Economies of scale in ICT: how to balance infrastructure and applications for economies of scale in ICT and business

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SUMMARY

For ICT management economies of scale are becoming increasingly important, because as the technology matures, particularly its cost-efficient application becomes crucial. This study offers new insight into the economies of scale of ICT departments. We found evidence that particularly infrastructure related investments leverage more efficient use of ICT resources. In this research, the relationships between ICT management policies, ICT assets, and ICT expenditure have been analyzed. Drawing from data on Housing Corporations, Municipalities and Hospitals, we found evidence that in these relatively low ICT spending organizations, ICT infrastructure expenditure appears to be the most important ICT management policies criterion. The measured economies between low and high infrastructure spending organizations are on average more than 20% for their operational ICT labour and for their total ICT costs. A second ICT management policies criterion investigated in this research was the maturity of the ICT organization, as measured according to COBIT 4.0. A positive relation between ICT expenditure and the maturity of the ICT organization could, however, hardly be validated.

We have also analyzed the relation between ICT management policies, ICT assets, and Organization performance, and concluded that Housing Corporations should spend a certain minimum of their ICT expenditure on applications, to realize economies of scale in their Business processes. Practically, it is suggested that Housing Corporations should spend as a minimum 42% of their ICT expenditure on infrastructure (costs defined as the sum of hardware, software and human resources). Besides, a minimum of 47% should be spent on applications. For Hospitals a comparable advice is to spend a minimum 54% on infrastructure and as a minimum 42% on applications. In this research we could not determine percentages for Municipalities, as the available data did not permit us to draw a conclusion. The theoretical contribution of this research lies in the formulation of a definition of the Efficacy of ICT management policies and the measurement of this construct. The analysis of the ICT and business productivity is based upon theories about systems, cybernetics and complexity. We introduce a new method to measure the relationship between the Efficacy of ICT management policies and cost savings in ICT and business processes by economies of scale.