

CHAPTER

IMS: Then and Now

This chapter presents IMS's past and discusses IMS as a strategic part of today's computing environment.

In This Chapter:

- "History of IMS: Beginnings at NASA"
- "Is IMS Still Strategic for Customers and IBM?" on page 4

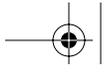
HISTORY OF IMS: BEGINNINGS AT NASA

IMS has been an important part of world wide computing since its inception.

On May 25, 1961, United States President John F. Kennedy challenged American industry to send an American man to the moon and return him safely to earth. The feat was to be accomplished before the end of the decade, as part of the Apollo program. American Rockwell won the bid to build the spacecraft for the Apollo program and, in 1965, they established a partnership with IBM to fulfill the requirement for an automated system to manage large bills of material for the construction of the spacecraft.

In 1966, 12 members of the IBM team, along with 10 members from American Rockwell and 3 members from Caterpillar Tractor, began to design and develop the system that was called Information Control System and Data Language/Interface (ICS/DL/I). During the design and development process, the IBM team was moved to Los Angeles and increased to 21 members. The IBM team completed and shipped the first release of ICS in 1967.





In April 1968, ICS was installed. The first “READY” message was displayed on an IBM 2740 typewriter terminal at the Rockwell Space Division at NASA in Downey, California, on August 14, 1968.

In 1969, ICS was renamed to Information Management System/360 (IMS/360) and became available to the IT world.

Since 1968, IMS:

- Helped NASA fulfill President Kennedy’s dream.
- Started the database management system revolution.
- Continues to evolve to meet and exceed the data processing requirements demanded by today’s businesses and governments.

IMS as a Database Management System

The IMS database management system (DBMS) introduced the idea that application code should be separate from the data. The point of separation was the Data Language/Interface (DL/I). IMS controls the access and recovery of the data. Application programs can still access and navigate through the data by using the DL/I standard callable interface.

This separation established a new paradigm for application programming. The application code could now focus on the manipulation of data without the complications and overhead associated with the access and recovery of data. This paradigm virtually eliminated the need for redundant copies of the data. Multiple applications could access and update a single instance of data, thus providing current data for each application. Online access to data also became easier because the application code was separated from data control.

IMS as a Transaction Manager

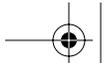
IBM developed an online component to ICS/DL/I to support data communication access to the databases. The DL/I callable interface was expanded to the online component of the product to enable data communication transparency to the application programs. A message queue function was created to maintain the integrity of data communication messages and to provide for scheduling of the application programs.

The online component to ICS/DL/I ultimately became the Data Communications (DC) function of IMS, which became the IMS Transaction Manager (IMS TM) in IMS Version 4.

Is IMS STILL STRATEGIC FOR CUSTOMERS AND IBM?

IMS joined the mainframe platform officially in 1969. Like the mainframe, IMS has continued to thrive, enjoying its most successful sales year ever in 2003. IMS has successfully reinvented itself many times over those years and its list of state-of-the-art technological innovations is far too lengthy to reproduce here. However, given that there are few, if any, software products still around after all these years, a fair question might be, “Is IMS still strategic?”





The word *strategic* means different things to different people.

For addressing customer needs, the word strategic can be defined by answering the following question:

- Is IMS delivering new functions that fulfill important and essential roles in relation to our customers' goals and objectives?

For addressing IBM's needs, the word strategic can be defined by answering the following questions:

- Is new IMS function consistent with the IBM strategy for the on demand operating environment?
- Is IMS providing sufficient return on IBM's significant investment in IMS to warrant such a strong continued IBM commitment to IMS development?

The following sections consider each of these questions.

IMS Is Strategic for Addressing Customer Needs

Customer acceptance of new IMS versions is the best measure of its strategic value. In 2003, the IMS workload, as measured in the millions of instructions per second (MIPS) capacity of IMS systems, increased 67.9% on our latest versions. At the end of 2003, there was almost three times more work being done on our latest versions, Version 7 and Version 8, than on older versions, Versions 5 and 6, worldwide. Overall, in 2003, MIPS of IMS systems grew almost 20%. By midyear, IMS Version 7 surpassed IMS Version 6 as the most popular version, measured by number of licenses.

Overall, the growth of net new IMS licenses remained positive, fueled largely by expansions required because of mergers and acquisitions among existing customers (in the Americas and Europe) and the selection of IMS for new zSeries[®] footprints (predominantly by emerging opportunities in Asia). It is noteworthy that customers showed continued confidence in the future of IMS during the years 2001–2003, when much of the rest of the IT industry was showing a downturn and retrenchment.

Who Uses IMS

Over 90% of the top world wide companies in the following industries use IMS to run their daily operations:

- Manufacturing
- Finance
- Banking
- Retailing
- Aerospace
- Communications



- Government
- Insurance
- High technology
- Health care

The following quote is an example of how one analyst¹ views IMS:

A 35-year-old hierarchical database and transaction processing system is currently growing faster than the world's most popular relational database system. Pretty funny, huh?

Actually, IMS is not forging new ground with innovative marketing or customer-acquisition strategies. It's more the other way around—it's keeping the same old customer base, but the base is growing, a lot. IMS and the mainframes it runs on underpin the vast majority of banks and banking transactions worldwide. And the banking world is growing. China alone may provide more growth in the next few years than the rest of world has in the last decade, and it is certainly not the only Pacific Rim country modernizing its banking system. Combine that kind of geographic growth with advances in online banking in the developed world and it's no wonder mainframes, especially IBM's newer zSeries machines, and IMS are growing. They're the only products capable of keeping up.

IMS is still a viable, even unmatched, platform to implement very large online transaction processing (OLTP) systems and, in combination with Web Application Server technology, it is the foundation for a new generation of Web-based, high-workload applications.

Here are some interesting facts about how IMS is used.

IMS manages a large percentage of the world's corporate data.

- Over 95% of Fortune 1000 companies use IMS.
- IMS manages over 15 million gigabytes of production data.
- \$2.5 trillion (in US dollars) per day is transferred through IMS by one customer.

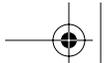
IMS processes over 50 billion transactions per day.

- IMS serves over 200 million users every day.
- IMS processes over 100 million transactions per day for one customer.
- IMS processes over 120 million transactions per day (7 million per hour) for another customer.
- IMS can process 21,000 transactions per second (over 1 billion² per day) using IMS data sharing and shared queues.
- A single IMS has processed over 6000 transactions per second over a single TCP/IP connection.

1. Quote taken from abstract of *IMS: Scaling the Wall*, Illuminata, Inc., November 2002. Illuminata is an IT advisory firm (see www.illuminata.com).

2. 1 billion = 10e9.





Related Reading: To learn more about the industries and customers that use IMS, visit the IMS Web site at www.ibm.com/ims, and click “Featured Customer,” “IMS Newsletter,” or “Overview.”

IMS is Strategic for Addressing IBM Needs

IMS’s strategic value to IBM can be measured in three areas:

- “IMS Is Strategic in the On Demand Infrastructure”
- “IMS Is Strategic Regarding Continued Investment” on page 8
- “IMS Is Strategic for the Future” on page 8

IMS Is Strategic in the On Demand Infrastructure

IBM defines an on demand enterprise as one whose business processes are integrated end-to-end across the company and with key partners, suppliers, and customers. An on demand enterprise can respond with flexibility and speed to any customer demand, any market opportunity, and any external threat. This need to respond with urgency must be addressed by an on demand infrastructure. This infrastructure is:

Based on open standards. IMS fully supports Java standards for application development and XML for transparent document interchange.

Heterogeneous. IMS applications can be developed on workstations and executed in the host environment. IMS applications and data can be accessed from any platform, including Linux, virtually anywhere on the Internet, through the utilization of the IMS Connect function and the IMS Connector for Java.

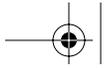
Integrated. Integration has always been an IMS priority. IMS ships connectors and tooling with IBM WebSphere® solutions so customers can connect to IMS applications and data utilizing the tools and connectors of their choice.

Scalable. IMS continues to address scalability needs by providing the highest possible availability, performance, and capacity. IMS Version 8 benchmarks show a single system providing 21,000 transactions, including database access, per second. IMS Version 9 continues this performance and offers 24 × 7 database availability with High Availability Large Database Online Reorganization support.

Enabled with self-managing capabilities. IMS Version 8 and Version 9 address the need to assist technical support staff in being more productive, keep systems continuously available, and do so in an operating environment that is growing more and more complex. IMS Version 8 contains over a dozen new and improved self-managing functions to enhance the productivity and effectiveness of database administrators and systems programmers. These functions and more are available with IMS Version 9.

Reliable. One large IMS customer has operated over 3000 days (and counting) without an outage in a 24 × 7 environment.





IMS Is Strategic Regarding Continued Investment

The ability of the IMS team to deliver revenue growth to the IBM company is a measure of our success as business managers. Success in this area supports continued investment by IBM in the development of future versions and the growth of resources devoted to that effort. In 2003, IMS enjoyed another record breaking year, surpassing 2002 as the largest revenue producing year in its 35-plus year history. In the first two quarters of 2004, IMS's revenue grew 9% (year to year).

IMS has shown consistent revenue growth each year since adopting the current IMS business model in 2000.

IMS Is Strategic for the Future

The focus for IMS in 2004, and beyond, is striving to remain the strategic choice for:

- The most business-critical applications of our current customers.
- The most business-critical applications of emerging enterprises.

Success in that area and support of the open, integrated, self-managing, on demand operating environment, suggest that IMS will continue as a major factor in the growth strategy of the IBM Corporation, as it has been for the past 36 years.

