

Strategizing Digital Disruption

A Transformation Roadmap for Global FinTech Corp.

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Module 3 Assignment

Analytical Use Case Prioritization Based on Data Considerations

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Background

Global FinTech Corp (GFC) is a multinational financial services provider with a diversified business model that caters to individual consumers, small to medium businesses, and large corporations. The company has been a leader in traditional banking services for over a century, but in recent years, it has also made substantial strides in the field of digital finance.

Headquartered in London, UK, GFC operates in over 50 countries, employing more than 100,000 people worldwide. It manages assets exceeding \$2 trillion and serves over 20 million customers globally. As one of the largest global banks, it offers a wide range of services, including retail banking, corporate banking, investment banking, asset management, and insurance.

Despite the company's success, the past decade has seen an industry-wide shift in the financial sector. The advent of financial technology or "fintech" has started to disrupt traditional banking practices, leading to a shift in consumer expectations. Consumers increasingly demand seamless, round-the-clock digital experiences. This change is driven by a younger, more tech-savvy generation of consumers, but it has also been accelerated by the global shift towards digital services resulting from the COVID-19 pandemic.

In response to these changes, GFC has undertaken a digital transformation journey to remain competitive and deliver on evolving consumer demands. The company has already made significant progress in this regard, with over 60% of its transactions now being conducted digitally.

However, GFC recognizes that to remain at the forefront of the industry, it must go beyond simply digitizing existing services. The company must also harness the power of data and emerging technologies to deliver innovative financial products and services that

anticipate and meet its customers' needs. Therefore, GFC is seeking to leverage technologies such as artificial intelligence, machine learning, natural language processing, and blockchain in its operations.

Moreover, GFC also understands that to fully realize its digital ambitions, it must reimagine its internal processes and structures. This includes adopting agile methodologies, fostering a culture of innovation, upskilling its workforce, and integrating technology into every facet of its operations. These efforts are being led by a dedicated digital transformation team that reports directly to the company's executive leadership.

GFC's strategic vision is to become a global leader in digital financial services. This ambition is underpinned by a mission to deliver personalized, seamless, and secure financial services that empower its customers and drive inclusive growth. The company's executive leadership is fully supportive of this vision and is committed to investing the necessary resources to achieve it.

As part of this transformation journey, GFC has posted a large project for bid. It aims to hire an analytical consultancy to design a Digital Transformation Roadmap that focuses on several key areas such as digital personal assistants/chatbots, fraud detection, credit scoring, NLP for customer contracts, portfolio management, high frequency trading, algorithmic trading, investment predictions, process automation, consumer marketing and cross-selling, trade settlements, and an automated wealth advisor. The successful consultancy will play a critical role in shaping the company's future and cementing its position as a global leader in digital finance.

Transformation Areas

In today's rapidly evolving digital landscape, financial institutions must leverage emerging technologies to stay competitive and meet the evolving needs of their customers.

For GFC, this means exploring a range of transformation opportunities that could fundamentally enhance its operations and customer experience. From deploying AI-powered digital assistants to harnessing machine learning for superior fraud detection and credit scoring, the potential for digital disruption is immense. Similarly, applying Natural Language Processing (NLP) for customer contracts can revolutionize contract management, while improved portfolio management, high-frequency trading, and algorithmic trading can bring unprecedented efficiency and profitability. Investment predictions, powered by sophisticated analytics, can significantly enhance financial outcomes for GFC's clients. Process automation can dramatically reduce costs and improve service delivery. Targeted consumer marketing and cross-selling, powered by data analytics, can enhance customer acquisition and retention. Enhancements in trade settlements can streamline trading operations, and an Automated Wealth Advisor, or 'Wealth Bot,' can democratize wealth management services, reaching a wider customer base. Let's explore these transformation opportunities in more detail.

1. **Digital Personal Assistants/Chatbots:** The integration of AI-powered chatbots will revolutionize customer service within GFC. In the initial stages, these chatbots will handle simple customer queries, significantly reducing response times and enhancing the customer experience. As these AI tools learn from interactions, they will be able to tackle more complex questions, reducing the load on human agents, thereby cutting costs. Additionally, integrating chatbots with product recommendation systems can create personalized up-selling and cross-selling opportunities, driving further revenue.
2. **Fraud Detection:** A progressive AI-based fraud detection system will drastically minimize GFC's exposure to fraudulent transactions and associated financial losses. Initially, these systems would identify basic patterns of fraudulent activities. As they learn over time, they could predict sophisticated fraud patterns in real-time, securing customer accounts and boosting overall customer confidence in the platform. This

will also help maintain the company's reputation and foster stronger customer relationships, thereby indirectly driving customer retention and acquisition.

3. **Credit Scoring:** The deployment of AI and machine learning for credit scoring will enable GFC to make more precise credit decisions. The firm will evolve from using traditional credit scoring methods to advanced models that leverage alternative data sources. The system will improve over time, allowing the company to extend services to a broader customer segment previously viewed as high-risk or credit-invisible, resulting in increased revenues and market share.
4. **NLP for Customer Contracts:** Implementation of Natural Language Processing (NLP) for customer contract analysis will boost operational efficiency. The primary step will involve using NLP for automatic extraction and categorization of key contractual obligations, which will significantly reduce manual effort and related errors. As the system matures, it can handle more sophisticated analyses like identifying anomalies in contractual terms or predicting disputes, providing an additional layer of risk management.
5. **Portfolio Management:** AI-enabled portfolio management will transform GFC's approach to investment advice. Initially, personalized portfolio strategies based on the customer's risk profile and financial goals will be provided. As the models mature, they can consider more nuanced factors like market sentiment analysis, improving the quality of advice and potentially leading to higher returns for customers, thereby enhancing customer satisfaction and loyalty.
6. **High Frequency Trading and Algorithmic Trading:** These automated trading strategies can provide GFC a competitive edge in the market. Initially, these systems will execute trades more quickly and efficiently, improving profitability. As they evolve, they can adapt in real-time to market dynamics, providing even better trading

performance. This could attract more active traders to GFC, boosting its trading volumes and revenues.

7. **Investment Predictions:** AI-driven investment predictions can become a significant differentiator for GFC. Initially, these systems will provide forecasts based on historical data and market trends. Over time, they will incorporate more complex data like real-time news, social media sentiment, etc., to make more precise predictions, which could lead to higher returns for customers and boost the company's reputation as a sophisticated investment platform.
8. **Process Automation:** Automating routine processes can lead to cost savings and improved accuracy. Initially, automation will be applied to simple, repetitive tasks. As the technology and implementation improve, more complex tasks can be automated, leading to substantial operational efficiencies and cost reduction, which can be reflected in competitive pricing for customers, thereby enhancing customer acquisition and retention.
9. **Consumer Marketing and Cross-Selling:** Advanced analytics can enable GFC to create highly targeted marketing campaigns and identify cross-selling opportunities. In the initial stages, personalized offers based on customer's past behavior will be provided. As the analytics mature, they can predict future customer needs based on their life events, behavior patterns, and other factors, leading to even more effective marketing and cross-selling, enhancing customer lifetime value.
10. **Trade Settlements:** Automation in trade settlements will reduce the trade processing time, decrease errors, and improve customer satisfaction. Initially, basic automation will reduce manual effort. Over time, sophisticated technologies like blockchain could be incorporated for real-time, decentralized settlements, further enhancing efficiency and reducing counterparty risk.

11. Automated Wealth Advisor (Wealth Bot): An automated wealth advisor can democratize wealth management services. Initially, the bot will provide basic advice on portfolio allocation. As the bot learns and improves, it will provide more sophisticated advice, considering factors like tax implications, estate planning, etc., leading to a more comprehensive wealth management service. This can attract a larger customer base, boosting assets under management and revenues.

Data Assumptions

GFC's digital transformation journey hinges not just on the effective use of technology, but also on the proper utilization of data. Data fuels the insights, predictions, and automation that power the transformation. However, deriving meaningful information from data requires clear assumptions about the data's nature. In the context of this digital transformation project, certain assumptions about data types, structures, volumes, and frequencies have been made for each of the transformation focus areas. These assumptions will set the groundwork for data gathering, processing, analysis, and model building. The specific data assumptions associated with each transformation opportunity are:

1. Digital Personal Assistants/Chatbots: Assumption is that a substantial amount of structured customer interaction data is available and can be used to train AI models. This includes customer queries, responses, and historical chat logs.
2. Fraud Detection: It's assumed that GFC has a large amount of structured transactional data, customer data, and historical fraud instances data to train robust machine learning models for fraud detection.
3. Credit Scoring: It's assumed that the company has access to a wide range of data about customers' financial histories, including loan repayment records, income information, and credit utilization rates.

4. NLP for Customer Contracts: It's assumed that there are vast amounts of unstructured contract data that could be digitized and processed. It includes different formats and languages as GFC operates globally.
5. Portfolio Management: It's assumed that sufficient structured customer data, financial market data, and investment data are available. This data will enable the creation of personalized portfolio management solutions.
6. High Frequency Trading and Algorithmic Trading: Assumption is that high-quality, real-time market data is readily available. Also, historical trading data for back-testing and refining algorithms is assumed to be present.
7. Investment Predictions: It's assumed that GFC has a rich source of structured historical trading data and financial market data which could be used to train predictive models.
8. Process Automation: It's assumed that the organization has an understanding of its various operational processes and that data related to these processes is available in a structured format.
9. Consumer Marketing and Cross-Selling: Assumption is that customer behavior data, purchase history, personal demographics, and interaction data are available in structured form, allowing for sophisticated customer segmentation and personalized marketing strategies.
10. Trade Settlements: It's assumed that detailed and structured data regarding trade orders, trade details, counterparty information, and settlement instructions are available.
11. Automated Wealth Advisor (Wealth Bot): It's assumed that the organization has structured customer profile data, investment preferences, risk tolerance data, and financial market data to build an efficient automated wealth advisor.

It's worth noting that the quality and completeness of this data will greatly influence the success of each transformation initiative. Additionally, the organization's ability to manage and analyze this data effectively will also play a crucial role.

Data Source Assessment Ratings

1. Digital Personal Assistants/Chatbots

- Types of Input Data Needed (Customer, Transaction, Product, and Services data):
5/5. Both customer interaction data and product and service information are essential to train and maintain the chatbots.
- Is Success Measurement Possible with this data? 5/5. Success is measurable through customer satisfaction scores, reduction in response times, and handling capacity.
- Data Availability: 4/5. The company already has access to a significant volume of customer interaction data.
- Volume of Data Needed: 4/5. Substantial volume of interaction data is necessary for chatbot training and upkeep.
- Frequency of Data Needed? 5/5. Constant input of new data is needed for the chatbots to learn and adapt.
- Are the data Structured or Unstructured? 3/5. The data is a mix of structured (product info, service info) and unstructured (customer interactions) data.
- Data Quality: 4/5. The quality of the customer interaction data can be quite high but can vary based on the recording methods.
- Availability of match Keys and Business Knowledge around Data: 5/5. The company likely has a deep understanding of its customer data and can align it well with business needs.

2. Fraud Detection

- Types of Input Data Needed: 5/5. Transaction data, customer data, and product/service data are all crucial to detect anomalies.
- Is Success Measurement Possible with this data? 5/5. The success of fraud detection can be measured by the reduction in fraudulent transactions.
- Data Availability: 4/5. The company already has a significant amount of transaction data, but additional external data (such as blacklisted entities) might be needed.
- Volume of Data Needed: 5/5. Fraud detection systems are more effective with larger volumes of data.
- Frequency of Data Needed? 5/5. Fraud detection needs continuous data to spot unusual activities instantly.
- Are the data Structured or Unstructured? 4/5. Most of the data will be structured, but there might be some unstructured data such as notes in transaction records.
- Data Quality: 5/5. High-quality data is essential for effective fraud detection.
- Availability of match Keys and Business Knowledge around Data: 4/5. The company should have a good understanding of its transaction data but might need to enhance its understanding of fraud patterns.

3. Credit Scoring

- Types of Input Data Needed: 5/5. A variety of data including customer demographic data, transaction data, and credit history data is necessary for credit scoring.
- Is Success Measurement Possible with this data? 5/5. Success is measurable by the accuracy of the credit scores in predicting default rates.

- Data Availability: 4/5. The company already has a lot of customer and transaction data but may need more detailed credit history data.
- Volume of Data Needed: 4/5. Large volumes of data are needed to build robust credit scoring models.
- Frequency of Data Needed: 4/5. Regular updates to the data are needed, but not as frequently as for fraud detection or chatbots.
- Are the data Structured or Unstructured? 4/5. Most of the data will be structured, but there could be some unstructured data, such as notes on customer records.
- Data Quality: 5/5. High-quality data is crucial for accurate credit scoring.
- Availability of match Keys and Business Knowledge around Data: 4/5. The company likely has good knowledge of its data but may need to learn more about credit scoring techniques.

4. NLP for Customer Contracts

- Types of Input Data Needed: 5/5. The contract data is essential for this transformation opportunity.
- Is Success Measurement Possible with this data? 5/5. Success is measurable by the efficiency and accuracy of contract processing.
- Data Availability: 3/5. The company will have its contracts, but it may be challenging to digitize and structure them.
- Volume of Data Needed: 3/5. The volume of data depends on the number of contracts the company has.
- Frequency of Data Needed? 2/5. This depends on the rate at which the company enters into new contracts or modifies existing ones.
- Are the data Structured or Unstructured? 2/5. Contracts are typically unstructured data.

- Data Quality: 4/5. The quality of the contract data is important to ensure accurate processing.
- Availability of match Keys and Business Knowledge around Data: 3/5. The company will need to develop business knowledge about NLP techniques.

5. Portfolio Management

- Types of Input Data Needed: 5/5. Customer profile, investment history, and market data are essential for this purpose.
- Is Success Measurement Possible with this data? 5/5. Success can be measured by portfolio performance and customer satisfaction.
- Data Availability: 4/5. While the company has a lot of internal data, external market data may need to be sourced.
- Volume of Data Needed: 4/5. Extensive data is required to create customized portfolios.
- Frequency of Data Needed? 4/5. The data need regular updates to adapt to market changes.
- Are the data Structured or Unstructured? 4/5. Most data will be structured, but some unstructured data might be used (e.g., news).
- Data Quality: 5/5. High-quality data is necessary for effective portfolio management.
- Availability of match Keys and Business Knowledge around Data: 4/5. The company needs to understand portfolio management and the data it requires.

6. High Frequency Trading and Algorithmic Trading

- Types of Input Data Needed: 5/5. Real-time market data and historical trading data would be extremely crucial.

- Is Success Measurement Possible with this data? 5/5. The success of trades can be measured by comparing predicted and actual outcomes.
- Data Availability: 3/5. While the company will have access to historical trading data, real-time market data might need to be sourced from third parties.
- Volume of Data Needed: 5/5. The algorithms would require a large volume of data for optimization.
- Frequency of Data Needed? 5/5. Real-time data is a must for high frequency and algorithmic trading.
- Are the data Structured or Unstructured? 5/5. Almost all of the data used will be structured.
- Data Quality: 5/5. The quality of data is crucial for successful trades.
- Availability of match Keys and Business Knowledge around Data: 4/5. The company needs to have a deep understanding of financial markets and trading algorithms.

7. Investment Predictions

- Types of Input Data Needed: 5/5. The necessity of historical transaction data, market data, and customer profile data is undeniable.
- Is Success Measurement Possible with this data? 5/5. Success can be measured by comparing predictions with actual outcomes.
- Data Availability: 4/5. The company has access to internal data, but market data may need to be procured from third parties.
- Volume of Data Needed: 5/5. The more data available, the more accurate the predictions.
- Frequency of Data Needed? 4/5. Investment predictions would require a continuous inflow of recent data to remain relevant.

- Are the data Structured or Unstructured? 4/5. Most data will be structured, but some unstructured data (e.g., news reports) might be used.
- Data Quality: 5/5. High-quality data is crucial for accurate predictions.
- Availability of match Keys and Business Knowledge around Data: 4/5. The company will need to enhance its understanding of predictive analytics.

8. Process Automation

- Types of Input Data Needed: 5/5. Data from multiple operations including customer interactions, transactions, and internal processes would be needed for automation.
- Is Success Measurement Possible with this data? 5/5. Success of process automation can be measured by efficiency gain, error reduction, and cost savings.
- Data Availability: 4/5. Most of the necessary data would be internally available, but there might be some gaps.
- Volume of Data Needed: 4/5. A large volume of data would be needed to identify and understand the processes suitable for automation.
- Frequency of Data Needed? 3/5. Once the processes are identified and automated, continuous data might not be necessary.
- Are the data Structured or Unstructured? 4/5. Both structured (transactions, process metrics) and unstructured data (emails, documents) might be required.
- Data Quality: 5/5. High-quality data is essential for identifying and optimizing the right processes.
- Availability of match Keys and Business Knowledge around Data: 4/5. Understanding of internal processes and their related data is required.

9. Consumer Marketing and Cross-Selling

- Types of Input Data Needed: 5/5. Customer profile data, transaction data, and product data would be critical.
- Is Success Measurement Possible with this data? 5/5. Success can be measured by the effectiveness of marketing campaigns and cross-sell ratios.
- Data Availability: 4/5. Most of the necessary data would be internally available.
- Volume of Data Needed: 4/5. A significant volume of data is needed to understand customer preferences and behavior.
- Frequency of Data Needed? 4/5. Regularly updated data would be required to stay in tune with changing customer preferences.
- Are the data Structured or Unstructured? 4/5. While a lot of structured data will be used, unstructured data such as customer feedback might also be useful.
- Data Quality: 5/5. High-quality data is crucial to accurately understand and predict customer behavior.
- Availability of match Keys and Business Knowledge around Data: 4/5. The company would need to understand the relationship between various data elements and consumer behavior.

10. Trade Settlements

- Types of Input Data Needed: 5/5. Transaction data and counterparty data are crucial for settlements.
- Is Success Measurement Possible with this data? 5/5. The success can be measured by the reduction in time and errors in trade settlements.
- Data Availability: 4/5. Most of the necessary data would be internally available.
- Volume of Data Needed: 4/5. A significant volume of data would be involved in trade settlements.

- Frequency of Data Needed? 4/5. Data would be needed as and when trades happen.
- Are the data Structured or Unstructured? 5/5. Almost all the data would be structured.
- Data Quality: 5/5. High data quality is essential to avoid errors in settlements.
- Availability of match Keys and Business Knowledge around Data: 4/5. The company needs to understand the intricacies of trade settlements and related data.

11. Automated Wealth Advisor (Wealth Bot)

- Types of Input Data Needed: 5/5. Customer profile, investment history, risk tolerance, and market data are all necessary.
- Is Success Measurement Possible with this data? 5/5. Success can be measured by customer satisfaction and investment outcomes.
- Data Availability: 4/5. Most of the necessary data will be available internally, but market data may need to be sourced.
- Volume of Data Needed: 4/5. While a vast amount of data is necessary, this is primarily customer specific.
- Frequency of Data Needed: 4/5. Updated data is required regularly but not continuously.
- Are the data Structured or Unstructured? 4/5. Most data will be structured, but unstructured data (e.g., customer feedback) could also be used.
- Data Quality: 5/5. The data quality is crucial for the wealth bot to provide accurate advice.
- Availability of match Keys and Business Knowledge around Data: 4/5. The company will need to enhance its knowledge of AI-based wealth advisory.

Summary – Data Source Assessment Ratings

Use Case	Types of Input Data Needed	Is Success Measurement Possible with this data?	Data Availability	Volume of Data Needed	Frequency of Data Needed?	Are the data Structured or Unstructured?	Data Quality	Availability of match Keys and Business Knowledge around Data	Average of scores
High Frequency Trading and Algorithmic Trading	5	5	3	5	5	5	5	4	4.625
Fraud Detection	5	5	4	5	5	4	5	4	4.625
Trade Settlements	5	5	4	4	4	5	5	4	4.500
Investment Predictions	5	5	4	5	4	4	5	4	4.500
Portfolio Management	5	5	4	4	4	4	5	4	4.375
Digital and Personal Assistants / Chatbots	5	5	4	4	5	3	4	5	4.375
Consumer Marketing and Cross-Selling	5	5	4	4	4	4	5	4	4.375
Automated Wealth Advisor (Wealth Bot)	5	5	4	4	4	4	5	4	4.375
Process Automation	5	5	4	4	3	4	5	4	4.250
Credit Scoring	5	4	4	4	4	5	4	4	4.250
NLP for Customer Contracts	5	5	3	3	2	2	4	3	3.375

Synopsis – Data Source Assessment Ratings

High Frequency Trading and Algorithmic Trading and Fraud Detection stand at the top of the ranking with an average score of 4.625. The nature of these areas necessitates real-time, high-quality, and structured data, which is highly available in GFC. These transformation initiatives could potentially yield a high impact on the firm's trading capabilities and risk management while also driving significant value.

Next are Trade Settlements and Investment Predictions, both scoring an average of 4.5. These transformation opportunities align well with the strategic mission of the company and would impact a large volume of customers. Their success can also be directly measured, leading to noticeable improvements in operational efficiency and customer satisfaction.

Portfolio Management, Digital and Personal Assistants/Chatbots, Consumer Marketing and Cross-Selling, and Automated Wealth Advisor (Wealth Bot) follow closely with an average score of 4.375. These transformations would enhance the customer experience and broaden the firm's service offerings. With the high-quality data available, these initiatives are expected to have a significant impact on customer outcomes.

Process Automation and Credit Scoring come next with an average score of 4.25. The potential benefits from these transformations range from enhanced operational efficiency to expanded market segments, although the availability of all necessary data may vary.

Finally, NLP for Customer Contracts is at the bottom with an average score of 3.375. Despite the lower score, this transformation could still drive substantial value by streamlining contract management and reducing legal risks. The key challenge lies in handling the variety of unstructured data inherent in contracts, requiring a more specialized data management approach.

Overall, GFC's journey to digital transformation appears promising across the board, with several high-impact opportunities identified. The successful execution of these initiatives, however, would largely depend on the effective utilization and management of data.

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