Enterprise resource planning system is a management information system integrating and managing different business operational processes for an enterprise; ERP can handle daily business transactions in real time and perform monthly accounting operations. Business operations require enterprise resources like people, machines, materials, and money. The activities of these resources generate both profits and costs for a company. To balance between profit and cost of operating business, firms need ERP to integrate and optimize operations among enterprise resources so that firms can quickly respond to business environment change and obtain operation efficiency. The IC design firms play a very important role in Taiwan’s high-tech industry since the economic output of Taiwan’s IC design industry ranks second in the world. Compared to most manufacturing industries’ ERP requirements which share many common features, IC design industry often companies many unique specifications different from those common features. Thus, an IC design firm must carefully evaluate its unique requirements to select an appropriate ERP solution and conduct detailed return on investment analysis of that solution to ensure the successful implementation of ERP system. In light of the complexities of evaluating ERP system, this research will aim at finding the critical success factors (CSF) for the ERP evaluation through vendor analysis of two popular ERP systems, Oracle and SAP, and analyzing interview responses from key ERP users and decision makers of an IC design firm. The finding of this research will help IC design firms choose an ERP solution that most fit their needs.

關鍵字：Enterprise Resource Planning 、IC design industry 、Critical Success Factor