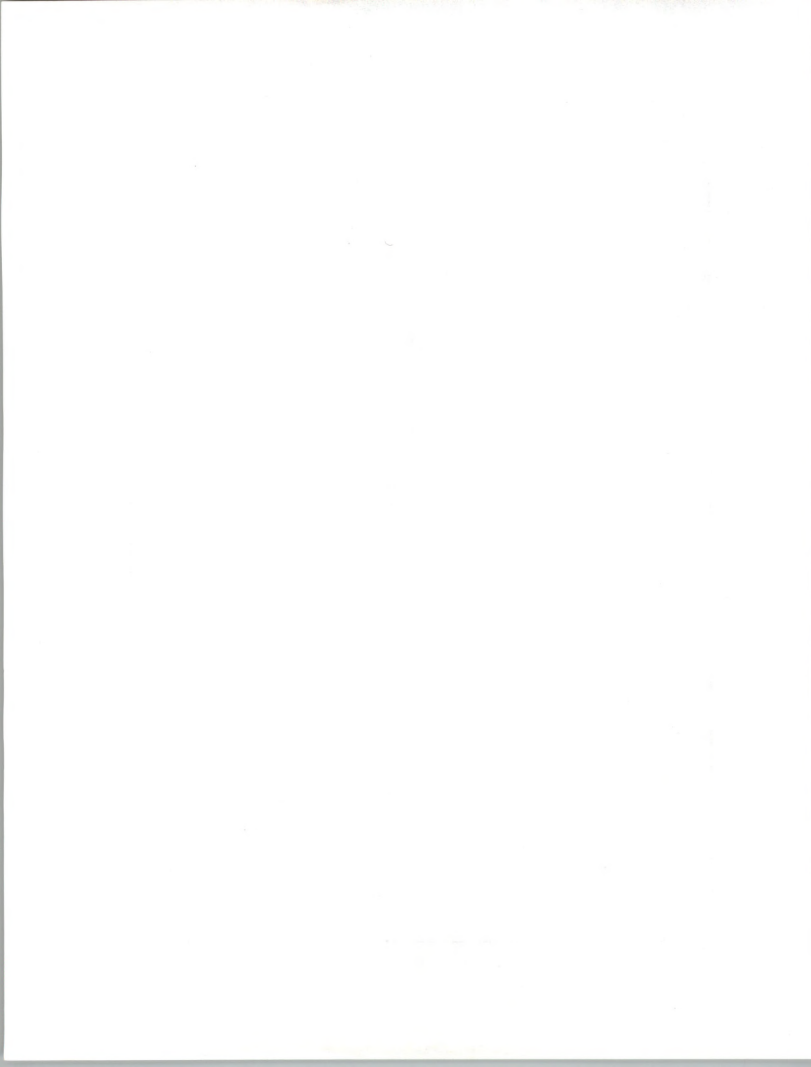


# Telecommunications Plans and Trends

---

Alex Graham  
Principal Consultant  
INPUT



# Integrated Communications Program

---

## Program Introduction

INPUT

NOTES:

JJ88-AG-1



# Integrated Communications Program Development Considerations

## *Business*

- Strategic Advantage
- Competitive Advantage
- Asset Utilization
- Cost Reduction
- Globalization

INPUT

NOTES:

IJ88-AG-2



# Integrated Communications Program Development Considerations

## *Technological*

- Improved Quality
- New Technology
- New Services
- Competition
- Regulations/Standards
- Greater Bandwidth

INPUT

NOTES:

JJ88-AG-3





Integrated Communications  
Program  
Program Focus

---

Connectivity and  
the Organization

INPUT

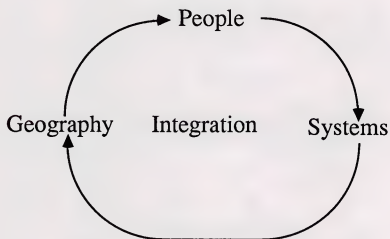
NOTES:

JJ88-AG-3A



# Integrated Communications Program

*Program Focus*



INPUT

NOTES:

JJ88-AG-5



# Integrated Communications Program

## *Program Components*

National Network Planning

Multinational Network Planning

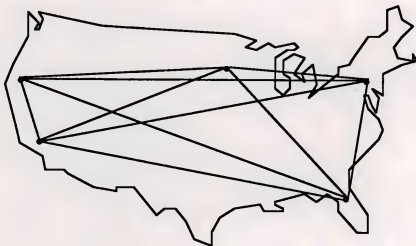
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NOTES:

JJ88-AG-6



## National Network Planning



INPUT

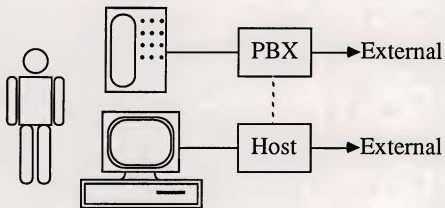
NOTES:

JJ88-AG-7





## National Network Planning Typical Office



INPUT

NOTES:

JJ88-AG-8



# National Network Planning

## Development Considerations

ISDN  
Dedicated  
Buy  
Standards  
Packet  
Satellite

Public  
T1  
Lease  
Regulations

Multiplexers  
SDN  
CPE  
PABX  
VSAT

Fiber  
LAN

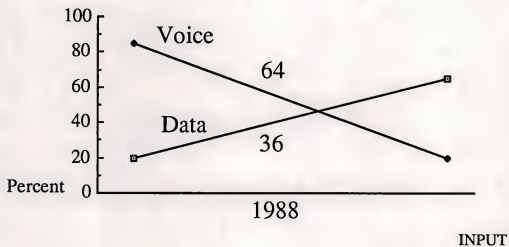
INPUT

NOTES:

JJ88-AG-9



## National Network Planning Development Considerations

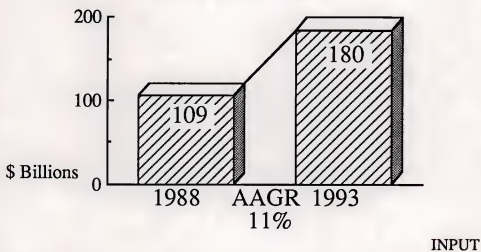


NOTES:

JJ88-AG-10



## National Network Planning Development Considerations



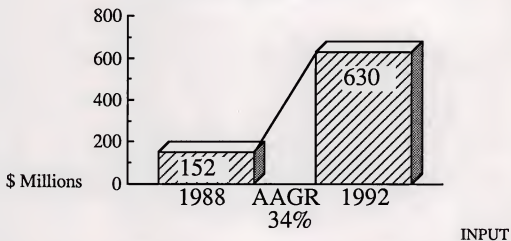
NOTES:

JJ88-AG-11





## Telecommunications Industry Industry-Specific Expenditures Application Software

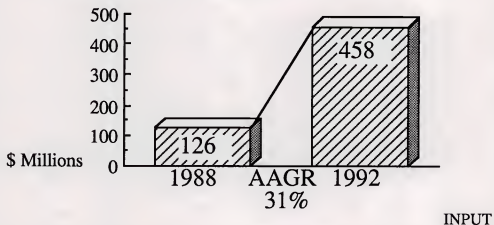


NOTES:

JJ88-AG-11A



## Telecommunications Industry Industry-Specific Expenditures Mainframe/Mini Software

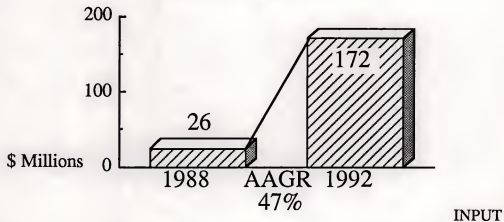


NOTES:

JJ88-AG-11B



# Telecommunications Industry Industry-Specific Expenditures Micro Systems

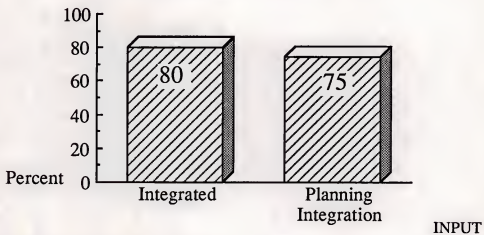


NOTES:

JJ88-AG-11C



## National Network Planning Development Considerations (Voice/Data Integration)



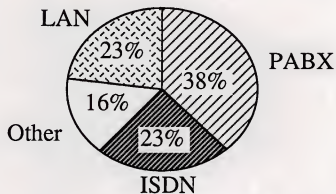
NOTES:

JJ88-AG-12





# National Network Planning Voice/Data Integration Method



INPUT

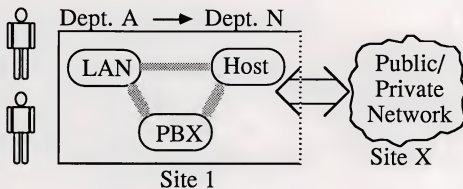
NOTES:

JJ88-AG-13



# National Network Planning

Typical Office—1990's

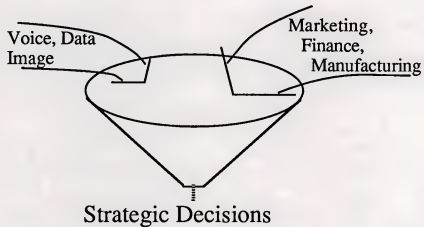


NOTES:

JJ88-AG-14



## National Network Planning Strategic Considerations

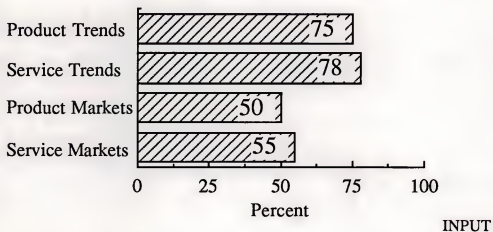


NOTES:

JJ88-AG-15



## National Network Planning Development Considerations High/Very High Ratings



NOTES:

JJ88-AG-15A

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice to ensure transparency and accountability. This is particularly crucial for businesses operating in highly regulated industries where compliance is a top priority.

2. The second section outlines the various methods used to collect and analyze data. It highlights the use of both qualitative and quantitative research techniques to gain a comprehensive understanding of market trends and customer behavior. The document notes that while quantitative data provides statistical insights, qualitative feedback offers valuable context and helps identify underlying issues.

3. The third part of the report focuses on the implementation of strategic initiatives. It details the steps taken to roll out new products and services, as well as the challenges encountered during the process. The authors stress the importance of clear communication and collaboration between all departments to ensure a smooth transition and successful adoption of the new offerings.

4. Finally, the document concludes with a series of recommendations for future actions. It suggests that continued investment in research and development is essential to stay competitive in a rapidly changing market. Additionally, it recommends strengthening internal controls and improving operational efficiency to optimize resource allocation and maximize profitability.

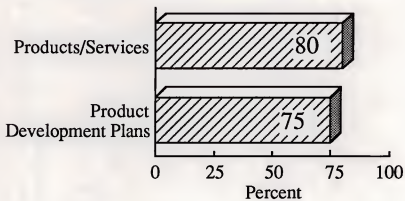
5. The following table provides a summary of the key findings and metrics discussed in the report. It shows a steady increase in sales volume over the period, accompanied by a corresponding rise in customer satisfaction scores. These positive trends indicate that the implemented strategies are effectively driving growth and enhancing the overall customer experience.

Category	Q1	Q2	Q3	Q4
Sales Revenue	\$1.2M	\$1.5M	\$1.8M	\$2.1M
Customer Satisfaction	85%	88%	90%	92%
Operational Efficiency	78%	80%	82%	85%
Market Share	15%	16%	17%	18%

6. In conclusion, the report provides a detailed overview of the company's performance and the impact of its strategic decisions. It demonstrates that a focus on innovation, customer-centricity, and operational excellence has led to significant positive results. Moving forward, the company remains committed to these principles and is confident in its ability to continue its upward trajectory in the market.



## National Network Planning Development Considerations High/Very High Interest



INPUT

NOTES:

JJ88-AG-15B



# National Network Planning

## Major Components

Key Vendor Profiles

Service Forecasts

Customer Support

Major Issues

INPUT

NOTES:

JJ88-AG-16



## Multinational Network Planning



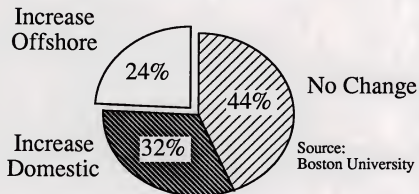
INPUT

NOTES:

JJ88-AG-17



## Multinational Network Planning Development Considerations Future Production Plans



INPUT

NOTES:

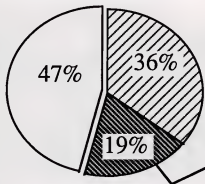
JJ88-AG-18





## Multinational Network Planning Development Considerations Future Purchases

Increase  
Offshore



No Change

Increase  
Domestic

Source:  
Boston University  
NOTE: Total  
greater than 100%  
due to rounding

INPUT

NOTES:

JJ88-AG-19



## Multinational Network Planning Influencing Factors

- PTT Policies and Practices
- Service/Circuit Availability and Usage
- Service Quality and Reliability
- Service/Equipment Incompatibility
- Service Delays and Costs

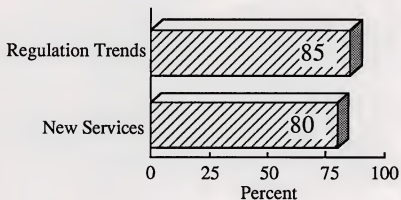
INPUT

NOTES:

JJ88-AG-20



## National Network Planning Development Considerations High/Very High Rating



INPUT

NOTES:

JJ88-AG-20A



# Multinational Network Planning

## Major Components

Regional Service Analysis

Country Profiles

Specialized Reports

INPUT

NOTES:

JJ88-AG-21





# Multinational Network Planning

## Regional Service Analysis

Asia/Pacific

Europe/Middle East/Africa

North/Central/South America

INPUT

NOTES:

JJ88-AG-22



## Multinational Network Planning Regional Service Analysis

Services Trends and Developments

Regulatory Developments

Political/Economic Trends

Tariff Changes and Trends

Five-Year Projection

INPUT

NOTES:

JJ88-AG-23



# Multinational Network Planning

## Country Profiles

40 Countries  
Administration Profiles  
Services Available  
Regulations  
Tariffs

INPUT

NOTES:

JJ88-AG-24



# Integrated Communications Program

## Program Development

### Current Development

- Issue Study
  - Network Management/User Requirements
- Regional Analysis
  - Asia/Pacific

### Current Development

- Vendor Profiles
- Country Profiles

INPUT

NOTES:

JJ88-AG-25A,B





## Planned Development

- Software and Services
- VSAT Service Opportunities
- Regional Analysis—Europe
- Network Services Quality
- Customer Premises Services

INPUT

NOTES:

JJ88-AG-25C



Alex Graham  
Principal Consultant  
INPUT

Alex Graham, a principal consultant, brings to INPUT more than 20 years of senior management experience in voice and data planning, network management planning, systems development, consulting, and marketing of telecommunications services. Additionally, he has wide-ranging experience in telecommunications, strategic planning, and development of customer support programs. He has been general manager of an international research and consulting firm, a senior consultant with Arthur D. Little, and a general manager for VISA International.

He holds an M.A. in international management from the American Graduate School and a B.A. in business from Grove City College.



✓

# Telecommunications Plans & Trends

---

Alex Graham  
Principal Consultant

INPUT

1860

1861

1862

1863

1864

Integrated Communications Program  
Connectivity, and the Organization



Program Introduction






Integrated Communications Program  
Development Considerations  
Driving Forces  
Business



- Strategic Advantage
- Competitive Advantage
- Asset Utilization
- Cost Reduction
- Globalization



Integrated Communications Program  
Development Considerations  
Driving Forces  
Technological

- 
- Improved Quality
  - new Technology
  - new Services
  - Competition
  - ~~stable~~ regulations/standards
  - Greater Bandwidth

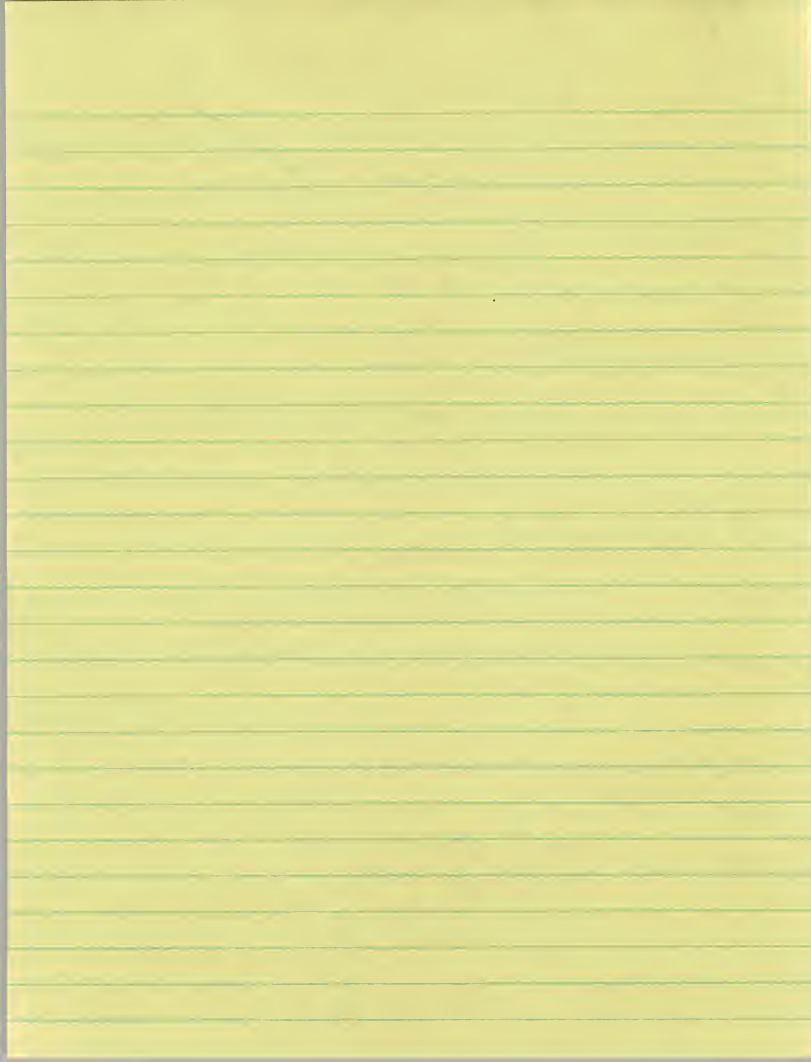


AG-3A

Integrated Communications  
Program  
Program Focus



Connectivity and  
the Organization



# Integrated Communications Program

## Program Focus (Definitions)

### Communications

- Access Between Persons or Places

### Integrated

- Separate Parts United Together
- Form Complete, Coordinated Entity

### network

- Interconnected Group or System

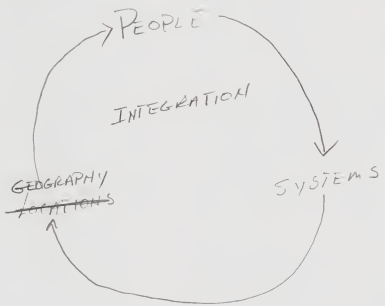






~~Integrated Communications Program~~  
~~Del. Component Considerations~~  
Driving Forces  
~~Component Elements~~  
PROGRAM FOCUS

- ~~People~~
- ~~Locations~~
- ~~Systems~~



4 5 (per author)



Integrated Communication Program  
Program Components

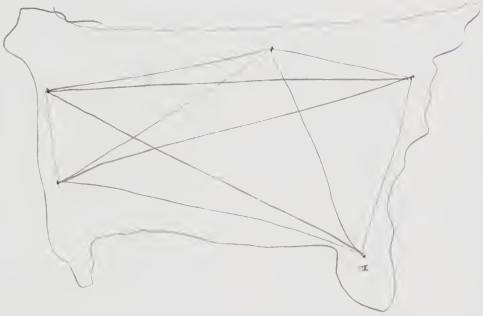
National Network Planning

Multinational Network Planning





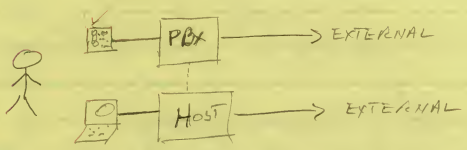
# National Network Planning



7



Network Network Planning  
Typical Office ~~Today~~







National Network Planning

~~Complexity of Analysis~~ ~~Factors left out~~ ~~also for~~ Influencing Factors

ISDN

DEDICATED

PUBLIC

MULTIPLEXERS

~~BUY '05~~

OR LEASE

FIBER

STANDARDS

T1

SDN

PACKET

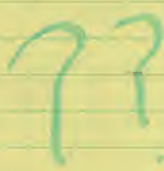
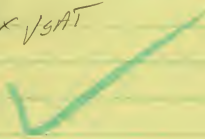
CPE

LAN

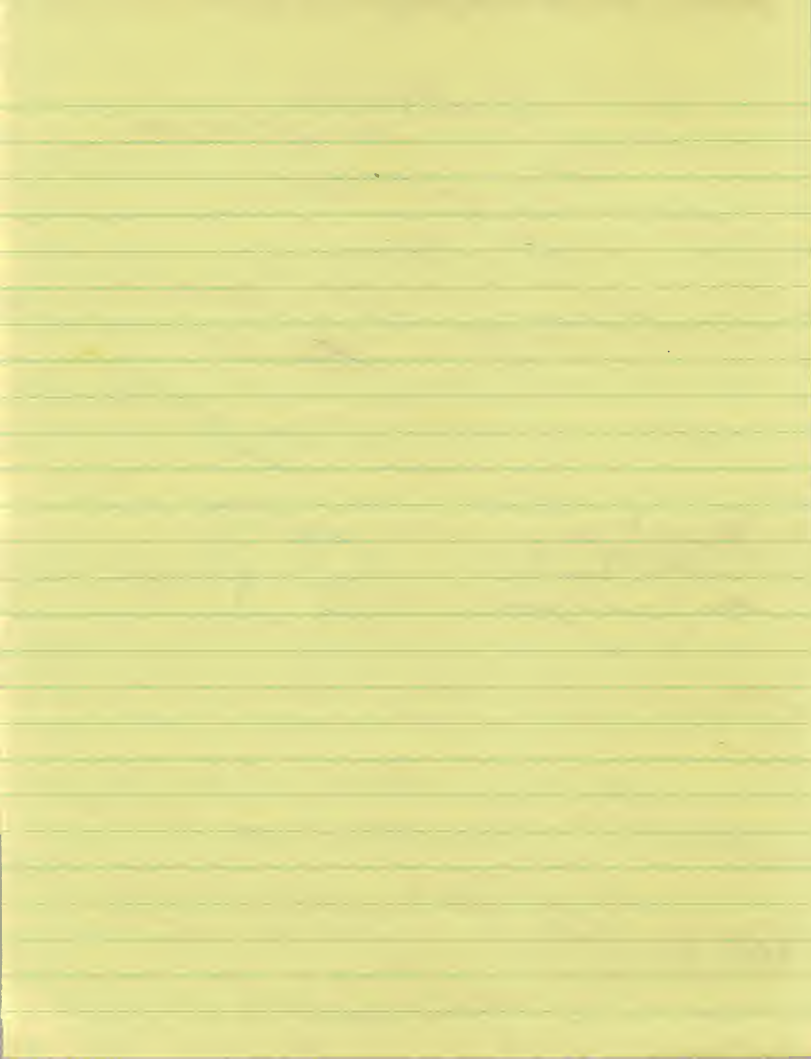
SATELLITE

~~PACK~~ OR VSAT

REGULATIONS

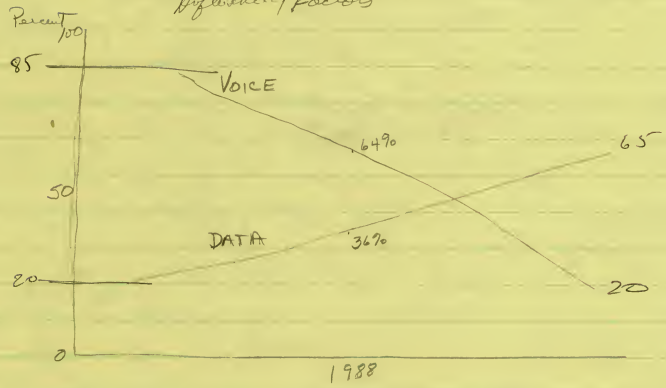


not enough room on  
(except last text)  
slides and cannot do  
more titles at an angle





### National Network Planning Strategic Consideration Influencing Factors



NEED DATA POINTS  
TO PLOT

AG-10



# Network Network Planning Influencing Factors

Base  
Index  
200



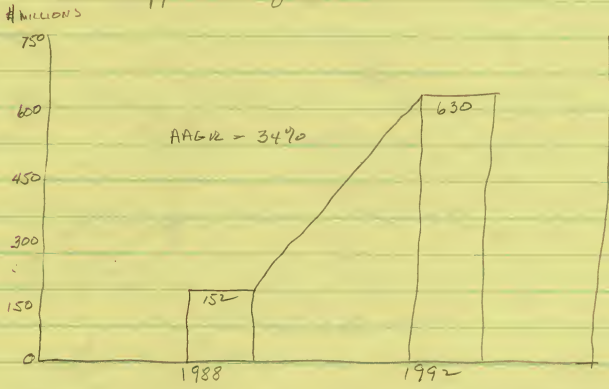
||

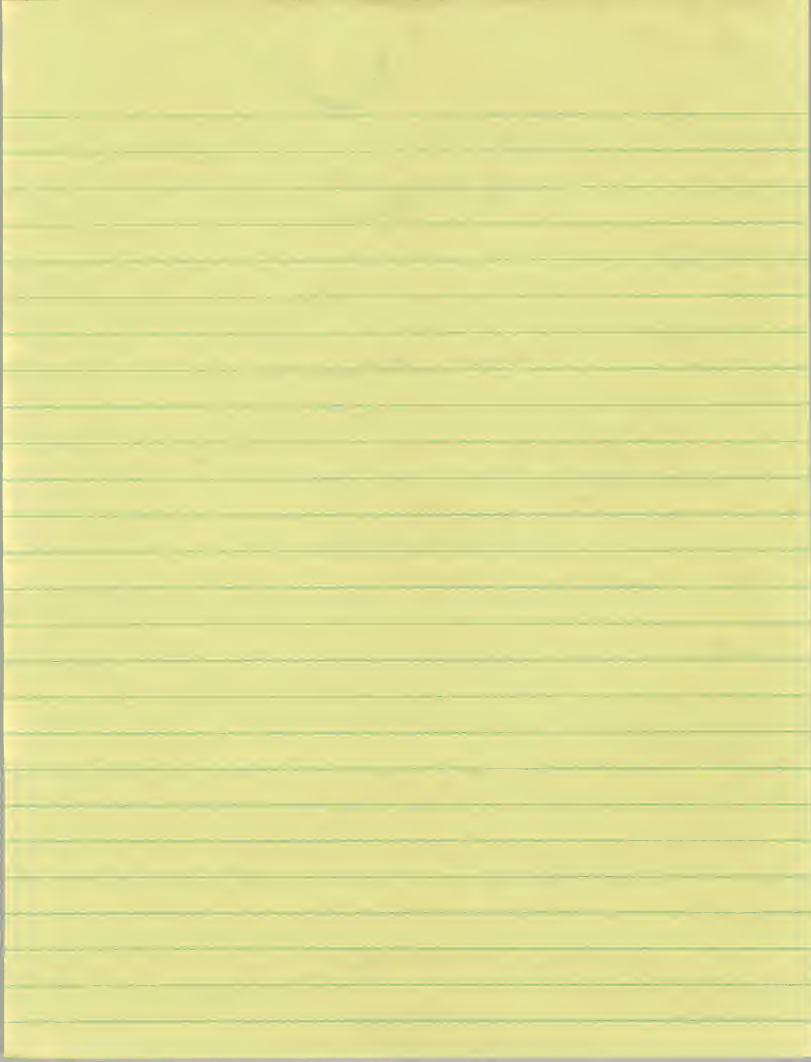


AG 11A



Telecommunications Industry  
Industry Specific Expenditures  
Application Software



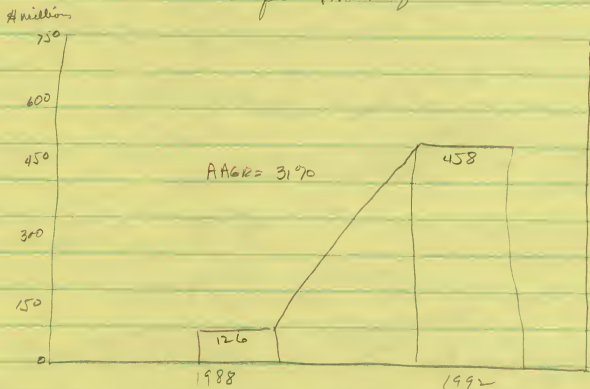


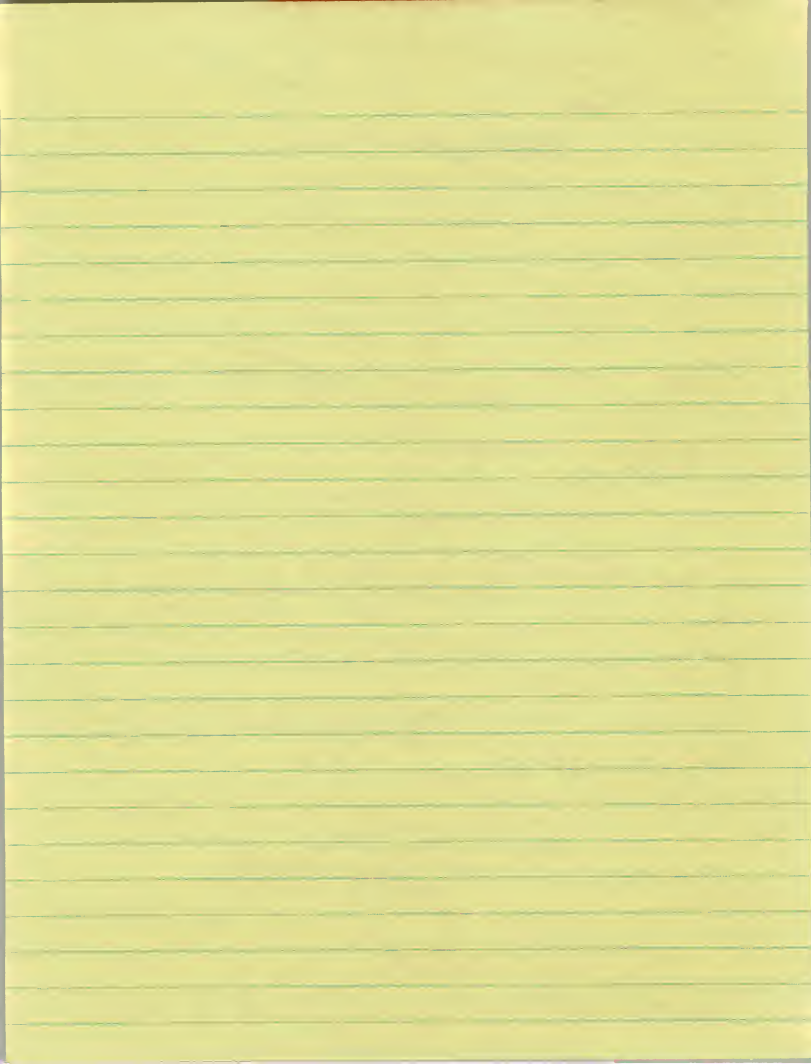


AG 11B



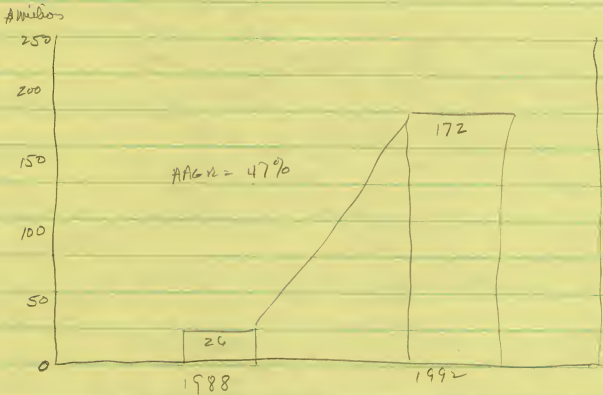
Telecommunication Industry  
Industry Specific Expenditures  
Mainframe / Mini Software

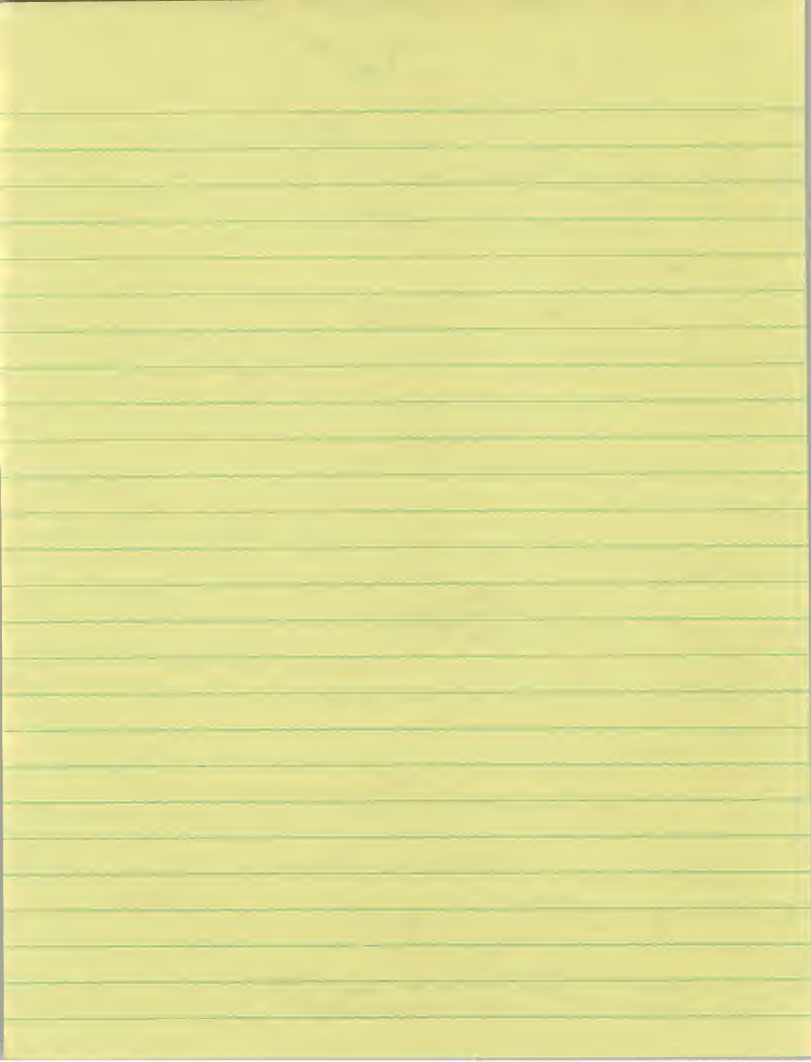




AG 11 C

Telecommunications Industry  
Industry Specific Expenditures  
Micro Systems

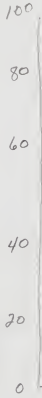




~~National Network Planning~~  
~~Integration Factors~~  
National Network Planning  
Integration Factors  
(Voice/Data Integration)



Percent



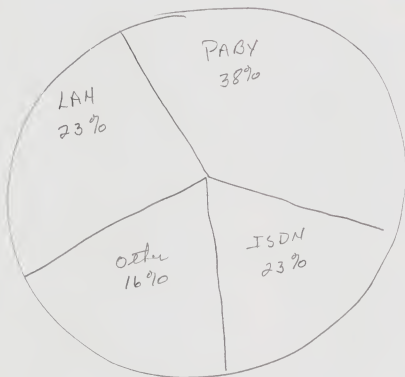
INTEGRATED

PLANNING  
INTEGRATION

12



National Network Planning  
Voice/Data Integration  
method

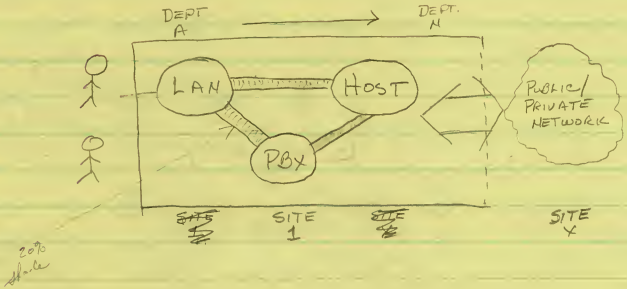






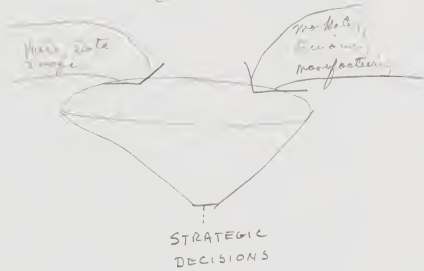
# Network Network Planning

Typical office -  
late 1990's





# National Network Planning Strategic Considerations





74  
~~75~~  
~~76~~ 15a

National Network Planning  
Development Considerations  
High / Very High Ratings

Prop  
High

Product Trends

75

Service Trends

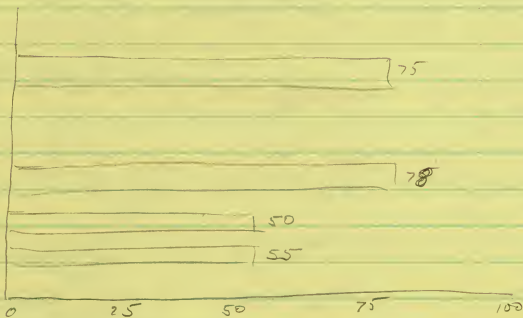
78

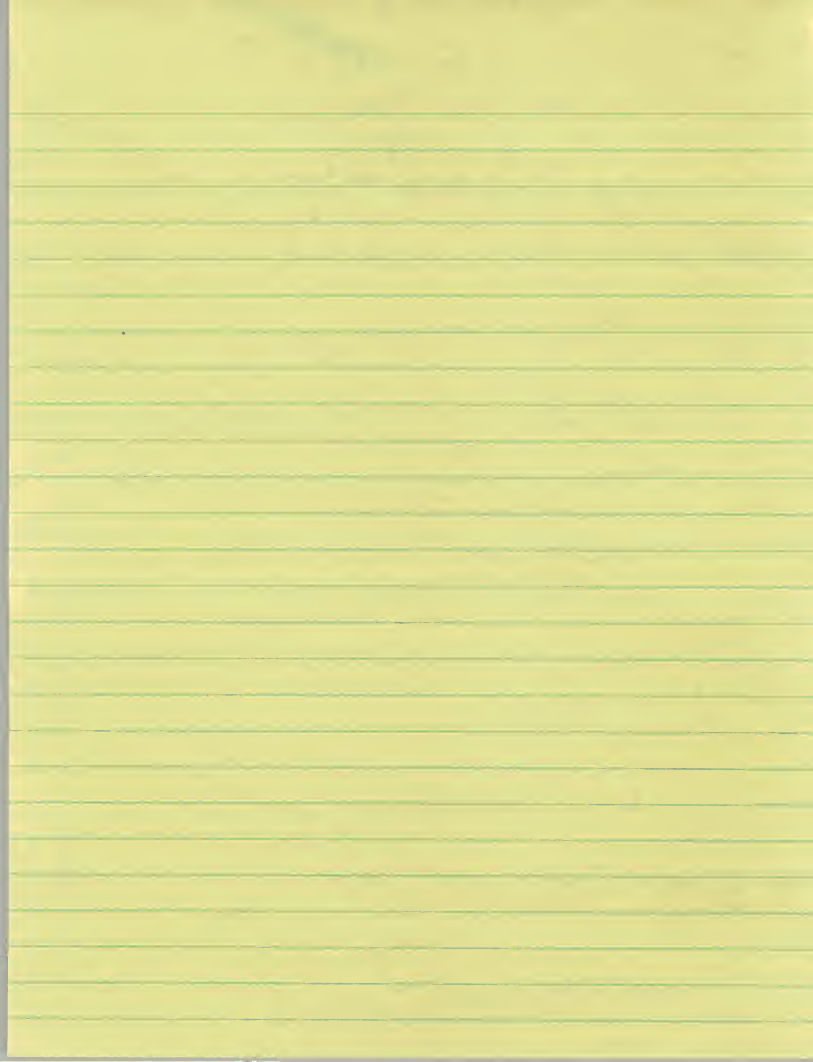
Product Markets

50

Service Markets

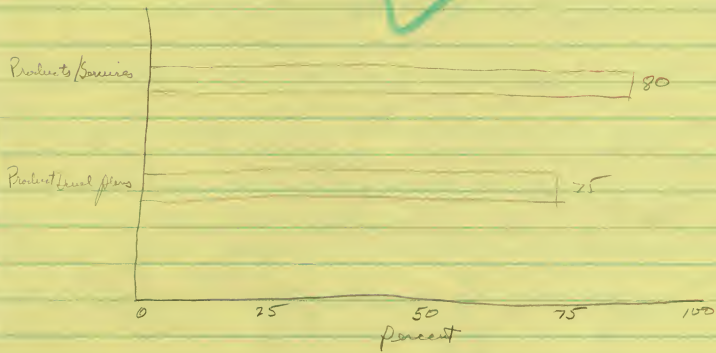
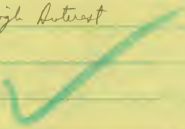
55

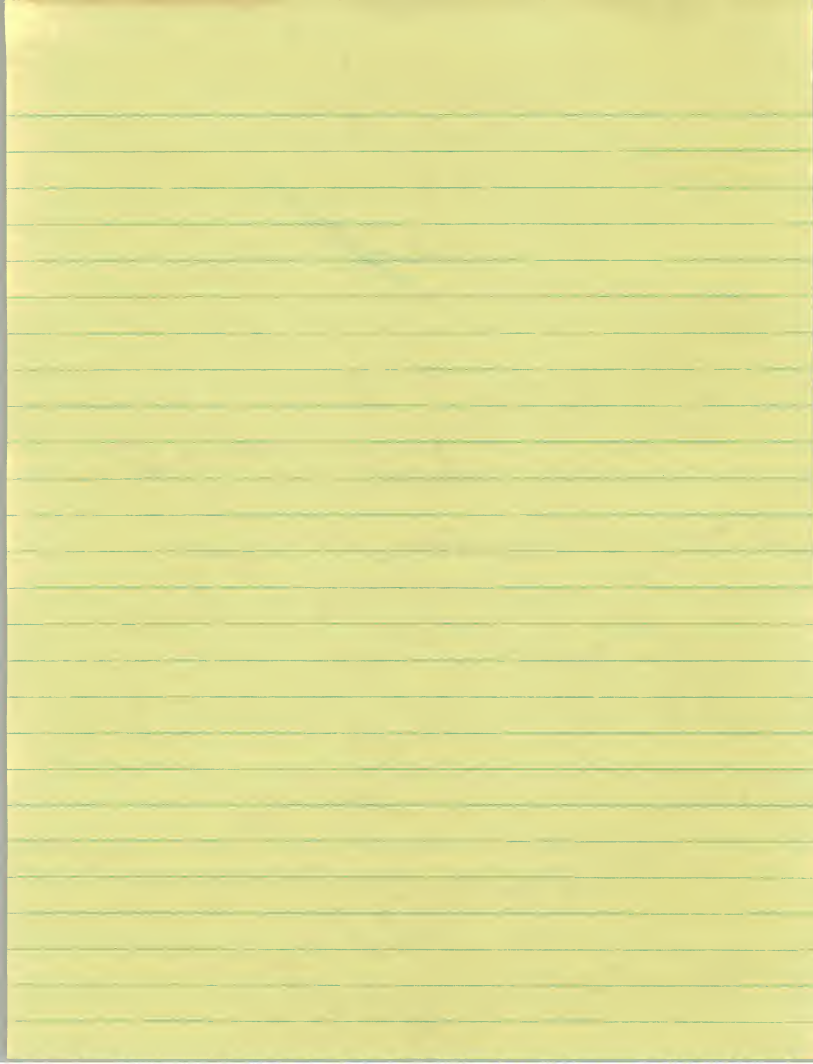




156

National Network Planning  
Development Considerations  
High/Very High Interest







National Network Planning  
Major Components

Key Vendor Profiles  
Sales Forecasts  
Customer Support  
Major Issues



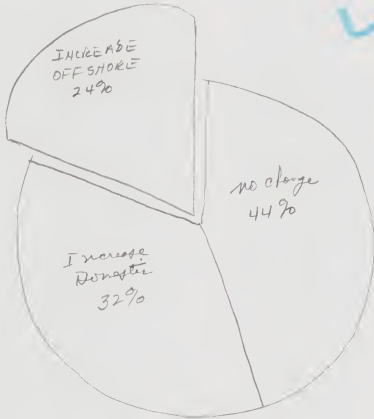


# Multinational Network Planning





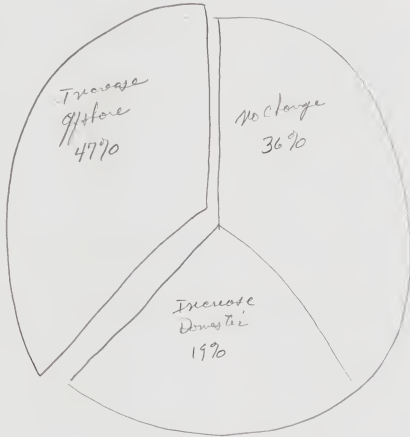
Multinational Network Planning  
Influencing Factors  
Future Production Plans



Source:  
Gaston University




Multinational Network Planning  
Influencing Factors  
Future Perspectives



Source: Boston University  
NOTE: Total adds up to 100%  
due to rounding







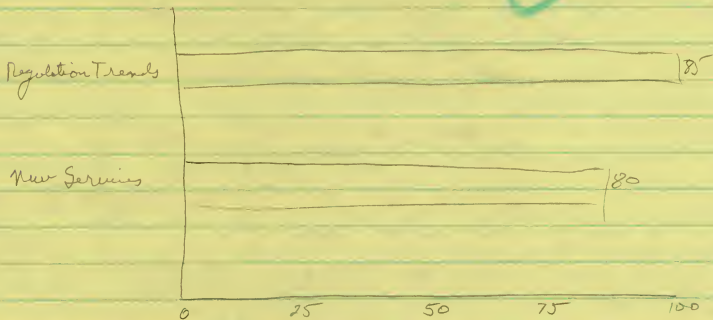
## Multitechnical Network Planning Influencing Factors

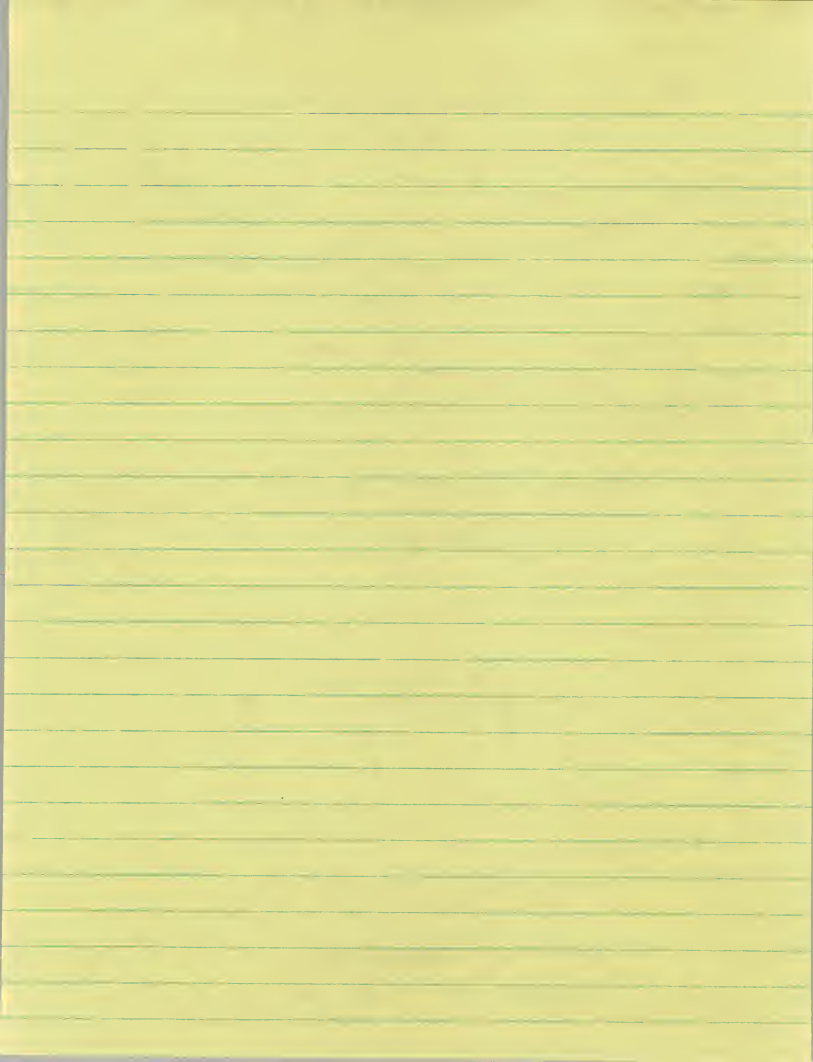
- PTT Policies and Practices
- Service/Circuit Availability and Usage
- Service Quality and Reliability
- Service/Equipment Incompatibilities
- Service Delays and Costs



200

Multinational Network Planning  
Development Considerations  
High / Very High Rating





Multinational Network Planning  
Major Components

Regional Service Analysis  
Country Profiles  
Specialized Reports





Multi-tional Network Planning  
Regional Service Analysis

Asia/Pacific

Europe/Middle East/Africa

North/Central/South America





✓  
Structural Network Planning  
Regional Service Analysis

- 3 . Political / Economic Trends
- 2 . Regulatory Developments
- 1 . Service Trends and Developments
- 4 . Tariff changes and Trends
- 5 . Five year projection



Multinational Network Planning  
Country Profiles



40 Countries

Administrative Profiles

Services Available

Regulations

Tariffs



# Integrated Communication Program

~~Development Schedule~~  
Program Development

## Current Development

2. Regional Analysis  
Asia/Pacific
3. Vendor Profiles
1. Issue Study

4 Country Profiles

Network Management/  
User Requirements 3

## Planned Development

- . Software and Services
- . VSAT Service Opportunities
- . Regional Analysis  
Europe
- . Network Services, Quality
- . Customer Premises Services

As of  
10/10/00

25 A, B, C

