

The Impact of New Information Architectures on Industry and Government Transformation

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Information and communication technologies (ICT) enable re-engineering business and government organizations and mirror flexible, fast, focused and friendly organizational structures.

Meeting appropriate standards of service is today key to effectiveness of organizations. ICT architectures should be designed accordingly to achieve competitive levels of flexibility and responsiveness, moving away from outdated conceptions of information systems. They constitute an enabler of the overall business strategy, an agent of the transition from mechanical to organic models of organizations, and a catalyst of productivity. In this framework, ICT infrastructures are the hub of different design dimensions, including people, technology, business activities, and information.

New distributed information infrastructures can empower integration of activities across departments, functions, suppliers and customers, give access to information and knowledge, connect knowledge workers. Telecommunications-based transactions offer immediate links between the firm and its external context, overcoming physical boundaries, and offering the basis for the development of models of "network companies".

By separating storage from processing, distributed architectures offer new design dimensions through the distinction between the accumulation of information value (storage) and its delivery (processing).

The integration of the information industry offers in a near perspective multimedia technologies and broadband network services capable to support innovative designs for organizational processes and human resources.

Architectures have to be planned and created for guiding and facilitating the migration from today fragmented and sub-optimized information systems to the target platforms; insufficient definition of business objectives and of transformation needs and lack of experience with the new diversified information technologies are the main problems in managing the migration process. Information service resources must restructure their organization, processes, skills and performance measurements accordingly, in order to meet their new strategic and operational role.

The significant investments for the new information infrastructures should be economically justified. The influence of ICT investments on productivity is

traditionally analyzed correlating a single investment with a benefit index. The problem is the difficulty of isolating benefits delivered by ICT from other factors contributing to a firm's business performance. Moreover, benefits of today ICT are often linked to differentiation and flexibility more than to cost reduction.

Consequently, the impact of ICT investments have to be measured on global indexes of firm performance, and quantitative cost-benefit analysis criteria have to be combined with more qualitative ones.

Benchmarking approaches could be usefully applied in the evaluation of ICT architectures. Existing benchmarking methods focus on specific problems and do not address the whole information integrating infrastructure, its adherence to business requirements, and its performance: new models and metrics are needed for assessing the value of ICT solutions against business process requirements.