9/1/87

REPORT PRINTER READY CHECK LIST

DATE: 2/18/88 PROJ. CODE: MSVA-SR

REPORT NAME: SPECIAL REPORT

AUTHOR: 420

✓ 1. TITLE PAGE

✓ FRONT - REPORT TITLE:

✓ BACK - COPYRIGHT STATEMENT:
- Report Pages on copyright paper

✓ ~~2. ABSTRACT~~

✓ 3. CONTENTS ~~TITLE~~ PAGE

✓ 4. LIST OF EXHIBITS

✓ 5. CHAPTER TITLE PAGES/COLOR SEPARATORS

✓ 6. APPENDIXES

7. EXECUTIVE OVERVIEW

8. TRANSMITTAL LETTER

9. PRESS RELEASE

10. PRINTERS SPECIFICATION FORMS

[✓ 11.] SOFTBOUND/STITCHED REPORTS

12. REPORTS FILED IN BINDERS

✓ 13. 'ABOUT INPUT'

***

Market
Analysis and
Planning
Services
(MAPS)

U.S. Information Services Industry-Specific Markets and Cross-Industry Markets

Special
Report

INPUT®

1280 Villa Street, Mountain View, CA 94041 (415) 961-3300

DECEMBER 1987

U.S. INFORMATION SERVICES INDUSTRY-SPECIFIC AND CROSS-INDUSTRY MARKETS

SPECIAL REPORT

INPUT®

1280 Villa Street, Mountain View, California 94041-1194
(415) 961-3300

Published by
INPUT
1280 Villa Street
Mountain View, CA 94041-1194
U.S.A.

Market Analysis and Planning Services (MAPS)

***U.S. Information Services Industry-Specific and Cross-Industry Markets—
Special Report***

MSVA-SR • 420 • 1987

Table of Contents

Table of Contents (Continued)

Exhibits

I

Introduction

I

Introduction

INPUT monitors the Information Services industry and each year produces a forecast for that year and the five ensuing years. Thus in 1987 INPUT has developed its forecast for 1987 and projected the various submarkets it follows through 1992.

Using this forecast data base INPUT prepares reports on the status of the 4 delivery modes that make up the Information Services industry in annual reports. In addition INPUT segments the Information Services industry into markets that are Industry-Specific and those that are Cross-Industry.

The industry-specific segmentation is based on using the U.S. Department of Commerce's definition for SIC codes. The cross-industry segmentation is based on INPUT's classification. Industry-specific expenditures are based on those expenditures based on services that are characteristic or unique to the industry being monitored. For example, medical claims processing is particular to the Insurance Industry; trust accounting systems are indicative of the Banking and Finance industry.

On the other hand, cross-industry expenditures are those expenditures for services that are not specific to a particular industry. For example, human resources computer services are necessary across all industries, as are accounting, planning and analysis, etc.

A

Purpose of This Report

This report is a special one to offer some reflection and analysis on the expectation for 1988. It is especially prepared due to the interest expressed by INPUT clients about the highly unusual actions in the world stock markets on October 19, 1987 and the subsequent weeks.

In the information services industry forecast prepared in the late September/early October time frame, INPUT used the economic forecast of the Department of Commerce for GNP and inflation (i.e., GNP deflator).

These economic data coupled with INPUT's view of technology and shifts in the buying process, etc. formed the basis of the 1987 market forecast and projections.

INPUT's clients should recognize that INPUT is not an economic forecasting service and will not attempt to prove that a recession or inflation will be forthcoming.

B

Scope of the Report

This report focuses on the U.S. Information markets and analyzes user expenditures. The report is an attempt to show the relationship between economic events in the past and the user expenditure patterns that occurred as a result of those events. The primary events being reviewed are the gross national product, the product price index, the consumer price index, and the GNP deflator.

The report will not attempt to correlate stock market events with information services expenditures. Although the stock markets around the world had precipitous drops, they in themselves have little direct bearing on information services expenditures. (Note: An important exception will be the banking and finance industry segment, for obvious reasons.)

The report is organized as follows:

- Chapter II, Issues/Trends/Events, will cover the effects of the stock market drops, events taking place in the U.S. economy (after the decline), and events taking place in the world economy.
- Chapter III will cover the impacts of the economic events and discuss the possible effects of a recession (if there is one) on the industry-specific markets as well as the four delivery modes. In a similar fashion some discussion of the effects of inflation will be presented. In addition, INPUT will provide some analysis of the delivery modes vs. GNP and inflation in an attempt to show some of the long term-relationships.
- Chapter IV will present recommendations and conclusions regarding the 1987 Information Services market forecast.

C

Methodology

The INPUT information services market forecast data base is developed during the course of the year using a continuous process of interviewing those companies over $10 million per year that provide services to the Information Services markets.

In addition, stratified sampling techniques are used to develop the portion of the market forecast contributed by companies with revenues of less than $10 million.

The above methodology accounts for the original INPUT Information Services market. In addition, INPUT interviews senior management in the IS departments of Fortune 2000 companies to obtain insight into the budget for information services.

As an important factor in preparing this report, INPUT called 40 key IS executives to determine their expectations and actions for a recessionary and/or inflationary economy. The questionnaire in Appendix A was used to determine the budgetary impact of the different factors that have occurred in the economy and what plans for spending IS managers have now.

II

Issues/Trends/Events

II

Issues/Trends/Events

The dramatic plunge of the world stock markets was an unprecedented world event in modern world economics. It happened at a time in the U.S. stock market where a long-term rise of stock values had been occurring, and (to many people) there was no apparent end in sight.

In January of 1987 the Dow Jones Industrial Average (DJIA) broke through the elusive 2000 barrier and proceeded to go up to slightly over 2700 in August. On Oct. 19 the largest decline in U.S. stock market history occurred, with over 605 million shares traded and a drop of 508 points in the DJIA. The ensuing weeks have seen the DJIA oscillate between 1850 and 2000, with a brief drop below 1800 early in December.

The stock market itself is not a measurement of the business climate, and it can be debated whether it is a predictor of what is likely to occur or a sign of what has happened. The fundamental premise is that investors—be they sophisticated institutions, the man on the street, or whoever—have only one goal in mind, i.e., making money. It should be noted that in *every* transaction one of the parties is making a mistake.

To determine how Information Services markets should perform in 1988, this section will cover the issues, trends, and events that have occurred since the stock market plunge. As mentioned previously, the stock market event itself is not under consideration and no attempt will be made to determine the causes of the drop. INPUT will present information it has collected and reviewed so that readers may come to their own determinations.

Based on the worldwide stock markets decline, many economists have been forecasting a recession in the U.S. economy; still others are forecasting inflation. Finally some economists are saying the economy will in large measure perform pretty much as it had prior to the plunge. Whatever the impact of the stock market, it did do one thing: many more people focused their attention on the U.S. and world economies.

One result is that the U.S. public is now significantly in tune with the fact that the U.S. economy is inseparable from the world economy. Also it is quite apparent that the world economy is a very complex set of relationships that no one understands precisely.

The rest of this section will discuss the economic situation and mention events that have an impact on the U.S. economy in 1988, which in turn will have an impact on user expenditures for Information Services. There are four types of events that will be covered:

- Stock Market
- Political
- U.S. Economy
- World Economy

A

Stock Market

Many corporations and individuals were negatively impacted by the stock market event. On paper, company evaluations and individuals' net worth were noticeably down. However, in the interest of clarity it should be noted that the DJIA in the stock market aftermath is fairly close to where it had been some 10 months earlier. There were no reports of people jumping out of windows or doing radical things in fits of emotional stress (with the exception of the man who shot up a Merrill Lynch office in Florida, killing at least one employee (and himself)). It seems as though most people took the plunge in stride.

Some of the causes of the stock market plunge are shown in Exhibit II-1.

EXHIBIT II-1

FACTORS CAUSING THE STOCK MARKET PLUNGE - 1987

- International Trade Deficits
- U.S. Budget Deficit
- Falling Dollar
- Rising Interest Rates
- Insufficient Specialist Financing
- Insider Trading
- **Panic Selling**

Although there will be books written on the subject and presidential commissions reporting on what took place the crash itself will not be the focus of this report. After all, the stock market is a place where investors invest (or is it really a sophisticated form of betting?) based on supposed knowledge and thus cause a stock to go up (or down), thereby causing other investors to buy (or sell).

The so-called straw that broke the camel's back was the comment made by Treasury Secretary James Baker that suggested (on 10/18) the United States was willing to allow the dollar to fall. The U.S. stock and bond markets had numerous foreign investors who lose each time the dollar declines, and these investors were anxious to protect against possible losses. This is believed to be what precipitated the plummeting market.

The real impact on the Information Services industry is significantly lower stock prices. The effects of these prices are shown in Exhibit II-2 and discussed below:

EXHIBIT II-2

EFFECTS OF LOWER STOCK PRICES

- Capital Formation
- Fewer Initial Public Offerings (IPO)
- Secondary Placements
- Mergers and Acquisitions
- Possible Regulatory Changes

1. Capital Formation

INPUT believes the main effect on Information Services will be the limiting of the stock market as a vehicle to let venture capital organizations (and institutional investors) find a way to become liquid. This limitation will have an impact on the ability of new companies (in formation) to raise the necessary money to develop and prove a product or concept.

This inhibition of new companies will temper the technological improvement side and have a small negative impact on the overall growth of the

Information Services market. On the other hand, if technology is not changing, it provides existing vendors and information services providers with a larger window of opportunity to market established products and/or technology. This larger window will provide a slight positive impact on the growth of Information Services. The positive and negative growths are likely to offset each other.

2. IPO Impact

Since the stock market plunge there have been virtually no major initial public offerings, a direct result of lower prices (or higher distribution) to raise a given sum. Since companies are evaluated against those of like kind that are already public, the IPO market has been curtailed. This in itself is only a problem for companies that were absolutely in need of the additional capital to stay in business. Companies that have strong balance sheets are in a position to raise additional money from their banks or existing venture firms.

Raising money from these sources has a subtle benefit to the company and its existing shareholders in that the companies will probably only raise the amount they truly need as opposed to getting extra funds from the more generous public. Secondary effects will postpone the potential employee morale builder (especially if the stock market was continuing to edge up), the income from cash investments, and the possibility of becoming over-extended in programs because of a large cash influx.

3. Secondary Placements

And as mentioned previously, if the company cannot raise capital in the open market, its investors will have to come up with additional money and not be in a position to fund other investments. Furthermore, some long-range technology or business development programs rely on going to the market for secondary placements or other instruments to fuel capital-intensive expenditures. This is the case with starting up new hardware lines or major software developments.

In the professional services sector the newer area of Systems Integration may require the long-term serious players to consider alternative financing methods that could have included the stock market.

4. Mergers and Acquisitions

Although there has not been a significant upturn in the number of mergers and/or acquisitions, INPUT believes there will be. The mergers and acquisition rate in the information Services industry had been increasing in 1987 as measured by the Broadview Index. There was a sort of "fever" regarding alliances, mergers, and acquisitions. This seems to have slowed down (there has been no actual statistic published at this writing).

However, INPUT, through its sources, believes that an increase in mergers and acquisitions will occur as the feeling spreads that the stock market and world economy have gotten into a steady-state again.

INPUT is forecasting a noticeable increase in foreign firms purchasing U.S. properties, and is quite surprised that very few have been announced. Besides the steady-state phenomenon, other plausible explanations are the complexities of international legal factors, cultural differences, and time zone differences. All slow the process.

5. Possible Regulatory Changes

Regulatory changes are being suggested as a means to prevent future chaos. Thoughts being considered are limits on how much a stock can rise or fall, limits on "portfolio insurance" and other ways to prevent economic catastrophe from a disorderly market.

6. Summary

The lower stock prices have given rise to an unprecedented number of companies announcing company stock repurchase plans. IBM has scheduled one billion dollars to repurchase its shares. Repurchase plans, have 3 major effects: 1) they provide a sense of confidence to other investors that the company believes its stock is very attractive in light of all other possible investments; 2) they have the effect of improving the earnings per share (fewer shares outstanding), which tends to be a major factor in evaluating the market value of the company and; 3) they provide additional shares for employee stock options and/or shares for future acquisitions.

Corporate insider trading is definitely on the buy side. During the first 30 days since October 19, corporate buyers have been outnumbering sellers by 7 to 1. This is opposed to the general trend of corporate insiders selling at a margin of 2 1/2 to 1. This strong insider buying, when added to the fact that historically insiders have never been wrong (when on the buy side), provides a strong hint that the stock market plunge was an anomaly. Certainly the insiders seem to believe their companies became extremely undervalued. Insiders are not typically traders due in large measure to the following factors: the scrutiny of the SEC, holding periods, and possible insider trading infractions.

B

Political Scene

In 1988 the U.S. Presidential elections will be held. If there is one thing everyone can agree on, it is that the U.S. economy is now in considerably better shape than during President Carter's administration, which ended in 1980. Then we had very high unemployment, very high interest rates, high inflation (for the U.S.), an unbalanced budget, and much social welfare spending.

Eight years later the economy has improved significantly and inflation, interest rates, and unemployment are all down, but with very large budget deficits and many social programs seemingly curtailed at the expense of defense budget increases.

INPUT does not desire to get into a political discussion on the impact of the political scene on Information Sciences. However, it seems perfectly reasonable to conclude that the Republicans are not anxious to turn over the government to the Democrats. This means the Republicans will do all they can to keep the economy going in a positive fashion. While the intent will be there, it will be difficult to do since the U.S. Congress is controlled by the Democrats.

The Democrats have nothing to gain by adversely impacting the economy on a short-term basis, so they will within partisan limits help the economy where they can. Or at least they cannot overtly sabotage efforts to keep the economy moving forward.

The Federal Reserve will do its utmost to keep interest rates as low as possible; the U.S. Treasury will advocate the falling of the dollar to reach more realistic levels that will promote worldwide trading and increase U.S. exports.

C

U.S. Economy

The behavior of the U.S. Economy in the next few months will have a distinct bearing on how companies perceive and react to their business climate, which in turn will have a major impact on Information Services expenditures.

Most economists and analysts forecasting a slowdown or recession are basing it on the belief that the consumer will not spend, due to a loss of confidence in the economy, a loss of wealth in the market, or a fear that the U.S. is heading toward a period of major economic chaos. Since the consumer spending and retail spending patterns account for roughly 2/3 of the GNP, the forecasts and prognostications being suggested had ominous tones. The situation was of special concern because the stock market meltdown occurred just prior to the annual Christmas holiday shopping season.

Christmas is the time of year where merchants make 1/3 of their revenue and 1/2 of their profits, and is a key factor in the success of the merchant for the year. If consumer spending slowed, there could be serious ramifications that would have a domino effect throughout the economy.

Thsi report will look at events that have taken place in the U.S. economy and review three main areas:

- Retail Sales Reports.
- Indicators Released.
- Observations and Mood Comments.

1. Retail Sales

As mentioned above, retail sales are a key factor in what will happen in the economy in 1988. Exhibit II-3 shows a sample of headlines that portray what is happening on almost a real-time basis. On some occasions the same statistical reports will be used by two different sources to provide totally divergent views. Some analysts scrutinize the statistics to draw a conclusion they are already seeking. (Note: There is no attempt by INPUT to do this.)

EXHIBIT II-3

SAMPLE HEADLINES

- San Jose Mercury News 11/6/87
  - Consumer Credit Undaunted by Collapse
- San Francisco Chronicle 12/1/87
  - Bay Retailers Surprised by Strong Sales
- San Francisco Chronicle 12/4/87
  - Retailers' Sales Disappointing
- San Jose Mercury News 12/9/87
  - Recession Fears Ease as Economy Rides out Crash
- San Francisco Chronicle 12/10/87
  - Christmas Sales Are Picking Up
- San Jose Mercury News 12/12/87
  - Shoppers Haven't Cut Back —Americans Step up Buying of Retail Goods
- San Francisco Chronicle 12/12/87
  - Retail Sales Increase 0.2 Percent —Wholesale Prices Steady

Without going into specifics, the only dragging elements in retail spending are luxury and/or discretionary items such as furs, diamonds, and expensive cars.

Exhibit II-4 shows news articles that appeared the same day in two different newspapers that ostensibly reported the same event—that is, the Commerce Departments reporting an increase of 0.2 percentage points for spending in November (over the previous month). The reader needs to decide which presentation is correct. It is likely that all the information is somewhat true.

EXHIBIT II-4

TWO DIFFERENT VIEWS OF THE SAME EVENT

12/12/87

San Jose Mercury News

- Written by Robert A. Rankin
  Mercury News Bureau
- Dateline—Washington
- Lead-In
  - "Born to shop" may indeed be the credo. Forget those widespread fears that the October 19 stock market crash might scare consumers into cutting spending enough to trigger a recession.
- Other Quotes
  - Sears Roebuck very pleased. Sales were stronger than expected. Forecast is revised upward.
  - Carter, Hawley, Hale said sales are beating our expectations.
  - Department store sales are up 6 percent over last November (1986).

San Francisco Chronicle

- Written by New York Times
- Dateline—Washington
- Lead-In
  - Evidence mounted yesterday that consumers have slowed their spending in recent months, but the cutback does not appear severe enough to shove the economy into early recession.
- Other Quotes
  - Retail sales were dragged down by the sluggish automobile sector, which was down 0.5 percent. (Note that without the auto sector, total sales would have been up by .4 percent.)

INPUT has also made an informal survey of individuals in the past few weeks and found that no one curtailed their holiday-season spending last year. In addition, local contacts in the retail industry have said that the holiday season had acceptable growth (of course, it could have been better!). (Note: The San Francisco Bay Area is acknowledged by all to be one that is enjoying prosperity above the national average.)

Furthermore, in INPUT's survey of IS managers, none indicated that his/her enterprise had seen any actual signs of a slowdown or decline in indicators they use to track their businesses.

INPUT's conclusion is that retail sales have not slowed to an extent that would warrant belief in an eminent slowdown or recession in 1988. The retail end of the economy has held up.

There is a plausible explanation: the average stock market investor was not highly leveraged nor had the majority of his/her investment in the stock market or related instruments. The enjoyment of the holiday season is not tied to one's net worth or wealth but to more fundamental values revolving around caring about people and being in touch with spiritual feelings.

And finally, almost any investment made more than a year ago is still ahead, *and* one's net worth or wealth in December of 1987 is essentially what it was in December of 1986.

The bottom line is that retail sales are holding up because the average American has much to be happy about and was not seriously affected by the stock market game.

2. Indicators Released

Since the stock market meltdown there have been numerous government indicators that cast doubt on a possible slowdown or recession. Exhibit II-5 summarizes the major announcements. Most of these announcements are upbeat and not indicative of an economy that is turning down.

In fact, with unemployment decreasing and factory utilization going up, there actually are renewed possibilities of a spurt in inflation.

3. Observations and Mood Comments

INPUT has also noticed business press articles that provide a sampling of the opinions of business people in the general economy.

For example, a survey of 80 chief executives in November indicated that 78% expect to get through 1988 without a recession. Back in August a slightly larger sample yielded 84% who saw no recession, and 53% of the new sample expect profits to rise by more than 10% in 1988. The business community does not seem to agree with the economists/analysts' view of the "crisis".

One should also recall that corporate insiders are buying their company stock at unprecedented ratios to selling.

EXHIBIT II-5

MAJOR INDICATORS

- Manufacturing Capacity Utilization at 81.4 Percent
- Unemployment at Lowest Level in 10 Years
- Personal Income Surge Highest Since WW II
- Machine-Tool Orders Increased 46 Percent in October over September, Which Was up 1.8 Percent
- Factory Orders Increased by 1.1 Percent in October over September, Which Was up 1.8 Percent
- Economic Indicators Declined Only .2 Percent in October, Mostly Due to the Decline in the Stock Market*

*If the Stock Market Stayed the Same, the Economic Indicators Would Have Been up .9 Percent

Ad spending is forecasted to rise 9% in 1988 despite the stock market crash. Since advertising expenditures are somewhat discretionary, the fact that they are forecast to increase is a positive sign.

A final mood sensor is a recent survey of purchasing managers indicating that there still is an expanding influence in the economy. On November 30, a survey of 250 industrial purchasing managers released their composite index (sponsored by the National Association of Purchasing Management), which indicated that production and new orders increased in November for the 11th consecutive month.

In summary, the mood and sense of most corporations has been one of having a cautious positive nature. Some have thought of contingency plans on how to deal with a change in the economy. This is prudent management behavior. Of the IS managers INPUT polled, fewer than 15% had been asked to prepare a contingency plan based on recent economic events. Most (90%) expressed caution as the operative word and all believed they could respond to changes in the market very quickly.

D

World Economy

There is no doubt that the U.S. is a significant participant in the world economy. The U.S. imports oil, cars, and steel—all making a large contribution to the trade deficit. The dollar has been the key reconciler of trade for governments and had been very strong until mid-October.

The belief then was that a lower dollar would increase U.S. exports, bringing the trade deficit more in line and altering the balance of payments. The U.S. is now the largest debtor nation in the world.

Following the stock markets' worldwide decline (remember foreign investors lose when the dollar declines) the dollar has fallen against the Yen, the Mark, and the Pound, and had seemingly stabilized in some instances at the lowest point since World War II.

The European Community helped out by lowering their interest rates to bolster their own economies and thereby spur economic growth internally. These efforts are also an attempt to support the dollar. There is cooperation in the world economy to restore faith and confidence in the dollar and to get the international economy back on track.

The record $17.6 billion U.S. trade deficit in November was a real shock, as many believed a reversal of the trade deficit was likely. The deficit is actually another sign that the U.S. economy is very strong; even with a significantly lower dollar. The U.S. is still importing at an increasing rate. Based on this announcement in mid-December, the dollar traded as low as 128.95 Yen and 1.631 against the Mark. The U.S. is working with other trading partners—such as Taiwan, South Korea, Hong Kong, and Singapore—to obtain an increase of 15 to 20 percent in their currencies relative to the U.S. dollar. This increase is proceeding very slowly.

Exhibit II-6 shows some of the major events occurring in the world economy that will have a bearing on how the U.S. economy is likely to behave in the forthcoming months. INPUT believes that the governments of most countries will cooperate in putting the world economic situation in order.

Another sign of cooperation is from the OPEC meetings of mid-December, where an oil price of $18 per barrel seems likely, with no increase of legal production. This stable price is against Iran's vehement wishes and may have difficulty holding up as an agreement. However, the intent of the middle-east countries (sans Iran) seems to be one of cooperating with the world economy. After the agreement, the oil price in the secondary market dropped toward $15/barrel as a sign of lack of confidence in the "new" accord. This drop will take the pressure off possible inflation.

EXHIBIT II-6

WORLD ECONOMIC EVENTS

- San Francisco Chronicle 11/25/87
  - European Banks Cut Key Rates
    - Effort to Stabilize Dollar, Spur Growth
- San Jose Mercury News 11/30/87
  - West Germans Develop Plan to Ease Credit
- San Francisco Chronicle 12/1/87
  - Oil Prices Fall in Moderate Trading
- San Francisco Chronicle 12/8/87
  - U.S., Canada Get New Trade Pact
- San Jose Mercury News 12/11/87
  - $17.6 Billion Trade Gap Stuns Analysts

In summary, the negotiations and interactions in the world economy are not over (at this writing), but the correct changes seem to be occurring to put order and stability in the world economy (not withstanding the surprise trade deficit record in November).

III

Information Services Industry Impact

III

Information Services Industry Impact

The Information Services Industry is impacted by the economy as one would expect. Information Services budgets tend to be a percentage of the revenues of a particular industry segment and in many ways are proportional to the amount of computer resources required to deliver products, develop products, or support products.

Information Services expenditures are therefore impacted by the general revenue trends of the enterprises they are supporting. Exceptions would be instances where an investment is required to provide a new manner of doing business or a more effective way of running the business based on productivity improvements.

Much of the typical IS budget is relatively fixed on supporting hardware, personnel, and associated overheads; these three dictate the increase in the budget for each year. Budget increases tend to track acceptable wage increases, etc. and lately have been in the 4-6% range, barring unusual project requirements.

A

Market Overview

INPUT has analyzed the growth rates for the four delivery modes since 1977 (turnkey systems were not accounted for until 1982). These growth rates were then normalized for "real" growth by subtracting the GNP Price Deflator. The result was then plotted against real GNP to see the relationship of real growth of the delivery modes versus "real growth" GNP.

Exhibit III-1 is a table that was developed from previous INPUT research in the years 1978 through the present. The table shows the percent growth by delivery mode. Turnkey systems were not monitored prior to 1982.

Exhibit III-2 is a table of the U.S. Gross National Product and other indices such as the Producer's Price Index (PPI), Consumer's Price Index

(CPI), the GNP Price Deflator, and calculated "real growth" (GNP minus GNP Price Deflator). The GNP Price Deflator is a measure of what is commonly called inflation.

Exhibit III-3 is a table that shows the "real growth" of each delivery mode for the years 1977 through 1986. There are two sets of values for each delivery mode for each year. The values in Column A are the percent growth for the delivery mode less the GNP price deflator for the same year. Those in column B are the percent growth for the delivery mode less the GNP price deflator for the previous year.

Exhibit III-4 is a plot of each delivery mode using both values for each year. Using both values produces a band of real growth. Also plotted in the Exhibits are the total market and the real-growth GNP. The intention was to determine any obvious relationships. The plots tend to show little correlation to the real-growth GNP. The processing/network services plot comes closest to following the GNP plot, except in the last 2 years

EXHIBIT III-1

PERCENT MARKET GROWTH BY DELIVERY MODES 1978-1986

Year	Processing/ Network Services	Software Products	Professional Services	Turnkey Systems	Total Market
1978	18.7	26.7	20.0	–	–
1979	20.1	28.7	26.0	–	–
1980	16.7	31.0	27.4	–	–
1981	16.2	32.4	26.9	–	–
1982	10.2	37.1	16.8	23.1	18.5
1983	12.9	35.1	21.4	27.9	21.7
1984	16.1	33.3	20.2	30.0	23.2
1985	10.1	18.9	19.8	11.4	14.7
1986	14.2	23.1	15.8	10.9	16.4

Source: INPUT Research and Reports 1978-1987

EXHIBIT III-2

U.S. GNP AND OTHER INDICES
(Percent Change)

Year	GNP (Current $)	PPI Finished Goods	CPI All Items	GNP Price Deflation	"Real-Growth" GNP-Price Deflation
1976	11.5	4.4	5.8	6.4	5.1
1977	11.7	6.5	6.5	6.7	4.0
1978	13.0	7.8	7.7	7.3	5.7
1979	11.5	11.1	11.3	8.9	2.6
1980	8.9	13.5	13.5	9.0	-0.1
1981	11.7	9.2	10.4	9.7	2.0
1982	3.7	4.0	6.1	6.4	-2.7
1983	7.6	1.6	3.2	3.9	3.7
1984	10.5	2.1	4.3	3.8	6.7
1985	6.2	0.9	3.6	3.3	2.9
1986	5.2	-1.4	1.9	2.6	2.6
1987	6.1 *	2-3 ***	3.6 *	3.3 *	2.8 *
1988	7.5 **	–	4.4 **	4.1 **	3.4 **

* Estimate - Department of Commerce
** Estimate - Council of Economic Advisors 8/87
*** Estimate - Bureau of Labor Statictics

Source: U.S. Department of Commerce

EXHIBIT III-3

REAL GROWTH BY DELIVERY MODE 1977-1986
(Percent)

	Real-Growth GNP	Processing/ Network Services		Software Products		Professional Services		Turnkey Systems		Total Market	
		Growth - Current Year's Deflator	Growth - Previous Year's Deflator								
Year		A	B	A	B	A	B	A	B	A	B
1977	4.0	–	–	–	–	–	–	–	–	–	–
1978	5.7	11.4	12.0	19.4	20.0	12.7	13.3	–	–	–	–
1979	2.6	11.2	12.8	19.8	21.4	17.1	18.7	–	–	–	–
1980	-0.1	7.7	7.8	22.0	22.1	18.4	18.5	–	–	–	–
1981	2.0	6.5	7.2	22.7	23.4	17.2	17.9	–	–	–	–
1982	-2.7	3.8	0.5	30.7	27.4	10.4	9.7	16.7	13.4	12.1	8.8
1983	3.7	9.0	6.5	31.2	28.7	17.5	15.0	24.0	21.5	17.8	15.3
1984	6.7	12.3	12.2	29.5	29.4	16.4	16.3	26.2	26.1	19.4	19.3
1985	2.9	6.8	6.3	15.6	15.1	16.5	16.0	8.1	7.6	11.4	10.9
1986	2.6	11.6	10.9	20.5	19.8	13.2	12.5	8.3	7.6	13.8	13.1

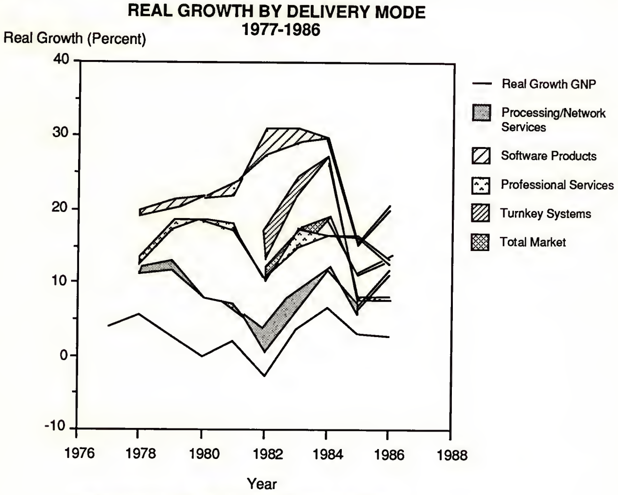
For each delivery mode

Column A is the percent growth minus that year's GNP Price Deflator
Column B is the percent growth minus the previous year's GNP Price Deflator

when the GNP was essentially flat and the Processing/Network curve edged up. Also in the '80 to '81 time frame the GNP increased and the Processing/Network curve went down. The other delivery modes seem to show even less correlation.

The total information services market tracked the "real growth" GNP fairly closely from 1982 through 1985. In 1986 when the GNP dropped slightly, the total market real growth went up, based on software products and processing services growth. Professional services companies' real percentage growth declined at a faster rate than the real-growth GNP.

EXHIBIT III-4



Note: Values for 1980 represent the growth from 1979 to 1980; 1984 represents growth from 83 to 84, etc.

B

Possible Slow-down?—Course of Action

1. Survey Comments

The IS managers interviewed as part of this special report were all senior members of their organizations. The organizations selected were all Fortune 500 companies. The questionnaire in Appendix A was used to initiate the discussions that took place.

The consensus (90%) was that the stock market declines would have no impact on respondents' immediate plans nor any impact on their 1988 budgets. As astute business people, they were aware that a change in the economy would likely occur (someday) and as responsible business managers they tended to monitor those business indicators that impacted their companies' businesses.

No one in the sample felt that any indicators had changed to warrant any sort of action. They all indicated that their IS departments had a "business as usual" approach except for very minor exceptions.

All had thought about possible contingencies as a result of the changes that could happen in the economy, but fewer than 10% were consciously trying to slow down certain expenditures. Slowing down was used in the context of shuffling projects in the budget to minimize the impact on the IS organization, and to provide an opportunity for better reaction to possible economic changes.

Since the concern about the economy occurred fairly late in the year, most interviewed were far along in the usual budget process. All of those interviewed indicated that budgets would not be altered because of the possible economic changes, and all expected approval shortly for the coming year. The average budget increase was in the 5-7% range.

Exhibit III-5 provides some of the comments that were made by those interviewed.

EXHIBIT III-5

I.S. MANAGER COMMENTS ON ECONOMIC CHANGE

- Service Industry Participant:
  - (Constantly monitoring economic indicators) "Saw early signs of recession in late 1988, early 1989 and planning for it"... "just watching to see if stock market acts as catalyst."
- Process Manufacturing Participant:
  - "Recession is already built into the plan." Re: inflation "don't see it coming."
- Process Manufacturing Participant
  - "My business line is pharmaceuticals, which is terribly immune to recession," "regulatory considerations are the main budgetary impact."
- Several Oil Companies:
  - Main concern is price of oil.
- Discrete Manufacturer:
  - "Recession is bound to come...not sure stock market crash will accelerate it." "Do not forsee inflation."

2. Delivery Mode Analysis

Earlier in this section a chart showed the possible impact of GNP as related to the delivery modes. This section will discuss the impact INPUT would expect if the GNP were to decline. Note: This section should be viewed as a "what-if" scenario, as INPUT does not believe a slowdown or recession is imminent.

a. Processing/Network Services

i. Remote Computing/Batch Processing

Most of the services in this delivery mode are related to the number of transactions the user requires. These transactions are charged at a price-per-transaction or hourly rate. If there is a slowdown, there is the likelihood that the number of transactions will decline, thereby lowering the expenditures for VAN usage, on-line data bases, and most remote services.

Expenditures that are deemed less essential will be either postponed or cancelled. Two applications that are likely to show increases are credit card processing and electronic funds transfer. INPUT believes people will use their credit cards more (paying off the bill in the allotted interest-free timeframe) to limit the cash they carry. People out of work (a slowdown or recession is likely to raise unemployment) will also use credit for essentials to tide them over.

ii. Facilities Management

INPUT believes there will be more interest in using outside services to replace large IS requirements. This replacement would not occur in a slowdown scenario, but would occur more frequently as the severity of a recession increases.

iii. VANs

VAN use would decline somewhat based on the decrease of transactions. However, in a slowdown IS departments would likely postpone hardware procurements and those intending to create private networks using TI switches would likely shift the private network traffic back to VANs, thus postponing the capital expenditure.

iv. Utility Processing

Utility Processing as an outside expenditure would be curtailed to the extent that it could be done in-house on existing equipment. Thus utility-processing expenditures would decline.

v. On-line Data Base

On-line data base usage in many instances is viewed as somewhat discretionary. Certain data bases such as stock quotation systems, news files, bibliographies, and numerous others would see a noticeable decline in use. Others—such as credit and property-oriented or transfer-oriented data bases—would probably increase as individuals refinance or trade property.

b. Software Products

In general the effects of a slowdown or recession on software products would depend on the specific circumstances. Overall, software products is the delivery mode that would decline the most because this expenditure is the most discretionary. Certainly if hardware is postponed or consolidated the pull-through on software will be noticeable. The two main categories of software products—systems software and applications software—are presented below; each has particular characteristics to be considered in a slowdown or recession.

i. Systems Software

Systems software itself comprises three segments. Systems control software is very heavily tied to the number of hardware platforms. Operating systems software expenditures would decline based on the hardware postponed by the IS manager. On the other hand, network control software would stay flat or rise based on the desire of IS management to get more benefit out of existing hardware. This increase in benefits could be accomplished by connecting previously disparate hardware systems in a network.

- Data Center Management Tools Software expenditures would remain flat (which in effect is growing in the stated slowdown scenario) as users spend incremental dollars to get more performance or productivity out of existing hardware.

- Application Development Tools spending would increase for tools oriented toward the actual users, such as the current wave of relational DBMS vendors. Software products oriented toward corporate programming departments would most likely decline in spite of the expected performance benefits. This decline is due to the personnel training and head count retention issue versus large outside expenditures.

ii. Applications Software

Much of the industry-specific software purchases would be postponed as a means to curtail spending. This could be the area of Information Serv-

ices that would be most heavily impacted by a slowdown scenario. The people necessary to implement specialized application packages would be under pressure to maintain existing systems, if these people are still on board.

c. Professional Services

The professional services delivery mode has segments that will decline and some that will remain flat in growth. Note: It should be intuitively obvious that being flat in a slowdown or recession economy is much like above-average growth in an expanding economy.

i. Education and Training

On one hand a very small number of persons would be trained and given further education to permit them to do more for the organization. This training would be a small addition to the upside and would be offset by the general decline in education and training as discretionary expenses. In a slowdown it would be easy to curtail expenditures for education and training.

ii. Software Development

Software development being performed by an outside professional services firm is generally viewed as essential for software that cannot be developed internally. In a slowdown it is likely that such software development would be continued if the project was reasonably far along. If the project was just being initiated, it is likely these outside expenditures would be postponed. Of course programs considered integral to the long-term success of the corporation would be funded, but perhaps at a slower rate. After all, the result is not needed as quickly because of the slowdown. The one positive note is that slowdowns (or recessions) do not last forever.

iii. Consulting

The use of consultants will likely decrease as enterprises will be closely scrutinizing their outside expenditures. If the IS budget shrinks, there would have to be some very compelling reasons to use consultants. INPUT forecasts that outside consultants would be negatively impacted at a higher rate than other segments in the professional services sector.

iv. Facilities Management

Just as in processing facilities management, organizations will take a hard look at how an outside firm could help them run their computer centers and facilities. If the enterprise needs to pare its head count, it may find it economically attractive to use outside services. INPUT believes there

will be considerable investigation but minimal additional business in this segment. It's not clear why an enterprise would want to retain its hardware and have outside people running the equipment when it could pass the entire situation over to a processing facilities management relationship.

v. Systems Integration

Major companies have implemented the first round of broad-based application systems such as general ledger, human resources, basic manufacturing systems, etc. These companies are now desirous of implementing mission-critical applications that require the experience and unique skills that professional services companies have cultivated. Commercial enterprises are letting multimillion-dollar, multiyear contracts to put entire systems together (hardware, software, and communications) to obtain competitive advantage and more efficiency in the IS organization.

INPUT believes these programs are typically viewed as integral to the future success of the enterprise. This being the case, the programs will continue.

d. Turnkey Systems

Turnkey systems will be the delivery mode most impacted by a slowdown. VARs selling to small businesses will find the small business anxious to conserve cash and willing to postpone expenditures until better economic times occur. Turnkey systems sold to firms looking to provide tools for their engineering and design groups will likely curtail their expenditures as they look at ways to cut costs.

Since turnkey systems have been very successful in several major application areas—such as CAD/CAM/CAE, automotive markets, and medical/health care systems—it is likely that a downturn in the economy will negatively impact these markets; medical systems will be less affected than the others, due to continuing strong cost-control pressures.

e. Summary

Although the above comments are based on a slowdown scenario, it should be reiterated that INPUT is not forecasting such an event nor is it changing its forecast for 1988. One overall important factor to consider is that the IS budget is generally from .7 percent to as high as 4% of an enterprise's revenue level. Thus even if an enterprise was to cut out the entire IS organization there would not be dramatic savings. Furthermore, the capital expenditures required by IS are generally related to IS' place in the organization; cutting IS capital expenditures is not the first action senior management would take to control costs. In fact, some recent

survey work by Paine Webber suggests that capital expenditures sponsored by the IS department have been somewhat below the overall trend over the past few years, and that there are inherent needs that have been accumulating.

This backlog of needs bodes well for the Information Services industry. It should also be noted that surveys of IS managers, computer retail stores, and purchasing managers have shown that corporate personal computer purchasing has not gone down as forecasted by the business economists and analysts.

3. Industry Sector Analysis

Based on the INPUT survey made after the world stock market decline, there are no data to suggest any industry-specific reactions (except perhaps for the stock brokerage business, which is part of Banking and Finance).

The scenario of a slowdown that could lead to a recession is primarily based on economists' belief that the average American will reduce his/her spending. Since consumer goods purchases stimulate two-thirds of the Gross National Product, any slowing or changed consumer patterns would have a domino effect on other industries.

IS expenditures are tied to the general needs of the enterprise, and generally measured as a percentage of the company's gross revenues. A slowdown in revenue production would necessarily have a negative impact on IS expenditures. This in turn would have an impact on the Information Services market.

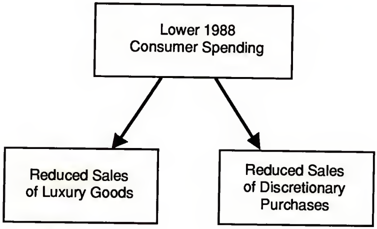
INPUT believes that the average consumer, while aware of the stock market, was not negatively impacted by the sudden drop in the market. In fact, the market dropped to where it had been 10 months earlier, thereby erasing large paper gains. On the other hand, there were a small number of highly leveraged trading professionals who took it on the chin. The average consumer does not identify with these individuals.

In the sections below, the industries most likely to be impacted by consumer spending slowdowns are identified. No doubt industries that are impacted will look for ways to trim expenditures, and these reductions would affect the IS part of the enterprise. As mentioned previously, IS generally does not account for a major portion of capital expenditures, so that aspect of the IS budget might not be impacted directly.

Exhibit III-6 shows the general pattern that would occur *if there was a slowdown* . The Exhibit shows that the slowdown in consumer spending will highly affect the luxury goods part of the retail economy and mildly affect discretionary expenditures.

EXHIBIT III-6

SLOWDOWN: SPENDING PATTERNS



- Boats
- High-end Cars
- Condos
- Designer Clothing

- Travel
- Vacations
- Nondurable Goods

EXHIBIT III-7

CONSUMER SPENDING SLOWDOWN INDUSTRY SECTOR IMPACT

Unaffected

- Utilities
- Telecommunications
- Insurance
- Medical

Impacted

- Discrete Manufacturing
- Process Manufacturing
- Transportation
- Distribution
  - Retail
  - Wholesale
- Banking and Finance
- Education Services
- Federal Government
- State and Local Government
- "Other"

Luxury goods are such items as boats, high-end automobiles, condominiums, designer clothing, jet-set vacations, etc. Discretionary expenditures are weekend trips, vacations, nondurable goods, dining out, etc.

Below is an industry analysis of the lower spending pattern or slowdown scenario. Beside the lower spending for services, INPUT will consider the other economic factors that are changing, such as lower dollar and lower oil prices, as well as the possibility of inflation. Exhibit III-7 indicates the industry-specific impact.

a. Discrete Manufacturing

This industry sector will feel the effects of a slowdown in terms of fewer products and services being required as U.S. consumers cut back. On the other hand, the decline of the dollar should put pressure on exports as U.S. products and services become more competitive in foreign markets. Furthermore, U.S. manufacturing has been positioning itself to be more competitive in foreign markets by becoming more cost-conscious and by improving manufacturing costs. Data from the Bureau of Labor Statistics shows that U.S. manufacturing productivity and labor cost control have been putting on their strongest performance since World War II. Only Japan has performed better. Exhibit III-8 shows U.S. manufacturing productivity and labor costs in the period 1982 through 1987. It should be noted that Europe's labor costs have risen (in local currencies) an average of 2 to 3 percent a year, whereas U.S. costs have been falling steadily. Factoring in the 40-percent plunge in the U.S. dollar from 1985 through November 1987 gives the U.S. the lowest manufacturing labor costs (in dollar terms) in the developed world. (Note that since November the dollar has skidded more, thus reinforcing the above analysis.)

Since manufacturing capacity has been hitting recent highs, there actually are fears that increased demand and the other recent trend of employment improvements will cause an inflationary spiral.

b. Process Manufacturing

The portion of process manufacturing that supplies durable goods is unlikely to notice any impact from a slowdown. People will not give up eating or the other daily consumable items because of the slightly impacted economy scenario. However, the recent drop in oil prices will have a dramatic impact on the fortunes of the oil industry and a decided impact on IS revenue expenditures. The recent discord at the OPEC meeting has resulted in a drop in oil prices again (they had improved and actually risen over \$20/barrel) and a possible floor of \$15/barrel. Some segments of the U.S. economy will benefit from declining oil prices—so the decline is a two-edged sword. Exhibit III-9 shows the winners and losers of oil price declines. In fact, although lower oil prices are bad news for the oil and gas industries, lower oil prices have been viewed by

EXHIBIT III-8

MANUFACTURING COMPETITIVENESS 1982-1987
AVERAGE ANNUAL GROWTH RATE
(Percent)

Country	Manufacturing Output per Hour	Total Manufactuing Output	Unit Labor Costs in Nation's Currency	Current Unit Labor Costs as Percent of U.S. Costs*
United States	4.8	6.2	-1.5	100
Germany	2.9	2.0	1.2	212
France	2.4	0.5	4.0	132
Canada	3.0	5.1	2.1	119
Great Britain	4.7	2.9	2.5	200
Japan	5.1	6.7	-1.9	153

* Calculated in dollars, with an index of United States = 100

Source: Data through 1986 from Bureau of Labor Statistics; 1987 data from Economist and Financial Time

EXHIBIT III-9

OIL PRICE DECLINE
WINNERS AND LOSERS

Winners	Losers
• Transportation	• Banks (Energy Loans)
• Agriculture	• Oil and Gas
• Discrete Manufacturers	
• Process Manufacturers	
• (Non-Oil or Gas)	
• Construction	
• All Oil Consumers	

many economists to be the antidote to the possible consumer spending shortfall, and as a means to temper the inflationary potential.

c. Transportation

The transportation industry is dependent on consumer spending patterns. Less demand for goods translates into less manufacturing and thereby fewer trucking and distribution services. Less discretionary spending for vacations means less revenue for airlines. And if consumer spending slows down, there will be a noticeable decline in business travel as business will quickly realize that travel and living expenses are easily reduced.

So while lower oil prices will lower operational costs, there will be less revenue but higher operating profits.

d. Utilities

Most people will not curtail their use of utilities as a result of a slowdown scenario. Creature comforts have become an important part of the U.S. psyche, and the YUPPIE and DINK (Double Income, No Kids) mentalities would not seriously consider modification of these services.

e. Telecommunications

INPUT believes a slowdown in consumer spending would not appreciably affect the telecommunications sector. Individuals are "reaching out" to stay in touch with friends and family, and this impulse is likely to increase rather than diminish in a downturn economy.

If business softens, individuals will stay more in touch and be more caring and supportive to those negatively effected. This increase in concern will counter balance those who see personal telecommunication expenses as discretionary and try to limit these expenses.

On the business side of the economy, downsizing will result in fewer business expenditures for telecommunications. Less demand means less voice and data traffic; leased facilities might be cancelled. Business will clamp down on personal conversations and social talk. This could be a catalyst to an increase in voice mail applications. Measurement systems for control of personal telephone time and expenses would become more popular.

f. Distribution

Retail and wholesale distribution companies will feel the immediate brunt of any consumer slowdown. They will react quickly to changes in the consumer's spending patterns and start the whole domino effect in mo-

tion, cancelling orders, being more cautious on new products, and putting the brakes on the consumer-retail-manufacturing chain. The durable part of the distribution chain will have little impact. The nondurable goods sector is where the higher-priced items tend to be situated, so a slowdown in these items is felt even more.

The impact of a lower dollar or lower oil prices has a minor effect on the retail and wholesale distribution sectors.

g. Banking & Finance

This is the largest sector of the U.S. economy in terms of IS expenditures and is impacted by consumer slowdowns in several ways.

In banking, if the consumer decreases spending because of lack of confidence, then instantaneously there will be an increase in savings. This increase will provide banks and financial institutions with a source of more funds. On the other hand, lower oil prices put a drag on the bank's loan portfolio; the ability to make more money by having more to work with is tempered by the potential loss of energy-related loans.

In the financial sector there has been some consolidation, ranging from brokerage houses buying specialists that were having trouble meeting their capital requirements, to the billion-dollar merger of Shearson with E.F. Hutton. Many large financial and investment banking institutions lost millions of dollars in the October 19 market quake. The loss of stock values has had a decided impact on capital formation activities and most brokerage houses have reacted quickly to paring these operations.

Although the stock market volumes have remained about 150-250 million shares per day, the Street makes its money on capital and financing activities, which have in large measure been postponed.

INPUT is surprised that cash-rich companies that had been investigating the Information Services industry have not moved quickly to absorb devalued, vulnerable companies. Foreign investors could be having a field day picking off prime U.S. properties because of foreign currencies being worth so much more.

INPUT believes that by early next year there will be significant purchases by foreign companies of U.S. information service companies, or cash-rich U.S. companies looking for opportunities to grow further in Information Services. It should be noted that many large U.S. cash-rich companies have announced stock buyback plans, suggesting their corporate stock is undervalued today.

These forecasted activities will bolster the corporate financing sector and the recent dismissals of the professionals in this Wall Street area may be more of a "knee-jerk" reaction than it should have been.

The stock market plunge has had the short-term impact of consolidation and layoffs, thus impacting IS expenditures that are people related. The increased volume and poor showing of orderly business has increased the potential for IS expenditures to either add more capacity and performance, or to evaluate how to have better-designed systems (professional services).

h. Insurance

This sector is unaffected by consumer-spending slowdowns. People will continue to buy insurance in our society. In addition the new COBRA law will make it easier for people laid off to retain medical coverage at a reasonable price, compared to the situation prior to COBRA legislation.

i. Medical

The medical and health care sector will be largely unaffected by consumer spending shortfalls. Elective surgery in the past would have been postponed, but with the new COBRA legislation, medical coverage is likely to be reasonably affordable, even in the event of a layoff or discharge.

j. Education

Educational institutions rely on donations and investment income to meet operating expenses. The stock market decline itself had a significant effect on income production. A consumer spending slowdown would likely impact donations viewed as discretionary.

k. Services

Discretionary services will be postponed in a slowdown. The use of tax professionals, lawyers, and real estate agents will be affected as general business volumes decrease. These individuals in turn will reduce or eliminate their Information Services expenditures.

l. Federal Government

The federal government expenditure levels themselves are given major blame for the stock market quake. The Street was tired of the deficit spending economy and similar federal government policies. The Gramm-Rudman-Hollings legislation for mandatory deficit reductions was already in place. The government will face the prospect of spending reductions, and if the consumer-spending slowdown occurs, perhaps

lower revenues. Lower revenues would produce larger deficits. The only way out is to increase revenues, which, of course, means raising taxes. A tax hike would be a hard pill to swallow in light of the presidential election coming up.

m. State and Local Government

State and local governments tend to rely on income tax and sales tax as sources of revenue. These governments would both be impacted and would probably have more of an effect on IS expenditures than would the commercial sector in general. This large effect is principally due to the low level of automation in state and local governments (i.e., somewhat behind the commercial sector) and the efforts underway to catch up. These activities can generally be postponed.

State and local governments have been active users of the commercial systems integration approach to put together systems to help governments run more effectively. Multiyear programs are needed to handle the needs of the municipality. INPUT believes these programs will continue.

Oil prices will have a major negative impact in certain states—Alaska, California, Texas, Louisiana, Oklahoma,etc.—where oil production is a sizable part of the economy. It was widely believed that the oil business was coming back.

n. "Other" Industry-Specific

"Other" includes the hotel and construction segments, both heavily reliant upon discretionary spending and confidence in one's wage-earning ability. These segments would definitely be impacted and thus would their IS budgets.

The oil price decrease will assist the construction industry because of lower prices for some building materials. Reduced building costs could help reduce housing prices.

IV

Conclusions

IV

Conclusions

After reviewing the events shaping the U.S. economy, the state of the world economy, the political situation, and its own five-year forecast, INPUT could find no compelling reason to alter the Forecast Data Base at this time.

In addition, a quick survey of 40 senior IS managers indicated that 90% had no intentions to alter their plans or their spending in light of recent economic events.

INPUT reviewed the Information Services industry from 1977 through 1986 by delivery mode and compared growth to changes in the GNP, PPI, and CPI. There was no correlation identified. In 1985 and 1986 the Information Services industry as a whole grew, while the GNP remained flat. Previous to this, the total information services market tended to track the GNP, whereas each delivery mode did not.

In spite of discussion in this report covering a possible consumer spending slowdown and its effects on industry, there is no belief by INPUT that such action is likely. The cooperation of the rest of the free world economy to control interest rates, the repricing of the dollar to aid the trade deficit, and the discord with oil prices (courtesy of the OPEC countries) all serve to nullify the originally negative prognostications of the impact of the world stock market collapse.

INPUT suggests its clients watch the forthcoming economic indicators and understand how different economic events impact their businesses. INPUT does not recommend taking any action until the client is sure that his or her business base is affected. Overreaction, or a knee-jerk reaction, could cause clients to lose momentum and opportunities to continue growth in their business arenas.

INPUT's forecast will be modified if, and only if, it becomes apparent that such action is warranted. At this writing the economy seems to be on a positive track, despite the stock market debacle. However, all prudent business people must realize that the economy cannot continue growing indefinitely.

INPUT will report on this important element of the business environment in its newsletter to be initiated in January, 1988.

A

Appendix: INPUT Questionnaire

A

Appendix: INPUT Questionnaire

Confidential

Study Title:

Type of Interview:

Vendor	Telephone
On-Site	Mail
	User

Interviewer:______________________________

Company:______________________________

Address:______________________________

____

____

Co. Type:______________________________

Sales:______________________________

No. of Empl:______________________________

Industry

Discrete Manufacturing
Process Manufacturing
Transportation
Utilities
Telecommunications
Distribution
Banking & Finance
Insurance
Medical
Education
Services
Federal Government
State & Local Government
Other Industry-Specific

Interviews

Name	Title	Telephone Number
____________________	________________	________________
____________________	________________	________________
____________________	________________	________________

Summary____

____

____

____

References____

____

____

Stock Market Impact
INPUT Survey of IS Managers

As everyone in business has observed, the stock markets around the world have suffered unprecedented declines. INPUT is a market research firm that specializes in the tracking and forecasting of the Information Services industry, a part of the Computer Industry. Information Services is essentially the "soft" part of the Computer Industry and contains the software and people portion services of the industry.

INPUT would appreciate a few minutes of your time to get your impressions of the stock market decline and how it may impact your buying patterns: immediately, in the near future and longer term. In appreciation for your comments, INPUT will send you an executive overview of the report it is writing on this subject. There are only 6 questions and the discussion should take 7 minutes.

Q1 What is the immediate effect of the stock market decline with regard to your company's information services expenditures? (but let the interviewee respond first)

Possible choices:

stop all spending
re-justify spending
postpone non-essential spending
increase spending
business as usual

Q2 Many economists/analysts are forecasting a recession.

What are your company's thoughts?

What are your personal thoughts?

Q3 If there is a recession, how would it affect your organization? By how much? (Possible answers: cut 10 percent, postpone an expenditure, lay-off people, use more outside services)

Q4 What are the specific signs that would convince you to take action?

Possible answers:

Executive committee dictate
Personal observation
Other

The previous questions were regarding recession. The following question is on inflation.

Q5 How would a significant increase in inflation affect your IS budget? How would it impact your external expenditures for software, professional services, outside processing or turnkey systems.

Q6 Last question:

How big is your IS budget now?
How much do you expect it to grow in 1988?
Is this pre- or post- stock stock market decline?
If pre-, what do you think it will be now in light of the stock market?
If post-, what was it before the stock market decline?
What is the revenue (or equivalent) of your company?

About INPUT

INPUT provides planning information, analysis and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions. Continuing services are provided to users and vendors of computers, communications, and office products and services.

The company carries out continuous and in-depth research. Working closely with clients on important issues, INPUT's staff members analyze and interpret the research data, then develop recommendations and innovative ideas to meet clients' needs. Clients receive reports, presentations, access to data on which analyses are based, and continuous consulting.

Many of INPUT's professional staff members have nearly 20 years experience in their areas of specialization. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed in 1974, INPUT has become a leading international planning services firm. Clients include over 100 of the world's largest and most technically advanced companies.

Offices

NORTH AMERICA

Headquarters
1280 Villa Street
Mountain View, CA 94041
(415) 961-3300
Telex: 171407
Fax: (415) 961-3966

New York
Parsippany Place Corp. Center
Suite 201
959 Route 46 East
Parsippany, NJ 07054
(201) 299-6999
Telex: 134630
Fax: (201) 263-8341

Washington, D.C.
8298C, Old Courthouse Rd.
Vienna, VA 22180
(703) 847-6870
Fax: (703) 847-6872

EUROPE

United Kingdom
41 Dover Street
London W1X3RB
England
01-493-9335
Telex: 27113
Fax: 01-629-0179

ASIA

Japan
FKI
Future Knowledge Institute
Saida Building,
4-6, Kanda Sakuma-cho
Chiyoda-ku,
Tokyo 101,
Japan
03-864-4026
Fax: 011-03-864-4114

INPUT®
Planning Services for Management