

## Abstract

**Title:** ICT in Construction  
**Sub-Title:** An Investigation into ERP Systems in the Leading Construction Firms  
**Researcher:** Ken Muir  
**Supervisor:** Ken Thomas  
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**Purpose:** In the current economic climate, main contracting organisations are significantly reducing tender sums to secure building contracts. At present, main contractors are under increased pressure to deliver these building contracts on budget and are seeking methods of reducing company overheads. This dissertation originates from the researcher observing inefficiencies within a main contracting organisation's ICT (Information Communications Technology) processes. It was anticipated that an ICT system, such as ERP (Enterprise Resource Planning), could benefit a main contracting organisation in terms of increased efficiencies and productivity. The findings and recommendations were expected to be used by the company, and other main contractors, to ascertain the benefit of implementing an ERP system within their organisations.

**Methodology:** A comprehensive literature review was undertaken but the lack of specific and relevant reference sources relating to ERP within the Irish construction industry was identified. The methodology used for conducting the primary research was to focus on one case study of a main contractor, who currently does not have an ERP system implemented, to identify the benefits that ERP could provide. To supplement the case study, interviews were conducted with another main contractor, who has implemented an ERP system, and ERP software vendors to determine the existing ERP systems on the market. A telephone survey of the main contractors in Ireland was also carried out to ascertain the extent to which ERP is used within the Irish construction industry.

**Findings:** The research identified numerous benefits which main contractors can avail of by the successful implementation of an ERP system. The main benefits that ERP systems can provide are an increase in efficiency and productivity within head office administrative processes. The widespread adoption of electronic trading can also provide a significant reduction in overheads, while ERP is essential in the facilitation of electronic trading. Many forms of ERP exist within the Irish construction industry at present; however, the research illustrated how the estimating and surveying ICT systems within the main contractors lack integration with these ERP systems. It was established that a comprehensive evaluation and implementation process is fundamental to ERP implementation success. While it was also found that an investment in ERP implementation would be beneficial to main contractors in the medium to long term, it would be considered improbable that a board of directors would approve such an investment in the current economic climate.

**Keywords:** ICT in Construction, Enterprise Resource Planning, ERP Implementation.