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### **Twenty Years of Quantum Error Correction**

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Starting around 1991 It became clear that the emerging quantum computer would need error correction to be sensible. Almost immediately, Berthiaume, Deutsch, and Jozsa announced the first key ideas (e.g., allowed codewords should live in a well-defined subset of the Hilbert space), and in less than ten years, the problem was “solved.” This solution had many components, involving insights from quantum teleportation, the concept of noisy entanglement and its improvement, creative borrowings from classical binary and quaternary codes, pure group theory, and the reliable working of noisy automata. Actually, this “solved” problem continues to produce new difficulties and insights up to the present day, and it is increasingly central for the question of what we do next in the progress towards a functioning quantum computer.