

INPUT

STRATEGIC MARKET PERSPECTIVE

Critical IT Applications in the Media Industry

U.S. Market Analysis Program

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Critical IT Applications in the Media Industry

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Abstract

This report from INPUT's Market Analysis Program analyzes key applications in the Media industry.

A survey of 67 U.S. companies within this industry examined their application-related objectives and plans. A further in-depth interview was conducted on 121 critical applications concerning plans over the next three years. The report provides insights into the replacement schedule of critical applications, the methods planned for implementation of these applications, and the expected expenditure on software and services.

Published by
INPUT
1881 Landings Drive
Mountain View, CA 94043-0848
United States of America

U.S. Market Analysis Program

Critical IT Applications in the Media Industry

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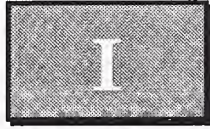
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Introduction

A

Overview

This study, from INPUT's Market Analysis Program, examines the plans of U.S. Media companies, both print and electronic, with respect to information technology (IT) applications.

This chapter will describe:

- The methodology used for this study
- The analytic approach
- The organization of this report

B

Methodology

INPUT interviewed 68 U.S. media companies in May and June of 1996 to learn of their application-related objectives and plans. The questionnaire used is shown in Appendix A.

The respondents were selected for being knowledgeable about all of their organization's systems and applications initiatives. The respondents were divided nearly equally between systems specialists and those in more general management positions. Surveys covered both electronic and print media sectors, including publishers, cable TV companies, radio/TV stations, and advertising agencies.

A key part of INPUT's methodology is that the questionnaire did not specify particular applications or application groups that INPUT had identified or

believed were critical. Instead, respondents were encouraged to identify the applications that they believed were important.

After key applications were identified, a further in-depth interview was conducted on 116 of these critical applications concerning plans over a three-year period. A three-year timeframe was selected because, in INPUT's experience, that is the maximum period for which most organizations are able to plan.

INPUT analyzed the interview responses both quantitatively and qualitatively.

C

Analytic Approach

Respondents were asked to identify the most important applications and their plans for replacement. In the course of its analysis, INPUT categorized the applications as follows:

- Advertising and subscription-related applications, including:
 - Circulation
 - Fulfillment
- Financial and administrative applications, including:
 - Accounts Payable and Receivable
 - Payroll/Human Resources
 - Order Entry and Billing
 - General Ledger, Financial Statements
- Desktop office or personal productivity applications, including:
 - Word Processing
 - Spreadsheets
 - Sales Tracking and Control Systems
 - Local, Single PC Database Management Systems
 - E-mail and Internet Access Systems

- Production and operations applications, including:
 - Graphics and Publishing Systems
 - Illustrating Systems
 - Server-based Database Management Systems
 - Editorial Systems
 - CAD Systems
 - Broadcasting Systems
 - Global Information Systems (GIS)

For each application type shown above, INPUT has performed the following analyses:

- The percent of media companies planning to replace the application
- The reasons for the replacement

In the research for this study, respondents were given the opportunity to give reasons for replacing applications. Later in the analysis, these were classified into the following groups:

- Changing business requirements
 - The need for better information or integration of information
 - Need for improved connectivity
 - The impact of technological advances
- The expected size (in dollars) of application replacement costs

The costs include identified in-house and external personnel costs, as well as costs for packaged software, systems integration, and outsourcing. Although some replacement costs involve additional costs for hardware, these costs were not considered because in many cases they were not yet identified or it was believed that no substantial hardware costs would be involved.

Projects have been classified into the following size groups:

- Under \$100K
 - \$100K-\$500K
 - \$500K-\$1 million
 - \$1million-\$5 million
 - Over \$5 million (generally under \$10 million)
- Total spending for media industry IT applications, and for the four application areas:
 - This is INPUT's estimate for total media industry spending on information services, and for the four subsets described above, for the years 1996, 1997, and 1998.
 - Expected sources for the replacement systems: packaged software, heavily modified packages, or customized applications
 - User satisfaction with currently installed applications

D

Organization of This Report

Chapter II, Executive Overview, is a summary of the key findings of this report.

Chapter III, Media Industry Selection of and Spending on Critical Applications, examines the demand for these applications across the entire industry.

Chapter IV, Analysis of Critical Media Application Types, analyzes spending plans and application requirements in each of the major application types identified by the survey.

Chapter V, Technology-Related Issues, discusses technology impacts and issues uncovered during the study.

Appendix A contains the questionnaire used for the survey of media industry firms.

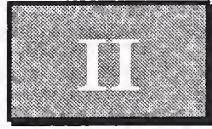
E

Related INPUT Reports

In addition to this market-specific report, the reader may also be interested in other INPUT reports, which address specific product/service markets and the U.S. and worldwide markets for information services. Such reports include the following INPUT publications:

- *U.S. Market Forecast Compendium, 1995-2000*
- *Revolutionary Changes in Hospital IT Applications*
- *Using the Internet for Business Operations*
- *Worldwide Internet Market, 1995-2000*
- *Electronic Commerce Over the Internet*
- *Worldwide Banking Information Services*

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Executive Overview

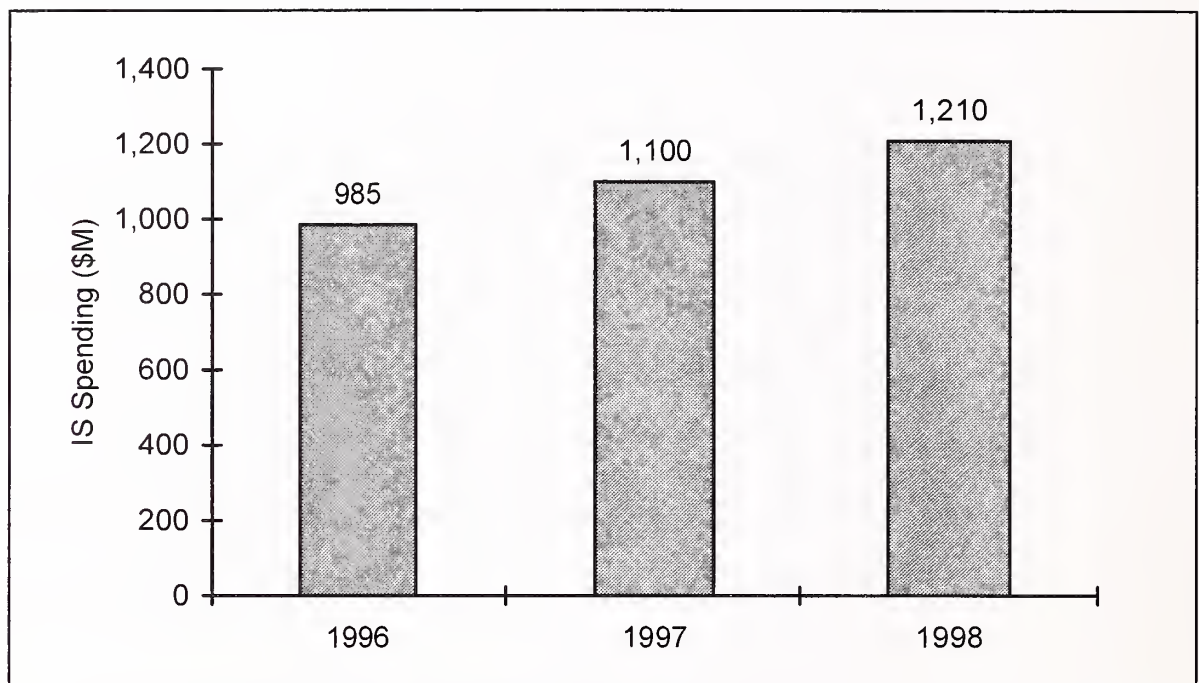
This study examines the plans of U.S. media companies for replacing critical information systems applications. This chapter provides a summary of:

- Total expected spending on critical applications within the media sector
- Replacement rates for critical applications
- The reasons why applications are being replaced
- The expected sources of these replacement applications
- Balances between business and technical influences in application selection
- Technology issues, such as Internet/intranet impacts, criteria for outside vendor participation, and vendor ratings
- Overall conclusions and recommendations

A**Information Services Spending in the Media Industry, 1996-1998**

Total spending for the media sector for the years 1996-1998 is shown in Exhibit II-1. This forecast is based on the projected spending for each critical application.

Exhibit II-1

Information Services Spending in the Media Industry, 1996-1998

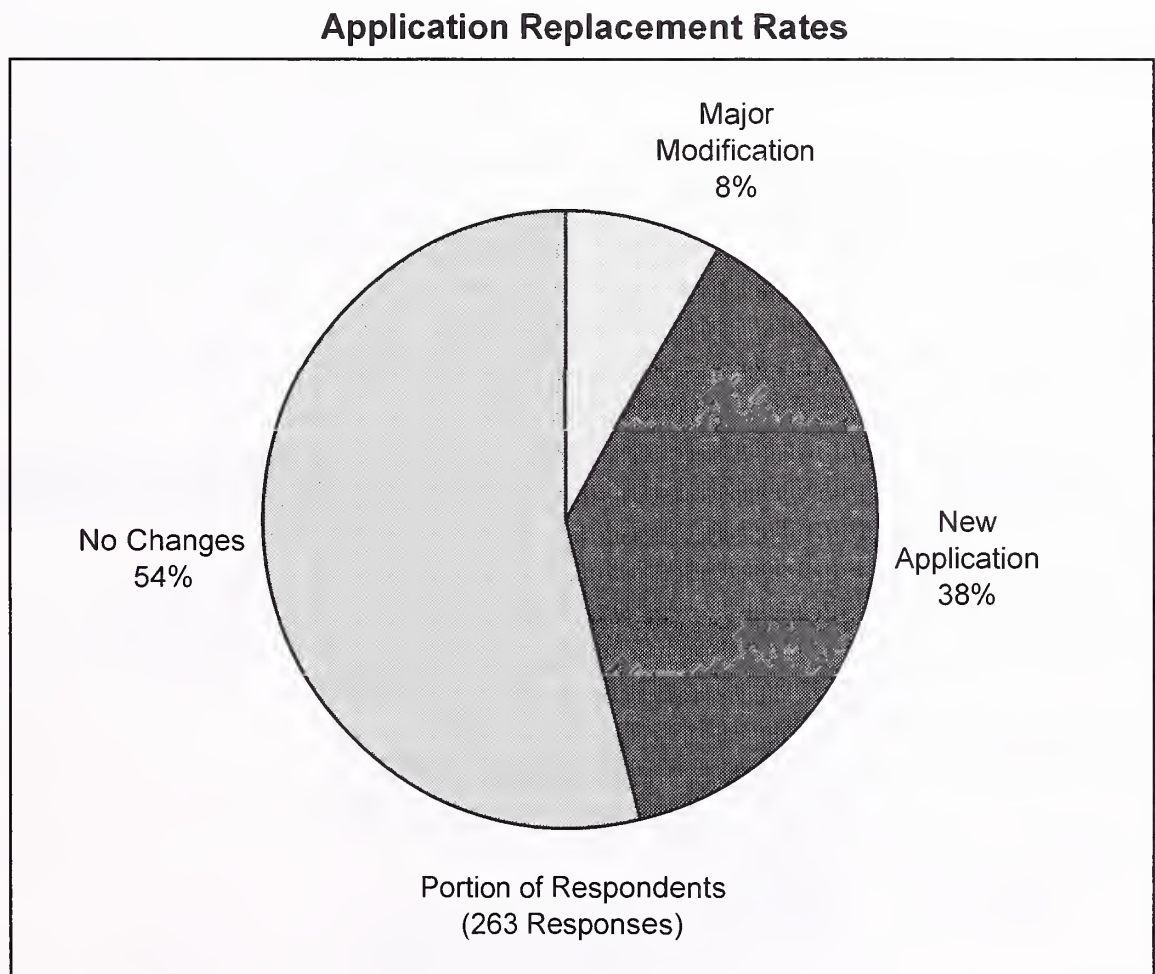
Source: INPUT

- Media industry spending is forecast to increase by 12% in 1997 and 10% in 1998. This closely matches growth for the overall U.S. Information Services Industry
- Media industry spending will exceed \$1.2 billion in 1998, driven primarily by growth in production/operations applications, which are crucial to competitive advantage in this sector.
- INPUT expects that not all planned spending will take place as scheduled. On balance, no more than 10% of planned spending should lapse or fall into later time periods.

B**Replacement Rates For Critical Applications**

Nearly 46% of applications in the media industry will be replaced over the next three years, as shown in Exhibit II-2. Replacement means either installing a completely new application, or extensively modifying an existing application. This replacement rate is not as aggressive as those forecast for other industries that INPUT has studied. For example, in the health care industry, over 80% of applications are planned to be replaced in the same timeframe.

Exhibit II-2



Source: INPUT

- Over 50% of the major applications surveyed will remain viable over the next three years.

- One factor in this relatively high number is the significant percentage of desktop-based office and personal productivity systems mentioned by respondents, including spreadsheets, word processors, and local database systems. These are much less likely to be replaced or heavily modified than more sophisticated applications.
- The media industry consists of a few dominant firms in major sectors, such as publishing and cable TV, and many smaller players. This demographic factor contributes to a lower level of application sophistication when the entire industry is measured, even though very complex applications are being installed in the larger firms.

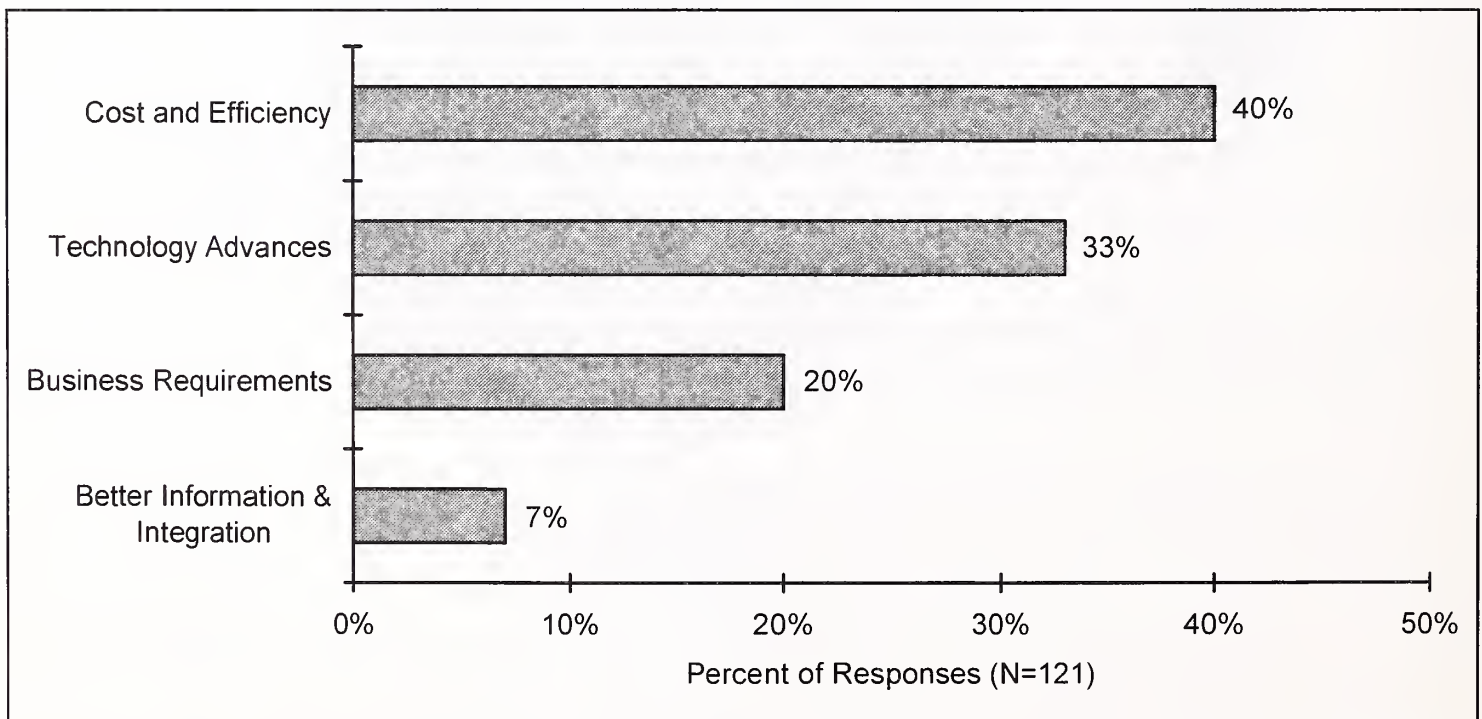
C

Reasons for Replacement

Open-ended responses to the reasons for application replacement were analyzed and grouped by INPUT into four major categories. The reasons for application replacement are shown in Exhibit II-3.

Exhibit II-3

Reasons for Application Replacement



Source: INPUT

- Cost/efficiency, listed in 40% of responses, dramatizes the significant cost pressures of the industry, especially among small and medium-sized players.

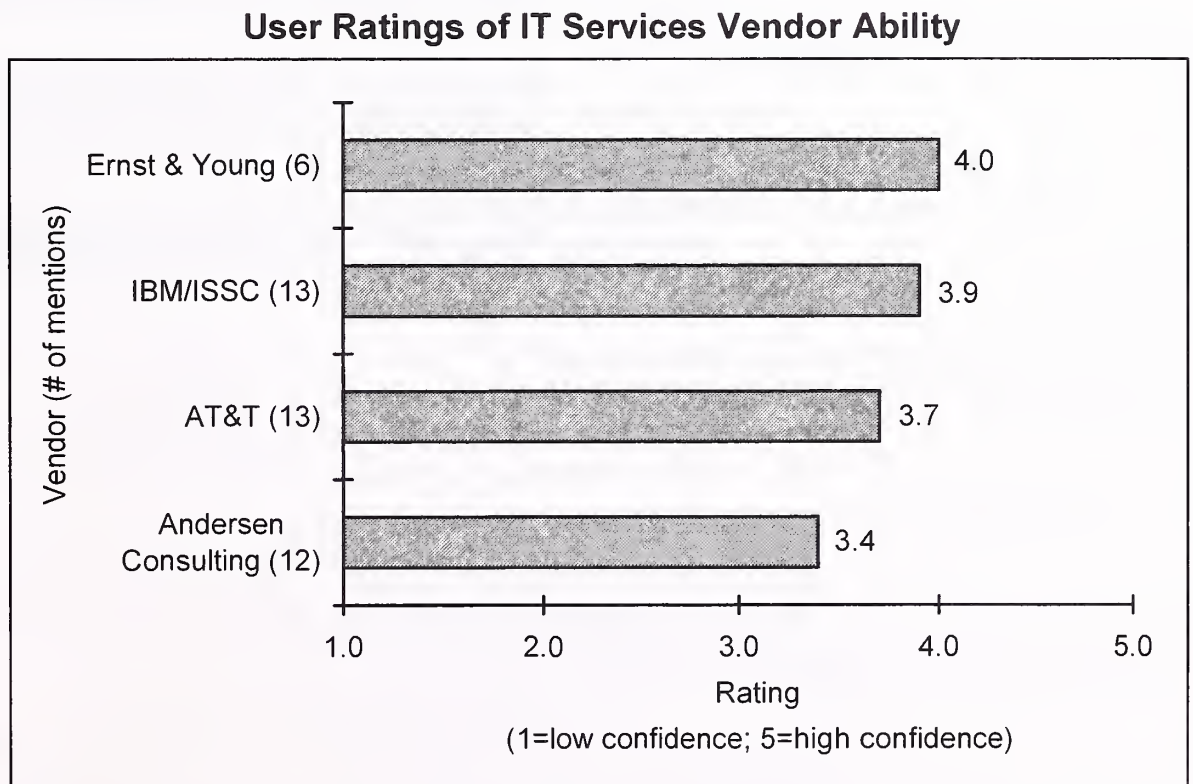
- Technology advances drive replacement for 33% of respondents, especially in the production/operations category, where significant capability improvements continue to be made in graphics systems.
- Somewhat surprisingly, only 7% of respondents indicated better information/integration as a reason; this is a reflection of the relatively unsophisticated IT usage among the small and medium-sized firms that composed the bulk of respondents.
- Stand-alone desktop office systems, which represent 30% of total applications identified during the survey, have relatively low integration needs outside a local server.

D

User Ratings of IT Services Vendor Ability

Users were asked to identify IT services vendors known to them and to rate their abilities in delivering solutions. Results for the most highly rated vendors are shown in Exhibit II-4. For ratings of all vendors mentioned, see Chapter V of this report.

Exhibit II-4



Source: INPUT

IBM/ISSC, Andersen Consulting and AT&T received the highest number of mentions in this survey.

All vendors received average ratings between 3.0 and 4.0, indicating relatively favorable views by respondents.

A rating of at least 3.9—on a scale of 1-5—is considered “good”; only Ernst and Young and ISSC achieved this target.

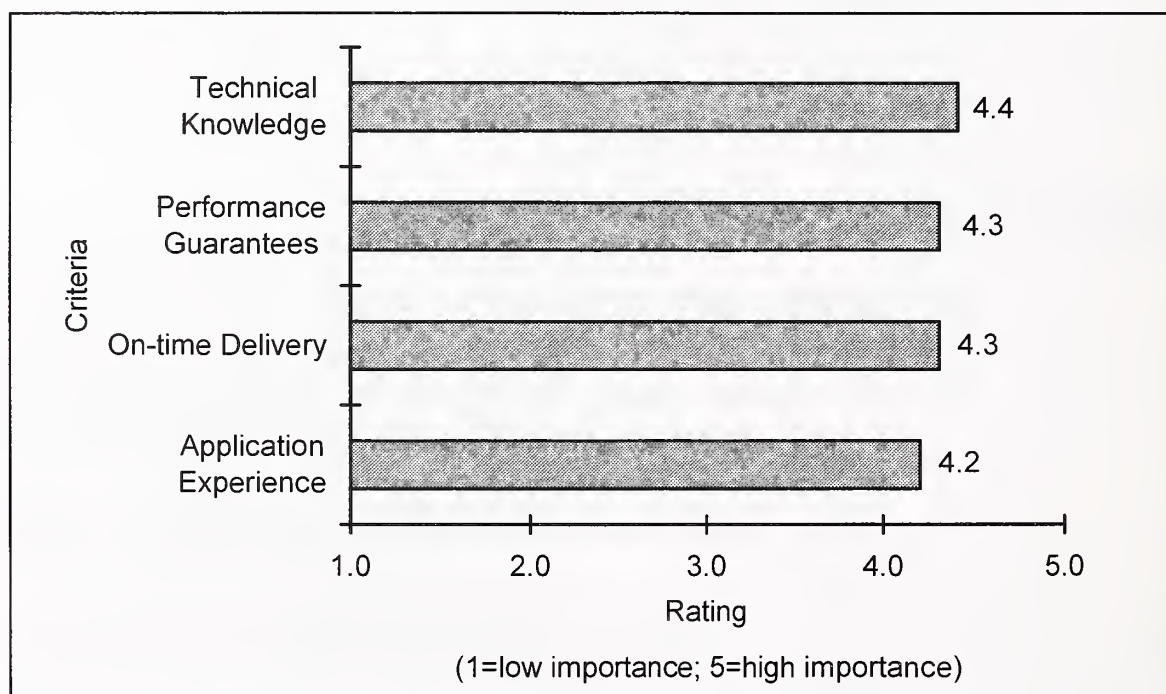
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Criteria for Selecting IT Services Vendors

Respondents were asked to state the most important criteria in selection of outside vendors for application development, systems integration, or other IT services. Results are shown in Exhibit II-5. See Chapter V for complete results.

Exhibit II-5

Leading Criteria in Selecting Outside Vendors for IT Projects



Source: INPUT

- Although technical knowledge ranks highest, the vendor’s willingness to provide performance guarantees and reputation for on-time delivery are also important.
- Surprisingly, industry knowledge was not ranked as highly as it is in other vertical markets. Respondents may feel they have sufficient industry knowledge within their own organizations to successfully guide the vendor.

F

Conclusions and Recommendations

Based on the research for this project, as well as other recent work that INPUT has performed, INPUT has drawn the following conclusions and associated recommendations:

1. Conclusions

- The media industry is characterized by a lower application replacement rate than in other industries.
- Revenue-related applications, such as advertising, subscriptions, and fulfillment, have the highest probability of replacement.
- Desktop office systems are least likely to be replaced.
- The drives for lower operating costs and increased business efficiency are the leading forces for replacement in the media industry
- Nearly 75% of replacement applications are seen as “packaged software” with limited modification needed.
- Opportunities for customized development and systems integration work are low.
- Users are most satisfied with production/operations-type applications and least satisfied with advertising/subscription-type applications.
- Median anticipated expenditure on replacement applications is \$300,000.
- IBM-compatible personal computers are the preferred platform for new applications, mentioned by nearly half the respondents. UNIX platforms were mentioned by nearly 25%.
- Two-thirds of respondents plan to incorporate Internet technology in their new applications.
- Only 18% of respondents will use outside vendors exclusively to deliver new applications. But another 55% will use a mixture of in-house staff and outside vendors to do this work.

2. Recommendations

Exhibit II-6 maps the media application types against the stated reasons for replacement. Opportunities are identified by an "x" in appropriate boxes of the matrix.

Exhibit II-6

Media Application Strategies

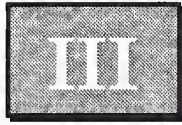
| Reasons for replacement | Better information and integration | Changing business requirements | Technology advances | Cost/efficiency |
|---------------------------------|------------------------------------|--------------------------------|---------------------|-----------------|
| Advertising and subscriptions | X | X | X | |
| Finance and administration | X | X | X | X |
| Desktop office and productivity | | | X | X |
| Production and operations | | X | X | X |

Source: INPUT

- Vendor opportunities in advertising and circulation applications (revenue producing or revenue related) occur because of changing business pressures, or the continuing improvement in technology.
- Vendors should plan marketing approaches to match users' reasons for replacement, as prospects will be able to assign value easily to revenue-generating applications.
- Financial and administrative applications represent a good target market for software products, as they are being installed for all four of the reasons shown in Exhibit II-5.
- Desktop office and productivity applications will not show a high replacement rate and do not make for an attractive market, except for in-place upgrades of personal productivity software.
- Production and operations applications offer an excellent opportunity for new software product sales and customization work, especially in publishing applications and video-related graphics.

- Vendors should incorporate Internet access into applications whenever possible and develop service strategies to deliver Internet capabilities.
- Vendors approaching the media industry should position themselves to highlight technical expertise and past successes with on-time delivery.
- Vendors should be prepared to offer performance guarantees where practical.
- Applications delivered on IBM-compatible personal computers (“Wintel”) will receive the highest degree of acceptance in this market.
- The media industry is actually a group of very different business types—advertising firms, publishing houses, daily newspapers, cable TV and network TV firms, and motion picture studios. Vendors must understand the buying needs and application requirements within each sector and must not assume that a single software solution or service approach will be accepted in each segment.
- At least 25% of identified projects will involve software development work, either in-house or with a services vendor. Vendors should aggressively seek out these opportunities, knowing that cooperative projects—involving *both* internal and external resources—will likely be the result in many cases.

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Media Industry Selection of and Spending on Critical Applications

A Rate of Application Replacement

The portion of existing critical applications forecast to be replaced over the next three years is 46%. The replacements will consist of new applications in well over three-quarters of these and major modifications to existing applications in one quarter of the instances identified by respondents.

Over 50% of major application investments made in the last few years are still viable. One factor is the high number of desktop-based personal productivity applications, such as Microsoft Office, which can be used for a number of years with regular upgrades from the software provider.

The following application groups were classified by INPUT in the course of the analysis of interview data:

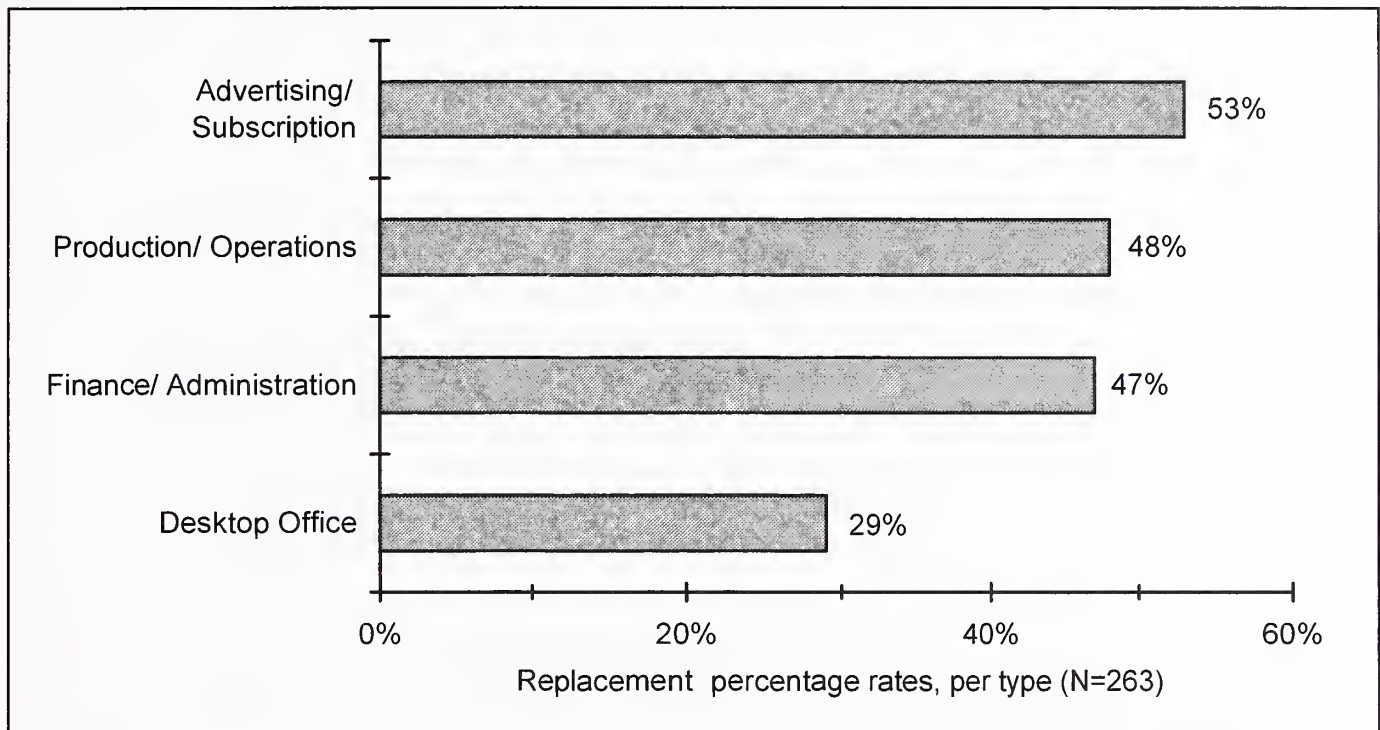
- Advertising and subscription-related applications, including:
 - Circulation
 - Fulfillment
- Financial and administrative applications, including:
 - Accounts Payable and receivable
 - Payroll/Human resources
 - Order entry and billing
 - General ledger, financial statements

- Desktop office or personal productivity applications, including:
 - Word processing
 - Spreadsheets
 - Sales tracking and control systems
 - Local, single PC database management systems
 - E-mail and Internet access systems
- Production and operations applications, including:
 - Graphics and publishing systems
 - Illustrating systems
 - Server-based database management systems
 - Editorial systems
 - CAD systems
 - Broadcasting systems
 - Global information systems (GIS)

Replacement rates for each of the four major application types are shown below in Exhibit III-1.

Exhibit III-1

Application Replacement Rates, by Application type



Source: INPUT

- Replacement rates are much lower for the desktop office applications type, reflecting the fact that many of these applications are basic spreadsheets and word processors and are not frequently replaced, just upgraded as new versions are released.
- The other three categories, each with replacement rates near 50%, offer much greater opportunities for vendors.

B

Reasons for Application Replacement

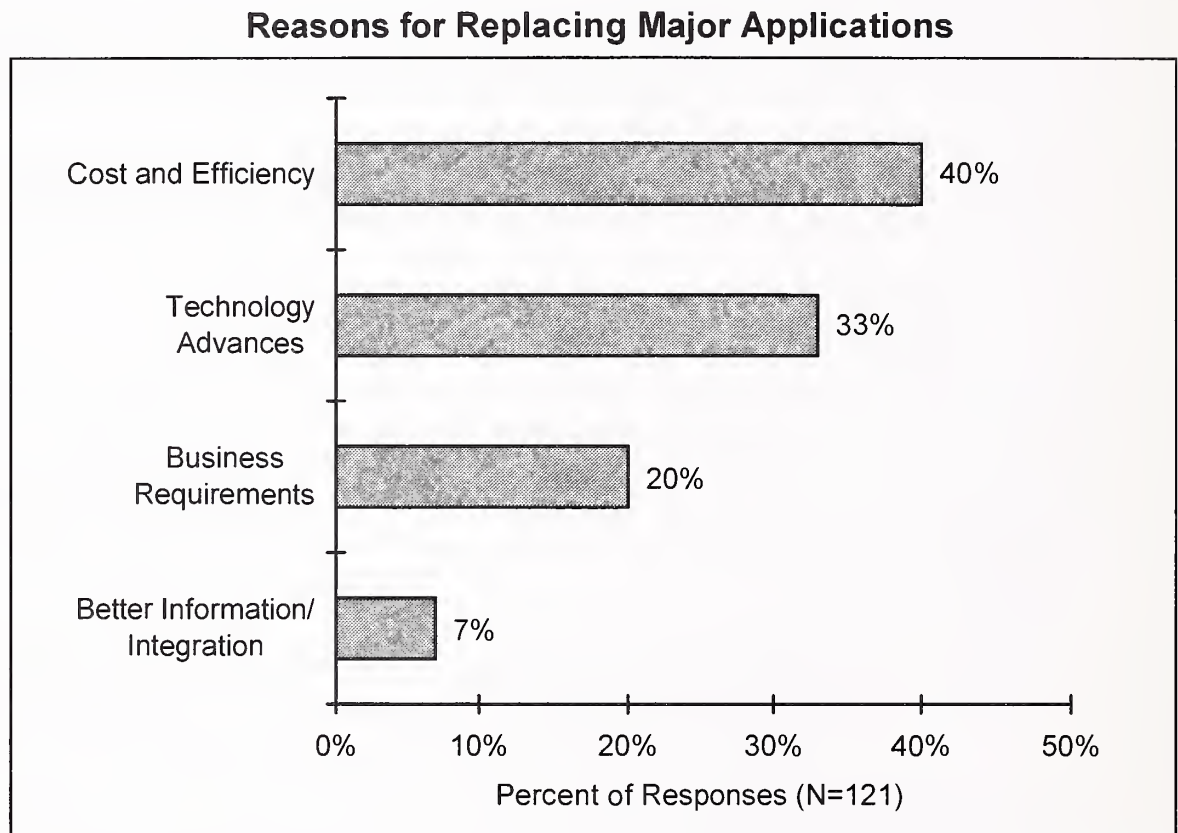
Reasons given by survey respondents for replacing current applications, or heavily modifying them, were categorized by INPUT into four major categories:

- Changing business requirements, caused by competitive pressures and customer demands
- Cost/efficiency, driven by the need to reduce costs to remain economically viable and efficient
- Technology advances, using new technology because it is available and feasible

- Better information/integration of information; the need to use information as a tool in being responsive to clients, and to utilize this information more fully across the enterprise

The results of this categorization of reasons are shown in Exhibit III-2.

Exhibit III-2



Source: INPUT

- Cost/efficiency, listed in 40% of responses, dramatizes the significant cost pressures of the industry, especially among small and medium-sized players.
- Technology advances drive the replacement for 33% of responses, especially in the production/operations category, where significant capability improvements continue to be made in graphics systems.
- Somewhat surprisingly, only 7% of respondents indicated better information/integration as a reason; this is a reflection of the relatively unsophisticated IT usage among the small and medium-sized firms that composed the bulk of respondents. Also, stand-alone desktop office systems, which represent 30% of total applications identified during the survey, have relatively low integration needs outside a local server.

C**Media Industry IT Spending Forecast**

Exhibit III-3 shows the distribution by cost category for all new projects identified in the survey. These are services and software expenses only and exclude hardware-associated expenses.

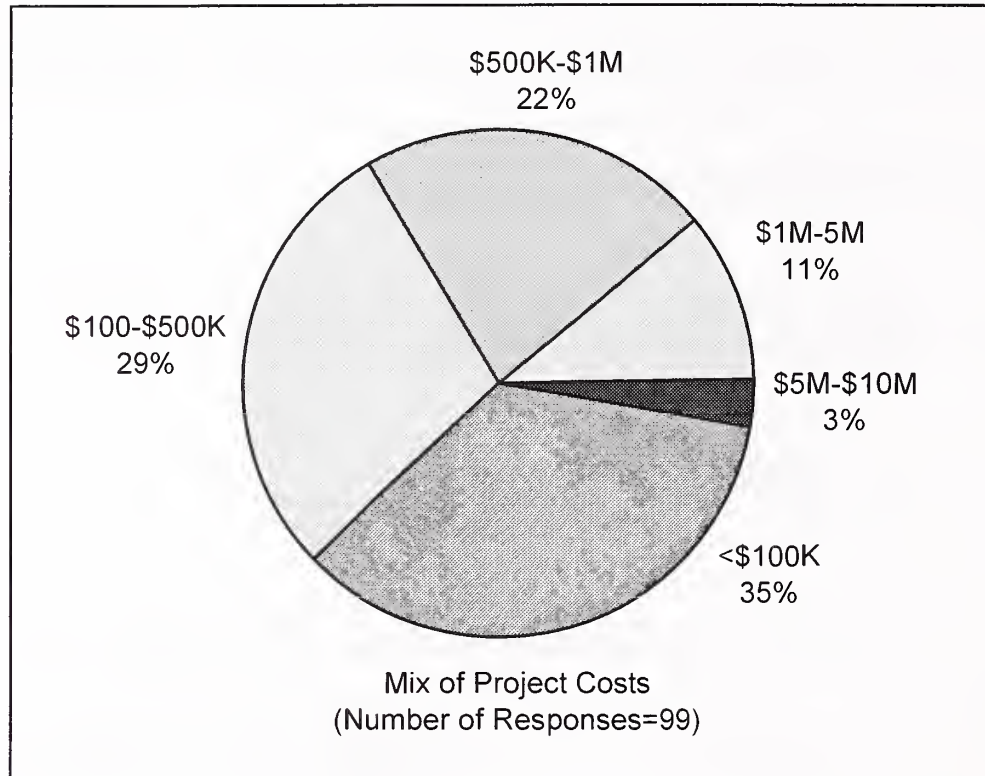
The following expenses are included:

- Software development (whether internal or external)
- Packaged software (including modifications)
- Systems integration
- Training and education
- Outsourcing

Hardware expenses are excluded for the following reasons:

- It was not always known if a replacement application would involve new hardware.
- The hardware costs were often not known.
- Hardware requirements are often analyzed across multiple applications.
- In some cases, it was assumed there would be little or no hardware expense.

Exhibit III-3

**Expected Size of New Projects,
All Media Industry Respondents**

Source: INPUT

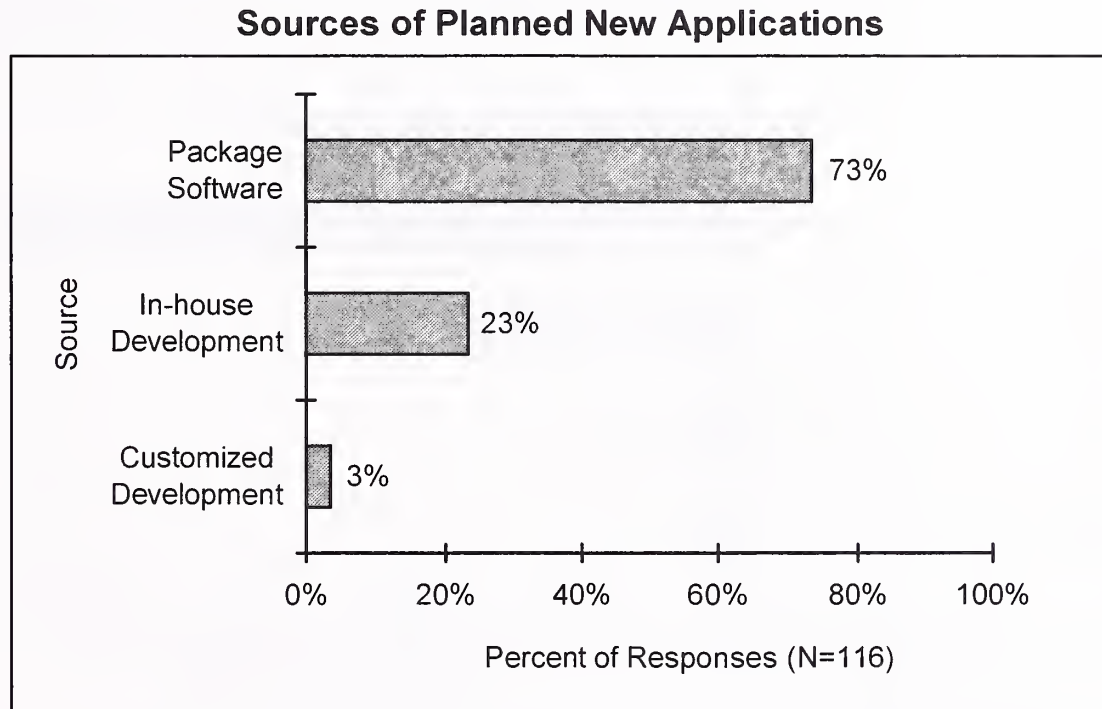
- More than 50% of the identified projects will cost less than \$250,000, according to respondents. As only a few are in excess of \$500,000, the results focus on the low end of the applications products market, especially in the desktop office area.
- This leads, as will be shown later, to a high percentage of applications utilizing packaged software and rather low interest in systems integration, outsourcing, or heavy customization of software.

D

Sources of Future Media Applications

Respondents were asked to select a source for their new or heavily modified application; the results are shown in Exhibit III-4.

Exhibit III-4



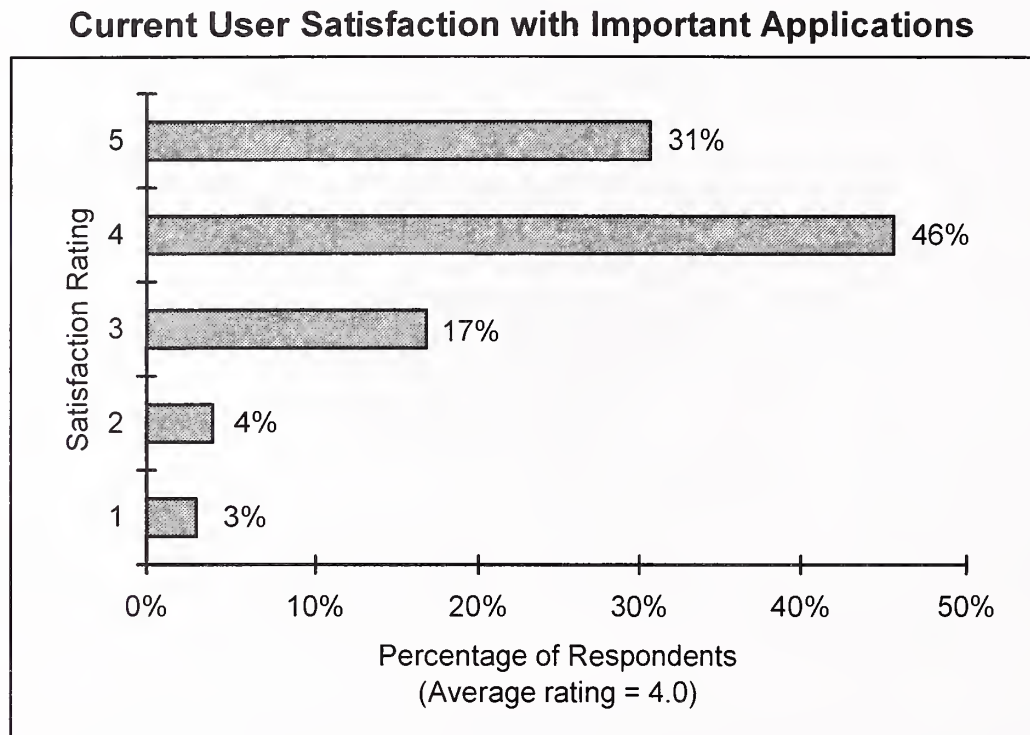
Source: INPUT

- The predominant source will be packaged software applications, with little or no modification.
- The industry as a whole has not evolved a demand for complex solutions that require application customization, although that need certainly exists among larger enterprises in each media sector.
- Examples of more complex solutions include project tracking and costing in the entertainment industry, specialized graphics for film and video productions, and complex publication layout.

E**User Satisfaction with Current Applications**

Exhibit III-5 displays current levels of satisfaction with their most important applications.

Exhibit III-5



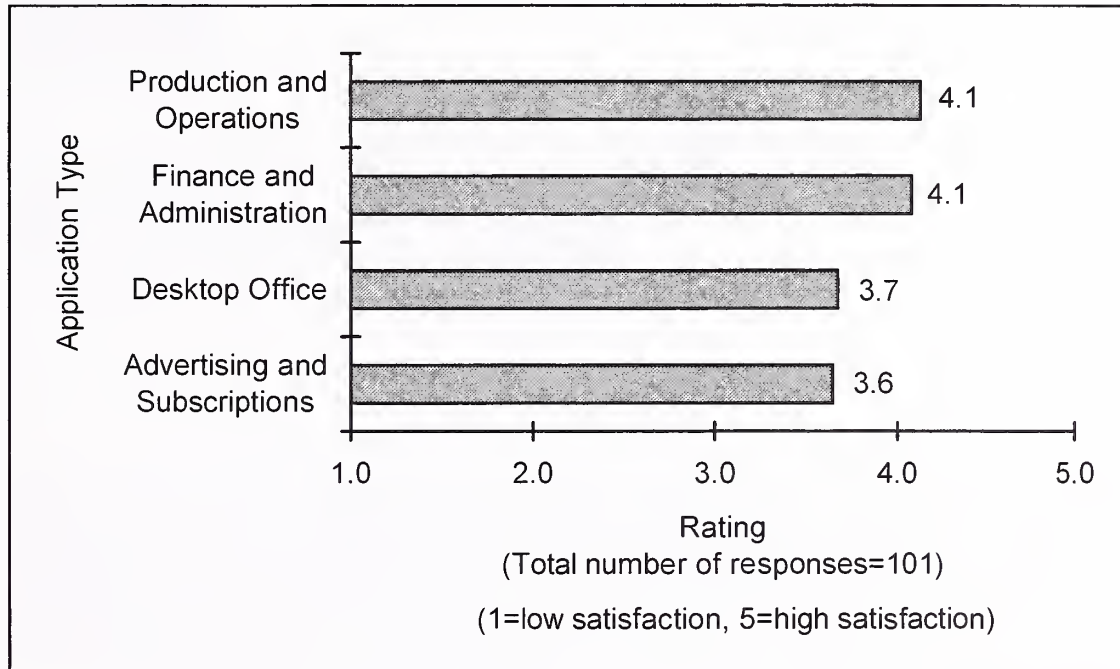
Source: INPUT

In general, users are highly satisfied; the median score is 4.0 on a scale of 1-5 (where 5 = highly satisfied). This high level of satisfaction is one of the reasons for the relatively low planned replacement rate in this industry.

When ratings are examined by type of application, as shown in Exhibit III-6, two different levels of results are identified.

Exhibit III-6


Satisfaction Ratings with Current Applications, by Application Type



Source: INPUT

- Satisfaction with production/operations and finance/administration applications is significantly higher than with the other two sectors.
- INPUT believes that satisfaction with production/operations applications is tied to the criticality of these functions. Put simply, in the media industry, these applications *have to work well*.

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Analysis of Critical Media Application Types

This chapter will analyze each of the critical application types identified during INPUT's research. Each of the four application groups will be reported on in a similar manner. Section A describes the process used generally.

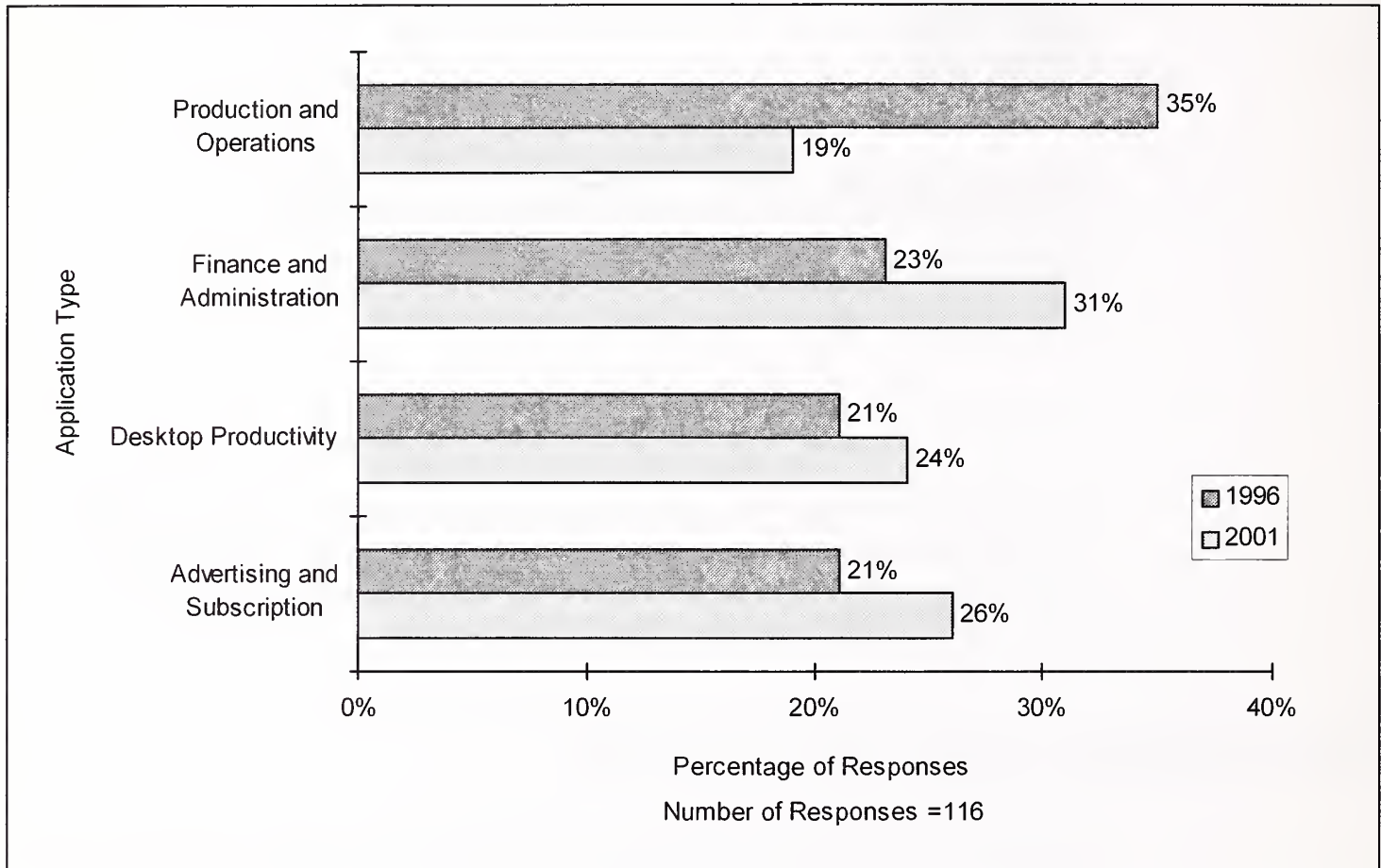
A

Critical Application Types, 1996 versus 2001

Exhibit IV-1 compares the percentage of current applications perceived as important today with the applications seen as likely to be important in 2001. While a five-year horizon can challenge the accuracy of predictions and forecasts, the exhibit still provides a useful view of respondents' relative ranking of application criticality, now versus the year 2001.

Exhibit IV-1

Most Important Application Types, 1996 vs. 2001



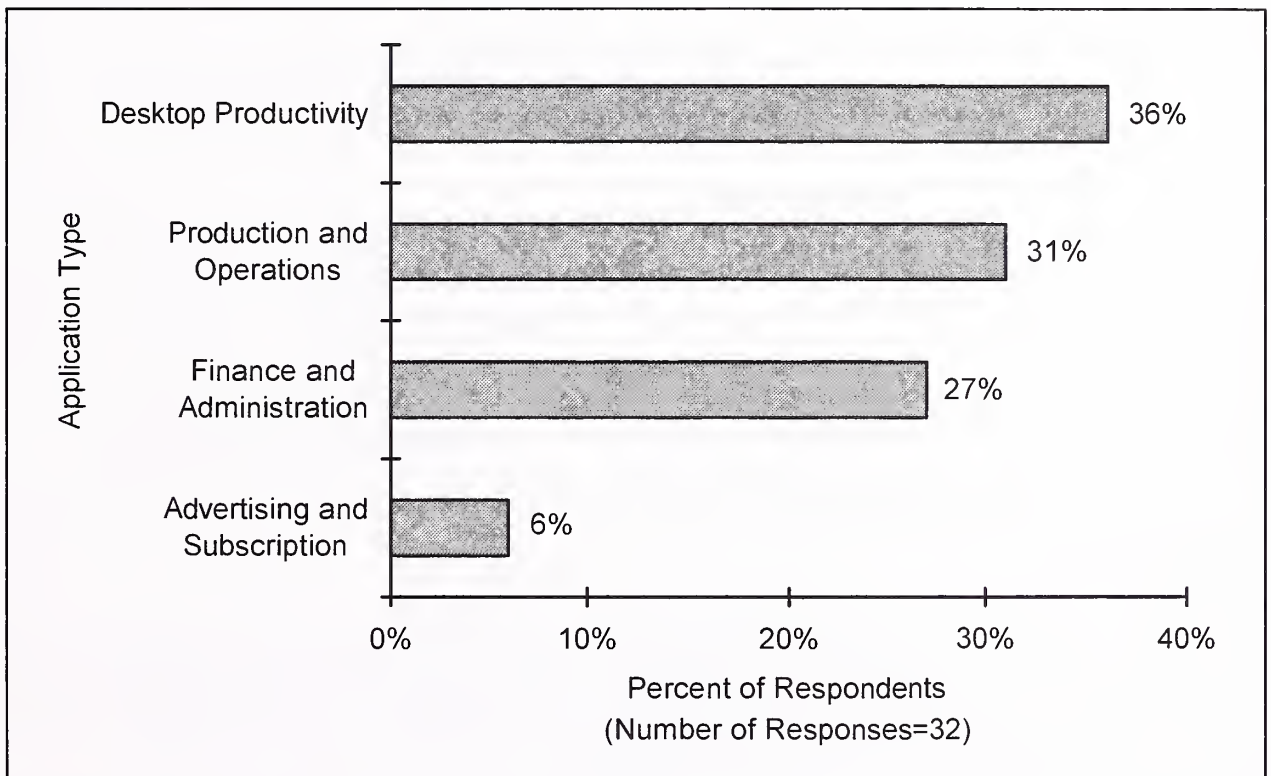
Source: INPUT

- Production/operations applications, seen as most important in 1996, decline significantly in 2001. This is partially due to the fact that many of the current production applications, seen as key to operations today, have recently been put in place and are not seen as needing replacement soon. However, INPUT research has shown in other sectors that five years is near the outer edge of application life prior to replacement, so respondents' views may be optimistic on application life.
- Finance and administrative applications are seen as most critical in 2001 by the largest percent of respondents, with revenue-producing applications close behind. The media industry, like others, now needs to focus on financial controls and revenue growth to remain competitive. Sophisticated production and operation tools and systems are assumed to be in place, hence a lower priority for these in the future.

B**Most Important Application Types by Respondent Line of Business**

This section of the report ranks the responses for important applications today, by company line of primary business; there are some interesting differences.

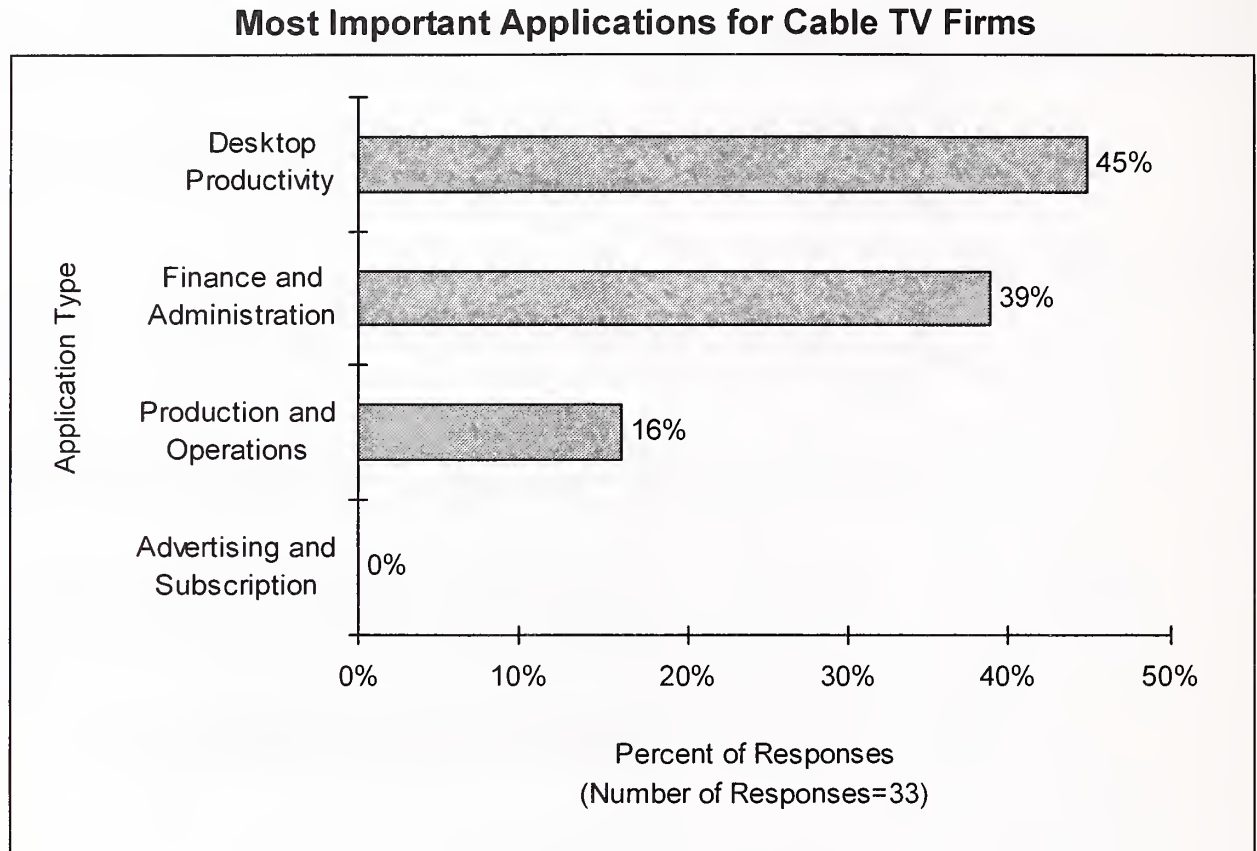
Exhibit IV-2

Most Important Applications for Advertising Firms

Source: INPUT

- Befitting a creative industry, most highly ranked of the application groups for advertising firms are the desktop office systems, which can enhance personal productivity and effectiveness.
- Knowledge workers in this sector need creative tools at their fingertips, and these are now commonly available in the desktop environment.

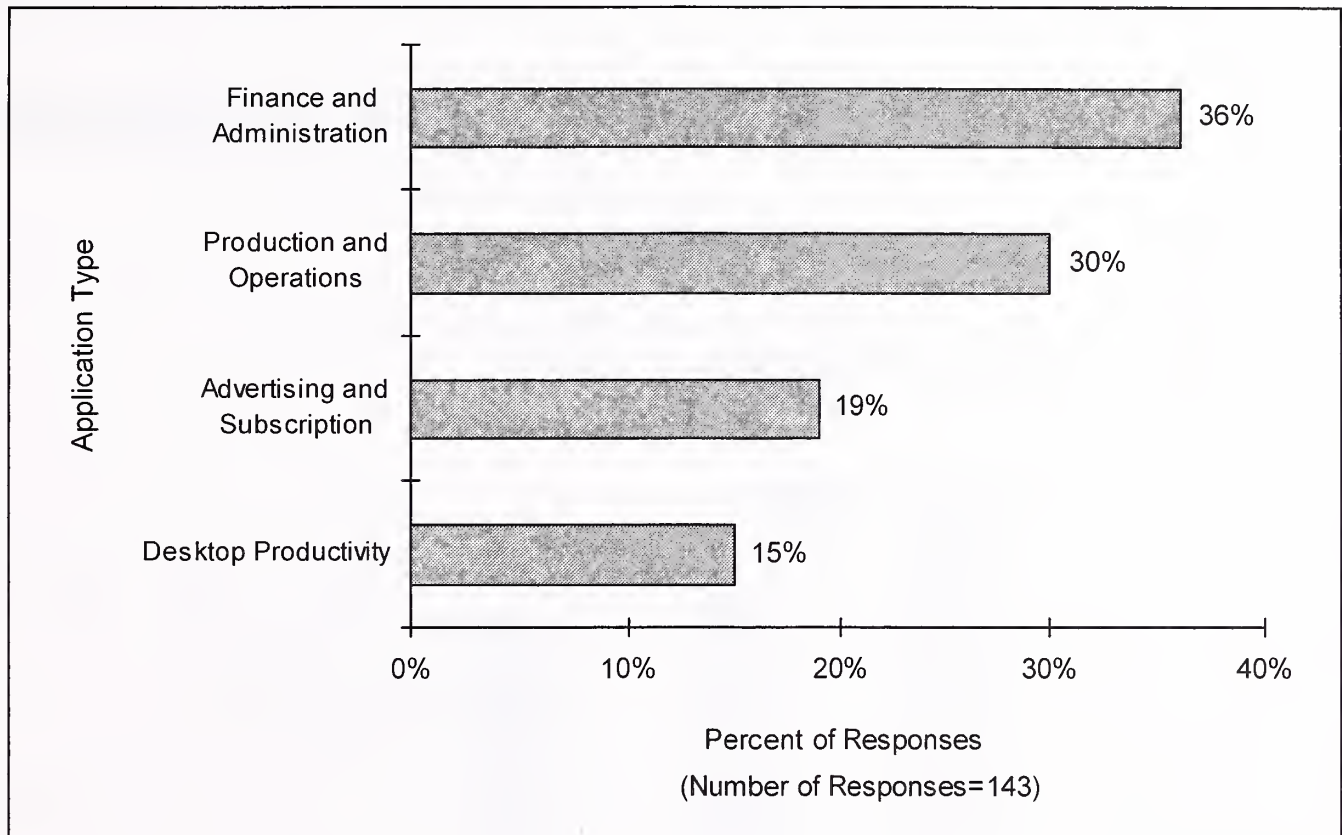
Exhibit IV-3



Source: INPUT

- Again, desktop office systems have the highest response. Given the growing consumer and governmental pressure to regulate prices charged by cable TV firms, its not surprising that financial control systems are also seen as important.
- None of the respondents listed advertising and subscription applications as critical today, reflecting the somewhat noncompetitive nature of the marketplace, where geographic exclusivity for cable TV service has been the rule. Of course, this may be a short-sighted view, considering the competition for viewer loyalty for other electronic media, including the Internet and newly unregulated telephone service providers.

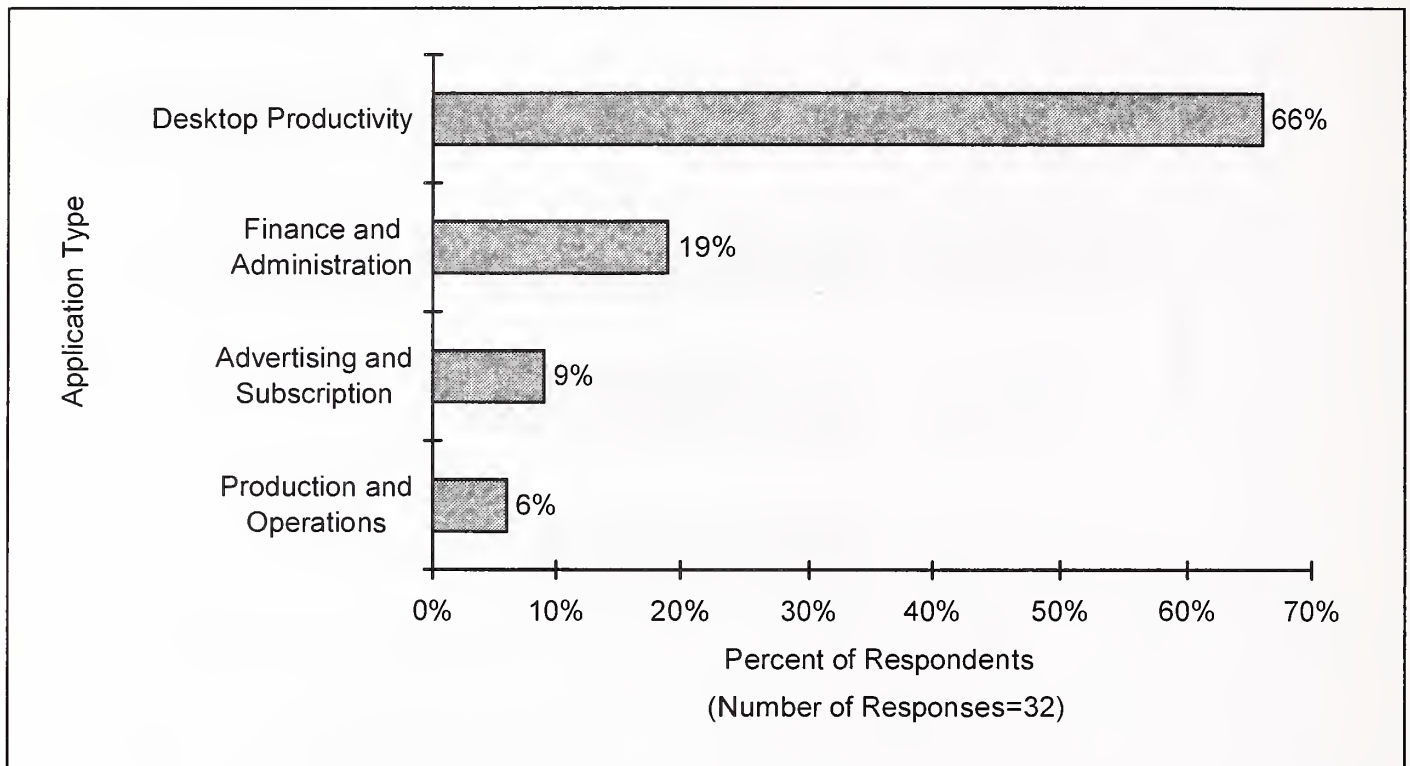
Exhibit IV-4

Most Important Applications for Publishing Firms

Source: INPUT

- Finance and administration applications are seen as most important today, given cost pressures on the publishing industry, major expansion by mega-stores like Borders and Barnes & Noble, and formidable electronic entertainment alternatives to reading as a hobby or recreation.

Exhibit IV-5

Most Important Applications for Radio/Television Companies

Source: INPUT

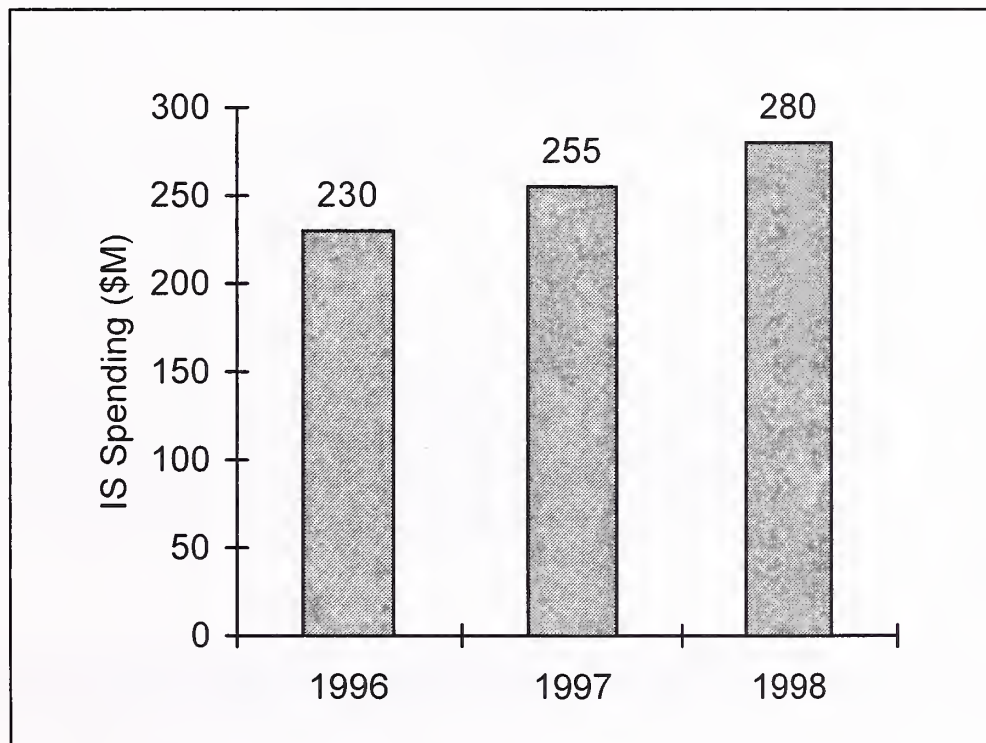
- Desktop productivity applications are far and away the leading application type today. Local radio and television stations are not as advanced in information technology application as other segments of the media industry, showing in the emphasis on basic tools for professionals in this sector.

C

Advertising, Subscriptions and Other Revenue-Related Applications

This section assesses, as a group, the applications most directly connected with revenue generation: advertising, subscriptions, circulation, and sales and marketing. The forecast for information technology spending in this sector for 1996, 1997, and 1998 is shown in Exhibit IV-6.

Exhibit IV-6

Spending on Advertising and Subscription-Type Applications, 1996-1998

Source: INPUT

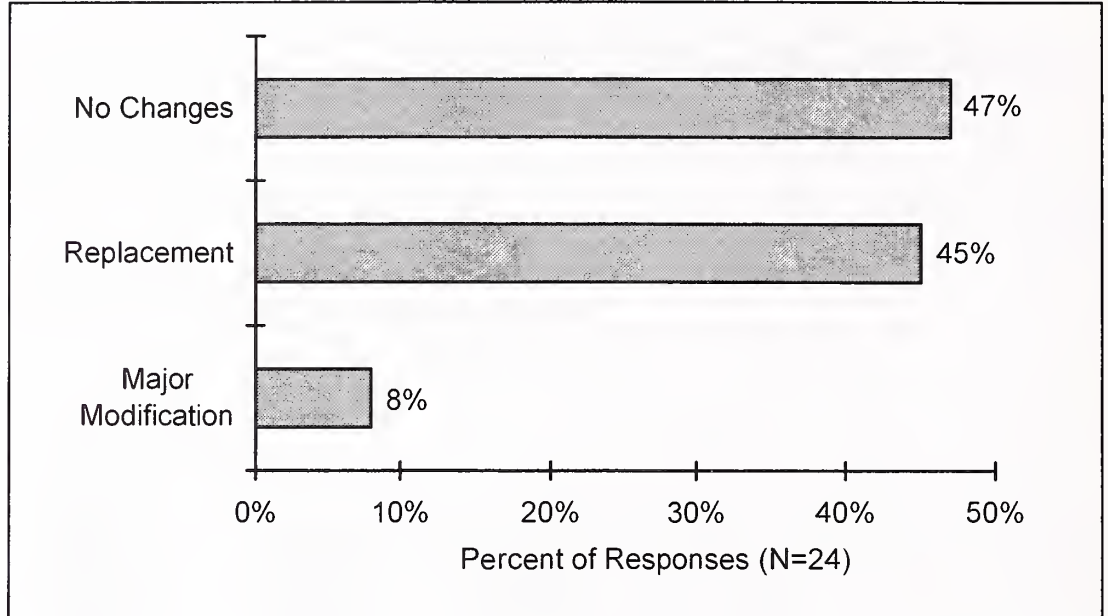
These revenue-producing or revenue-related applications constitute about 23% of the total information services spending during the three-year forecast period.

Because competition in all of the industry subsectors is strong, installation and upgrading of these functions will continue to have a high priority.

Planned replacement rates for these types of applications over the next five years are shown in Exhibit IV-7. Replacements are separated into two categories; completely new applications and major application modifications.

Exhibit IV-7

Replacement Plans for Advertising and Subscription Applications

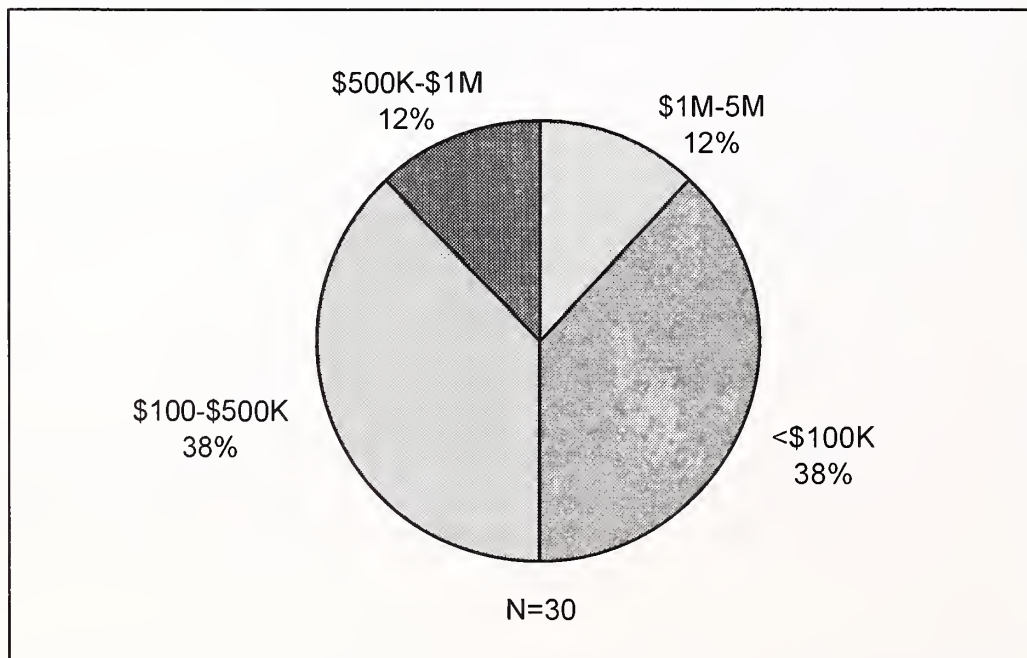


Source: INPUT

Most planned changes will involve completely new applications, rather than major modifications to existing applications, by a 4:1 ratio. However the systems integration opportunities are limited as most of the replacements will take the form of packaged solutions as discussed in the next two exhibits.

Exhibit IV-8

Expected Size of Advertising and Subscription Applications

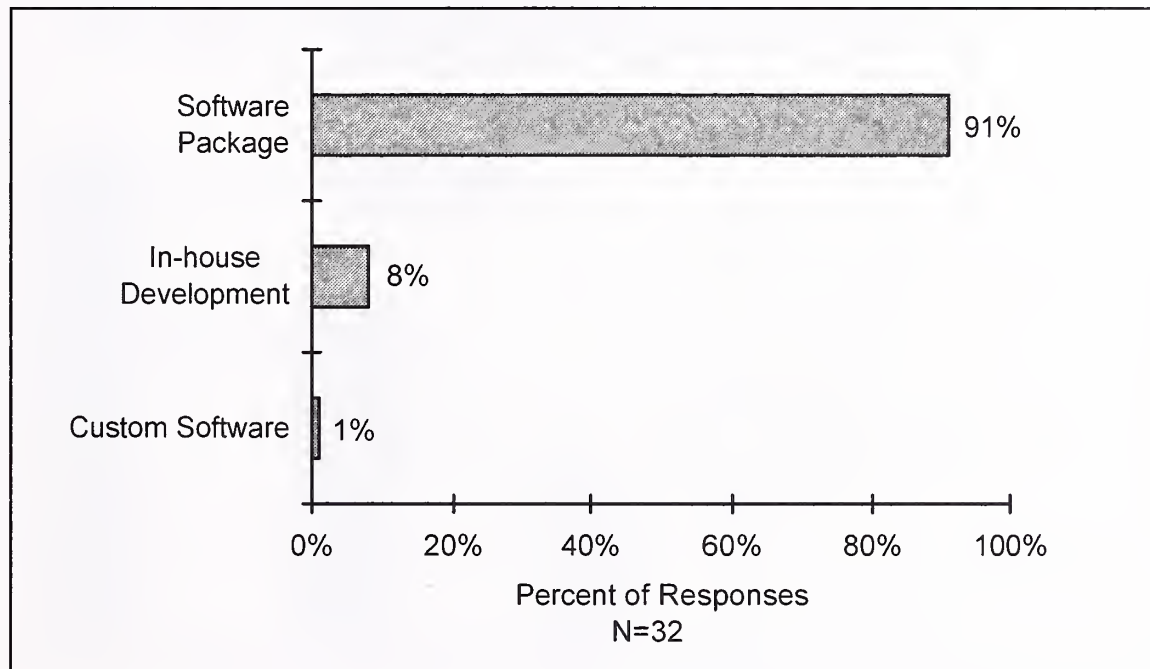


Source: INPUT

- The majority of new applications are at the low end of the cost spectrum; nearly three quarters are less than \$500,000. This reflects the distribution of firms in the media industry: a few small players are dominant in a number of subsectors, and many smaller firms make up the rest of the industry.

Exhibit IV-9

Sources of New Advertising and Subscription Applications



Source: INPUT

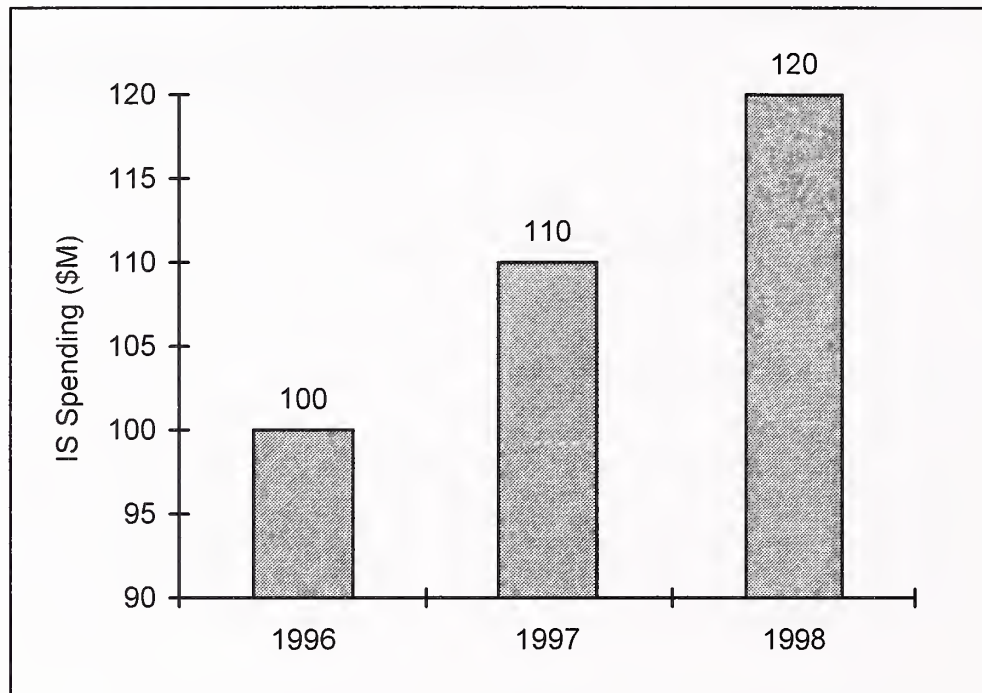
- The preponderance of new applications will be of the “off-the-shelf” variety, which is consistent with the size of applications shown in Exhibit IV-8.

D**Desktop Office and Personal Productivity Applications**

The spending forecast for desktop office and personal productivity systems is shown in Exhibit IV-10.

Exhibit IV-10

Spending on Desktop Office and Personal Productivity Applications, 1996-1998



Source: INPUT

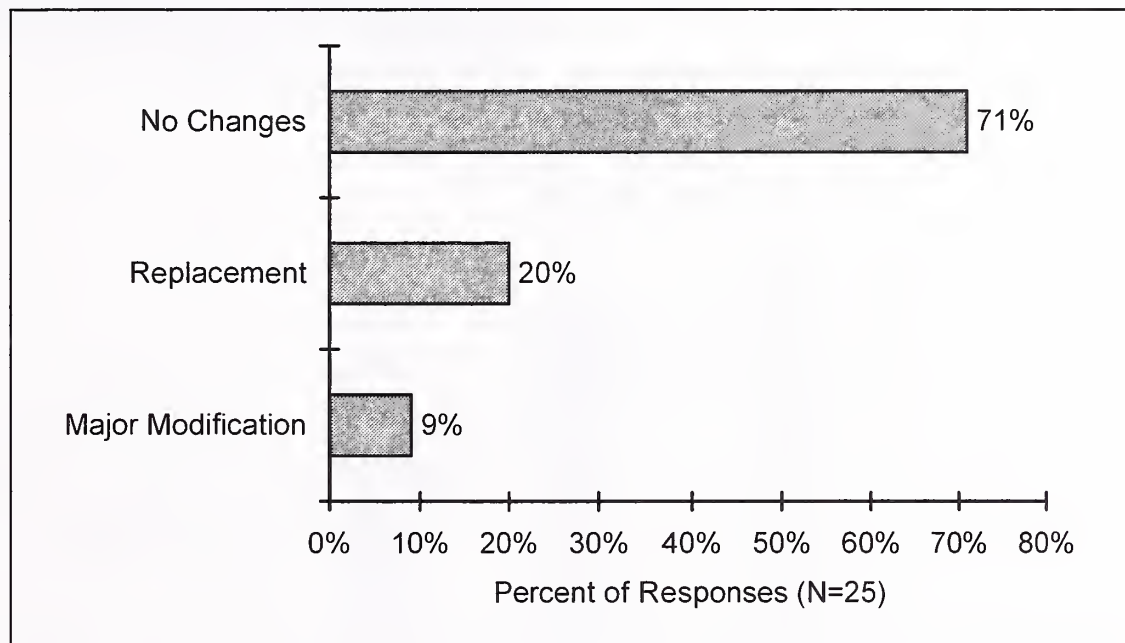
Spending on desktop office applications generates the lowest dollar volume of the four application types studied by INPUT. Although interest in installing these applications is high, unit cost is low and replacement is infrequent, once an enterprise or department has made a buying decision.

Spending on desktop office systems will create only about 10% of the information services market during the 1996-1998 period.

Replacement plans for desktop office systems are shown below in Exhibit IV-11.

Exhibit IV-11

Replacement Plans, Desktop Office and Personal Productivity Systems

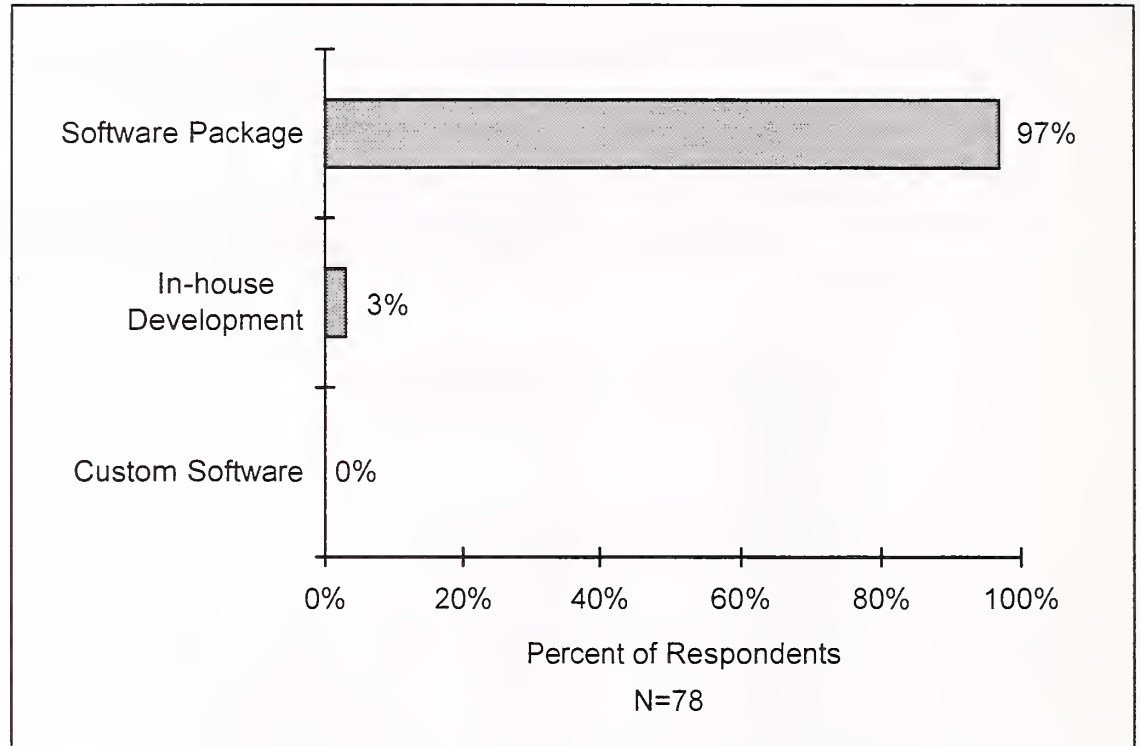


Source: INPUT

- A very significant 71% of respondents have no immediate plans to replace these applications. Because many of the applications are basic desktop word processors, spreadsheets, and databases, it is likely that version upgrades by the manufacturer are seen as sufficient for the next few years.

Exhibit IV-12

Source of New Desktop Office and Personal Productivity Applications



Source: INPUT

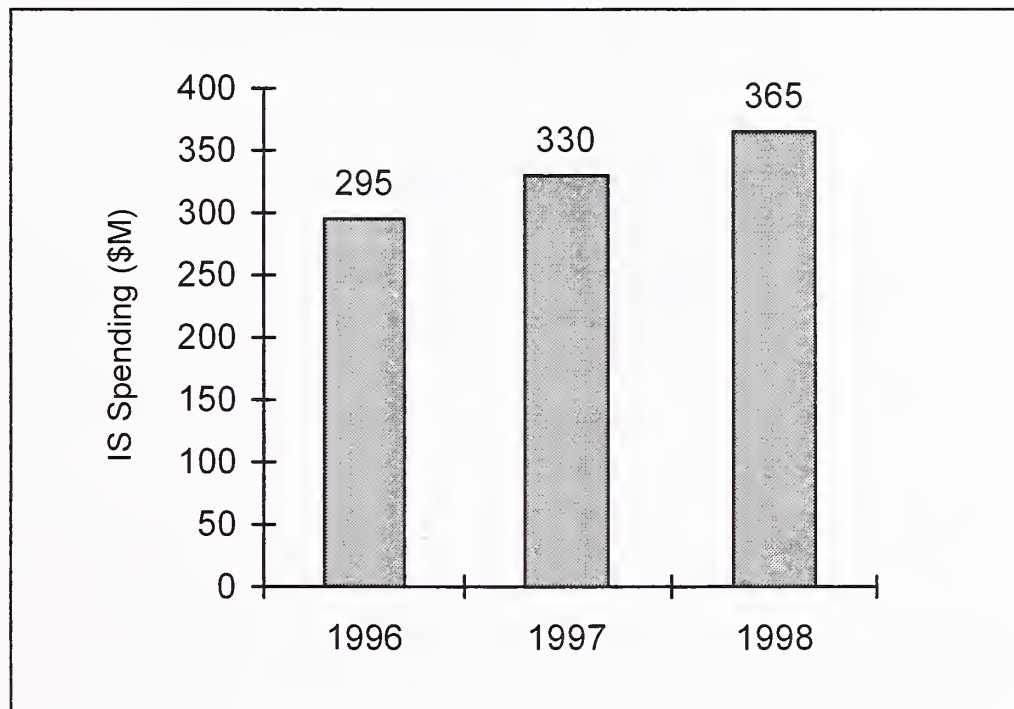
- The overwhelming majority of replacements will of course be from the well-established large vendors of these applications: Microsoft, Lotus, Novell, Corel, etc.

E**Finance and Administration Applications**

The information services spending outlook for this application group is shown in Exhibit IV-13.

Exhibit IV-13

Spending on Financial and Administrative Applications, 1996-1998



Source: INPUT

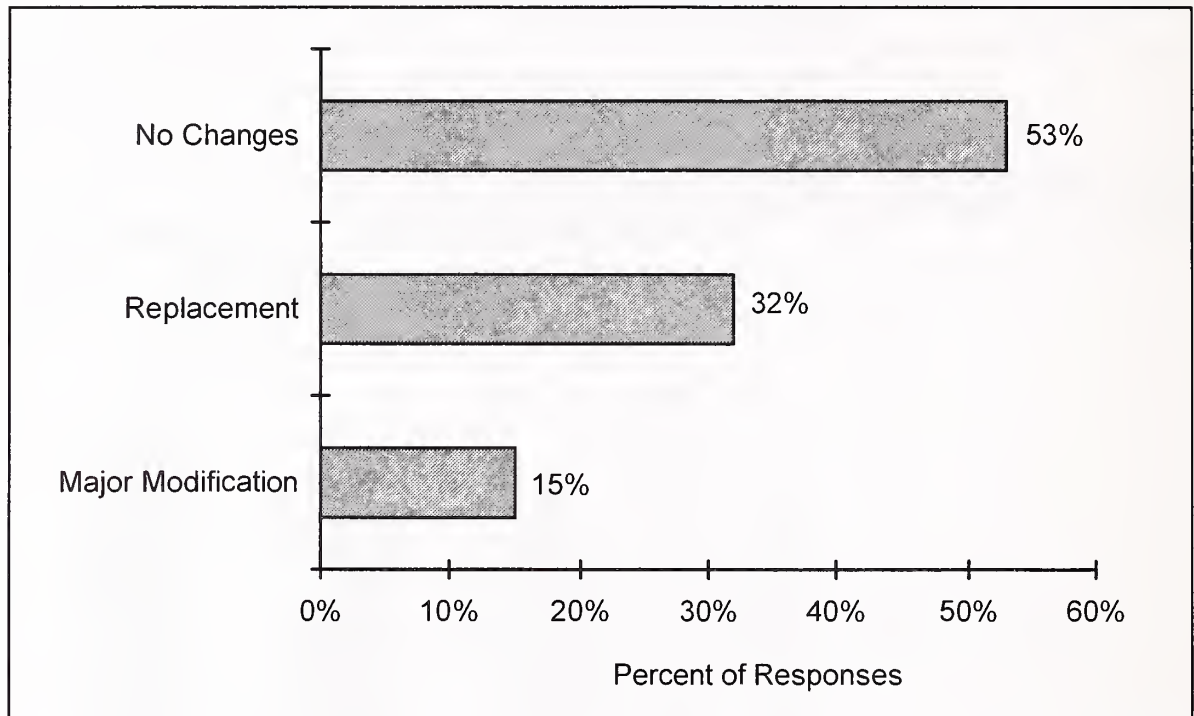
Finance and administration applications make up roughly 30% of the total information services spending in the media industry.

Project costing and tracking systems have high value in the film and television sectors.

All industry segments require effective financial systems in a continuing environment of tight cost control.

Replacement plans for finance and administration applications are summarized in Exhibit IV-14.

Exhibit IV-14

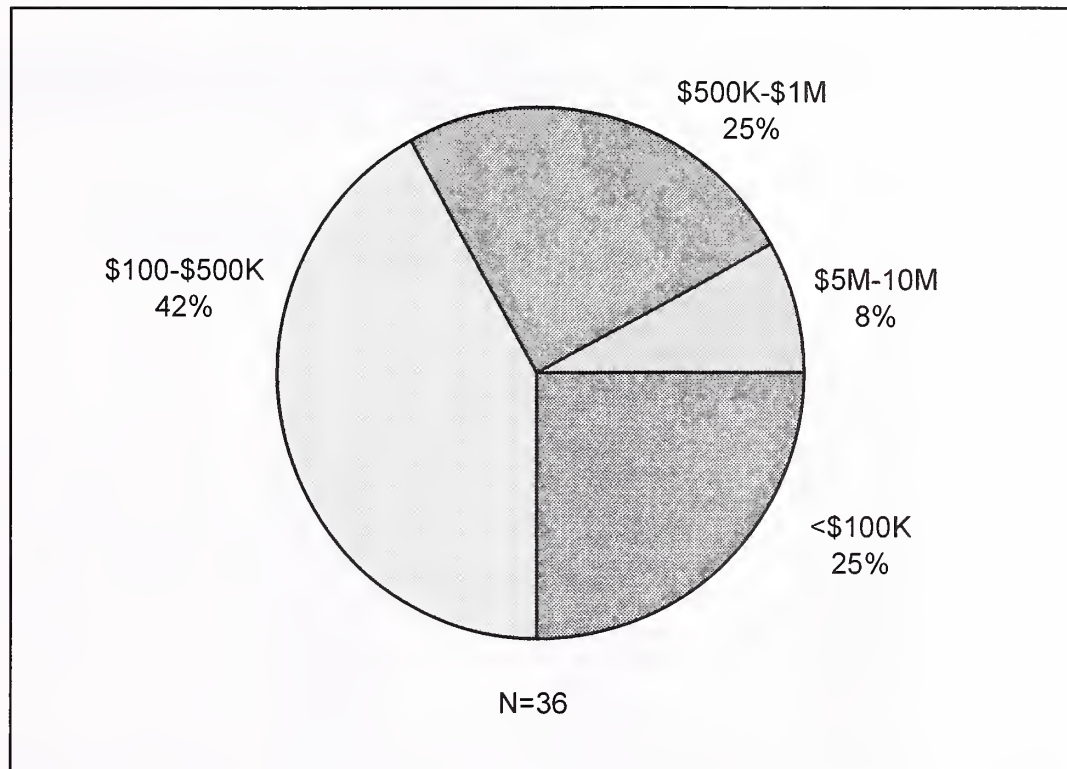
Replacement Plans for Financial and Administration Applications

Source: INPUT

- This is the one application type where any significant level (15%) of major modifications to current systems is considered. This is to be expected, given the inclination and capability of users to develop applications using in-house resources, and subsequently to modify them. Even so, over half of the installed applications will not be changed in the next five years.

Exhibit IV-15

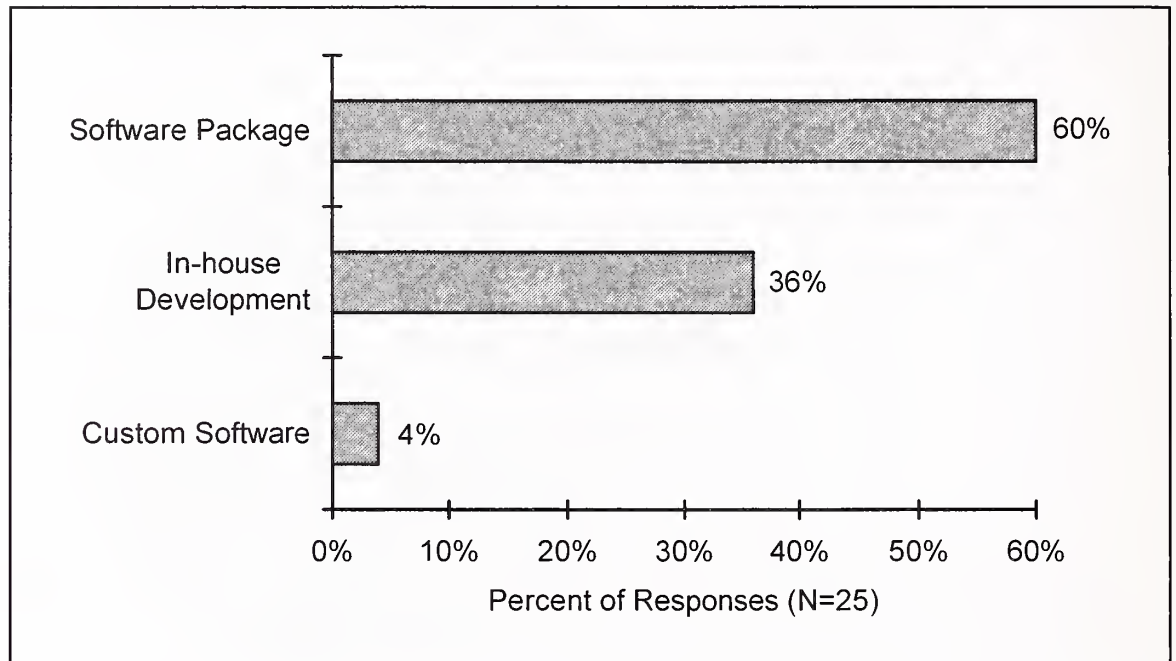
Expected Size of New Financial and Administrative Applications



Source: INPUT

- Larger applications are more frequent in this application group, with one-third of the planned projects in excess of \$500,000, excluding equipment purchases.
- Recommendation: Vendors of financial software should focus on specific applications requirements in this industry, where significant spending potential exists.

Exhibit IV-16

Sources of New Financial and Administrative Applications

Source: INPUT

Clients indicate a significant probability—40% of responses—to develop customized solutions for more complex, integrated financial systems.

Recommendation: Systems integrators and professional software developers should focus on the opportunities in this sector, where predisposition exists for acquiring or building specialized systems.

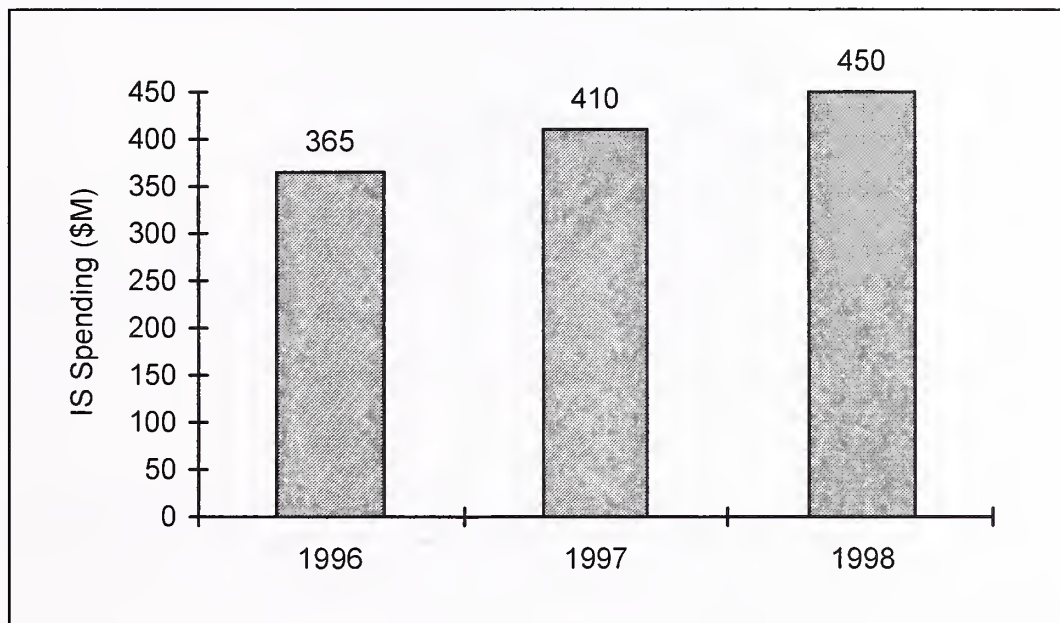
While 36% of respondents plan to build their own systems, a significant number of these firms may be approachable for outside development work instead, as in-house work encounters the predictable set of obstacles.

F

Production and Operations Applications

The three-year outlook for information services spending for production and operations applications in the media sector is shown below in Exhibit IV-17.

Exhibit IV-17

**Spending for Production and Operations Applications,
1996-1998**

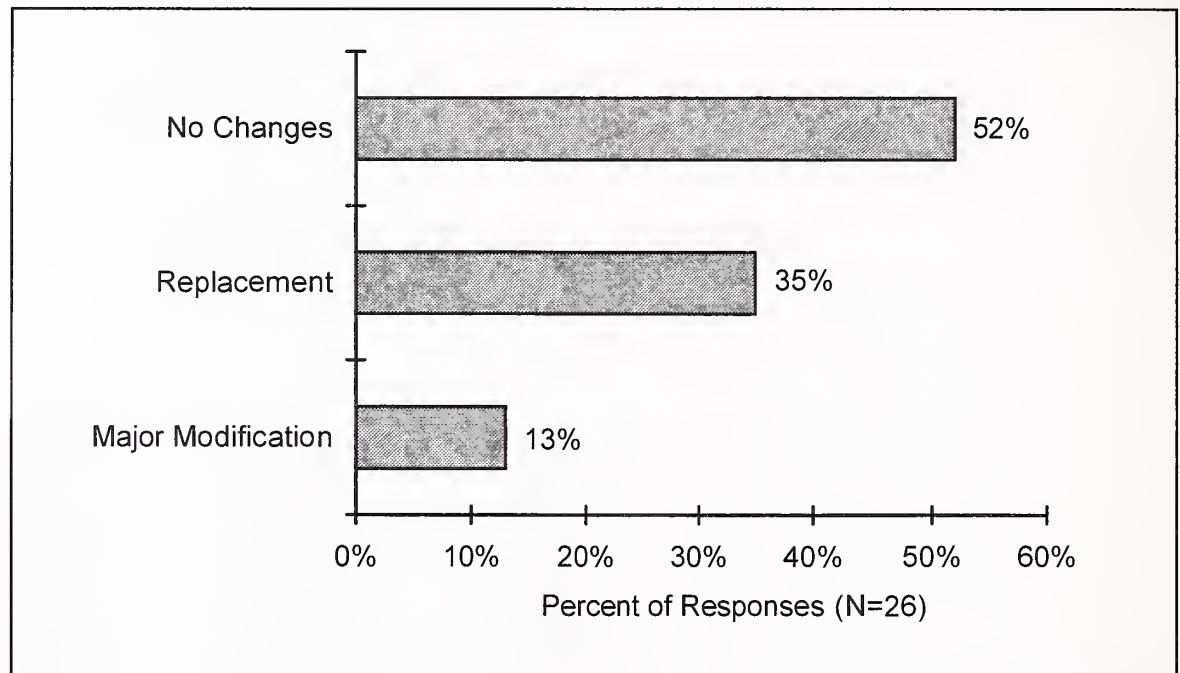
Source: INPUT

This application type will generate 37% of the information services revenue in the media industry from 1996-1998.

High value is assigned to these applications, which typically are on the critical path to produce the end product of the industry: the printed or electronic message that is delivered to clients.

Anticipated replacement rates for production and operations applications are shown in Exhibit IV-18.

Exhibit IV-18

Replacement Plans for Production and Operations Applications

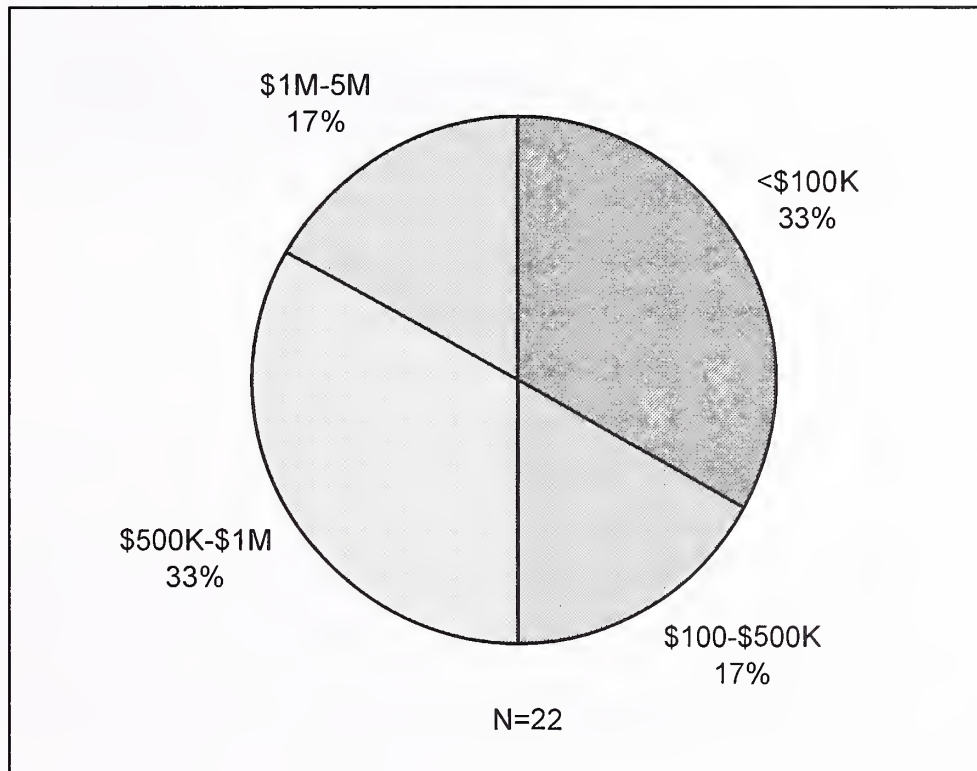
Source: INPUT

There is strong demand for replacement in this application group, driven by the dramatically improved graphics capabilities introduced in the past few years in electronic publishing and complex graphical systems for video productions.

Recommendation: vendors of graphics-oriented products should learn more about the buying needs of this sector and adapt their products and marketing efforts accordingly. The industry as a whole is not large, but emerging application needs make this an attractive market for vendors with good product fit and service capability.

Exhibit IV-19

Expected Size of Production and Operations Applications



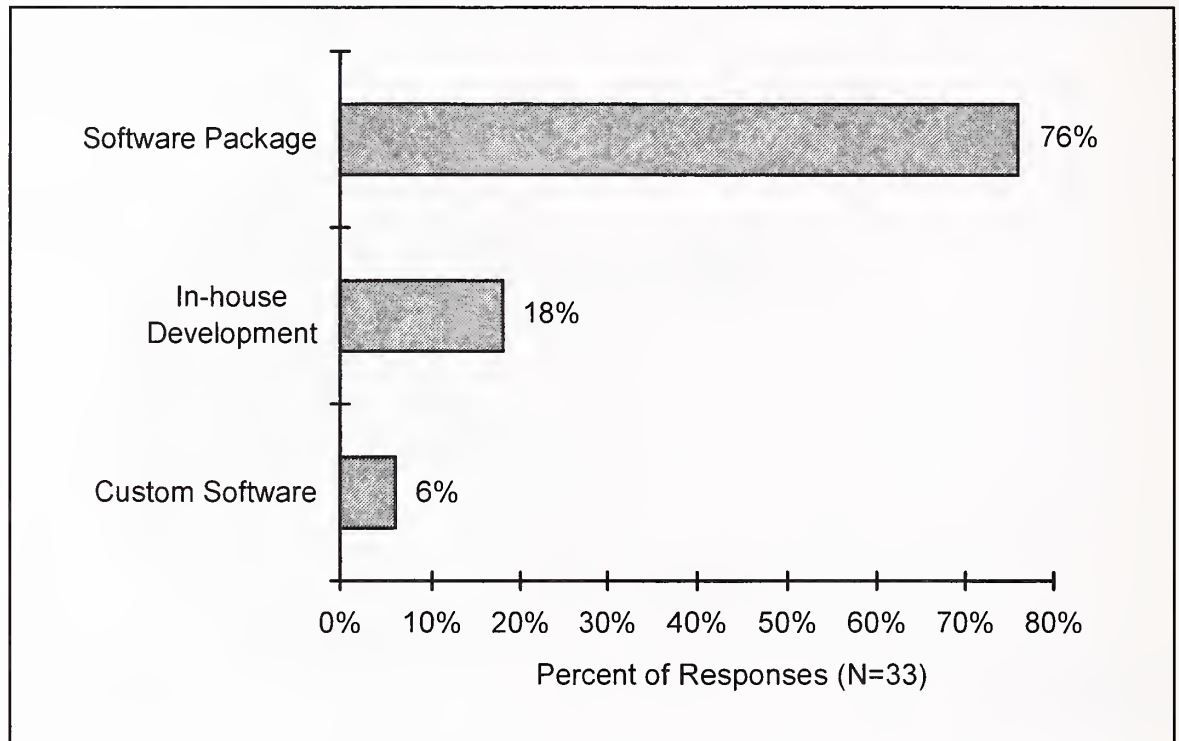
Source: INPUT

Because of the complexity of media productions, especially in video, television, and motion picture studios, typical applications are larger here than in any other media sector. Fifty percent of the projects are expected to exceed \$500,000, excluding equipment costs.

Recommendation: Typical project size makes this an attractive sector for professional software services firms and systems integrators who possess media industry expertise and track records.

Sources of new applications for production and operations applications are summarized in Exhibit IV-20.

Exhibit IV-20

Sources of New Production and Operations Applications

Source: INPUT

Over three-fourths of the projects anticipate using off-the-shelf software products, or products with only minor modifications.

The remaining nearly 25% of projects are potentially available to services firms, although 18% are today identified as in-house development. Skillful vendors will make the case to client executives that they can either provide these applications more effectively than in-house staff, or can cooperate with clients to produce better, quicker, lower cost solutions.

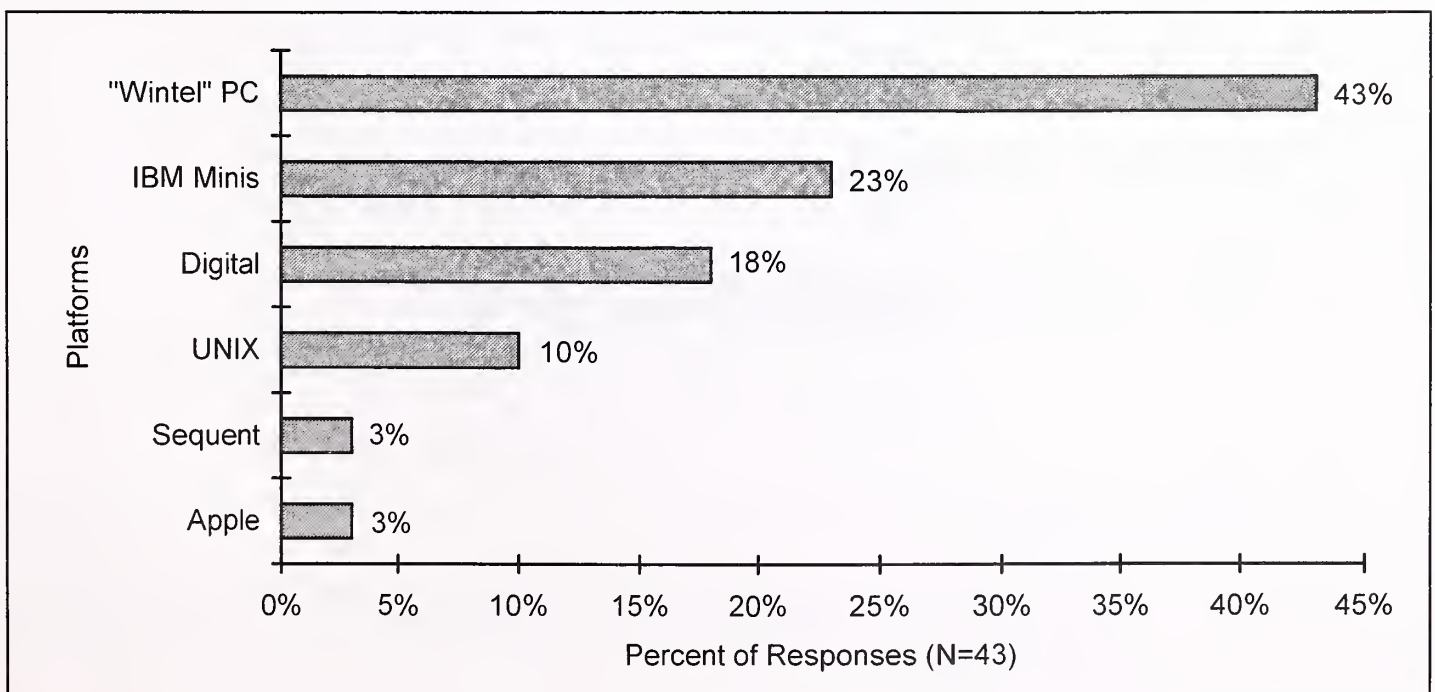


Technology-Related Issues

A Hardware Platform Selection Plans

A very high percentage of the planned new applications will be executed on PC networks or even stand-alone PCs using Intel chips and Microsoft Windows 95 software ("Wintel"). These IBM or IBM clone computers are present in such large numbers because of the unusually high percentage of existing or planned important applications that fall into the category of "basic" desktop productivity tools, such as word processors, spreadsheets, and local databases. The survey distribution by platform is shown in Exhibit V-1.

Exhibit V-1
Computer Platforms Expected To Be Used for New Applications by Media Firms



Source: INPUT

IBM-compatible desktop units dominate the list, reflecting the strong demand in this sector for desktop computer productivity tools.

When IBM and Digital minicomputer responses are combined, they form a segment comparable to PCs—41% of responses. Mainframe plans are not in evidence in any of the respondents' plans.

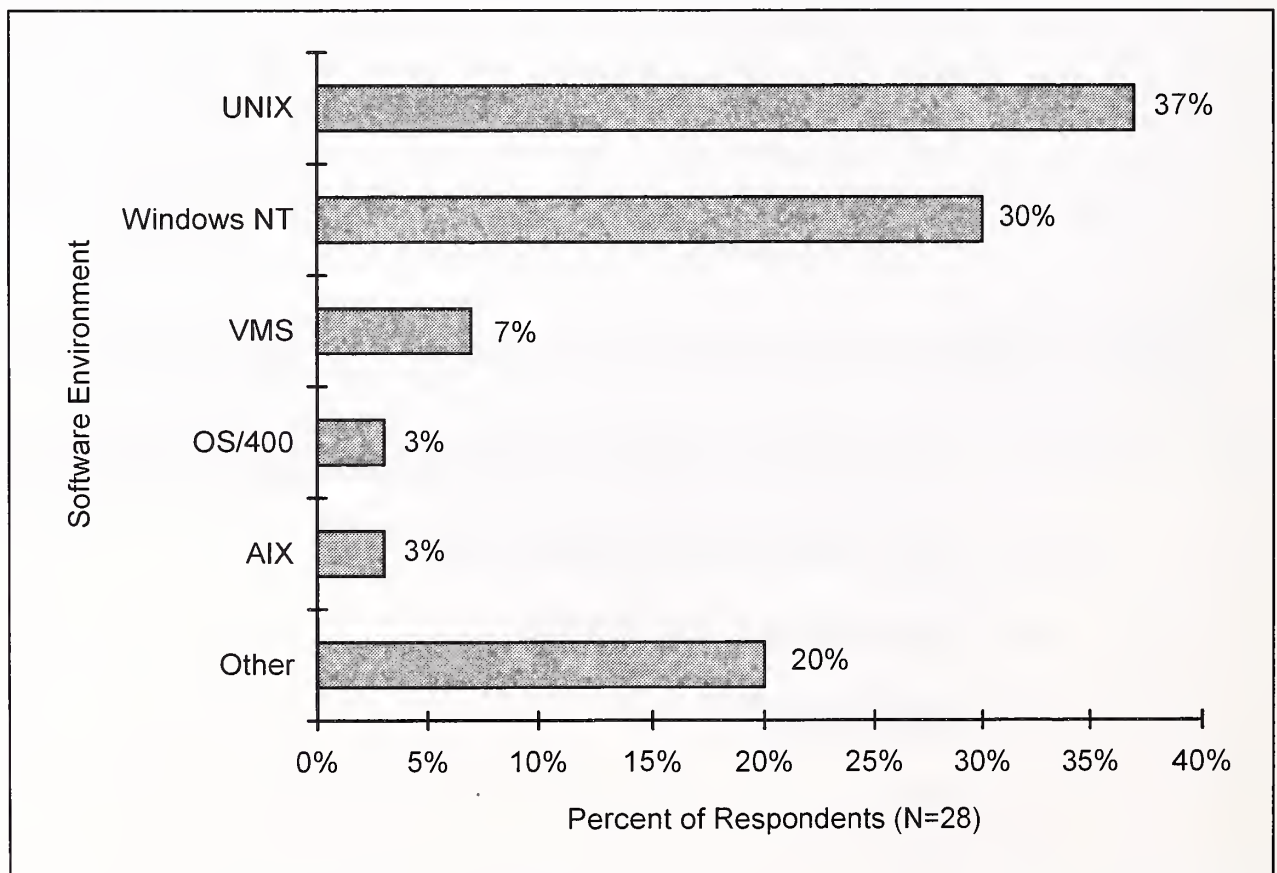
B

Software Environment Selection Plans

The response for software environments was at variance with indications of hardware platform selection. That is, a greater number of UNIX environments were specified. This response reflects the growing desire for and popularity of open architectures. Software environment plans are shown in Exhibit V-2.

Exhibit V-2

Expected Software Environments for Media Industry Applications



Source: INPUT

UNIX predominates, with 37% of the responses. Interest in open systems and client/server architectures has created significant new opportunities for UNIX providers.

Windows NT follows closely in terms of total responses. Continuing interest in this industry sector in desktop productivity tools fuels this response.

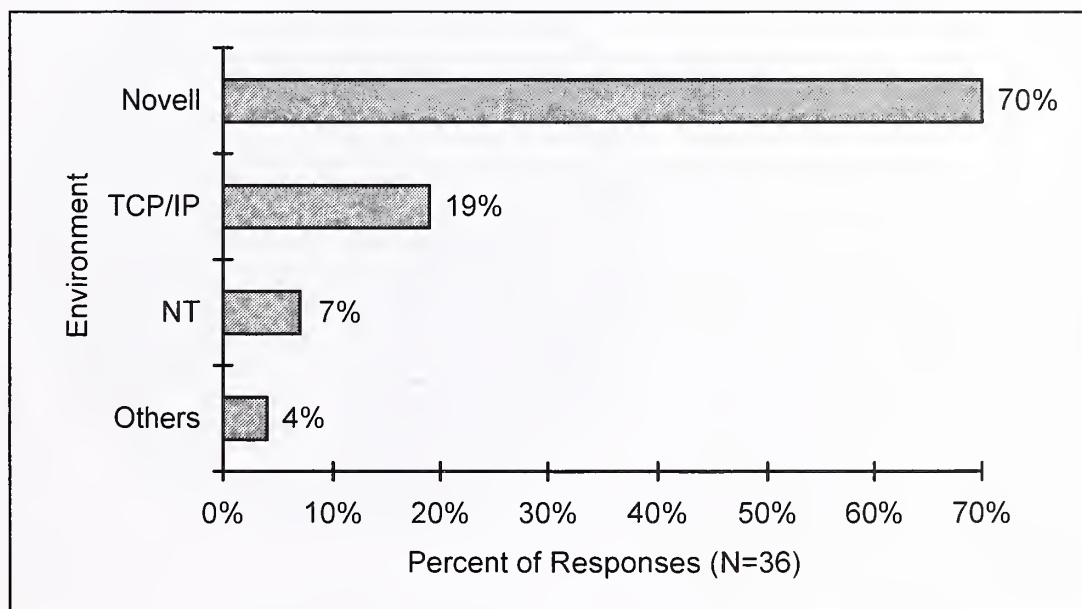
C

Communications Network Environment Selection Plans

Novell dominates the network arena. However, uncertainty regarding Novell's future will contribute to a change in this picture over the next two years.

Exhibit V-3

Expected Communications/Network Environment for New Applications by Media Firms



Source: INPUT

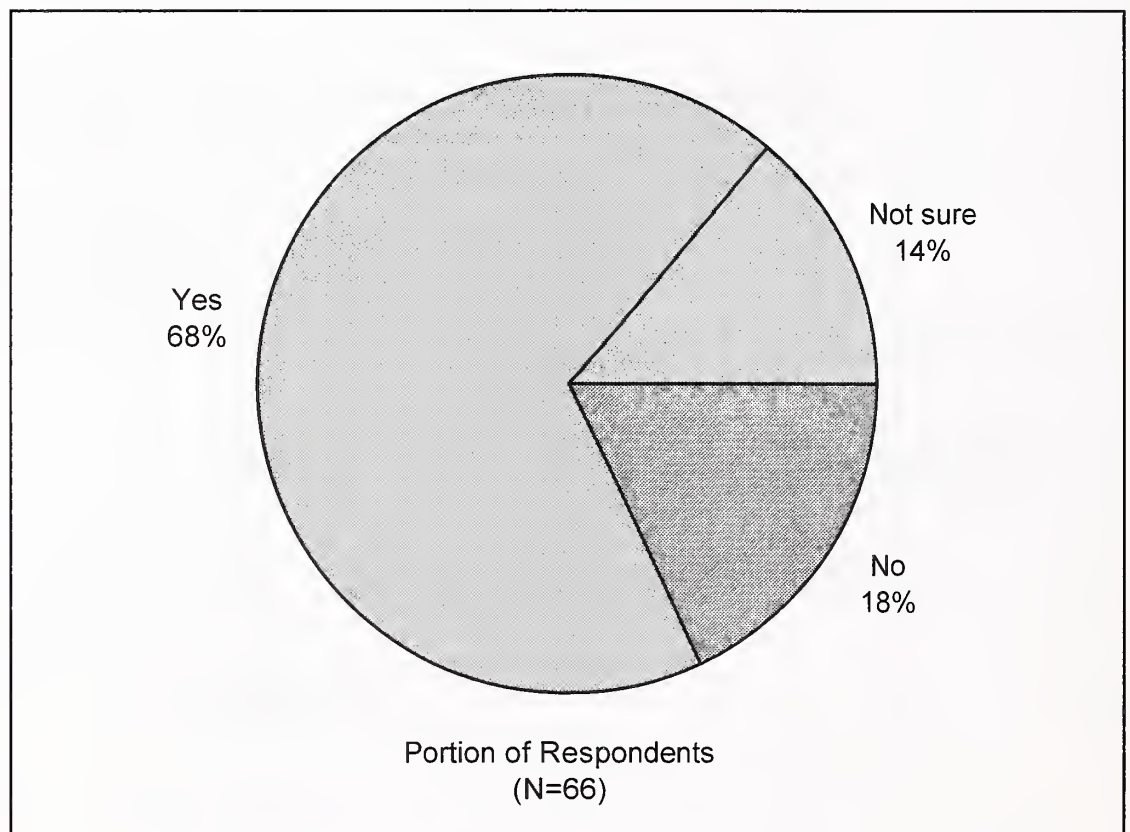
Novell architecture dominates, due to its wide acceptance in both Intel and UNIX-based architectures.

Though Windows NT shows only a small percentage of responses today, this number will rise in the future.

D**Planned Usage of the Internet and Intranets in New Applications**

Respondents were asked whether their new application plans would include the Internet or intranets, and results are shown in Exhibit V-4.

Exhibit V-4

Firms Planning To Include Internet or Intranet Technology in New Applications

Source: INPUT

A healthy majority of respondents plan to utilize the Internet in new applications they install. Given the current surge in electronic publishing and the significant potential for delivery of Internet services into the home via cable television or telephone lines, it's crucial that leading media firms have coherent plans to harness this technology.

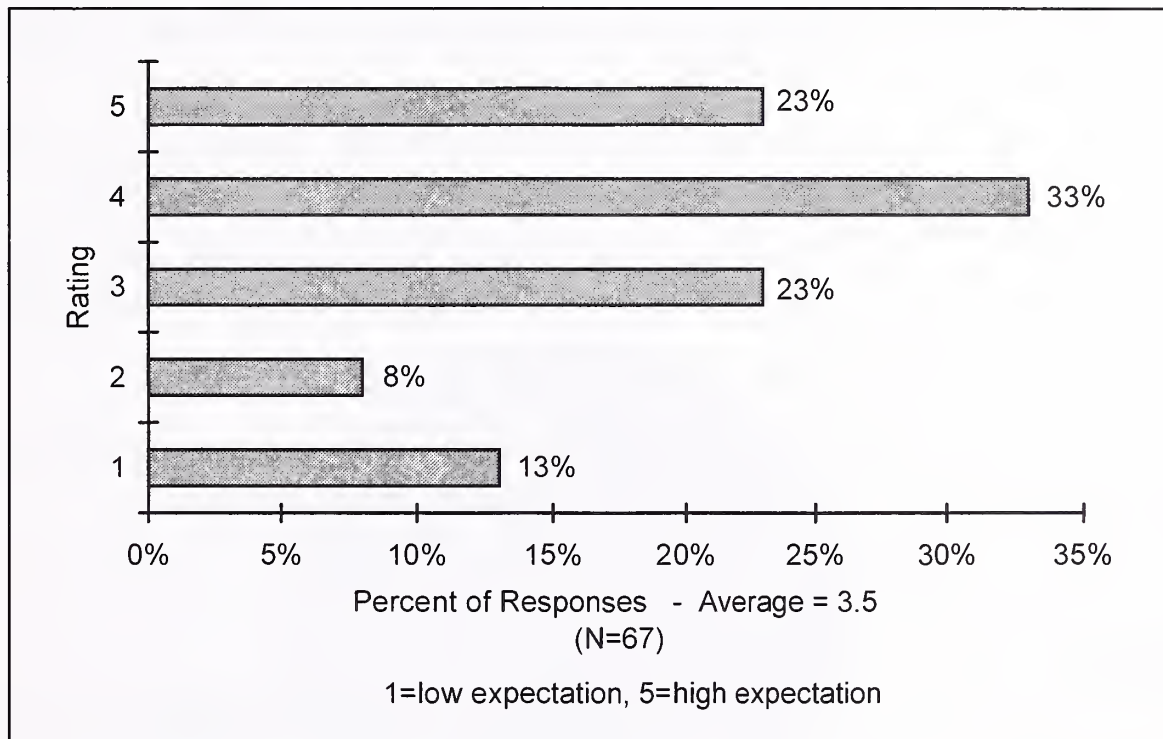
A number of respondents were skeptical about the real value of the Internet to their business, but were nonetheless planning to incorporate it, if only as a defensive strategy.

Recommendation: Software and services vendors need to insure that their own offerings provide Internet access and capability, for maximum market acceptance.

One of the most interesting developments in the phenomenal growth and acceptance of the Internet as a business tool is the emergence of “intranets”: internal enterprise networks using Internet technology. Respondents were asked about their plans for this capability, and results are shown in Exhibit V-5.

Exhibit V-5

Media Firms Expecting To Use Intranets in Their Businesses



Source: INPUT

56% of responses reflected high expectations for the use of Intranets, rating it 4 or 5 on a scale of 5. A number of these respondents cited security concerns and cost benefits as reasons for their high ratings. But about 20% of respondents rated it low, as a 1 or 2. This results in a median rating of 3.5, but with an enthusiastic majority rating it higher than that.

Recommendation: This is an attractive market for services firms that can provide services to design, build and implement the Intranet capability across enterprise boundaries.

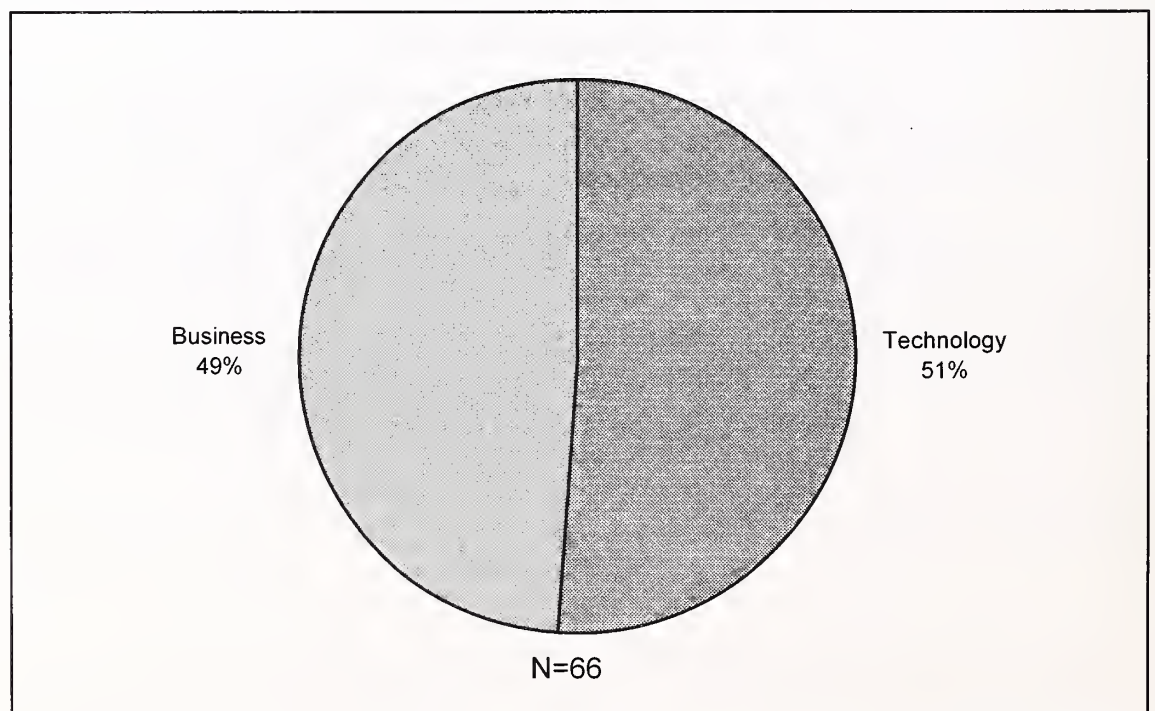
E**Decision-Making Authority in Application Selection**

Respondents were asked to assess the relative weight of technology factors versus business factors in selecting new software applications. The balancing of these factors will vary across enterprises, and may depend on many factors, including:

- The extent to which new business objectives are different from prior objectives
- The extent to which there will be integration of user functions, which will then require a higher level of technical integration
- The current level of technology, the success of new technology in the past, and the organization's willingness to take technology risks
- The amount of business risk facing the media firm
- The level of mutual confidence among the functional units and between the functional units and the IS departments

The views of the media industry on this question are shown in Exhibit V-6.

Exhibit V-6

Relative Weight of Decision Making, Technology Factors versus Business Factors

Source: INPUT

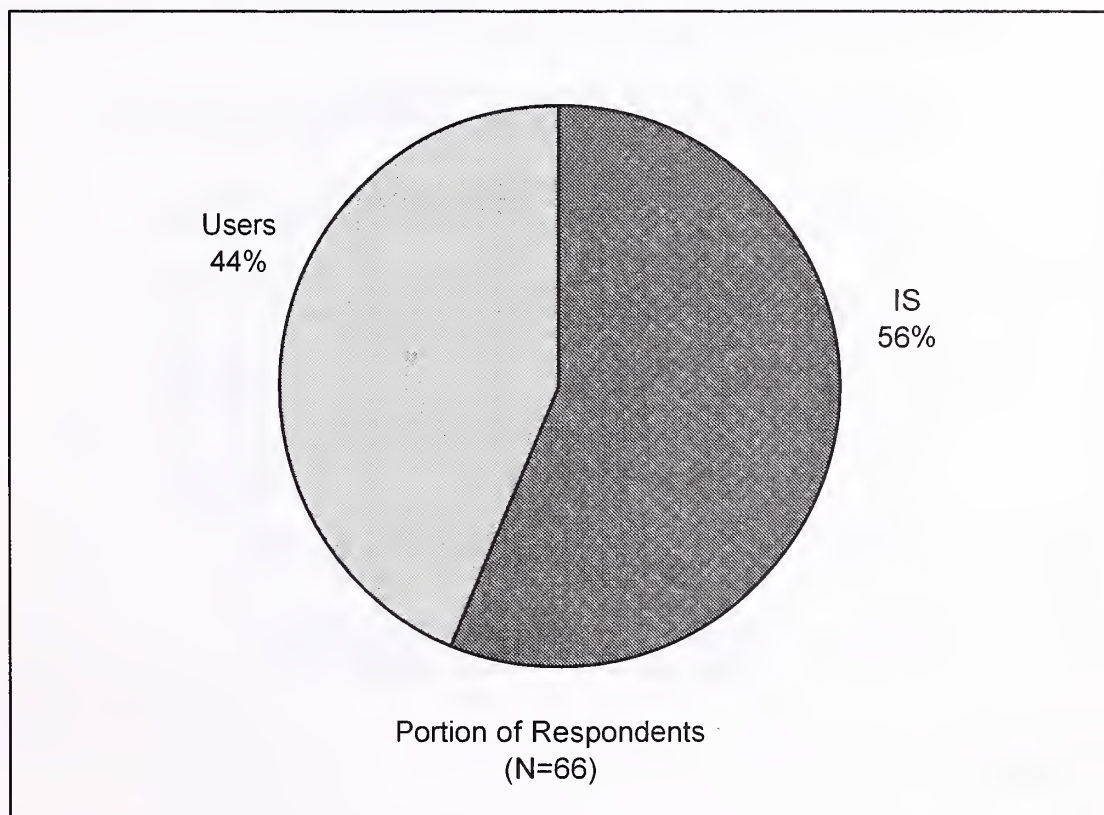
The split is almost equal, representing a good balance in the interaction between these factors.

There has been a shift in recent years toward a greater degree of decision-making authority residing in the enterprise's IT user departments, rather than in the information technology unit with the IS manager or CIO.

The influence of business reengineering processes and the availability of client/server architectures have greatly influenced this shift. The survey responses about these relative influences on application selection are shown in Exhibit V-7.

Exhibit V-7

Decision-Making Authority—Users versus IS Departments



Source: INPUT

This relationship is well balanced, with respondents giving a slight but not dominant advantage to IS management in the selection process. INPUT views this as a healthy situation.

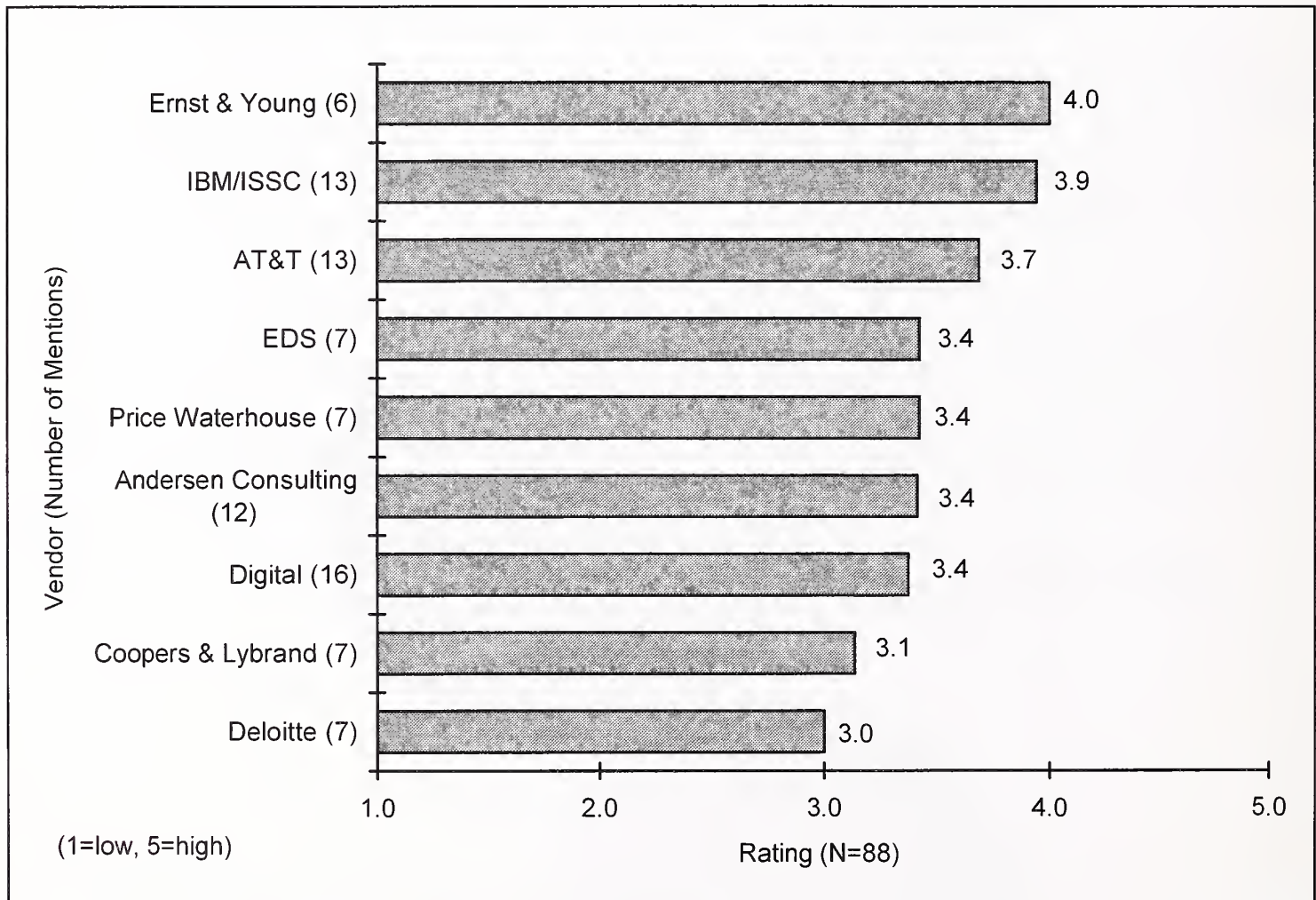
F

Ratings of Information Technology Services Vendors

The survey asked respondents to evaluate IT services vendors they were familiar with and rate their ability, if known. Results are shown in Exhibit V-8.

Exhibit V-8

Ability Ratings of Information Technology Services Vendors



Source: INPUT

All of the identified vendors received ratings between 3.0 and 4.0, showing generally favorable opinions of these vendors.

AT&T, Andersen Consulting, Digital, and IBM are the most visible, based on the number of times they were mentioned.

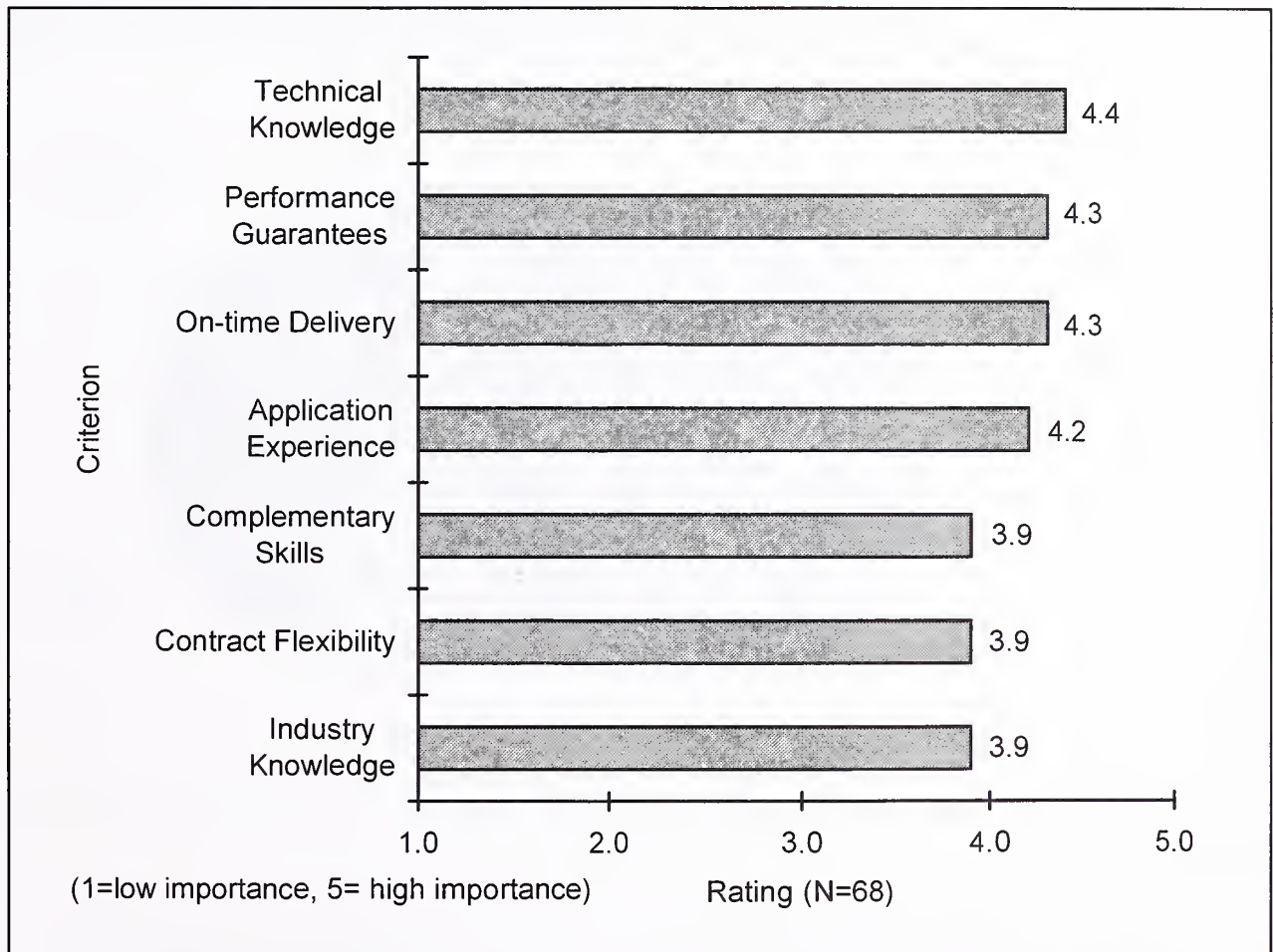
G

Criteria for Selection of Outside IT Services Vendors

Respondents were asked to state the most important criteria for selection of outside services vendors. Results are shown in Exhibit V-9.

Exhibit V-9

Leading Criteria in Selecting an Outside Vendor for IT Projects



Source: INPUT

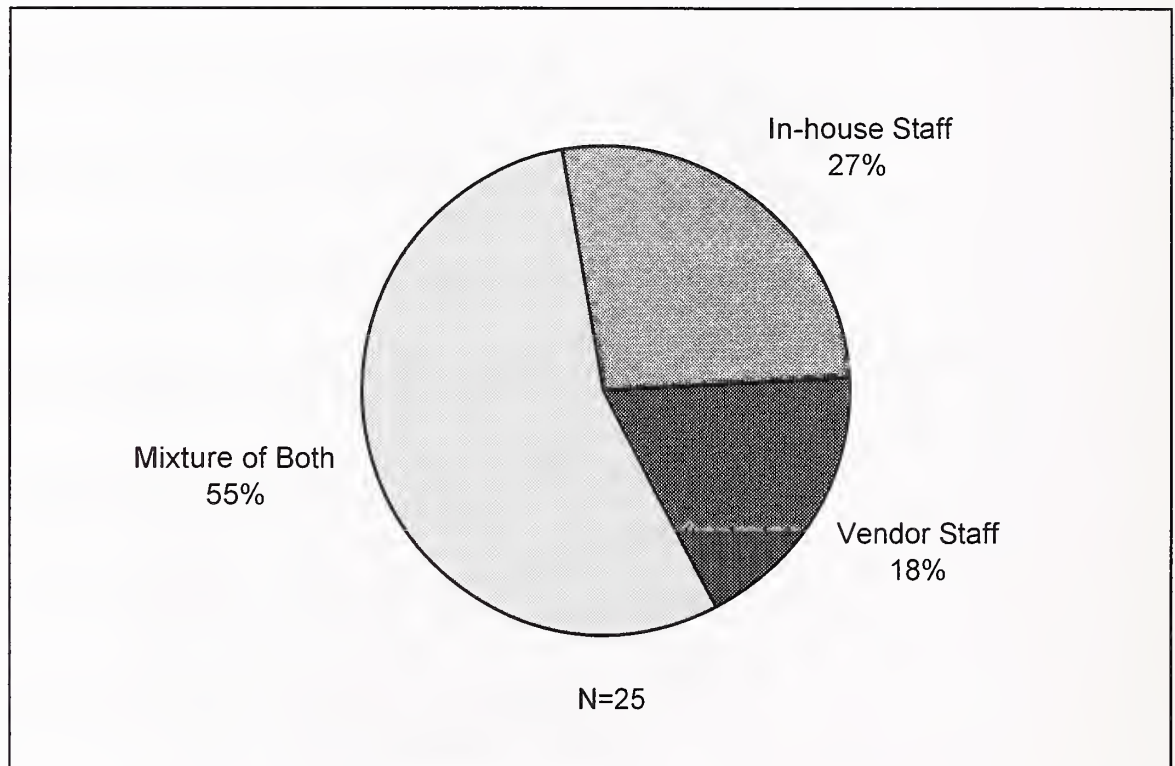
Although technical knowledge ranks highest, the vendor's willingness to provide performance guarantees and its reputation for on-time delivery are also important. Surprisingly, industry knowledge was not ranked as highly as it is in other vertical markets. Respondents may feel they have sufficient industry knowledge themselves to guide the vendor successfully.

Recommendation: Vendors approaching this industry should highlight their technical expertise and past successes with on-time delivery. Also, vendors should be prepared to offer performance guarantees where practical.

H**Internal versus External Resources in Building New Applications**

The survey asked respondents to indicate their preference for using either internal or external resources in the development of new applications. A response of "mixture of both" was also allowed. The results are shown in Exhibit V-10.

Exhibit V-10

Internal versus External Resources in Building New Applications

Source: INPUT

Most firms will utilize a mixture of in-house staff and outside resources to develop new applications, with only about one quarter of respondents selecting the in-house only option.

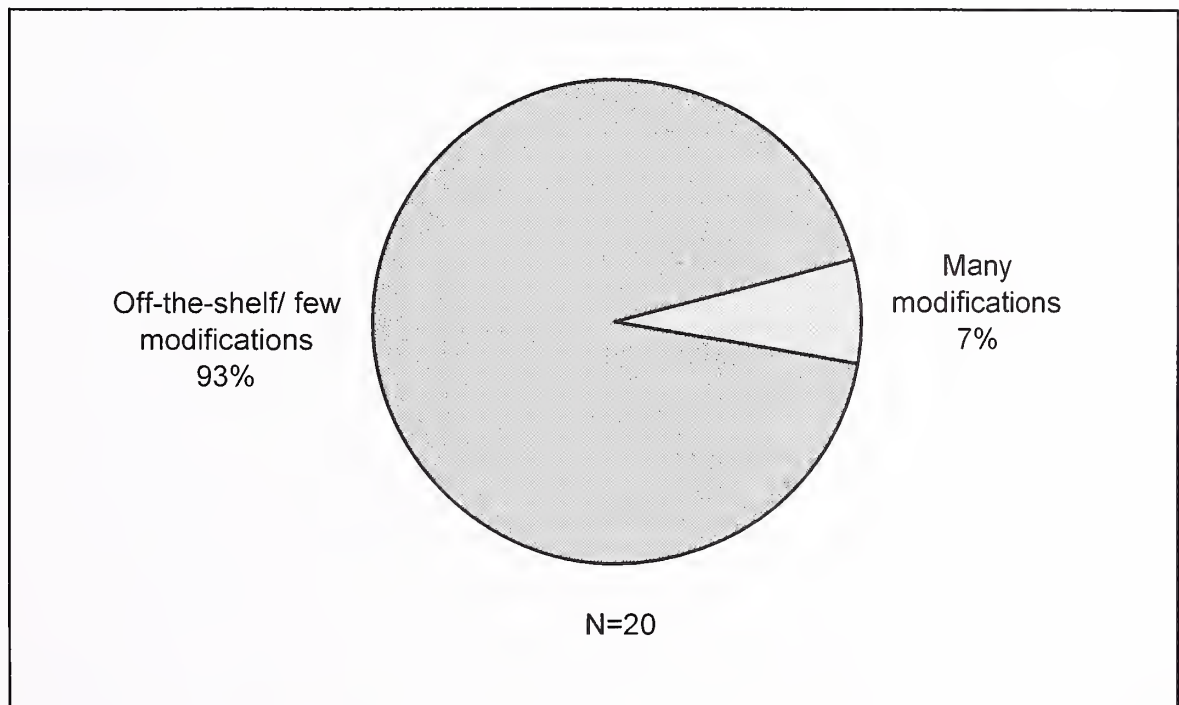
Recommendation: Vendors must be alert for cooperative opportunities in this industry, where joint projects can be carried out. Vendors should stress their ability to perform effectively in all aspects of the development cycle, from requirements analysis to coding and application maintenance, and cite situations in which they have worked jointly with in-house staff to deliver good results.

Planned Modifications to Software Packages

Respondents who indicated that they planned to acquire a new software application were asked to state their inclination to use an “off-the-shelf” package, with no or few modifications, or to make many modifications. Responses are shown in Exhibit V-11.

Exhibit V-11

**Planned Modifications of Software Packages
by Media Firm Respondents**



Source: INPUT

Very few respondents plan extensive modifications of the software they purchase. As software package capabilities increase, there is growing recognition that minor tuning to an existing package will meet most users' functional needs.

Recommendation: Software providers should continue to build “tailored” option settings and features into their packages to give clients flexibility without the major cost of customization.

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Appendix A

Survey Questionnaire

MAJOR CRITICAL APPLICATIONS STUDY

My name is _____. I'm with INPUT, a research and consulting firm in Teaneck, New Jersey. We are conducting a study on why and what cycle companies replace their major applications. All the information you provide will be kept confidential, as well as your name and your company's name. In return for your assistance, we will send you a summary of the completed study at no charge.

1a. First of all, what are your five most important applications today?
(in order of importance)

1b. How will this list change in five years, either in terms of their order on the list, or by the adding of new applications?

| | <u>1996</u> | <u>2001</u> |
|----|-------------|-------------|
| 1. | _____ | _____ |
| 2. | _____ | _____ |
| 3. | _____ | _____ |
| 4. | _____ | _____ |
| 5. | _____ | _____ |

1c. What are the reasons for these changes?

2. Next, I would like to understand more about four of these applications.

(Select the top four in 2001.)

Use one of the attached “Applications, Questions Attachment” for each application.

3. Now I would like to ask a few more general questions. What would you say is the relative weight of the decision making authority between the following when replacing or changing applications software? (Must add across to 100%)

A. IS _____% Users _____%

B. Technology _____% Business _____%

4: Could you give me a breakdown of your expenditures for the following outside services? (Check the box that applies.)

| Outside Expenditure | <100K | 100 - 250K | 250 - 500K | 500K - 1M | >1M | Amt. |
|---|-------|---------------|---------------|--------------|-----|------|
| IT-related consulting services | | | | | | |
| Systems development services | | | | | | |
| Systems integration | | | | | | |
| Application software products | | | | | | |
| Pkg. software customization/installation | | | | | | |
| Applications management/maintenance | | | | | | |
| Computer/network operations mgmt. (outsourcing) | | | | | | |
| Related business advisory/consulting services (not necessarily linked to IT services above) | | | | | | |
| Total budget for outside services | | | | | | |

5. Would you rate the importance the following criteria in terms of selecting an outside vendor for your IT projects, using a scale of 1 - 5?

| Criteria | Rating |
|-------------------------------------|---------------|
| Knowledge of the latest technology | |
| On-time delivery | |
| Performance guarantees | |
| Application experience | |
| Industry knowledge | |
| Contract flexibility & risk sharing | |
| Skills to complement in-house staff | |
| Other | |

6. On a scale of 1 - 5, how would you rate the following vendors of IT services in terms of being able to successfully complete a project for you?
(1=Low, 5=High)

| Vendor | Ability rating | No experience |
|-------------------------|----------------|---------------|
| Andersen Consulting | | |
| Digital Equipment Corp. | | |
| IBM/ISSC | | |
| AT&T Solutions | | |
| CSC | | |
| Deloitte & Touche | | |
| Price Waterhouse | | |
| KPMG Peat Marwick | | |
| EDS | | |
| Ernst & Young | | |
| Coopers & Lybrand | | |
| Unisys | | |
| Other vendors | | |

- 7a. By 1998, how large an impact do you see the use of the Internet having on your firm's business? (1=low, 5=high) _____ Why?
- 7b. By 1998, how much do you expect to be using Intranets in your business? [Intranet is the use of Internet technology within a single firm.]
(1=low, 5=high) _____ Why?

8. Do you have any other comments on the trends of major applications, either in your organization or generally?

Applications, Questions Attachment

A. What is the source of this application?

In-house developed _____

Custom developed _____

A commercial software package _____

(Name - _____)

Other (e.g., combination of above, developed by parent company)

[describe]

B. What year was it installed?

C. On a scale of 1 to 5, how would you rate the performance of the application? _____ Why?

D. Do you expect to replace or make major modifications to this application in the next five years?

No (go to the next application sheet or, if this is the last application, go to question 3)

Yes

- Will this be a replacement __or a major modification_____?
- When do you expect or want to make this change?

E. Why are you making the change?

F. What type of hardware, software and communications environments do you expect to use?

- Hardware environment[s] (e.g., Intel, Sun, Alpha, etc.):
- Software environment[s] (e.g., UNIX, NT OS/2, ETC.)
- Communications/network environment[s] (e.g., Novell, DCE, Worldwide Web, etc.)
- Do you plan to use Internet or intranet technology? If yes, in what way?

G. How do you expect to implement this application change, that is, will you use

- Custom software development
 - Using in-house staff __
 - Using vendor staff ____
 - Using a mixture of in-house and vendor staff ____
- Software package
 - Off-the shelf, with few modifications ____
 - With many modifications ____
 - Which packages are being considered?
- Systems integration (i.e., where an outside supplier supplies a full business solution)
- Outsourcing or a processing service
- Other
- Don't know

H. If you intend to use an outside firm, have you identified the firm at this time?

Yes _____ No _____ In process _____

(If Yes or in process) Which firms are being considered or have been selected?

I. Approximately how much do you expect this new/revised application to cost? [Use ranges below as prompts, of necessary.]

Under \$100,000 _____ \$1-5MM _____

\$100K - 500K _____ \$5-10MM _____

\$500- \$1MM _____ Over \$10MM _____

Does this amount include/exclude hardware? If included, about what percent would be for hardware? _____%

Go to next application or Question 3

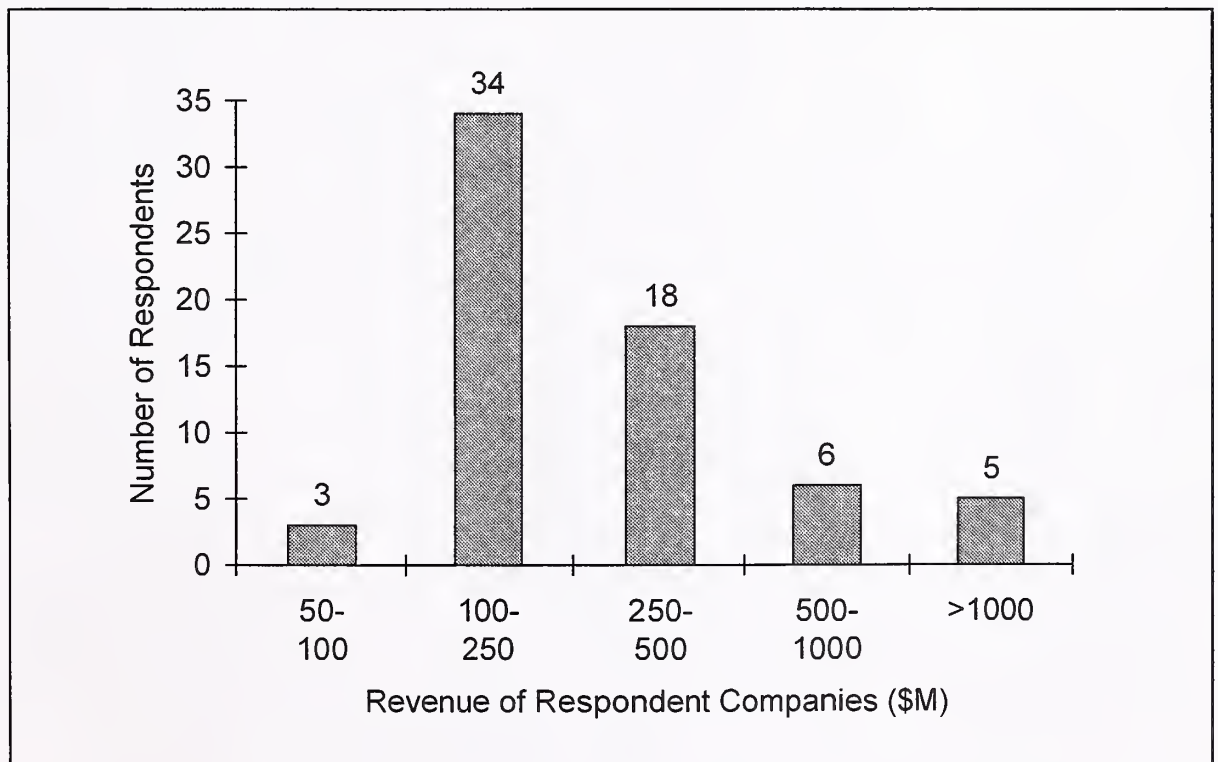
B

Appendix B

Respondent Demographics

Exhibit B-1

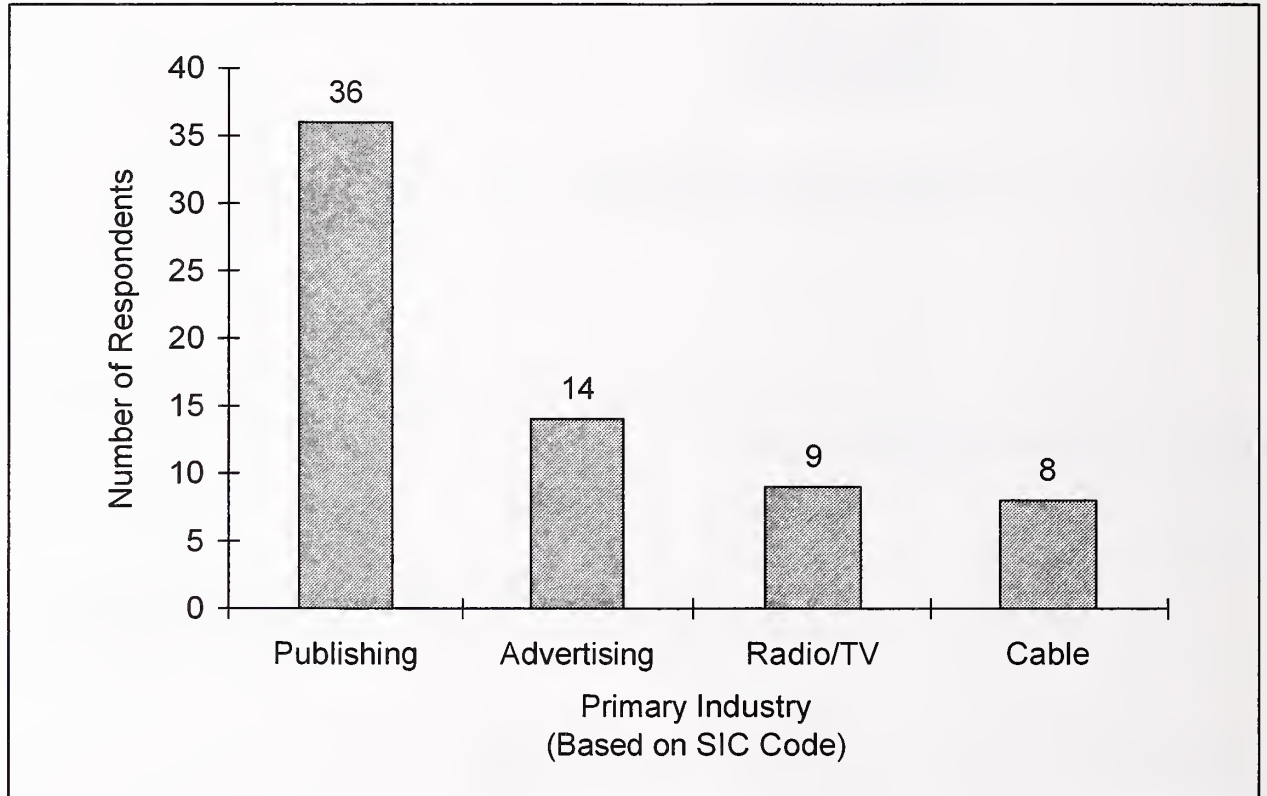
Survey Respondents by Size of Company



Source: INPUT

Exhibit B-2

Survey Respondents by Type of Business



Source: INPUT

