**Question 6: Study how to estimate mobile app development cost.**

**Introduction**

Estimating mobile app development cost is crucial to ensure projects are completed within budget and on time. The following steps below can be use to obtain this estimated cost.

**1. Define Project Requirements**

1. **Identify the app's purpose, features, and functionality**.

Complexity of features: More complex features, such as payment gateways or social media integration, increase development time and cost.

Number of features: More features require more development time, increasing costs. E.g Facebook and Go student.

Determine the platforms (iOS, Android, or both).

1. **Consider the technology stack, architecture, and infrastructure**.

Technology Stack, Architecture, and Infrastructure:

- Choice of programming languages, frameworks, and libraries: Some technologies, such as React Native, may be more cost-effective than others, like native iOS and Android development.

- Architecture and infrastructure: Complex architectures or infrastructure requirements, such as backend servers or databases, increase development time and cost.

**2. Choose a Development Methodology**

A. **Waterfall**: Linear approach with fixed requirements.

- Higher upfront costs due to detailed planning and documentation.

- Less flexibility, leading to potential rework and cost overruns

B. **Agile**: Iterative approach with flexible requirements.

- Lower upfront costs due to iterative development and flexible requirements.

- More flexibility, reducing rework and cost overruns.

C. **Hybrid**: Combination of Waterfall and Agile.

- Estimated cost: Moderate (between Waterfall and Agile).

**3. Estimate Development Time**

**A. Break down the project into smaller tasks.**

- Designing the user interface

- Developing the backend API

- Implementing payment gateway integration

**B. Estimate the time required for each task considering:**

- Complexity of the task: The more complex the task is, the more time is allocated to it.

- Development team's experience and efficiency: Critical tasks are allocated to the development team with more experience and efficiency, in order to have the best result within a significant time.

**4. Calculate Development Costs**

**A. Determine the hourly rate of the development team.**

**Def**: The hourly rate of a development team refers to the amount of money charged by the team for one hour of their work

**Factors affecting the hourly rate**

1. Experience and Expertise: More experienced and skilled developers typically charge higher hourly rates.

2. Technology Stack: Developers with expertise in specific technologies, such as Native iOS/ Android may charge higher than React Native or Flutter, due to their high demand

**B. Multiply the estimated development time by the hourly rate.**

**C. Add additional costs (Design and prototyping, testing, Deployment and maintenance**, **Marketing and promotion).**

**5. Consider Additional Costs**

**A. Design and prototyping.**

1. **UX/UI Design:** Estimate the hourly rate for user experience (UX) and user interface (UI) design and multiply by the estimated time for Design

- Hourly rate: 500 FCFA – 1,500 FCFA per hour

- Estimated time: 40-100 hours

- Total cost: 20,000 FCFA - 150,000 FCFA

**Prototyping**: Estimate the number of hours required for creating a functional prototype and multiply by the hourly rate of the expertise.

- Hourly rate: 500 FCFA - 1500 FCFA per hour

- Estimated time: 20-50 hours

- Total cost: 10,000 FCFA -75,000 FCFA

**B. Testing and quality assurance.**

**Manual Testing**: Estimate the number of hours required for manual testing, and multiply by the hourly rate of the expertise.

- Hourly rate: 200 FCFA – 500 FCFA per hour

- Estimated time: 40-100 hours

- Total cost: 8,000 FCFA – 50,000 FCFA

**Automated Testing**: Estimate the number of hours required for automated testing, and multiply by the hourly rate of the expertise.

**C. Deployment and maintenance**.

**Deployment**: Estimate the cost of deploying the app to app stores or play store

**Ongoing Maintenance and Updates**: Estimate the cost of ongoing maintenance and updates.

- Cost: 1,000 FCFA - 5,000 FCFA per month

**D. Marketing and promotion.**

**App Store Optimization (ASO):** Estimate the cost of ASO services.

- Cost: 100,000 FCFA -200,000 FCFA

2. **Social Media Marketing**: Estimate the cost of social media marketing services.

- Cost: 1,000 FCFA -5,000 FCFA per month

3. **Influencer Marketing**: Estimate the cost of influencer marketing services.

- Cost: 1,000 FCFA-10,000 FCFA per month

**Total additional Cost**

The estimated costs for design and prototyping, testing and quality assurance, deployment and maintenance, and marketing and promotion are all added to get the **total additional cost.**

**Conclusion:**

By following these steps, you can create a comprehensive and accurate estimate for mobile app development costs.