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AN EXPLORATION OF FIRM-WIDE INFORMATION TECHNOLOGY INFRASTRUCTURE INVESTMENT AND SERVICES

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Abstract

Information technology (IT) infrastructure investments are a major component of firm investment in information technology. Because these investments are frequently made in anticipation of business developments, their subsequent benefits can be difficult to track and quantify (Grossman and Packer 1989). Infrastructure investments are often viewed only from a cost perspective, as any gains come indirectly from the business applications they enable (Parker and Benson 1988). We define IT infrastructure as the base foundation of IT capability, in the form of reliable services, shared throughout the firm and usually provided by the information systems (IS) function. The IT capability includes both the technical and managerial expertise required to provide reliable services (McKay and Brockway 1989; Weill 1993; Weill, Broadbent and St. Clair 1995).

This study examines the rationale behind decisions on firm-wide infrastructure investments, the types of infrastructure-related services provided by firms, and levels of IT infrastructure expenditure. A major goal of the study is to establish whether certain IT infrastructure approaches are adopted for particular strategies or by certain industries. Twenty-five large firms in three industries — finance (banking and insurance), process manufacturing and retailing — are included in the study. An exploratory research approach is used involving data collection and onsite interviews about the nature of corporate level and business unit level IT infrastructure investments and decision making in each firm.

Preliminary results from seventeen firms (thirty-four business units) suggest that firms view the role of firm-wide IT infrastructures in three different ways: utility, dependent and enabling. In addition, each view involves different cost justification and investment levels, exhibits different patterns of service provision and infrastructure reach and range (Keen 1991), and has different expectations for the types of return on investment. Eight different infrastructure services were identified as being common to all firms, while an additional fifteen services were provided in only a subset of firms.

Initial data suggest that, over the last five years, these seventeen firms spent between 3% and 100% of their IT investment on providing firm-wide infrastructure with an average across all firms of 46% increasing at 9.5% per annum. During this period, investment in firm-wide IT infrastructure averaged 4.1% of the firm's total expenses and 2.0% of revenue, with the rate of increase being significantly higher in retail firms. The nature of the firms' centralized IT investment also changed with infrastructure accounting for 76% of corporate IT and increasing at 5.7% per annum.

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