

# The Growth of Digital Information

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(Written for Richard Lazar, CEO Fios, Inc.)

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## Introduction

The growth of digital information is phenomenal. Whatever watermark you use to measure the advance, this fact is clear: Digital documents dominate the swelling tide of information – a tsunami of e-information that floods nearly every aspect of doing business and has begun to saturate the shores of society. Digital information has become so commonplace that it is hard to imagine getting along without it. A multiplicity of e-mails, voice mails and computer files fuel the engines of corporate enterprise, and over half the households in America have at least one family member who surfs the Web.

While the growth of digital information is increasing, what has not increased is the awareness of the risks. Where is all of your digital information located? What does your digital information say about you or your company? Would you be comfortable sharing all of your digital content in a court of law – similar to a retroactive wiretap on your digital communications? Many people aim to ride the information wave to prosperity, but less are sufficiently attentive to the potential liabilities lurking in the depths of digital information.

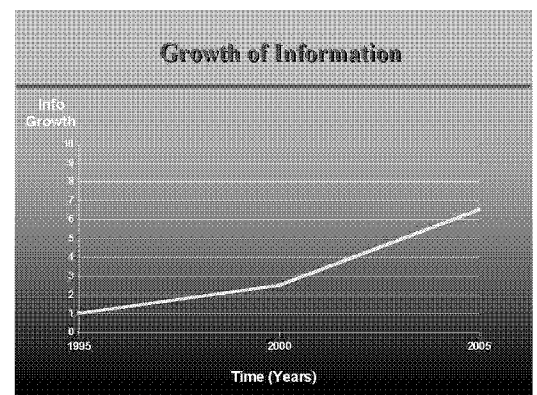
Risks notwithstanding, to defy the flood of digital information is foolish. We are experiencing a digital information revolution which touches our business lives as well as our personal lives in some rather significant and sometimes surprising ways.

## The Digital Wave Becomes a Flood

The world is experiencing exponential growth of digital information. More information has been produced in the last thirty years than in the previous five thousand – the entire history of civilization.<sup>1</sup> More astonishing are predictions that this existing information base will double in the next three to five years.<sup>2</sup>

This information growth is fueled by accelerating adoption of digital technology. Consider the following statistics:

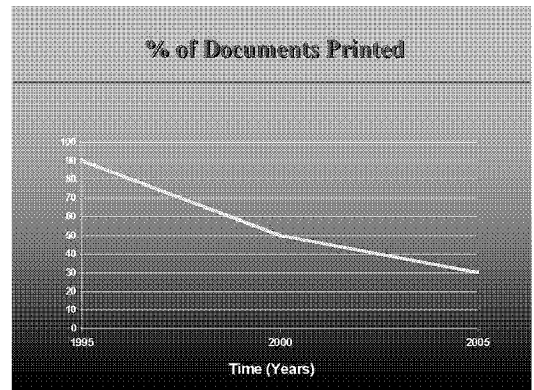
- Investment in information technology now accounts for over one-half of the United States' gross investment in equipment.<sup>3</sup>
- Each year, American businesses spend more than \$100 billion on computer hardware alone.<sup>4</sup>
- The use of digital information is growing at 96% per year.<sup>5</sup>
- 80% of corporate information is in digital form<sup>6</sup>



Source: Xplor International

Stacks of statistics from many sources share a common theme: growth rates for digital information are undeniable and extremely high.

Clearly, the “paperless office” is far from reality, but digital information has quickly conquered the previously paper-centric world of business. In 1995, over 90% of documents were in paper form. During the last few years, however, there has been a steady decline in the number of paper-only documents. By 2005, analysts predict that only 30% of documents will remain on paper.<sup>7</sup>



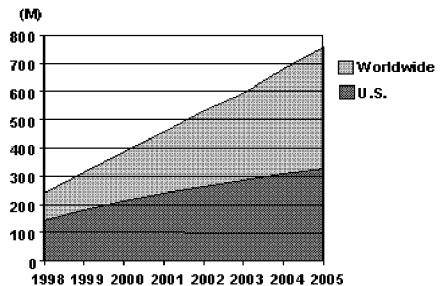
Source: Xplor International

Whether or not documents eventually see the light of day on paper, the trend is clear: Corporate information is primarily digital in origin. Web pages, e-mail and electronic commerce lead the way, but even the behemoths of the basement – printing presses and production printers – receive information digitally. Nearly all information in today’s business world is manipulated, modified, manufactured and moved in digital form.

## E-mail

The growth of digital information is most clearly evident in the ever-expanding use of e-mail. Over 40% of Americans currently use e-mail – sending and receiving approximately 2.2 billion messages each day, compared with just 293 million pieces of first class mail.<sup>8</sup> In the corporate world, it is hard to imagine doing business without e-mail. Microsoft, for example, processes more than 3 million e-mail messages a day.<sup>9</sup> The average office worker sends and receives nearly 200 e-mail messages each day, and analysts estimate that 82 million workers rely on e-mail as an essential part of their job.<sup>10</sup>

### U.S. and Worldwide Email Mailboxes, 1998–2005



Source: IDC #19758, July 1999

As a result, the number of e-mail addresses (also known as mailboxes) has grown steadily in the United States – from 150 million in 1998 to over 200 million currently. Analysts predict that well over 300 million mailboxes will exist in America by 2005.<sup>11</sup>

The increase in e-mail traffic is even more rapid around the globe. Currently, over 225 million people worldwide can send and receive e-mail.<sup>12</sup> Analysts predict that the number and size of e-mail messages will increase at an average annual growth rate of more than 35% over the next few years.<sup>13</sup> As a result, predictions are that an astounding 750 million e-mail boxes will exist worldwide by 2005.<sup>14</sup>

Tremendous growth in e-mail is found at the White House. When President Clinton leaves office, his legacy will include 40 million e-mail messages which, by law, must go to the National Archives and Records Administration (NARA) who have the task of storing and preserving those messages essentially forever.<sup>15</sup>

Year	E-mail Users	Messages Sent
1997	67 million	2.7 trillion
1998	81 million	3.9 trillion
1999	96 million	5.4 trillion
2000	108 million	6.8 trillion

(North America Only) Source: *Electronic Messaging Association*.

## The World Wide Web

The World Wide Web typifies the Information Age. This ocean of information contains 2.3 billion digital documents and analysts predict that the number of documents on the Web will grow eight-fold in 2000 alone – and 100 times in the next decade.<sup>16</sup> Approximately 275 million people access the World Wide Web, and that figure is expected to reach one billion by 2005.<sup>17</sup> Clearly, in the Information Age, using the Web is no longer a competitive advantage, it is a competitive necessity. As a result, companies are aggressively migrating existing business processes to the Web and, almost without exception, feel that the Web will help them sell more products, reach more customers and share information more easily and dynamically.<sup>18</sup>

### How People Access the World Wide Web

At Home	72 million people
At Work	46 million people
At School	28 million people
Other (cybercafe, library)	2 million people

*Computerworld*, August 8, 1999.

## E-Commerce

Electronic commerce accounts for much of the growth of the Web. Business is good; approximately 72% of online Americans have already purchased products and services over the Web.<sup>19</sup> As a result, most corporations are jumping on the virtual bandwagon. In a recent study that surveyed 600 information technology and business managers, over 90% of the managers had an e-commerce initiative in place. This is an increase of about 40% in one year, from 1998 to 1999, and the upward inclination is dramatic over the last decade.<sup>20</sup> Most organizations hope to duplicate the success of Amazon.com – the paragon of online retail – who reported first quarter sales in 1999 of \$293.6 million. This is more than three times the company's revenue for the prior year. Amazon accounts grew by more than 2.2 million in 1999, to approximately 8.4 million customers.<sup>21</sup> Ultimately, more than \$18 billion worth of merchandise was sold via e-commerce in the U.S. in 1999, a figure that is expected to jump to nearly \$53 billion in 2003.<sup>22</sup>



## Online Trading

Online trading is another indicator of the tremendous growth and acceptance of digital information in both business and society. Only three years ago, online investment brokers were practically non-existent. Today, there are over 150 online brokers and over 11 million online accounts. Online trading accounts for approximately a half-million stock trades per day.<sup>23</sup> The percentage of U.S. investors trading online is now 12.5%, and is expected to climb to 29.2% by 2002.<sup>24</sup>



- 42 million American households have a PC
- 24 million have Internet access
- 12 million have an online trading account

*Fortune*, October 1999.

