Abstract
Nowadays the security risk management play a crucial role, which is applied to the entire life cycle of information systems and communication technologies but still so many models for security risk management are non-practical, therefore, it should be measured and improved. In this paper, a novel approach, in which Analytic Hierarchy Process (AHP) and Quantum Particles Swarm Optimization (QPSO) can be combined with some changes, is presented. The method consists of; firstly, the analytic hierarchy structure of the risk management is constructed and the method of QPSO comprehensive judgment is improved according to the actual condition of the information security. Secondly, the risk degree put forward is QPSO estimation of the risk probability, the risk impact severity and risk uncontrollability. Finally, it gives examples to prove that this method Multi Objectives Programming Methodology (MOPM) can be well applied to security risk management and provides reasonable data for constituting the risk control strategy of the information systems security. Based on the risk management results, the targeted safety measures are taken, and the risk is transferred and reduced, which is controlled within an acceptable range.

References

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Index Terms

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Keywords