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INTRODUCTION

Many people in the UAE use Careem as their transport service provider and they recently initiated an Open Technology Innovation Challenge to look for ways in which they could integrate Augmented Reality (AR) in their services. The purpose for this project is to enhance user experience through the use of AR, ease the pickup process and in the process make it fun for the users to engage with their environment. This occasion was precipitated by the potential of augmented reality in developing interactive and pedagogical travel experiences. This is well aligned to Careem's value proposition of innovation and excellent customer solutions. With the use of AR in its app, Careem could revolutionize how customers locate their drivers, explore places, and even engage with physical space. By overlaying digital info on reality, AR can enrich onsite operations with real-time navigational assets, safety measures, and location-specific information. This can make the journey more interesting and efficient. The goal of the challenge is, thereby bringing Careem to the forefront of the digital transformation of the transportation industry in UAE. This will show that the country is serious about adopting new technologies that make life better for both residents and visitors. By integrating AR into their app, Careem will not only revolutionize the users' travel experience but also establish itself as a trailblazer in the transport industry where the AR feature will give it a competitive edge and also transform the market dynamics.

Stakeholders & Impact for AR

Main Stakeholders

Customers: People who use Careem can expect a better and more interactive service. With AR technology, it's possible to make navigation easier and faster, which makes it easier to find a vehicle.

Captains (Drivers): AR can help you find your way around more easily, find pickup spots faster, and get real-time traffic updates, all of which can make your job more satisfying and improve operational efficiency.

The Corporate Team at Careem: Adding AR can help everyone from top executives to customer service reps make better decisions based on data and make the service delivery model better overall.

Investors: Since they have a financial stake in the business, investors would expect that AR technology would help Careem's market share and profits by making the company stand out.

Second-Level Stakeholders

Government: As groups that work to make public services better, government and regulatory bodies should support new ideas that make transportation safer and more efficient.

Local Businesses: Since AR can help users find places of interest and businesses, they may see more foot traffic and more engaged customers.

Collaboration with firms in technology: Companies that work with Careem on AR technology can get their products approved and possibly see their businesses grow.

Environmental Groups: Better routes and less time spent on the road can lower emissions, which is in line with the goals of environmental activists who want to protect the environment.

Evaluation Criteria for Augmented Reality Innovations at Careem

For an in-depth analysis of the augmented reality (AR) ideas submitted for Careem's Open Technology Innovation Challenge, it is necessary to use a set of organized and diverse evaluation criteria. These criteria are the most important part of deciding whether an innovation is feasible, scalable, and could have a big impact.

- **Strategic Alignment:** New ideas must be carefully checked to see if they fit with Careem's main strategic goals. This is to make sure that they support the company's goal of changing transportation forever through better technology.
- **Customers Needs:** How much the new idea improves the use for the customer and how it affects user engagement, service customization, and overall satisfaction.
- **Feasibility Analysis:** It is important to carefully investigate whether the AR solutions are technically and operationally possible. This includes figuring out what technologies are needed, who has the right knowledge, and how well they can work with existing infrastructure.
- **Scalability Potential:** The technology will be tested to see how well it can be added or changed to work in all the different areas that Careem covers. This is to make sure that growth paths aren't slowed down by too many complicated features.
- **Cost Analysis:** This will include comparing the costs of development and operation to the potential savings or increases in revenue.
- **Sustainability Impact:** The innovation will be judged on how well it helps Careem reach its environmental sustainability goals, with a focus on how it reduces the company's carbon footprint and makes eco-friendly business practices easier to implement.
- **Competitive Distinctiveness:** It will be found out how much the innovation gives Careem an edge over its competitors. This will make sure that the innovation offers either completely new or significantly better features.

Target Audience for Augmented Reality Implementation at Careem

Careem's AR implementation targets a diverse audience with different needs. Tech-savvy passengers who typically incorporate the latest technologies into their daily lives, including transportation. The typical tech-savvy passenger resides in a large city and is most likely a young professional who is quick to adopting technology, specifically those that add value to their daily lives. This market segment needs cutting edge technologies that offer a good user experience. The addition of AR in the app therefore makes it more appealing to them because it makes it more interactive and user-friendly. As a result, tech-savvy passengers will embrace the newly enhanced app more because it aligns with their attraction to technological advancements and also adds value to their commuting experience.

Another important group is business professionals, who value timeliness, being reliable, and providing excellent service to fit their work-centered schedules. For this group, time is always of

essence, and they need efficient transport from one meeting or event to the next. AR is useful to business professionals in various ways; firstly, it helps them identify the faster route to use, secondly, it provides clear directions to the venue ensuring navigation is easier which minimizes the chances of arriving late, and thirdly, it contains security features that provide an added layer of protection, especially when they are new to an area. Additionally, the sleek user interface

The tourism industry, which includes both tourists and people who live and work in the UAE, is also a key target market. Tourists need to find their way around a destination, and to feel safe despite being in an unfamiliar location. AR facilitates smoother navigation and will therefore help tourists move around with more ease, find their way around unfamiliar routes, and access content that is specific to the area. In addition, AR enhances their safety, thus, they will have a more enjoyable experience, knowing that they are safe from being robbed or scammed by scrupulous taxi drivers. AR is an extremely practical feature to tourists, it is available in multiple languages enabling tourists from diverse backgrounds access the app conveniently. It also acts as a guide, providing information on the history, landmarks, customs and cultures, thus making their travel experience better and help them become more immersed in the culture.

30 Possible Innovations

1. Virtual Cockpit for Captains
2. Virtual Interior Customization
3. Interactive AR Maps for Passengers
4. Emergency Procedure Overlays
5. Safety Procedures Training
6. Feedback and Rating System
7. AR Vehicle Maintenance Tutorials
8. AR Fare Estimator
9. Dynamic AR Advertisements
10. Eco-Friendly Ride Visuals
11. Passenger Entertainment Portal
12. AR Reward and Loyalty Program
13. Augmented Destination Previews
14. AR Fitness Challenges
15. Cultural Landmarks Information
16. Virtual Meet-and-Greet
17. AR-Assisted Parking
18. Virtual assistant for booking services
19. Stress-Free Pick-up Locator
20. Guided AR tours
21. Language Translation Overlays
22. Navigation for Walking Segments
23. In-Ride Virtual Shopping
24. AR Captains' Log
25. AR Route Optimization
26. AR to help passengers identify items
27. Real-Time Weather Display
28. Social Interaction Features
29. Augmented Reality Games
30. AR tools designed to assist passengers with disabilities

Shortlisting Process

Stage One: Setting Criteria and Gathering Data

To begin with, a complete set of criteria is created, these criteria will be used to guide the evaluation process, some of these criteria are finding a need or gap in the market, checking to see if there are any competitors, looking at the market's growth potential, costs, funding needs, financial viability, risk factors, and the availability of management skills. When both qualitative and quantitative data are gathered for each criterion, a yes/no evaluation is made.

Stage Two: Quantitative and Qualitative Analysis

Then, each proposed AR innovation goes through two separate analyses.

Quantitative techniques are used to look at metrics like expected market growth, possible profit margins, and cost structures.

Qualitative technique is used to rate the quality of an innovation by looking at things like how unique it is, how well it can use existing management skills, and how easily it can be funded.

Stage Three: Innovation Scoring and Ranking

Each innovation is given a score based on the data gathered and the criteria that have already been set. using a weighted scoring model in which more important criteria are given more weight. For example, "identified market need/gap" and "no or few existing competitors" may be seen as more important than "low fixed costs." This is because Careem's strategy is to be the market leader and set itself apart. After that the innovations are ranked by their total scores to find the ones with the most potential (smartsheet, n.d.).

Stage Four: Risk Assessment

Each innovation goes through a risk assessment at the same time, using data to find possible market operational and financial risks. Innovations are also looked at to see how well they can be used to track and reduce risks with a focus on those where risks can be seen and managed. This step is very important for making sure that the innovations can work and last.

Stage Five: Shortlisting Decision

A full review of the data-driven scores and risk assessments is part of the final shortlisting of innovations. The most promising innovations that meet a strong market need, show sound financial management, and pose manageable risks are chosen to move on to the next phase. This choice is backed up by strong evidence from the real world and strategic alignment with Careem's goals.

Shortlisting & Impact

In order to achieve the goal of implementing Augmented Reality (AR) into the functioning of Careem, a short list of innovations was selected. The rationale for this gradual approach was to identify the right combination of innovations that aligned with the three primary objectives of market relevance, technical viability, and process effectiveness. After analyzing each criterion, it was possible to identify a few options that were clearly superior to everything else. This was mainly because they aligned with Careem's strategic objectives, could potentially position it as a market leader, and would enhance customers' experience.

1. AR Assisted Navigation for Drivers and Passengers

This new idea was chosen because it has the potential to make navigation much easier and pick-ups and drop-offs more accurate, which will have a direct effect on operational efficiency.

Impact: The AR Assisted Navigation system is meant to change the way ride-hailing works by giving drivers and passengers better ways to find their way. This system can make it faster to find people, plan routes in real time to avoid traffic, and direct people to the exact pick-up and drop-off points.

Risk: If the system fails or has a glitch, it could stop working and stop the service. Concerns about privacy may also come up because these systems would need to be able to see exact location data. There could also be opposition from users who don't like new technologies or from drivers who find it hard to get used to the new system.

2. Interactive Safety Features Through AR

Safety is very important to ride services, so new ideas that could give drivers and passengers real-time safety information really stood out. This decision was based on the idea that it would improve user safety and maybe lower the costs of accidents.

Impact: The purpose of this innovation is to integrate safety information into the drivers. People riding in cars might feel safer with real-time safety features like route tracking and emergency service locations. This new idea could improve Careem's safety record and customer trust by possibly lowering accident rates and the costs that come with them.

Risk: Creating and upkeep of an AR system with so many features would need a lot of money. It's very important that safety alerts are correct and reliable, since wrong information could cause dangerous situations.

3. AR-based Entertainment and Advertising in the Car

The innovation was chosen because it can both improve the customer experience and create new ways for businesses and marketers to work together within the app. In a market where keeping customers is very important, this new idea is a smart way to get people more involved.

Impact: This new idea is meant to give passengers entertainment and promotional items while they ride, which could make Careem stand out from other companies that offer the same service. By using AR for entertainment, the ride time could be turned into a chance to interact with content, services, and ads that are specific to the area. This would not only make things better for customers, but it could also lead to new ways to make money through targeted ads and partnerships.

Risk: The challenges include making sure the content is relevant and interesting to a wide range of customers, finding the right balance between useful content and ads so they don't ruin the user experience, and dealing with any security issues that might come up with in-app marketing.

Final Selection

The shortlisted innovations were compared for technical feasibility, user adoption potential, cost, and alignment with Careem's strategic vision.

Each innovation's scalability and market impact has been measured using pilot test and market research metrics.

After combining this analysis, the innovation with the greatest potential to improve operational efficiency, customer satisfaction, and service value was chosen. Careem's commitment to strategic based on research innovation was highlighted by this selection process.

The final selection came up to AR Assisted Navigation system.

Implementation

Brief Description

Augmented reality (AR) technology is used in the AR Assisted Navigation system to make the transportation services process better. This system aims to make navigation more accurate and passenger comfort better by adding AR overlays to the driver's real-time view. For drivers, it helps them find the best routes, and for passengers, it shows them where to meet the driver and lets them know how the ride is going.

Required Resources

- They used their knowledge of AR software development to make the app.
- Collaboration with AR hardware manufacturers if specialized gear is needed.
- Cloud services are used to host the app and keep track of data.
- Expertise in user experience design (UX design) to make sure the app is easy to use.
- Training programs for drivers to familiarize them with the new system.

Budgets

- The first software is expected to cost \$500,000.
- Possible hardware investment of \$200,000 if AR devices are needed for drivers.
- Cloud hosting and maintenance: Approximated at \$100,000 yearly.
- Training and support: About \$50,000 for training and support during the initial launch.

Schedule to Implement

1. Six months for the development phase.
2. Three months of controlled testing as a pilot.
3. Two months for training and the first launch.

Key Performance Indicators for Success:

- **Reduction in pickup time deviations:** aim for a 20% improvement.
- **Increase in driver efficiency:** Aim for a 15% rise in the number of daily rides each driver does.

- **Customer satisfaction:** Aim for a 10% rise in ride satisfaction.
- **Decrease in fuel consumption:** A 10% drop in fuel use is what you should aim for thanks to better routing.

Conclusion

As a result of careful planning and strategic evaluation, Careem chose an Augmented Reality (AR) innovation for implementation. Careem found a solution that will improve the transportation services experience for drivers and passengers using empirical data and stakeholder participation. The chosen AR innovation will improve operational efficiency, customer engagement, and Careem's leadership in transportation technology. The expected impact on market share, customer loyalty, and operational agility suggests this initiative could help Careem succeed.

The study finds that in today's fast-paced business environment, embracing technological advancements is crucial to the continued growth of the company. It is therefore necessary to embrace a culture of innovation of change. The integration of AR into the app will enable Careem to position itself as an innovative pioneer in the industry, which will enhance its competitiveness. Financially, the cost of developing and implementing a more advanced app may be high in the short term. However, the added AR feature will lead to increased customer loyalty as well as new customers, which will enhance its success. Careem's image and perception will also improve significantly, making it attractive to clients, investors and partners. Therefore, by embracing innovation and a positive attitude towards change, the company is positioning itself to thrive in the future.

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