CHAPTER 1

Introduction: Digital Data and the Information Revolution

1.1 Dot.com Realities

Only someone recently roused from a 25-year sleep can be unaware of the ways that information and communication technologies (ICTs) have reshaped our daily routines. To be sure, in the early 1980s there were telephones, television, newspapers, facsimile machines and even computers capable of calculating pi to hundreds of digits past the decimal point. But local and wide area networks did not exist, there were no online research libraries like Nexus or Lexus from which you could retrieve a magazine article or a law opinion, dot.coms had yet to arrive (and depart), and a global computer network called the World Wide Web hadn’t been devised – or even considered possible. One could not buy or sell anything from anywhere anytime.

However, by 2004, the business outcome of technology, after a few years of euphoria, has deceived many. The dot.com crash has represented the demise of technology-related business activities. Following it, reports pointing to the demerits of technology abound. The telecoms sector lost $900 trillion. According to a report in December 2001, 70 per cent of IT and e-commerce projects either fail or are completed over budget with less functionality than planned.1 Spanish Telefónica froze its UMTS2 initiative with 4.8 billion Euros provisions in July 2002. Controversial technology-bashing is not restricted to its immediate sectors, either. IT now accounts for 50 per cent of all business equipment spending.3 According to a Guardian report, ICTs contributed about 0.7 of a percentage point of the 1 percentage point acceleration in US productivity growth between 1990–5 and 1995–2000.4 Not all investments in technology seem to be net positive: 1 billion was wasted on failed IT projects in the UK alone.5 The UK computer giant ICL confirmed that a multi-million pound crew-scheduling system it was developing for British Airways had to be junked after a two-year overrun.

Behind this business outcome are managers at all levels, investors,
consultants market research companies and governments. None of them was able to stop the 3G fall out that many felt marked the start of the tech collapse subsequent to the year 2000 Internet stock bubble.

Today, nonetheless, the amount of information – books, movies, photographs, sports scores, songs, games, lists of autos for sale, encyclopedias, hotel rooms availability, video chips, stock market transactions – that can be delivered into (or out of) a business or home by computers and/or other telecommunications devices is virtually immeasurable and would have been unthinkable just five years ago. Reality, again, has surpassed fiction. And the quantity of information being added to electronic networks is estimated to have been increasing by 100 per cent on average every year since 1996.

Statistics usually omit activity that takes place on intranets, but these, too, deliver torrents of information, especially in the business-to-business (B2B) sphere. An intranet is an organization’s own network designed for internal sharing, but parts of it can be accessed by outside parties (usually legitimate, occasionally unsolicited hackers) to facilitate a B2B transaction. Ford Motors might be granted access to Firestone Tire’s intranet to examine that latter’s models, specs, availability and prices, and/or to execute transactions. The network would then be termed an extranet – part of a larger network that is limited in access to a pre-agreed set of people. Say you are a small parts manufacturer in Taiwan and you have never sold a thing to Ford but want to do business with them. Ford will go through an accreditation process on you, then grant you access to their extranet so you can start looking at requests for parts makers that Ford has posted there.

This torrent of information and the multiplicity of channels it can take was let loose many years after scientists had figured out how to break down the data that comprise information into electronic signals, compress those signals into manageable portions, send them along cables or over waves, then, at their destination, reconstitute them into information. But what follows is not intended to be a treatise on computer and telecommunication technologies. It’s an examination of the value added functions, characteristics and strategies for competitive positioning of the kinds of companies that have adapted or plan to adapt such technologies to the dissemination of information.

**1.2 Why Does Digital Information Make a Difference in Business?**

**Analogue and Digital**

Suffice it to begin by noting that there are two modes of conducting