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Developing an application like "IkoniniApp" to rival WhatsApp for video conferencing, supporting up to 100 concurrent users, presents several cross-cutting issues that are critical for its success. These issues span various domains such as software engineering, networking, user experience design, and security. Here are some key considerations:

1. **Scalability:** Ensuring that the application can handle a large number of concurrent users without compromising performance or quality is crucial. This involves designing a scalable architecture using techniques such as load balancing, distributed computing, and server clustering (Barron, 2018).
2. **Network Bandwidth:** High-quality video and audio streaming require sufficient network bandwidth. Optimizing data compression techniques and implementing adaptive bitrate streaming can help manage bandwidth usage effectively (Duan, 2018).
3. **Low Latency:** Minimizing latency is essential for real-time communication applications like video conferencing. Implementing protocols such as WebRTC (Web Real-Time Communication) and optimizing server-client communication can help reduce latency (Hansen, 2018).
4. **User Interface Design:** Providing a seamless and intuitive user experience is critical for user adoption. Designing a user-friendly interface with features such as easy navigation, clear audio and video controls, and responsive layout can enhance usability (Baxter, Courage, & Caine, 2015).
5. **Cross-Platform Compatibility:** Supporting multiple platforms (e.g., iOS, Android, web) ensures broader accessibility and user reach. Developing native or cross-platform applications using frameworks like React Native or Flutter can help achieve compatibility (Whitemore, 2019).
6. **Security and Privacy:** Protecting user data and ensuring privacy compliance are paramount. Implementing end-to-end encryption, secure authentication mechanisms, and adherence to regulatory standards (e.g., GDPR) can enhance security (Katz & Lindell, 2015).
7. **Quality of Service (QoS):** Maintaining consistent audio and video quality is essential for a positive user experience. Monitoring network performance, implementing QoS protocols, and optimizing media codecs can improve overall QoS (Zhang & Fitzek, 2015).
8. **Reliability and Redundancy:** Ensuring high availability and reliability is crucial to prevent service disruptions. Implementing redundant servers, failover mechanisms, and disaster recovery plans can mitigate downtime risks (Al-Fuqaha et al., 2015).
9. **Performance Optimization:** Optimizing application performance involves reducing resource utilization, improving response times, and minimizing bottlenecks. Profiling code, optimizing algorithms, and leveraging caching mechanisms can enhance performance (Yan & Wen, 2018).
10. **Feedback and Iteration:** Continuous feedback from users is essential for identifying issues, gathering requirements, and refining features. Implementing agile development methodologies and conducting usability testing can facilitate iterative improvements (Sharma, Lawrence, & Lowe, 2018).

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