

Preface

Without going deep into the history of computing, one can say that modern electronic computing has played some part in business for the last half of the century. During all of this time, there has been an ongoing discussion on the strategic meaning of information technology and on the need for computers and computing power.

In the beginning, the notion of computing was connotatively near to its original meaning: calculating. Computers were used to help people in various tasks that required much mechanical calculation: ordering, storing data, etc. At that time computers were merely machines — like any other mechanical devices people had invented to ease their tasks.

Ever since the notion of computing started to relate to the data processing of information, the whole idea has become somewhat mystified. Humans have long talked about an electronic brain: an electronic machine that would have the intelligence to produce information. This discussion will not go into the semantics of words such as “data” and “information.” Simply put, when one adds some reasonable use and direction to data, it becomes information.

The title of the book itself — “Business Strategies for Information Technology Management” — raises some semantic questions. Terminology in the field of information systems (IS) and in information technology management (ITM) appears to be manifold, overlapping, confusing, and even faltering. For the field to become disciplined, a thorough framework is needed to provide a common vocabulary: everyone would speak the same language. A brief review of the terminology, therefore, is necessary because there exists a somewhat confusing jargon from different quarters of IS. The terms information technology (IT); the newcomer, information and communications technology (ICT); information systems strategy (ISS); strategic information systems (SIS); information [systems] management [strategies] (IMS); management information systems (MIS); decision support systems (DSS); and even data processing (DP) are used to relate the phenomenon to the context. These acronyms mystify the field even more in laypeople’s eyes. The scientific community should know better.

Sometime in the 1950’s, data processing became information processing with computers which were, in the beginning, mere calculators. Computers began to form IT organizations when conjoined with the knowledgeable people who

used them. Hirschheim's notion (1983) that computer-based IS has typically evolved in haphazard fashion — stemming from the 1960's and the 1970's, when people did not know the actual possibilities of IS — is pessimistic. The systems had grown over many years and had been products of numerous, unrelated user requests. The systems tended to originate individually and to develop independently of one another. Hirschheim wrote his article in the early 1980's — in the era of huge corporate mainframes, which were supposed to solve all information problems. In the latter half of the 1980's, there was much discussion of centralization vs. decentralization in the literature; but today in the age of [personal] microcomputers, networked organizations, wideband telecommunications, and the Internet this discussion seems to have diminished. Individuals work with their own personal computers, in which they store programs used daily and personal files. The remainder of information is gathered in various databases — data warehouses — with easy retrieval through intra- or interorganizational networks or through the internet.

In the 1980's, several authors praised IT: it had become the ultimate weapon with which to sustain competitive advantage amid constantly toughening competition. Subsequently doubts diminished the praise, and today many business managers regard IT as a commodity: as a non-core resource (such as law or accounting) that one can outsource, but that one cannot do without. I argue that IT is different: that it cannot be treated as are other functions; that it is more valuable; and that, in some cases, it makes a significant difference (for example, in organizations in which it has prevailed, IT is the link that holds the network together).

Corporate infrastructure — large corporate information systems — emerged as a concept in the 1980's. The systems were standardized and were run from huge mainframe central computers, which were located at several computer centers. The data was distributed to users through “dumb” terminals at each location. This created centralized IT departments on one hand, and distributed systems and applications on the other hand.

To support their organizational structures many traditional, multinational firms relied upon inter-linked networks of mainframe computers, which radiated from headquarters; with smaller, mid-sized systems in regional offices and data centers; culminating with minicomputers in smaller, subsidiary locations. Large firms had formerly used a multitude of data centers operating in a multitude of locations. A few data “super centers” were sustained in the field by many smaller supporting centers. This framework of computer technology was linked together over international borders to serve corporate communications and control systems.

Traditional conglomerates had a series of “nearly-separate” businesses known as divisions. Divisions could be described as “firms within a firm.” Each division had separate functional offices for accounting, for purchasing, for production, for sales, etc. A division was sold or procured as a stand-alone

business quite often, or a strategic alliance was formed. Its internal structure did not change much, usually, during such activity; and its IT function was linked and aligned to existing corporate systems as much as possible. (A good example of this kind of conglomerate is IBM in its late 1980's form. The traditional structure, however, drove IBM to the verge of bankruptcy and to survive, it had to change drastically.)

The strategy-structure-system trilogy described above was a revolutionary discovery in the 1920's. It was a wonderful way to define large companies; and it supplied an effective intellectual framework within which to govern and coordinate immense conglomerates. Times change, however: companies with clear strategy and structure became more systematic. Predictable and machine-like systems of control, of course, were not helpful (Ghoshal, Bartlett, & Moran, 1999). The shift to a new paradigm in the digital economy can only happen through organizational learning, which is only enabled through a dynamic view of the firm and of entrepreneurship.

Operators in international markets often perform with their business partners occasional, one-time transactions through electronic devices. In today's digital economy, extensions of the traditional, intra-firm "value chain" concept (Porter, 1985) are emerging. The value chain is a customer-centered "wheel of fortune" that emerges more by coincidence than by plan or by design. The result is a need to build a one-time value chain for almost every transaction. This chain is ephemeral and dissolves once the transaction has been conducted. Traditional value chain and industry cluster analyses (Porter, 1985), as well as most other recent firm theory approaches, appear obsolete in the new information economy. Discussions on centralization and decentralization seem to be purely academic, having no practical value in the new economy.

Mata (1995), in a resource-based analysis, found that out of four attributes of IT — capital requirements, proprietary technology, technical IT skills, and managerial IT skills — managerial IT skills is the only resource that can bring sustained competitive advantage. Keen (1991) comes to a similar conclusion, noting that while IT may be a commodity, *IT management* is not — it is the value-added element that *leads to* competitive advantage. Mata (1995) points out, of course, that we cannot consider the other three attributes unimportant, since they may still produce, admittedly, temporary competitive advantage. Mata's analysis (1995) suggests that IT managers should work closely with other managers within a firm to support information needs of the latter. It must be recognized that information needs of various stakeholders vary in different kinds of firms, depending upon industries, resources, and structures. It is, therefore, vital that firms develop business strategies that support IT management.

The chapters in this book form a series of good examples of this principle. A short description of each chapter is presented in the following.

Chapter 1 discusses inter- and intraorganizational telework in many different forms including distributive project teams, telecommuting, mobile work, business-to-employee e-business, and the virtual corporation. It reviews impli-

cations of chosen variables such as task characteristics, communication quality, and technology support on telework success from a fit theory perspective. The examination focuses upon the implications of two- and three-way alignments among task characteristics, communications quality, and technology support on the distributive work setting.

Chapter 2 identifies the profound impact of modern IT on the manufacturing industry. Advanced manufacturing technologies, coupled with organization-wide information system infrastructures, have offered manufacturing firms tremendous opportunities for sustainable competitive advantages. This chapter introduces some current research ideas in the areas of information technology and of manufacturing strategic management.

Chapter 3 presents an alignment model and a representation framework for IS architecture management. The alignment model explains and supports the grouping of IS architecture elements into IS architecture areas, thereby offering a systematic way to generate alternative high-level principles for an IS architecture evolution in the long term.

Chapter 4 proposes a framework with which to guide research into a business/IT alignment. It reviews alignment research and considers some of the cognitive theories and methodologies that may be appropriate for the study of alignment. Contemporary empirical research into business/IT alignment explores the alignment issue by examining ways in which organizations conduct themselves. Managerial cognition is an area of growing interest and importance in strategic management.

Chapter 5 describes, via case study, the development of IT architecture for the purpose of forming a strategic alliance between an ICT organization and its partners. It also addresses how benefits to the negotiation process emerge during development. A telecommunications organization (TEL) intends to enter into an alliance with an existing retail electricity distribution business, so that TEL can improve its market position. An IT architecture for the new market situation is developed to help understand future information requirements, as well as the extent of the dependence of partners upon one another.

Chapter 6 reports on an action research study that uses the Strategic Choice method. This method is used to inform the prioritization of IT with respect to enhancing systems within a public sector Health Department. Such decisions are notoriously complex, fuzzy, time-consuming, and political for stakeholders. The results of the study indicate that the Strategic Choice method offers potential to reduce time commitment for stakeholders and to do so in a satisfactory manner.

Chapter 7 proposes that, in addition to balancing risk in the total IT project portfolio, organizations should also balance risk in strategic IT portfolios. A framework is distilled from the literature. The framework's validity is assessed using four classic cases in the strategic use of technology. Results indicate that overall strategic IT risk may be reduced by evaluating an organization's strategic IT portfolio.

Chapter 8 shows that the concept of strategic alliances is highly relevant to the ASP model. The chapter illustrates this with two cases, one of which is a failure because of inappropriate partnership management. It highlights the importance of focusing upon the management of alliances — instead of upon alliance formation — using a life-cycle approach to alliances. It also relates the immaturity of the ASP market to the difficulties in measuring the success of strategic alliances formed in this context.

Chapter 9 explores the theoretical foundations of the digital economy. It discusses eight main theories of the 20th century firm. Drawing upon literary review, the chapter presents frameworks for the theories; and it demonstrates that the only theory suitable for the digital economy is a resource-based view of the firm. The chapter suggests that studies on the digital economy emerge more fruitful when conducted under resource-based theory than under any other modern theory of the firm.

Chapter 10 suggests that success of CRM implementations is critical to the survival of firms in the 21st century. CRM literature classifies CRM products into three categories: operational, analytical, and collaborative. The chapter proposes a theoretical framework that examines the CRM outsourcing success. Examining pertinent literature, it proposes that CRM outsourcing success is influenced by the degree of CRM outsourcing; by partnership quality between the outsourcing firm and the vendor; and by organizational factors of the outsourcing firm, as well as by the quality of service from the vendor.

Chapter 11 describes “know-what” uncertainty, which firms generally face as they implement any techno-organizational innovation. It discusses some specific know-what uncertainties associated with a client adoption of the ASP paradigm. The chapter also discusses the role that participation and trust in the ASP organizing vision play in mitigating client-side know-what uncertainties during the course of adoption and implementation of the new IT governance model. Recommendations for clients and vendors for making the new IT-services paradigm a successful reality are also provided.

Chapter 12 focuses on the use of metrics for justifying investment in IT and technology and for measuring business and management performance. With several examples drawn from contemporary practice it introduces implementation guidelines for DSS development, focusing on the incorporation of new metrics that goes beyond ROI and “Balanced Scorecard”-like measures. Suggested guidelines include simplicity, selectivity, focus on research and learning, and benchmarking.

Chapter 13 presents a study about the effectiveness of IT applications in Brazilian companies. Effectiveness evaluation makes possible strategic alignments between IT and company business visions and should be analyzed as a continual process. A comparative analysis of IT strategic impacts is performed using different theoretical models. The study is based upon multiple interview cases in financial services, telecommunications, and building materials companies.

Chapter 14 deals with “technology trust,” which is the subjective belief by which an organization assesses that the underlying technology infrastructure and support mechanisms are capable of supporting interorganizational communications, transactions, and collaborations. It conceptualizes technology trust, drawing upon the notion of institutional trust, and particularly upon the dimension of situational normality. The chapter makes sense of conceptual foundations of technology trust by bridging the gaps among technological solutions from the perspectives of an institutional trust (technology trust), of an interorganizational trust, and of value creation in B2B electronic commerce.

Chapter 15 attempts to develop a profile of online consumers in South Africa based on various research sources. The chapter further focuses on what is wanted by online consumers in South Africa, as well as on the challenges facing web developers and organizations developing websites in South Africa.

Chapter 16 discusses the contingent nature of IT strategic planning (ISSP) practices and presents the results of an empirical study of ISSP and the role of IS within 90 leading companies in South Africa. It shows that the relationship between ISSP and IS functional performance is significantly higher for firms within the strategic IS environment.

Chapter 17 claims that IS success is still one of the most researched topics in the IS discipline, but that most research defining and measuring IS success is conducted in North America. Researchers within the international management discipline have assessed that culture may be a major factor in influencing organizational structures and management practices. The chapter discusses reasons that organizations intending to standardize IS within different cultures should consider culture an important factor in achieving success. It then proposes a comprehensive framework for future cross-national research on IS success in multinational organizations.

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