Drowning in data

Google, the Internet search engine, is now a verb. The company name is actually derived from the word “googol” — 10 to the 100th power — or 1 followed by 100 zeros. The name aptly underscores today’s information glut, in which the amount of data on the Internet is growing much faster than our ability to make sense of it.

Software applications such as enterprise resource planning (ERP) and customer relationship management (CRM) have unleashed overwhelming, and almost oppressive, amounts of data. Managers complain that critical events frequently go undetected, due to voluminous incoming information that may inadvertently camouflage them. Ironically, the data increase — and less time — hinders effective management.

Technology, which was once the solution, is now a problem. A generation ago, data was part of production systems that helped run a business. Paper reports were processed — usually in the middle of the night — and distributed on a regular basis. System users organized their business tasks around the arrival of these hard-copy reports. Direct queries were forbidden, as a single search could degrade the performance of the entire system.

IT development offered companies improved access to more data than ever, and companies invested enthusiastically. Although information quantity is estimated to be increasing by two or three times each year, data alone is insufficient. And databases and control systems were designed to store, manipulate and communicate information, and to perform very specific functions. They were not designed to provide information for all parties affected by events in a real-time environment. Most existing systems are unable to monitor information that may impact their business, nor can they rapidly analyze the data and instantly communicate it across functional silos — and to stakeholders inside and outside the company.

Companies have become virtual enterprises that include suppliers and customers in business networks. Today, business time is compressed. In the case of an unusual event, late information — which today means late by a mere few hours — can produce myriad complications, cripple productivity and even affect a company’s quarterly performance. Furthermore, the business opportunities missed — or lost — by employees frequently mired in time-sensitive problems constitutes a significant setback to a company.

Cisco Systems exemplifies the need for real-time information. Although the company had sophisticated systems, and claimed it could conduct financial closings in less than 24 hours, it was unable to detect changes in ordering patterns, which left it with a $2.5 billion inventory write-off in 2001. Most companies are worse off. Forrester Research estimates that almost two-thirds of C-level executives (chief executive, chief financial officer, chief information officer, etc.) are hamstrung “because of poor visibility of internal operational data.” And the majority of this survey’s respondents placed the opportunity cost at greater than $50 million.

The next wave in IT includes systems that immediately will “tell” all parties affected, regardless of their role, of new events as they happen. Real-time no longer will refer solely to the entry of data, but instead reflect the availability of the information. Any lag between the detection and/or reporting of an event, and its response to decision-making must be eliminated. The implications of these tools to the transportation industry are enormous. Global positioning systems and radio frequency identification are examples of technology that will increase the data deluge. Are we prepared to handle the tsunami of information coming our way?

The need to manage our companies in real-time suggests at least two opportunities for our industry. It stands to reduce the risk — and impact — of operational failure, and allows a company to seize business opportunities. The emerging technology goes by many names. Business Activity Monitoring and Real-Time Enterprises are two of the more common. Regardless of their applications, these technologies promise to impact the entire industry. The firms that successfully integrate newer technology will prevail over those that do not.

The transportation and logistics sectors understand their futures depend as much on the rapid evaluation of information as they do on the flawless execution of other services. Real-time management currently may not be necessary for every function, but that will likely change. One glance at technology initiatives of the past — EDI, supply-chain management, for example — shows that these developments began as value-added distinctions, and quickly became core requirements. Executed properly, the rapid processing of all this data will ultimately prevent the industry from drowning in it.

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