
Analyst: Greg Dyer

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</tbody>
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Abstract


To provide a comprehensive overview of the U.S. and worldwide knowledge management (KM) services markets, analyzing spending by region and including forecasts from 1999–2005, this report examines the major drivers and trends in the United States, Canada, Western Europe, Asia/Pacific, Japan, and the rest of the world (ROW). For this report, IDC classifies Latin America as part of the ROW region because these countries are only beginning to invest in KM. This document also ranks the top service firms.

This report’s analysis of the market trends and forces that either bolster or inhibit the growth of the KM services industry in the United States constitutes an especially in-depth examination. IDC also identifies the needs, trends, and opportunities that represent key success factors for sustained growth and competitiveness among KM firms.
Executive Summary

The knowledge management (KM) market is primed for growth as companies focus on their ability to retain expertise in their organizations. In order to address this need and others that are emerging around customer retention and corporate profitability, a host of established and start-up service and software companies are offering KM products and services. The service market is categorized by spending activities including consulting, implementation, operation (outsourcing), maintenance, and training. IDC’s definitions of these activities are provided in Appendix A.

Worldwide Market Growth

As the number of KM implementations increases and success stories are publicized, there will be an increase in the demand for KM services. The total worldwide KM services market will increase at a compound annual growth rate (CAGR) of 41%, resulting in a market of over $12 billion by 2005 (see Table 1). It is important to note that IDC is focusing on discrete KM initiatives and does not include KM that is a secondary component of other projects such as those for customer relationship management (CRM), enterprise resource planning (ERP), or elearning. However, IDC foresees that, going forward, the ability to segregate pure KM revenue will become more difficult as more service firms begin to imbed their KM offerings in other solutions and move away from standalone KM solutions.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Worldwide</td>
<td>1,327</td>
<td>12,696</td>
<td>40.7</td>
</tr>
<tr>
<td>United States</td>
<td>836</td>
<td>6,094</td>
<td>34.6</td>
</tr>
</tbody>
</table>

Key Assumptions:
- Many companies are beginning to implement knowledge management (KM) solutions.
- Once implementation begins, KM programs start as small pilot programs and expand over time.
- The United States is leading the KM market.

Messages in the Data:
- The worldwide market for KM services will be over $12 billion by 2005.
- Worldwide KM services are forecast to increase at a CAGR of 41% between 1999 and 2005.
- The U.S. KM services market made up 62% of the worldwide market in 1999 but will only account for 48% in 2005.

Source: IDC, 2001
IDC assumes worldwide and U.S. revenue will grow as companies implement their KM projects, which start as small pilot programs and expand over time. The United States is leading the KM market, although the non-U.S. regions will account for the majority of spending by 2005. In 1999, the United States accounted for 62% of overall KM spending, while it will account for only 48% in 2005 (see Figure 1).

**Figure 1**

Worldwide Knowledge Management Services Spending by Region, 1999 and 2005

KM expansion outside the U.S. varies by region. The non-U.S. market consists of Western Europe, Canada, Asia/Pacific, Japan, and the rest of the world (ROW). Of this group, Western Europe accounts for the largest share of KM revenue.

Although KM is gaining momentum in Japan, it is experiencing a slow climb due to the hierarchical culture of Japanese businesses. However, there is activity in Taiwan and Korea, a potential cause of which is a high-tech manufacturing industry that requires effective collaboration between worldwide offices for effective research and development (R&D). Australia and New Zealand also continue to show growth in KM services.

At present, IDC includes Latin America in the ROW region because of the limited amount of KM activity in the region; however, this is expected to change in the future. The region is slowly creeping into the KM fold with improvements in infrastructure and economic development.
Analysis of Market Drivers and Inhibitors

Market Drivers

Corporate management is realizing the importance of managing knowledge to solve business problems and beginning to take initiative in leading KM programs within their organizations. While technology drove the initial interest in KM in the United States, current drivers for KM are practical goals focused on improving business and can be directly linked to specific business uses that companies are targeting for KM. The drivers are listed below, followed by the business uses as reported to IDC through its 2000 end-user survey.

- Drivers:
  - Retaining expertise of personnel
  - Increasing customer retention/satisfaction
  - Improving profits/growing revenue
  - Supporting ebusiness initiatives

- Business uses:
  - Capturing and sharing best practices
  - Providing training and corporate learning
  - Enhancing CRM
  - Delivering competitive intelligence
  - Managing legal and intellectual property issues

Market Inhibitors

The primary challenges in developing and implementing a KM program revolve around the people and culture of an organization. These challenges are consistent from region to region and include the following:

- Employees do not feel they have time for KM.
- The current culture does not encourage sharing.
- Users do not understand KM and its benefits.
- The company is unable to measure the financial benefits of KM programs.
- The organization’s processes are not designed to accommodate a KM initiative.
- The company lacks incentives and rewards for sharing knowledge.

It is interesting to note that the challenges facing organizations are not technology focused but involve issues of people and processes. While much of the attention in the market and in the press is given
to software applications, the real customer needs are change management and business-process design services.

**Industry Trends**

To meet the needs of their customers, companies are propelling a number of trends in the market, emerging from vendors’ challenges and evolving market conditions. These trends focus on market evolution and vendor initiatives. A more comprehensive list of trends follows:

**Market Evolution**

- Small/middle market interest growth
- Increased demand for business cases and measures
- Interest in peer-to-peer (P2P) and wireless communication and how they fit into KM

**Vendor Initiatives**

- KM solutions that include people, process, technology, software, and services
- More imbedded KM versus standalone KM solutions
- Emphasis on community development and support
- Formal partnering strategies
- Targeted solutions, both vertical and horizontal
- Spin-offs/joint ventures (JVs)
- Application service providers (ASP) as solution components

**Knowledge Management Opportunities**

The majority of companies that have adopted KM programs have begun the process of implementing their solutions, resulting in a move away from the equal spending between consulting and implementation that was seen in 1999 (see Table 2).

Along with implementation growth, spending on operations and maintenance will increase as more companies come to need help in the daily upkeep of their KM initiatives. Training will also be very important in order to develop buy-in within organizations. One of the primary challenges that companies will need to address is how to get their employees to understand and participate in their KM programs. The importance of this initiative may also feed vendors’ consulting businesses around culture change and the need to modify an existing KM system.

In looking at specific opportunities, a number exist that address the market inhibitors mentioned above. These focus on the following:

- Redesign of processes and operations
• “Communities of practice”
• Leadership preparation (mentoring)
• Measurements of companies’ intellectual capital
• Vertical and horizontal solutions
• Collaborative services
• Content management services

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Worldwide Knowledge Management Services Spending by Major Activity Segment, 1999 and 2005 ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning (consulting)</td>
<td>385</td>
</tr>
<tr>
<td>Implementation</td>
<td>385</td>
</tr>
<tr>
<td>Operations management (including outsourcing)</td>
<td>265</td>
</tr>
<tr>
<td>Maintenance (support)</td>
<td>146</td>
</tr>
<tr>
<td>Training</td>
<td>146</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,327</strong></td>
</tr>
</tbody>
</table>

**Key Assumptions:**
- Companies will focus on planning and implementation in the short term and operations and maintenance in the long term.
- Once implementation begins, knowledge management (KM) programs start as small pilot programs and expand over time.
- Training will be vital in developing employee buy-in.
- Consulting firms and integrators offer products and services in all activity segments either with in-house resources or through partnering.

**Messages in the Data:**
- The majority of companies were entering or preparing to enter the implementation stage in 1999; in 2005, the majority will have entered the implementation stage or moved beyond it.
- The worldwide market for KM services will be over $12 billion by 2005.
- KM services are forecast to increase at a CAGR of 41% between 2000 and 2005.
- Maintenance will have the highest growth rate at 52% and planning will have the lowest at 28%.
- Implementation services will account for the highest percentage of spending by category after 2005.

**Source:** IDC, 2001

**Opportunities by Industry**

KM solutions are being developed for many industries. Based on survey data, IDC has found that the industries listed in Table 3 are actively involved in adopting KM solutions.
Table 3
Worldwide Knowledge Management Services Spending Share by Vertical Industry, 2000

<table>
<thead>
<tr>
<th>Vertical Industry</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business services</td>
<td>23</td>
</tr>
<tr>
<td>Communications</td>
<td>10</td>
</tr>
<tr>
<td>Government</td>
<td>8</td>
</tr>
<tr>
<td>Education</td>
<td>6</td>
</tr>
<tr>
<td>Financial services</td>
<td>5</td>
</tr>
<tr>
<td>Discrete manufacturing</td>
<td>4</td>
</tr>
<tr>
<td>Process manufacturing</td>
<td>4</td>
</tr>
<tr>
<td>Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>Insurance</td>
<td>3</td>
</tr>
<tr>
<td>Retail</td>
<td>2</td>
</tr>
<tr>
<td>Transportation</td>
<td>1</td>
</tr>
<tr>
<td>Utilities</td>
<td>1</td>
</tr>
<tr>
<td>Banking</td>
<td>1</td>
</tr>
<tr>
<td>Wholesale</td>
<td>1</td>
</tr>
<tr>
<td>Chemicals</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: IDC, 2001

**Conclusion and Recommendations**

As the KM marketplace continues to grow, the competitive landscape will change, with customers becoming more conservative in their decision making and requiring demonstrable measures such as return on investment (ROI) for their programs. In addition, customers will demand to see proven track records of success by their service providers. Vendors able to effectively understand and prepare for this market shift will increase their perceived value to their customers and gain competitive advantage. Vendors should work toward being able to demonstrate the following skills to clients:

- KM training
- Business goal identification and clarification
- Understanding of clients’ cultural challenges and ability to make change-management recommendations
- Demonstrable measures for programs
- A proven track record categorized by industry and company size
• A complete service offering, including assessment and evaluation, that leverages internal resources and partners

• Knowledge community management

In addition to being able to provide these services, vendors should also consider how they are going to position themselves moving forward. IDC’s recommends the following strategies:

• Participate in the community ecosystem

• Offer complete solutions including partnerships, services, and software

• Provide clear business cases and related measures to justify solutions

• Determine how particular offerings coincide with CRM, ERP, and elearning

• Consider offering vertical or horizontal solutions
Related Research

For information related to the subject of this report, IDC recommends that readers refer to the following documents:

- *An IDC View of Peer-to-Peer Computing* (IDC #24496, April 2001)
- *Knowledge Management Solutions with an Eye on eBusiness* (IDC #24010, February 2001)
- *Knowledge Management: The Backbone to Success in the 21st Century* (IDC #CA004BIH, January 2001)
- *Enterprise Portal Adoption* (IDC #23759, January 2001)
- *Knowledge Management Profile Series: IBM Global Services* (IDC #23664, December 2000)
- *IBM and Participate.com Provide a Community Solution* (IDC #23586, December 2000)
- *Peer-to-Peer Business Solutions: Getting into the Groove with Knowledge Management* (IDC #23464, November 2000)
- *A Snapshot of the Worldwide Knowledge Management Services and Software Market* (IDC #23423, November 2000)
- *IDC's eBusiness Services Leadership Grid* (IDC #23221, October 2000)
- *Knowledge Management Profile Series: Arthur Andersen* (IDC #22841, September 2000)
Methodology, Definitions, and Data Collection

Every year, IDC devotes considerable time and effort to measuring, analyzing, and forecasting the size and shape of the IT marketplace. Part of this endeavor includes research and analysis conducted on the KM services market.

Definitions

The intention of this report is to provide a comprehensive examination of KM services. KM is offered through a number of different contractual agreements. For example, it can be delivered as a discrete project or as part of a large service contract such as CRM and outsourcing.

A general definition of KM has been “getting the right information to the right people at the right time” in order for them to make better decisions. Although this explanation is correct, it is too simplistic because it does not address the importance of the KM “process” in developing an effective program.

Part of the difficulty surrounding KM derives from its being a multidisciplinary endeavor, building on all the major management and IT trends of the past 20 years. Thus, KM centers on the relationships between an organization, its people, and technology. Through familiarity with these relationships, a company will better understand its business processes, corporate culture, employee buy-in, and technological abilities as it strives to become a knowledge sharing organization. To answer all of these aspects, IDC uses the following definition for KM.

KM is a formal “process” by which knowledge is captured in the form of the following:

- **Content** (or unstructured data) concerning activities valuable to the organization is published in a form that is categorized or tagged and is relatable to other data (including structured data).
- **People’s** use of information is tracked by category and by individual or team.
- **Processes** that are valuable to an organization and that reflect learning or know-how over and above routine operations (such as exception handling and decision making) are captured as invokable workflow or executable applications.

Once knowledge is captured, it can be accessed through the same three components in the following ways:

- **Content**, along with other relevant data, can be searched or queried directly by users.
- **People** can be identified (with their permission) by areas of expertise and as sources of information.
• **Processes** over and above routine operations (such as exception handling and decision making) and involving team collaboration can be guided by means of invoking a workflow or executing an application.

KM services support the KM process in the following ways:

• KM services, including consulting, implementation, outsourcing, training, and support, focus on solving a company's defined business problems with effective collaboration and content management.

• KM services emphasize change management and business-process and system design.

KM software supports the KM process in the following ways:

• KM infrastructure software supports knowledge capture.

• KM access software supports knowledge access and sharing.

• KM infrastructure software is necessary for KM access software.

Because KM is multidisciplinary, there is confusion as to what it does and does not include in the context of software and services. While software and services related to groupware, data mining, search engines, document management, and imaging products are often referred to as KM by users and vendors, IDC refers to these as enabling services and technologies that provide the foundation for KM. In other words, they should not be viewed as KM solutions per se, though they may be important components of a KM engagement or program.

KM is achieved when information can be manipulated, with the resulting changes automatically detected and delivered and decision making simplified. For example, at present, an employee may have a problem with a client and access his or her employer's intranet for help. A keyword search is performed on structured data and 10 matches are returned. While there may be a monitor indicating the relevance of each match, it is up to the user to go through each query and decide its relevance to the problem. In KM, the individual will perform a dynamic search under a variety of optional parameters. The system will not only find the 10 matches but will also break each match down by content and relevance. It will then return the top 3 matches to the user and make a recommendation about which to use and why. The system will also return related information outside of the intranet, provide a list of experts to contact, and retrieve a list of individuals doing related work. This information will be automatically updated over a period of time based on criteria set by the user.

**Regions and Industry Sectors**

Definitions of the various regions and industry sectors are provided in Appendix B, Regional Categories, and Appendix C, Vertical Market Definitions, respectively.
Data Collection

This report is the product of both qualitative and quantitative information collected from a wide variety of primary and secondary research.

Primary sources used for sizing the current and future market are as follows:

- Surveys of and interviews with KM vendors
- User surveys of KM spending (e.g., current usage, purchase plans, issues, and concerns)
- Interviews with the suppliers and partners of KM services firms

Secondary sources used for sizing the current and future market are as follows:

- Published news articles and press releases
- Public financial records (e.g., quarterly announcements and annual reports)
- Dun & Bradstreet data
- Government census data
- IDC reports and bulletins
- Historical market data

Forecast Assumptions

Many assumptions are built into market forecasts. Following are assumptions that IDC believes will significantly affect the worldwide systems integration forecast.

Macro-Level Assumptions

- Exchange rates will remain relatively constant throughout the forecast period, and there will not be a dramatic decline in the world economy.
- Buying behavior will remain similar; that is, there will be no sudden and dramatic shift in mass culture to either outsource or “insource” projects.
- The U.S. IT industry will experience an overall softening of demand in 2001.

Knowledge Management–Specific Assumptions

- Many companies are beginning to implement KM solutions, which will drive revenue growth.
- Once implementation begins, KM programs start as small pilot programs and expand over time.
- The United States is leading the KM market.
• Companies will focus on planning and implementation in the short term and operations and maintenance in the long term.

• Training will be vital in developing employee buy-in.

• Consulting firms and integrators offer products and services in all activity segments through either in-house sources or partnering.

• KM implementation will increase as effective business cases and measures are publicized to show the potential benefits of KM solutions.

• Spending on IT services is expected to exceed spending on software as organizations implement their KM programs.

**Worldwide Information**

IDC sizes geographic segments through analysis of data collected directly within each major region and in 35 countries by local IDC analysts. In 1998, IDC added resources to its services expertise centers in Europe, Asia/Pacific, Japan, and Latin America. Consequently, each region now has dedicated services analysts, and the understanding of the services market in these regions has improved significantly.

The author consolidates the data from these analysts around the world, interviews them for further clarification and understanding, reviews other local and regional IDC research, and studies published news articles about the various countries. This information provides the basis for IDC’s analysis of the worldwide market and trends.

To ensure consistency among all of IDC’s research, the various countries have been classified into specific regions. This classification can be found in Appendix B.

The market sizing for 1999, 2000, and 2001 is based on actual average exchange rates for the respective years, whereas forecast sizing from 2002 to 2005 is based on the 2001 exchange rate. No attempt has been made to predict exchange rate directions in the forecasts.

**U.S. Information**

**Demand-Side Spending Model**

The sizing and forecasting of the U.S. market and trends are primarily based on the **IDC Services Spending Model**. This demand-side model is developed from numerous surveys of U.S. companies that detail patterns for internal and external services spending. Spending is captured for both IS department and business unit services. Demand-side spending data is organized by five activities — consulting, implementation, support and maintenance, operations, and training — grouped into 12 discrete IT services categories (of which consulting is one), 13 major services-intensive vertical industries (according to SIC code), and 3 company sizes. The ROW region also uses some version of this model with respect to its own
regions. Figure 2 shows a conceptual map of the *IDC Services Spending Model*.

Forecasts are made based on user projections, vendor growth rates, and research on the current status of any given industry sector. Secondary research of economic forecasts (e.g., industry trends and IT spending patterns) are leveraged to present the most accurate picture possible.

**Figure 2**

*Demand-Side Services Spending Methodology Overview*

Source: IDC, 2001
Supply-Side Research

In addition to demand-side analysis, IDC surveys services vendors on an ongoing basis to obtain information about their services offerings, strategic direction, revenue, and financial announcements. This data helps IDC not only identify key trends in the marketplace but also rank the top KM firms. This supply-side analysis is then matched against the demand-side analysis of spending on external services. Adjustments are made as needed.
Worldwide Knowledge Management Forecast and Analysis

The worldwide market for discrete KM services is not only growing as a whole but also beginning to be adopted in many regions of the world. Most KM activity is in consulting and implementation, but it is gaining ground in the areas of operations, maintenance, and support. The worldwide opportunity for KM vendors offering these services to solve clients’ specific business problems is large.

Market Size and Forecast

The discrete KM services market will experience rapid growth through 2005. IDC estimates that worldwide spending on KM services will increase from $1.3 billion in 2000 to over $12 billion by 2005, for a five-year CAGR of 41% (see Table 4).

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Worldwide Knowledge Management Services Spending, 1999–2005 ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>836</td>
</tr>
<tr>
<td>Non-U.S.</td>
<td>491</td>
</tr>
<tr>
<td>Worldwide</td>
<td>1,327</td>
</tr>
</tbody>
</table>

Key Assumptions:
- Once implementation begins, knowledge management (KM) programs start as small pilot programs and expand over time.
- KM implementation will increase as effective business cases and measures are publicized, showing the potential benefits of KM solutions.

Messages in the Data:
- The United States is leading the KM industry; however, non-U.S. spending will surpass U.S. spending in 2005.
- The worldwide market for KM services will be over $12 billion by 2005.
- Total KM services are forecast to increase at a CAGR of 41% between 2000 and 2005.
- The U.S. KM services market made up 62% of the worldwide market in 1999 but will only account for 48% in 2005.
- Non-U.S. KM spending will grow more quickly than U.S. KM spending.

Source: IDC, 2001

All regions will experience market growth as more companies begin to implement their KM programs. As business cases and effective measures are developed and identified, the market will continue to gain a foothold across industries and grow.

Although through much of the forecast period, the majority of spending will be in the United States, spending growth is expected to be faster in the non-U.S. markets. As a group, non-U.S. markets will experience a five-year annual growth rate of 48%, versus 35% for the United States. Because KM originated in the United States and support for KM continues to grow, IDC expects the U.S. market to be
larger than the non-U.S. market until 2005. At that time, KM initiatives in non-U.S. regions will have gained popularity, and spending there will surpass levels in the United States.

Giving consideration to the individual regions of the world, Asia/Pacific, Japan, Latin America, and ROW will experience much faster growth than the United States (see Table 5). The smaller initial values in 1999 account for the higher growth rates in Asia/Pacific, Japan, and ROW. In addition, IDC assumes KM growth in non-U.S. areas will outpace that in the United States because KM is only beginning to catch on in many regions.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Worldwide Knowledge Management Services Spending by Region, 1999–2005 ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>836</td>
</tr>
<tr>
<td>Canada</td>
<td>27</td>
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<tr>
<td>Western Europe</td>
<td>451</td>
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<tr>
<td>Asia/Pacific</td>
<td>7</td>
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<tr>
<td>Japan</td>
<td>1</td>
</tr>
<tr>
<td>Latin America</td>
<td>3</td>
</tr>
<tr>
<td>ROW</td>
<td>3</td>
</tr>
<tr>
<td>Worldwide</td>
<td>1,327</td>
</tr>
</tbody>
</table>

Key Assumptions:
- Once implementation begins, knowledge management (KM) programs start as small pilot programs and expand over time.
- KM implementation will increase as effective business cases and measures are publicized, showing the potential benefits of KM solutions.
- The higher growth rates in Asia/Pacific and ROW are attributable to the small initial values in 1999.

Messages in the Data:
- The rate of growth in all regions is high.
- The worldwide market for KM services will be over $12 billion by 2005.
- Total KM services are forecast to increase at a CAGR of 41% between 2000 and 2005.
- The United States accounts for the highest KM revenue by region but the lowest growth rate.
- Asia/Pacific and ROW markets are growing at the fastest rate.
- Western Europe has the highest KM revenue outside the United States.
- Western Europe accounts for 34% of the market in 2000 but will account for only 26% in 2005.

Source: IDC, 2001

Canada

Canada will experience similar growth to the United States, with a CAGR of 41%. Because of the lower value of the Canadian dollar, potential clients either starting in or moving into Canada may have favorable pricing versus non-Canadian firms, but they will need to effectively communicate and share knowledge across borders to meet market needs.
Western Europe

Western Europe is the leading market for KM outside the United States, with 34% of the market in 2000. Although it will sustain a 33% growth rate through 2005, Western Europe's percentage of the market will actually decrease to 26% as Asia/Pacific and ROW gain momentum.

Deregulation of utilities continues to be a driver for KM adoption in this region because it will promote the entrance of new providers into the market and drive down prices. For example, with telecommunications, as prices fall for local phone calls, Internet usage will grow and cause an increase in ebusiness. In order to effectively manage the higher volume of information and create a customized buying experience online, companies will have to implement KM programs.

From a wireless perspective, Western Europe is ahead of the United States and will be a proving ground to determine how KM will be affected by the technology. In this environment, effective content management and the ability to promote and capture the results of value-added collaboration will be critical in justifying expenditures.

Asia/Pacific

The Asia/Pacific KM market will increase at a CAGR of 129%. While Asia/Pacific, in general, has been slow to grab onto KM, IDC sees increased activity in Taiwan, Korea, Australia, and New Zealand. While the growth in Australia and New Zealand owes its force to these countries' more westernized approach to business, Taiwan and Korea are a bit more interesting.

Taiwan has moved away from a hierarchical business structure and developed flatter organizations. As a result, there is more knowledge sharing, which is critical since much of its business involves high-tech manufacturing and requires communication from overseas offices and clients. For example, although a great deal of semiconductor manufacturing takes place in Taiwan, the design offices are often in the United States. It is critical that these companies have effective KM to manage the relationships between offices.

KM is perhaps the newest concept in enterprise solutions and thus tends to be the least commonly deployed solution in Korea. The incidence of KM solution implementations is currently 1.2% of enterprises (see Korea Enterprise Solutions Market Dynamics, IDC #AP34120H, November 2000). By yearend 2000, it was estimated that over 12% of enterprises had deployed KM solutions. Larger organizations will continue to lead in the adoption of KM solutions, with expectations that 40% of these enterprises will adopt KM solutions by yearend 2001.

Japan

The Japanese KM market is expected to increase at a 94% CAGR. This is a bit misleading due to the small initial market sizes in 1999
and 2000. While businesses are beginning to grasp the benefits of KM, its slow climb to a significant market size is a result of the hierarchical culture of Japanese business.

**Latin America**

The Latin American market is expected to increase at a CAGR of 93%. Like Japan's rate, it is a bit misleading due to the small initial market size in 1999. While KM activity is lower due to the region's immature infrastructure and slower adoption of technology, vendors believe the area holds much promise. For instance, KPMG is focusing on the area through its Caribbean offices.

**The Rest of the World**

The ROW region, which includes Russia, Eastern Europe, the Middle East, and Africa, will have the second highest CAGR, 101%. A large proportion of this growth will come from Eastern Europe, particularly Hungary, the Czech Republic, Slovenia, and Poland. The growth in these countries will be driven by their proximity to Western Europe and their desire to integrate into the European Union (EU).

**Market Activities**

Table 6 provides an overview of the major activity segments of the KM market. IDC assumes companies will focus on planning and implementation in the short term and operations and maintenance in the long term. Once implementation begins, the small pilot programs that represent KM's first iteration will expand over time, and training will be a vital issue toward developing employee buy-in. While considering the opportunities in the market, IDC assumed that most consulting firms offer products and services in all activity segments either in-house or through partners.

Based on the data in Table 6, consulting and implementation are currently the primary KM spending segments. While consulting and implementation spending were the same in 1999, more companies have begun to implement their KM programs, resulting in greater spending than planning in 2000. The consulting and implementation categories will dominate spending until 2002, when operations will become a higher-spending segment.

Parallel to implementation, training will play a major role in the success of KM initiatives because companies will need to develop employee buy-in in order to maximize the benefits of their programs. As a result, the growth of training, at 43%, will be slightly higher than that of implementation.

In 2002, companies will begin moving past the implementation stage and focus on the daily operations and maintenance of their programs. The growth of these two areas in 2003 and 2004 will lead to higher CAGRs compared with the other categories.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning (consulting)</td>
<td>385</td>
<td>598</td>
<td>906</td>
<td>1,159</td>
<td>1,442</td>
<td>1,646</td>
<td>2,031</td>
<td>27.7</td>
</tr>
<tr>
<td>Implementation</td>
<td>385</td>
<td>690</td>
<td>1,169</td>
<td>1,854</td>
<td>2,403</td>
<td>3,086</td>
<td>3,555</td>
<td>38.8</td>
</tr>
<tr>
<td>Operations management (including outsourcing)</td>
<td>265</td>
<td>460</td>
<td>754</td>
<td>1,275</td>
<td>1,922</td>
<td>2,572</td>
<td>3,301</td>
<td>48.3</td>
</tr>
<tr>
<td>Maintenance (support)</td>
<td>146</td>
<td>253</td>
<td>415</td>
<td>695</td>
<td>1,121</td>
<td>1,543</td>
<td>2,031</td>
<td>51.7</td>
</tr>
<tr>
<td>Training</td>
<td>146</td>
<td>299</td>
<td>528</td>
<td>811</td>
<td>1,121</td>
<td>1,440</td>
<td>1,777</td>
<td>42.8</td>
</tr>
<tr>
<td>Total</td>
<td>1,327</td>
<td>2,300</td>
<td>3,770</td>
<td>5,795</td>
<td>8,009</td>
<td>10,286</td>
<td>12,696</td>
<td>40.7</td>
</tr>
</tbody>
</table>

**Key Assumptions:**
- Companies will focus on planning and implementation in the short term and operations and maintenance in the long term.
- Once implementation begins, knowledge management (KM) programs will start as small pilot programs and expand over time.
- Training will be vital in developing employee buy-in.
- Consulting firms and integrators offer products and services in all activity segments either with in-house resources or through partnering.

**Messages in the Data:**
- The majority of companies worldwide are in the planning and review stage of their KM programs.
- The worldwide market for KM services will be over $12 billion by 2005.
- Total KM services are forecast to increase at a CAGR of 41% between 2000 and 2005.
- Maintenance has the highest growth rate at 52%, and planning has the lowest at 28%.
- Vendors must offer a full range of services to meet the short-term and long-term demands of their customers.

**Source:** IDC, 2001

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**Worldwide Opportunity**

From a regional perspective, all areas offer KM opportunities. The differentiating factor is the level of preparedness. The United States leads efforts in KM, followed by Western Europe. Other regions are further behind, but the delay will shorten as regional organizations learn about and observe the positive results that successful KM implementations can have on their operations. As a result, while the United States moves into operations, Canada and Western Europe will focus on implementation, and Asia/Pacific and ROW will emphasize planning. In order to benefit from KM evolution, vendors will need to leverage their presence in each region in which KM gains a foothold. Vendor presence can be established through the following:

- Establishing offices in the regions and pursuing local customers using internal resources
- Partnering with regional firms or U.S. firms that are expanding or currently have offices in other regions
- Leveraging relationships with current customers that have or are planning to have presence outside their original regions
KM is the new frontier for most companies and is gaining momentum. Corporate managers understand the benefit of capturing and sharing intellectual capital, but they do not understand the process of putting it into action. As a result, there is a great opportunity for vendors that can develop and apply KM solutions around specific business problems that clients are trying to solve — employee retention, for example. By doing so, vendors help KM to lose its ambiguity and become a value-adding tool.

In addressing a specific business problem, vendors need to be prepared to incorporate consulting, implementation, training, operations, and maintenance into their product and service mixes. If a vendor cannot provide these services from internal resources, it will need to partner with firms in the appropriate categories to gain a critical competitive advantage.
U.S. Knowledge Management Services Market

The consistent barrage of bad economic news and the recent downfall of the equity markets have caused many companies to ask about the effects on the knowledge management market. IDC is not seeing a major slowdown in demand but a more targeted approach to how money is being spent by end users. There is real demand for solid business cases and effective measures. Companies have spent a large fortune on technology over the past few years, and now CEOs are asking to see the value that it has created. The result on the vendor front is that IDC is seeing more targeted horizontal solutions focusing on more specific problems and measures.

U.S. Market Growth

As companies adopt KM programs and move through the planning, review, and implementation stages of their programs, the demand for KM services will increase. The U.S. KM services market will increase at a CAGR of 35%, resulting in a market of over $6 billion by 2005 (see Table 7).

<table>
<thead>
<tr>
<th>Year</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>CAGR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spending</td>
<td>836</td>
<td>1,380</td>
<td>2,149</td>
<td>3,187</td>
<td>4,245</td>
<td>5,349</td>
<td>6,094</td>
<td>34.6</td>
</tr>
<tr>
<td>Growth (%)</td>
<td>NA</td>
<td>65.0</td>
<td>55.7</td>
<td>48.3</td>
<td>33.2</td>
<td>26.0</td>
<td>13.9</td>
<td></td>
</tr>
</tbody>
</table>

Key Assumptions:
- The majority of U.S. companies are in the planning and review stage of their knowledge management (KM) programs.
- Once implementation begins, KM programs will start as small pilot programs and expand over time.
- The United States is leading the KM industry, with non-U.S. regions expected to surpass the United States in 2005.
- Once business cases are used to justify KM initiatives and success stories are publicized, additional companies will begin to plan and implement KM programs.

Messages in the Data:
- The U.S. market for KM services will be over $6 billion by 2005.
- U.S. KM services are forecast to increase at a CAGR of 35% between 2000 and 2005.

Source: IDC, 2001

In the future, revenue will grow as companies continue to move into the implementation phase of their programs. The publication of success stories targeting specific business cases with effective measures will influence additional companies to begin planning and implementing KM programs, helping to drive growth.
In 1999 and 2000, service spending was dominated by consulting and implementation (see Table 8). While spending in these two categories was the same in 1999, implementation pulled ahead in 2000. IDC expected this change, but the growth of implementation was not as high as expected. This change is most likely due to the slowdown in the economy and the heavier emphasis on strategic planning rather than faster implementation. The result is a reallocation of funds from implementation to planning.

<table>
<thead>
<tr>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning (consulting)</td>
<td>242</td>
<td>359</td>
<td>516</td>
<td>637</td>
<td>856</td>
<td>975</td>
</tr>
<tr>
<td>Implementation</td>
<td>242</td>
<td>414</td>
<td>666</td>
<td>1,020</td>
<td>1,605</td>
<td>1,706</td>
</tr>
<tr>
<td>Operations management (including outsourcing)</td>
<td>167</td>
<td>276</td>
<td>430</td>
<td>701</td>
<td>1,337</td>
<td>1,584</td>
</tr>
<tr>
<td>Maintenance (support)</td>
<td>92</td>
<td>152</td>
<td>236</td>
<td>382</td>
<td>594</td>
<td>802</td>
</tr>
<tr>
<td>Training</td>
<td>92</td>
<td>179</td>
<td>301</td>
<td>446</td>
<td>594</td>
<td>749</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>836</strong></td>
<td><strong>1,380</strong></td>
<td><strong>2,149</strong></td>
<td><strong>3,187</strong></td>
<td><strong>4,245</strong></td>
<td><strong>5,349</strong></td>
</tr>
</tbody>
</table>

**Key Assumptions:**
- More companies will be implementing knowledge management (KM) solutions in the short term and operations and maintenance in the long term.
- Once implementation begins, KM programs will start as small pilot programs and expand over time.
- Training will be vital in developing employee buy-in.
- Consulting firms should offer products and services in all activity segments either with in-house resources or through partnering.

**Messages in the Data:**
- The majority of companies are in the implementing stage of their KM programs.
- The U.S. market for KM services will be over $6 billion by 2005.
- U.S. KM services are forecast to increase at a CAGR of 35% between 2000 and 2005.
- Maintenance has the highest growth rate at 45%, and consulting has the lowest at 22%.
- Vendors must offer a full range of services in order to meet the short-term and long-term demands of their customers.

Source: IDC, 2001

As implementation increases, training will play a major role in the success of KM initiatives because companies will need to develop employee buy-in to maximize the benefits of their programs. As a result, the growth of training will follow the growth of implementation.

In 2001, consulting and implementation will continue to be the main spending activities. However, changes will become apparent in 2002 when spending on operations will exceed that on consulting. In 2003, the combined spending on operations, training, and maintenance will exceed that on consulting and implementation. The highest growth activities through 2005 will be maintenance and training.
U.S. Spending

Based on IDC’s findings related to KM spending, it is clear that companies are trying to maximize their internal resources; however, 36% of KM budgets have been allocated for external resources during 2001 (see Table 9). Since respondents in IDC’s 1999 survey answered that their external spending was going to be 34% of their 2000 budgets, the increase to 36%, while a statistically small difference, is an encouraging sign for vendors. IDC sees this as a direct correlation to the increase in the number of KM implementations. Of total external budgets, segment spending will be similar to that reported in 2000, with IT services accounting for 32%, non-IT consulting services for 25%, and computer software for 37%.

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>66</td>
<td>64</td>
</tr>
<tr>
<td>External</td>
<td>34</td>
<td>36</td>
</tr>
<tr>
<td>Computer software</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>Non-IT/management consulting services</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>IT services</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

**Key Assumptions:**
- IT services are separated from non-IT/management consulting services in order to reflect the emphasis on technology in knowledge management (KM) program development.
- Spending on IT services is expected to exceed spending on software as organizations implement their KM programs.

**Messages in the Data:**
- Within external spending, software accounts for the majority of expenditures followed by IT services.
- Overall service spending (IT and non-IT) is 57%, versus 37% for software.

Source: IDC, 2001

Based on its findings, IDC assumes that the majority of current spending is internal because most organizations are in the process of understanding KM and determining its place in their organizations. When looking at external services, IT services are separated from non-IT/management consulting services to reflect the emphasis on technology in KM program development.

It is interesting to note that overall service spending, IT and non-IT, is 57%, versus 37% for software. This difference proceeds from two factors. First, while KM began mainly as a technology initiative in most companies, the need for services has increased because the challenges that are being experienced around KM tend to involve
business processes and change management, which are service issues. Second, as companies move from planning to implementation, the demand will increase for service firms with expertise in integration, change management, and business process design.

**Market Drivers and Business Uses**

While technology drove the initial interest in KM in the United States, current drivers of KM are practical goals focused on improving business and can be directly linked to specific business uses that companies are targeting for KM.

**Market Drivers**

*Retention of Expertise*

By capturing expertise through KM solutions that may include communities of practice and best practices, companies are not only covered when employees leave, but they are also capable of getting new employees up to speed quickly, creating a positive work environment.

*Customer Retention and/or Satisfaction*

An organization’s ability to keep its existing customers and grow its customer base is critical in the increasingly competitive environment of the U.S. marketplace. KM lends itself to this goal because it emphasizes getting the right information about customers to the right people at the right time in order for them to make informed decisions.

*Revenue and Profit Growth*

As companies become enamored with new technology, they often run the risk of overlooking its practicality and, instead, focus on the bells and whistles. The result is wasted time and money that could have been invested more wisely to positively affect the bottom line. With KM, companies appear to have learned from their past mistakes and are approaching the concept with an eye toward how a KM solution can make a business more profitable. This more mature consideration of technology is primarily due to corporate management’s taking an active role in leading KM efforts.

*eBusiness*

eBusiness is an underlying driver of all business today. From a KM perspective, companies are trying to create environments to parallel the face-to-face interactions that customers, employees, partners, and suppliers have traditionally experienced. To do so, organizations must provide effective content management and collaboration, the underlying components of KM. If effective, the user experience can be heightened because they save time, work more efficiently, and are more productive.
Business Uses

The specific business uses that companies are targeting with KM include capturing and sharing best practices, providing training/corporate learning, enhancing CRM, delivering competitive intelligence, and managing legal and intellectual property issues.

Capturing and Sharing Best Practices

The focus on capturing and sharing best practices directly addresses retaining expertise. By sharing best practices, current employees can increase their value to the company and potential for promotion by learning new skills, and new employees can get up to speed faster when they are hired or are moving to new positions within the same organization. Developing best practices is one of the most common purposes for implementing KM. However, one trap into which companies fall is not clarifying and drilling down to specific business problems that need to be solved by the best practices.

Provide Training and Corporate Learning

Training and corporate learning also address the issue of retaining expertise. When provided with training and learning opportunities, employees may feel more dedicated to an organization because it is providing career building skills and be less tempted to leave for other positions in which the opportunities are not as clear. KM ensures that knowledge moves freely and swiftly from sources that have it to those who need it. Learning ensures that people can effectively acquire the knowledge and skills they need in order to be productive and competitive.

Enhancing Customer Relationship Management

In order to retain customers, companies are using CRM to enhance customer support in call centers and online environments. Most consulting firms and integrators see the majority of their KM work as being tied to CRM projects. Current use of KM in this environment touches on learning where employees can be brought up to speed faster during training and acquire the knowledge they need in order to answer a customer’s inquiry.

Delivering Competitive Intelligence

The delivery of competitive intelligence focuses on increasing sales/profits. A common area for this activity is in sales organizations that use this information to overcome customer concerns and close more deals. KM increases the efficiency of accessing and managing this knowledge base in order to drive more proposals and contracts through an organization. It would be a logical fit to develop solutions that tie the delivery of competitive intelligence with CRM solutions.
Managing Legal and Intellectual Property Issues

The ability to manage legal and intellectual property issues focuses on R&D and product development in organizations. The more efficient this process can be made, the faster new products can be brought to market. KM is important in this endeavor because it can enhance the collaborative environment where valuable content is created that will drive more efficient product development. Because faster product introduction translates into revenue, the pharmaceutical/biotech industry, in particular, is very interested in this capability.

Customer Needs and Expectations

Based on IDC’s findings, end-users have a number of expectations and challenges regarding KM that need to be addressed by vendors. At present, the six main inhibitors that a company is likely to encounter when implementing a KM program are the following:

- Employees do not feel they have time for KM.
- The current culture does not encourage sharing.
- Users do not understand KM and its benefits.
- The company is unable to measure the financial benefits of KM programs.
- The organization’s processes are not designed to accommodate a KM initiative.
- The company lacks incentives and rewards for sharing knowledge.

It is interesting to note that technology is not one of the primary challenges. This is due to the fact that, while organizations have invested in KM, the investments were around “technology solutions” and lacked a focus on people and processes issues. As a result, it is critical that change management and process design be primary components of KM initiatives. Over time, management must develop and continue to support a culture of sharing through ongoing training and educational programs.

In order to overcome the above challenges, companies are willing and planning to spend money on services. As shown in Table 10, respondents to IDC’s end-user survey said they plan to invest in process redesign and training along with other services to help them achieve success.
Table 10
Future Service Requirements for Knowledge Management

<table>
<thead>
<tr>
<th>Service Requirement</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redesign of processes/operations</td>
<td>56</td>
</tr>
<tr>
<td>Training</td>
<td>51</td>
</tr>
<tr>
<td>Incentives and rewards for sharing/creating knowledge</td>
<td>50</td>
</tr>
<tr>
<td>Leadership preparation (mentoring)</td>
<td>49</td>
</tr>
<tr>
<td>Measurement of intellectual capital</td>
<td>49</td>
</tr>
<tr>
<td>Communities of practice</td>
<td>47</td>
</tr>
<tr>
<td>Technical evaluation</td>
<td>45</td>
</tr>
</tbody>
</table>

N = 538  
Note: Multiple responses were allowed.  
Source: IDC’s Knowledge Management Survey, 2001

Trends

In the interest of meeting the needs of their customers, companies are initiating a number of trends in the market, partially emerging from vendors’ challenges and evolving market conditions.

KM Solutions: People, Processes, and Technology

There is a growing awareness that an effective KM solution must not be solely focused on technology; however, much of the attention in the marketplace is on software applications. The Big 5, IBM Global Services, and Ksolutions are just a few consulting firms and integrators targeting process assessment and change management.

Fewer Standalone Solutions

The term knowledge management is losing favor in the marketplace, with companies moving away from formal KM offerings essentially because the term tends to cause confusion. In many cases, KM services are becoming imbedded in other solutions because, as a process, KM will become a foundation for most projects around CRM, ERP, training, and e-business in the future. PricewaterhouseCoopers (PwC) has dropped its KM offering in favor of this approach, as has the rest of the Big 5.

Small/Middle Market Interest Growing

As mentioned above, IDC’s most recent end-user survey had a significant number of respondents representing companies with fewer than 500 employees compared with 1999’s survey. This increased interest by end-users is translating into vendor interest as some new vendors, such as Habama, target this market.
A challenge in this market is that smaller companies are more price sensitive than large companies with thousands of employees. As a result, solutions targeting this segment tend to be more technology focused, with out-of-the-box solutions. However, KM implementation challenges revolve around people and processes issues that require more expensive services to solve. Many smaller organizations cannot afford these services. Therefore, the challenge for vendors targeting this segment is to find a balance between technology and nontechnology components in order to provide reasonably priced solutions that meet the needs of the customer. IDC believes that external solutions targeting smaller organizations will be dominated by turnkey technology solutions. As a result, the true value of KM will be attained only if the management of these organizations internally focuses on change management and business process design that can be used in conjunction with the technology.

**Community Development**

In order to get away from the term *knowledge management*, companies are beginning to emphasize community development products and services. These companies include IBM Global Services, Participate.com, BlueBarn, Prospero, and Communispace. While the terminology is different, the issues are the same, with emphasis on content management and collaboration. If an organization has effective content management and collaboration, then, by default, it has developed a community and has a KM solution.

A lot of the interest in communities has been related to ebusiness because of the importance of maximizing the length of time that visitors stay at Web sites. This emphasis is particularly true for eMarketplaces. eMarketplaces have traditionally been transaction-based businesses, but there is a need to increase the “stickiness” of the sites in order to create destinations that users will visit longer and more often and, therefore, increase the rate and size of their purchases. As a result, some exchanges promote themselves as communities.

**Formal Partnering Strategies**

Partnering is a common strategy among companies. It is not surprising that software firms want to partner with service firms and vice versa. The reason for doing so is to more effectively provide customers with complete solutions. End-users are becoming aware that KM is not all about technology and are looking for vendors to meet their service needs as well. While many companies have taken a shotgun approach to partnering in the past two years, there is a move toward more formal partnering strategies that emphasize only a handful of strong partners. This focus allows companies to more efficiently manage their limited resources and have better-quality control. An example of a company that has undergone this change is Participate.com.
Business Case/Measures

While, in the past, companies have been willing to invest in KM on gut instinct, they are now requiring defined business cases with effective measures. This new demand is due to the fact that more CEOs are involved in their organizations’ KM initiatives and expect results to be visible in profits and costs. In many cases, companies have invested millions of dollars in technological infrastructures and are now trying to figure out how these investments will pay off.

Targeted Solutions: Vertical and Horizontal

In focusing on the needs of the customer, vendors are beginning to promote targeted solutions around specific industries and activities. The reason for doing this is to define more specific business problems that can be effectively measured for companies. Examples of vertical and horizontal solutions being targeted by specific companies are the following:

- Vertical:
  - Life sciences: IBM GS and Sopheon/Biospace
  - Financial services: Access Data Corp.
  - Not-for-profit: Ramius and Primus/Blackbaud
  - High-tech: Toptier/Aristosoft

- Horizontal:
  - Sales/marketing: Conjoin and Primus
  - R&D: Sopheon/eFunda
  - CRM: the Big 5

If an organization decides to provide a horizontal solution, it is important to consider the fact that end users are looking for solutions that may incorporate a number of areas such as ERP, CRM, and training. In this situation, a vendor must have in place the means to link a horizontal solution to other functional areas to meet the needs of its customers.

Spin-Offs/JVs

While spin-offs, such as Microsoft and Accenture’s Avanade, have been in the news over the past few years, IDC does not expect this to be a long-term trend because the purpose of starting a new company in the past was to take advantage of the robust equity market. With the current market decline, the potential for the participating companies to have big paydays is unrealistic.

ASP

ASP

ASP have started popping up as components of KM solutions. For example, Communispace uses an ASP delivery model for its technology but also has services targeting the people and processes
challenges that companies will encounter while implementing KM solutions. The benefits of the ASP model are that it is usually inexpensive in relation to developing a project from scratch and the provider has the staff to install and support the applications, which frees a client to focus on strategic business objectives. However, it is important for vendors and end users to not consider a standalone ASP to be a KM solution. KM requires not just technology expertise but also a solid understanding of change management and business processes related to a customer’s business.

P2P

Since P2P is a computing model that links peers for the purpose of sharing and leveraging resources, it feeds into the KM market. P2P emphasizes collaboration and content management, the two primary drivers of KM.

From a collaborative standpoint, P2P is a multipurpose tool that can be used internally among employees for project management or externally by partners, suppliers, and customers in areas such as CRM. Because users have ultimate control of the environment, the relevance of the participants and their experience should be heightened. P2P’s decentralized approach to collaboration also makes it more secure and private, which may help increase the comfort level and buy-in of users.

For content management, P2P has the ability to heighten the value of content. Since the decentralized technological approach places and encrypts the content on all specified users’ computers, it forces individuals (experts) to take ownership of content that is relevant to them and increases the likelihood that it will not only be useful, but also be improved during the collaborative process.

Knowledge management solutions emphasize three components of an organization when developing a solution: people, process, and technology. The reason for doing so is that the biggest challenge organizations have with knowledge management is not the technology but aligning organizations’ processes with the knowledge management solutions and getting employees, partners, clients, and suppliers to use the system. While P2P does not offer a complete knowledge management solution, it can directly enhance an overall solution by being packaged with nontechnology-focused collaborative and content management services. Collaborative services include culture assessment, training, measurement design, and workflow evaluation, while content management services include process design around quality control, access, and content submittal/removal.

Wireless

Wireless technology, similarly to P2P, has gotten a tremendous amount of press in reference to KM, but the key issue with any KM initiative is to determine a relevant problem that the solution will be designed to solve. If wireless fits into the solution, then it should be considered. However, at present, companies are trying to come to
grips with their existing technology, discern how KM fits into their organizations, and determine which problems they may address with the investments that they have already made in their IT infrastructures. Wireless presents tempting benefits around collaboration and access, but it also reintroduces issues that are key to any successful KM solution: content management and business process design.

Opportunities

Although corporate managers understand the benefit of capturing and sharing intellectual capital, the process of putting a KM program together has proven to be confusing. As a result, there is a great opportunity for vendors that can help plan and implement systems for clients that have specific business problems. By doing so, vendors can help KM to lose its ambiguity and become a value-adding tool.

With implementation, one of the primary challenges that companies must address is the buy-in of their employees. As a result, there will not only be a significant opportunity for vendors to offer consulting, implementation, operations, and maintenance assistance, but also to provide educational and training services. Examples of specific opportunities include developing programs around the redesign of processes and operations, communities of practice, leadership preparation (mentoring), measurement design, vertical solutions, and collaborative and content management services.

Redesign of Processes and Operations

In putting a KM program into place, organizations often need to restructure their operations to enhance knowledge flow and sharing. For example, if a company wants to improve the productivity of its sales force, it may need to change its existing compensation structure, which generally promotes internal competition between sales people. Instead, the process must be designed to encourage sales people to contribute and share best practices while aligning the compensation plan to promote and reward this behavior. The means by which price changes reach sales and marketing personnel must be made more efficient in order to ensure that all representatives have the most up-to-date information as soon as possible. The ability to restructure is particularly important in ebusiness, for which speed and accuracy are critical to providing enhanced purchasing experiences. As a result, vendors that have experience in providing these services will have an advantage in generating new business.

Communities of Practice

KM solutions often entail leveraging corporate intranets and developing corporate portals. The goal of the portals is to increase collaboration between employees, connect individuals with similar interests, and deliver value-added content to users. By developing communities of practice, employees feed the knowledge base and become more productive, and the communities lend themselves to
the development of expert systems that can be used companywide. Vendors that can provide the technological infrastructure and support in addition to collaborative and content management services will have a significant advantage over their competitors.

In addition, for employees to participate in KM programs, incentives must be in place to motivate that participation. The incentives can include ties to compensation and/or other types of perks such as extra vacation days. Because the establishment of a sharing culture is so critical to the success of a KM program, incentive-program development should be a visible component of a vendor's product mix.

**Leadership Preparation (Mentoring)**

A KM program will not be successful without effective leadership from corporate and functional area management. Corporate managers may not be involved in the day-to-day management of the program, but it is critical that a company’s employees understand that they support the KM initiative and expect a maximum effort from the employees. Preparation for functional area management will also be critical because managers will be responsible for developing buy-in within their areas. If this group does not believe in the KM program, then the benefits will not be communicated effectively, and the program will fail.

**Measurement of the Company’s Intellectual Capital**

The ability to measure the effectiveness of a KM program is a critical factor in the long-term success of an initiative. The need for an effective measurement system has been further emphasized with the shift in leadership to corporate managers and their demand for effective measures. Vendors that can establish or include effective measurement systems in their KM solutions will increase the value-add to their customers and differentiate themselves from the competition. Vendors that can develop return on investment (ROI) parameters for their services will be handsomely rewarded with new business.

As KM continues to gain momentum, the competitive landscape will change, with customers demanding to see proven track records of success by service and software vendors, particularly in light of the current economic conditions. Customers will be more conservative in their decision making and will require demonstrable measures such as ROI for their programs. Vendors able to effectively understand and prepare for this market shift will have a competitive advantage.

**Vertical and Horizontal Solutions**

From an industry perspective, KM programs can be developed for any type of business, but those involved in the service industries most commonly embrace these programs. Industries that have become involved in KM and will provide notable opportunities to vendors include healthcare, financial services, manufacturing,
professional services, and government. These verticals are characterized as large markets in which the ability to successfully leverage information determines companies’ success.

A number of horizontal solutions could be developed, though based on the needs of the customer, but the most common include CRM, R&D, and sales/marketing.

**Collaboration Services**

The purpose of collaborative services is to design, implement, and foster an environment in which work can be better performed by users. As a result, the services must not be based solely on technological needs, but also on an organization’s people and business processes. Descriptions of service opportunities around each of these categories follow.

**People Services**

People services include the following:

- **Culture and social assessment.** This service evaluates an organization’s culture, social makeup, and ability to be a sharing organization and will identify key players and challenges that need to be formally addressed in the design of a solution.

- **Training.** Based on the collaborative atmosphere in a company, training programs must be available to introduce and train users regarding collaborative behavior, techniques, and tools.

- **Collaboration management.** Once a collaborative solution is in place, usage does not happen immediately. Users must continually be motivated and given incentives to participate. To drive usage, community management services that focus on collaboration should be pursued by KM service vendors and can differentiate vendors who successfully motivate their clients’ employees.

**Business Process Services**

Business process services include the following:

- **CRM.** If an ebusiness initiative includes customer contact through ecommerce or other offerings, then an effective CRM solution is critical to achieving effective collaboration between the business and its clients. Therefore, a vendor that can design and implement a CRM process in an ebusiness project will provide additional value to the customer.

- **Workflow evaluation and design.** Companies that develop ebusiness initiatives must have online collaborative processes that parallel the offline processes. To ensure that this parallelism occurs, vendors must provide services including, knowledge mapping, to analyze the flow of information through a company and business rules design/redesign to increase the efficiency of information motion through an organization.
• **Measurement.** Being able to measure the success of an ebusiness initiative is critical. When focusing on communities and collaboration, the ability of a vendor to develop a measurement system that shows the effectiveness of collaboration in driving usage and/or sales to a client’s Web site will be of tremendous value. Measurement services can be a component of collaborative management.

**Technology Services**

When dealing with ebusiness and collaboration, reliable and effective technology that meets the needs of the client is critical. Vendor services should include assessment, design, and implementation around messaging, project management, expert tracking (profiling), language, and workspace technologies.

**Content Management Services**

The purpose of content management services is to design and implement solutions that ensure that information (i.e., content) in an online environment is of value to the users. As in collaboration, technology has received much of the attention in this area, but the people and business processes used to manage content are of tremendous importance.

**People Services**

People services include the following:

• **Resource management.** A common problem in managing content is the lack of people to effectively manage the content in a KM system. Companies need assistance in addressing this problem. The solution may range from having a full-time staff to a rotating schedule through which experts monitor their particular areas for a fixed period of time.

• **Performance evaluation.** The ability to evaluate the performance of a content management staff is also a challenge for companies. Because these individuals are responsible for managing content, they need to be experts in their functional areas in order to know when to pull or add information. The ability to measure the level of someone’s expertise is difficult, particularly when the information changes rapidly.

**Business Process Services**

Business process services include the following:

• **Content submittal and access.** Services in this category focus on how content is entered into the system and the flow of the entered information through the organization. For content submittal, formal procedures need to be designed and implemented that define how information is entered (e.g., templates), why it is being entered (e.g., project-specific versus general), who gets to enter it, where it is entered, and when it is
entered. Similar procedures need to be developed around access.
Some content may be team-specific while other information
may be of a sensitive nature and, therefore, for upper managers’
eyes only.

- **Quality control.** These services focus on the design and
  implementation of quality control standards that will monitor
  the value of the content in relation to the needs of the users.
  Formal evaluation processes must be in place not only to
  measure the age and usage of existing content, but also to
determine whether new content is adequate to replace outdated
information or is contributing to a content bucket that is
underrepresented.

- **Content removal.** Based on the result of a quality control
  system, content will have to be routinely removed from the
  system. As in the submittal process, processes need to be in
  place that define how information is removed, why it is being
  removed, who gets to remove it, where it is removed, and when
  it is removed.

**Technology Services**

Technology services include the following:

- **Security.** Security is a major concern for companies that want to
  protect their proprietary information and privacy. In looking at
  pharmaceutical, financial, and manufacturing firms, each has
  customer and R&D information that must remain secure when
  placed in a technological environment. Combining security
  technology and the access processes discussed above is a logical
  service offering that would be of significant value to clients.

- **Taxonomy.** With the current business environment so heavily
  focused on mergers and acquisitions and globalization, clients
  need the ability to develop common taxonomies across their
  organizations. As a result, taxonomy development represents an
  opportunity for vendors.

- **Database management.** This service entails not only developing
  new databases but also the very challenging task of linking
  multiple legacy databases that are not traditionally compatible.
Knowledge Management Service Firms

Based on reported and estimated revenue, IBM Global Services and PwC are the leading KM service providers worldwide (see Table 11 and Figure 3). PwC has broad exposure inside and outside the United States, while IBM Global Services has proven to be very innovative in designing and bringing to market unique KM services.

<table>
<thead>
<tr>
<th>Firm</th>
<th>Revenue ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Global Services</td>
<td>260</td>
</tr>
<tr>
<td>PricewaterhouseCoopers</td>
<td>190</td>
</tr>
<tr>
<td>Arthur Andersen</td>
<td>75</td>
</tr>
<tr>
<td>KPMG</td>
<td>70</td>
</tr>
<tr>
<td>Cap Gemini Ernst &amp; Young</td>
<td>65</td>
</tr>
<tr>
<td>Accenture</td>
<td>65</td>
</tr>
<tr>
<td>A.T. Kearney/EDS</td>
<td>60</td>
</tr>
<tr>
<td>Lotus</td>
<td>50</td>
</tr>
<tr>
<td>McKinsey</td>
<td>40</td>
</tr>
<tr>
<td>Booz</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>915</strong></td>
</tr>
</tbody>
</table>

**Key Assumptions:**
- The top service providers have worldwide operations.
- Once companies begin implementing their programs, external spending will increase.
- The United States will lead the knowledge management industry until 2005.

**Message in the Data:**
- IBM Global Services and PwC are the leading service providers worldwide.

Source: IDC, 2001
Figure 3
Key Knowledge Management Service Firms

Low
Low
High
High

Brand Awareness

Opportunity Alignment

- IBM GS
- KPMG
- PWC
- CGE&Y
- Andersen

- Accenture
- Lotus
- Microsoft
- DC
- CSC
- EDS/AT Kearney

- BCG
- Bain
- Booz

- Perot
- ADL
- Avanade
- Answerthink
- Sopheon
- AMS
- DMR

- Primus
- Organic
- Compaq
- Emerald Sol.
- Plaut

- Unitas
- Webfair
- Groundswell
- Communispace
- CCG.XM

Source: IDC, 2001
Conclusion and Recommendations

Opportunities exists for vendors that can develop and apply KM solutions for clients that address specific business problems such as employee retention. By doing so, vendors help KM to lose its ambiguity and become a value-adding tool. In addressing specific business problems, vendors must be prepared to define their service mixes through consulting, implementation, training, operations, and maintenance. In this way, they can promote themselves as solution providers. If a vendor cannot provide these services using internal resources, it will need to partner with firms in the appropriate categories to gain a competitive advantage.

Dealing with organizations’ cultures and their resulting ability to become sharing organizations is a tremendous opportunity for vendors that is just beginning to be emphasized. Managers’ ability to understand the degree to which the company is a sharing organization and what changes will need to be made in the culture and organizational processes to reach that goal will determine the success of a KM program. Moreover, an organization’s internal openness will not only be an important issue to address during initial project development, but it also represents a process that must be regularly evaluated indefinitely. To be effective at KM, companies will require help evaluating their levels of preparation as sharing organizations, training employees about KM’s benefits and technology, and designing pilot programs.

As the KM marketplace continues to grow, the competitive landscape will change, with customers becoming more conservative in their decision making and requiring demonstrable measures such as ROI for their programs. In addition, customers will demand to see proven track records of success by their service providers. These track records will be based on experience with specific industries, horizontal, client size, and measures. Vendors able to effectively understand and prepare for this market shift will increase their perceived value to their customers and gain competitive advantage. Vendors should work toward being able to demonstrate the following skills to clients:

- KM training
- Business goal identification, clarification, and measure
- Understanding of clients’ cultural challenges and ability to make change-management recommendations
- Vertical and horizontal solution development focusing on assessment, services, and software while leveraging partner expertise
- A proven track record categorized by industry, vertical, horizontal, and company size
- Knowledge community management focusing on content management and collaboration
Appendix A: Definition of Knowledge Management Spending Categories

Consulting
Consulting is the assessment and evaluation of an organization's needs and operations in order to help make decisions regarding the company's strategy and tactics. These activities might include evaluating an IS organization's help desk operation or examining the best technology to meet a company's order fulfillment process needs. IT consulting can also provide product-specific consulting such as formulating a plan for incorporating a new software product into an existing suite of applications or assessing the performance of a network and fine-tuning specific access devices. This category includes IS strategizing, IT and network planning, architectural assessment, IS operational analysis, technical system and network design, supplier assessment, and maintenance planning. IT consulting excludes strategic planning and tax, audit, benefits, financial, and engineering consulting.

Implementation
Implementation involves building technical and business solutions. At a point during functional system design (the consulting phase), proof-of-concept activities signal the beginning of the implementation phase. When a project turns from concept to actual building or prototyping of the system, implementation activities start. Examples of activities captured in this segment include prototyping and staging a new system before installation, configuring a new software package's features, or pulling network power cables.

Similar to consulting, implementation services are delivered as standalone activities or packaged within larger offerings such as systems integration projects. For example, the installation of a PC is considered to be a standalone installation service. However, a systems integration project aimed at building a new data processing center would include bundling implementation activities such as preparing the site, installing new equipment, loading software applications, developing custom interface drivers, testing and debugging systems, documenting final configurations, and managing the overall project.

Operations Management
Operations management is the day-to-day running of a technical business function or process. Specific activities that are included under operations management include help desk management, asset management services, systems management, network management, remote network monitoring, backup and archiving, and business recovery services.
Operations management activities may be part of an outsourcing contract in which staff and facilities are transferred to the service provider. As such, administration and facilities management costs become elements of the outsourcing contract.

Support

Support is ensuring that products and systems perform properly. Many of the activities captured in this phase are considered “traditional services” because IT product vendors have always had to provide a certain level of service to their customers when their products have failed. The use of packaged software has given new meaning to the word “support.” There is nothing traditional about metering network traffic, browsing the Web for information, or remotely diagnosing a problem and downloading a patch. Services in this category can come as bundled packages of other services or as standalone services.

Training

Training encompasses education meant to enhance knowledge of IT and expand the use of IT. Training focuses on improving performance or on developing new concepts, behaviors, and skills. Training revenue represents training content, delivery solutions, and learning services for IS/technical and desktop applications training delivered to the corporate market by an external provider.
Appendix B: Regional Categories

Regional numbers in this report are rolled up as shown in Table B1.

<table>
<thead>
<tr>
<th>Region</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>United States</td>
</tr>
<tr>
<td>Canada</td>
<td>Canada</td>
</tr>
<tr>
<td>Western Europe</td>
<td>Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom</td>
</tr>
<tr>
<td>Asia/Pacific</td>
<td>Australia, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, New Zealand, the Philippines, Singapore, Taiwan, and Thailand</td>
</tr>
<tr>
<td>Japan</td>
<td>Japan</td>
</tr>
<tr>
<td>Latin America</td>
<td>Argentina, Brazil, Chile, Colombia, Mexico, Venezuela</td>
</tr>
<tr>
<td>Rest of the world</td>
<td>Eastern Europe, Russia, the Middle East, and Africa</td>
</tr>
</tbody>
</table>

Source: IDC, 2001
Appendix C: Vertical Market Definitions

The IDC vertical market definitions that may be relevant to this report are listed in Table C1.

Table C1
IDC’s Vertical Market Definitions

<table>
<thead>
<tr>
<th>Industry</th>
<th>Company Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>Commercial banks, savings institutions, credit unions, foreign banks, agencies related to banking, the Fed, Fed-sponsored credit agencies, personal credit institutions, business credit institutions, and mortgage bankers and brokers</td>
</tr>
<tr>
<td>Insurance</td>
<td>Life, accident, and health insurance; fire and marine casualty insurance; surety; title; pension health funds; insurance carriers; insurance agents</td>
</tr>
<tr>
<td>Financial services</td>
<td>SEC brokers and dealers, commodity brokers and dealers, SEC commodity exchanges, holding companies, investment companies, trusts, and miscellaneous investing institutions</td>
</tr>
<tr>
<td>Discrete manufacturing</td>
<td>Aerospace, apparel, textiles, automotive, construction and building, electronics and electrical, information technology, office equipment, printing, publishing, allied industries, and miscellaneous manufacturing</td>
</tr>
<tr>
<td>Process manufacturing</td>
<td>Chemicals, cosmetics and soaps, food and beverages, forest products, mining and crude oil production, pharmaceuticals, plastics, and rubber</td>
</tr>
<tr>
<td>Transportation</td>
<td>Railroads, passenger transport, trucking, marine cargo, and air transport</td>
</tr>
<tr>
<td>Communication</td>
<td>Telephone, radio, TV broadcasting, and cable, fax, and Internet services</td>
</tr>
<tr>
<td>Healthcare</td>
<td>Offices and clinics of doctors, dentists, chiropractors, nursing care facilities; hospitals; medical and dental laboratories; home care providers; and outpatient facilities</td>
</tr>
<tr>
<td>Utilities</td>
<td>Gas, electric, sewage, refuse, water, and irrigation systems</td>
</tr>
<tr>
<td>Business services</td>
<td>Construction services; travel; tours; hotels; personal services; legal, social, and accounting services; museums; zoos; gardens; architectural and engineering services; child care services; entertainment; and recreation</td>
</tr>
<tr>
<td>Wholesale</td>
<td>All wholesale trade</td>
</tr>
<tr>
<td>Retail</td>
<td>All retail trade, single or multisite</td>
</tr>
</tbody>
</table>

Source: IDC, 2001