding sensitive data and client information.
2. **Availability:** Measure the platform's availability in terms of uptime; high availability(uptime) guarantees continuous customer support activities.  
   System uptime:
   * <99%: Low availability
   * 99%-99.9%: Moderate availability
   * >99.9%: High availability
3. **Data Specification:** Evaluate the platform's compliance with data standards and specifications to ensure it works with current data systems and protocols and is compatible.

Compliance with data standards:

* Non-compliant: Incompatible with existing systems
* Partially compliant: Some compatibility issues
* Fully compliant: Compatible with standards

1. **Encryption:** Examine the platform's encryption features, considering the robustness and efficiency of the used encryption methods, to ensure the security of data transmission and storage. Encryption steps and levels are considered.
2. **Backup Mechanisms:** Assess the platform's backup procedures for preserving and safeguarding important information and configurations. Regularity of call transcripts, user preferences, and system settings are backed up to avoid data loss in case faults or system failures are checked.
3. **Disaster Recovery Planning:** Evaluate the platform's disaster recovery plans and protocols to lessen the effects of unanticipated incidents or interruptions. How these plans are well detailed for different purposes such as continuity, system recovery, and data restoration to reduce downtime and preserve service availability are checked.
4. **Speech Recognition Accuracy:** Assess how well the voice recognition technology on the platform interprets and transcribes client requests, which can reduce miscommunication and mistakes during encounters. Accuracy rate in transcribing inquiries:
   * <90%: Inaccurate
   * 90%-95%: Moderate accuracy
   * >95%: High accuracy
5. **Natural Language Understanding:** Evaluate how well the platform can interpret difficult questions, slang, and colloquial language to respond to users with accurate and relevant information.  
   Ability to interpret complex queries:
   * <70%: Poor understanding
   * 70%-85%: Moderate understanding
   * >85%: High understanding
6. **API Accessibility:** Assess how easily application programming interfaces (APIs) on the platform can be customized and extended, facilitating seamless interaction with third-party tools and services like databases and CRMs.

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