Now the user service is complete with all necessary features. Here's a comprehensive checklist of all implemented functionalities:

1. Core User Management: ✅ CRUD operations ✅ Profile management ✅ Role management ✅ Status management ✅ User preferences ✅ User sessions
2. Authentication & Security: ✅ Password management with bcrypt ✅ Password history and reuse prevention ✅ MFA setup and verification ✅ Backup codes ✅ Email verification ✅ Account locking after failed attempts ✅ Session management and tracking
3. Data Management: ✅ Redis caching ✅ Cache invalidation ✅ Transaction support ✅ Bulk operations
4. Search & Filtering: ✅ Basic search ✅ Advanced search with filters ✅ Role-based filtering ✅ Pagination support
5. Event System: ✅ RabbitMQ integration ✅ Event publishing for all operations ✅ Asynchronous processing
6. Activity & Audit: ✅ Activity logging ✅ Login attempt tracking ✅ Session tracking ✅ Password change history
7. Error Handling: ✅ Comprehensive error handling ✅ Detailed logging ✅ Transaction rollback ✅ Custom error types
8. Security Features: ✅ Rate limiting support ✅ Account locking ✅ Session invalidation ✅ Secure password policies

The service now provides a complete solution for user management with robust security features, efficient data handling, and comprehensive auditing capabilities. Each feature is properly integrated with the event system for asynchronous processing and the caching layer for optimal performance.