



## **Chapter 1**

# **An Introduction to Information Technology and Business Intelligence**

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*The world of commerce has undergone a transformation since the early 1990s, which has increasingly included the utilization of information technologies by firms across industry sectors in order to achieve greater productivity and profitability. In other words, through use of such technologies as mainframes, PCs, telecommunications, state-of-the-art software applications and the Internet, corporations seek to utilize productive resources in a way that augment the efficiency with which they provide the most appropriate mix of goods and services to their ultimate consumer. This process has provided the backbone to the evolution of the information economy which has included increased investment in information technology (IT), the demand for IT labor and the initiation of such new paradigms as e-commerce.*

### **A DRIVING SOURCE OF PRODUCTIVITY: (IT, Economic Theory and Business Strategy)**

Over the past six years, the US economy has been in a state of expansion which has included impressive growth in Gross Domestic Product (GDP),

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increased demand for labor and surprisingly low inflation. In fact, this lack of rising prices in the face of prolonged expansion has perplexed many analysts, economists and business leaders since traditional theory implies that as growth increases and unemployment declines, there is an increased probability of price pressures. One potential reason behind this anomaly of today's situation incorporates the notion of productivity at the firm level.

Productivity generally refers to the process by which firms use productive inputs to generate output. If they can more effectively or intelligently incorporate labor, machinery or technology and materials, they can better manage their underlying costs and maintain moderate prices for goods and services to the ultimate consumer. Firms can achieve increased productivity by combining the power of today's information technology with the tools of economic theory and business strategy. This notion has been supported by recent statistics.

There is evidence that the US economy is in the early stages of a powerful new wave of innovation. The leading edge is the information revolution, which permeates every sector of the economy. Over the last year, for example, high tech has taken half a percentage point off of inflation and added almost a full point to growth... Since 1990, productivity of non-financial corporations has risen at a strong 2.1% rate, far above the 1.5% seen from 1973 to 1990. Manufacturing has done even better: Since 1990, factory productivity has been soaring at 3.6% annually, the fastest rate in the post-World War II era.<sup>1</sup>

Economic and business theory provide the fundamental underpinnings to firm level productivity as these disciplines address such issues regarding the utilization of optimal levels of resources (land, labor, capital and materials) in bringing a good or service to the market (Varian, 1996). Business strategy bridges off the more rigorous microeconomic theory by applying it within the corporate world. It addresses such issues as accurately identifying corresponding target markets, consumer preferences and effectively managing the process by which goods and services are produced and delivered to the consumer. Information technology enables corporate managers and decision makers to more effectively devise appropriate business strategy based on economic theory by facilitating the flow of information to decision makers and employees throughout an organization. Through effective use of IT, managers can more quickly analyze operations in the organization which include such areas as:

- 1) Production (inventory and process and supply chain management)
- 2) Marketing/advertising and optimal pricing
- 3) Customer relationship management applications (churn, response)

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