Career Services

MICHIGAN
ROSS SCHOOL OF BUSINESS

Career Path:	**Telecommunications**

Introduction

Career Services (CS) created the *Career Path* series to assist students with the career search process. Each *Career Path* handout examines a common business functional area in which Stephen M. Ross School of Business graduates pursue jobs each year. The first four steps of CS's recommended career search process are detailed for each specific business field.

Telecommunications Overview

Telecommunications is evolving quickly causing the industry definition is becoming broader with time. The historical industry boundaries, which divided the long distance carriers, local carriers, and technology providers are disappearing rapidly since the signing of the Telecom Act of 1996. Firms are increasingly offering a wide range of services and products, including local, long distance, wireless, and internet products and services. Additionally, the convergence of the high tech and telecommunications industries is causing the boundaries between these industries to blur. The telecommunications industry which previously included only telephone companies and technology providers today includes cable, entertainment, and software companies in this category. Present and future regulatory policies will ultimately create new industries, as well as change the landscape of the telecommunications industry as we know it today.

Most equipment vendors still look for graduates with technical backgrounds. Even service providers consistently look for a technical background when hiring for certain divisions, such as network planning and equipment sales. However, do not let this dissuade you; many managers with non-technical backgrounds are successful in this industry. Candidates without technical experience, but with strong functional and managerial skills, are becoming very highly desirable within these companies. For example, telecom companies are beginning to value the brand-management approach to their consumer products. As a marketer, you might not be a technical expert on the systems you manage, but an understanding of these systems will help you on the job.

Telecommunications is a specialty category of the hi-tech field; as such, it requires people who are very interested in technology and can react quickly to constant changes. It is a field in which marketing is taking on an entirely new meaning as competition, new product development, and product line proliferation increases at a rapid rate. Other hot functional areas within telecommunications include finance, operations, and business development.

Steps for Developing a Career in Telecommunications

Career Search Step #1: Conduct Self Assessment
People who are successful in telecommunications generally have strong technical savvy or know-how. While you don't have to have technical experience to pursue a career in telecommunications, you must be able to convey your interest in and lack of fear of technical issues. You need to assess how comfortable you are using a lot of technical language and technical product knowledge on the job. Also, most companies expect you to have technical background and even specific knowledge of their line of business, for example wireless, fiber optics, etc., thus it is critical that you 'get to know the industry', which means learning and using a great deal of technical knowledge.

This field is dominated by changing players, changing products and changing regulations. If you like a fast-paced environment with variety and can adapt to change, this may be a desirable field to pursue. Further self-assessment, including the CareerLeader program may prove valuable.

Career Search Step #2: Investigate Possible Career Opportunities

MBA Career Opportunities: Many of the service providers and vendors offer rotational assignments meant to develop future leaders. They feel that this is best accomplished through developing managers by exposing them to cross-functional experiences (see handout - General Management Development Programs). These assignments can be in areas such as finance, international operations, strategic planning, marketing, or technology. Direct functional inflow positions such as financial analysis, marketing management, and human resources management also are available.

Issues to consider when seeking a position in the telecommunications area:

- Within rotational programs, look for companies that have corporate budgets, rather than departmental budgets. This indicates greater commitment to the development program.
- Consider the company's position in the industry. Those firms not in a strong and aggressive position risk extinction in the near future due to the trend toward consolidation.
- Consider the company's available resources. Can it maintain its position during a period of industry transition?
- Understand the company's decision making structure. It should be lean and agile in acting on emerging opportunities.
- Find out more about the company's financial status, operations, or marketing/new product development.

Consulting firms usually have a telecom group, although it is often lumped in with "High Tech." The extent to which special consideration is given to telecommunications will help you determine a particular firm's commitment to the telecom industry. You also may find that some telecom companies have their own internal consulting group.

BBA Career Opportunities: There are also rotational assignments as well as specific functional entry-level roles (i.e. finance, marketing) with companies that recruit on campus. Either type of role is an excellent opportunity to start to learn the industry and gain experience. Generally, movement into management roles in this industry requires an advanced degree. Also, the number of undergraduates that telecommunications companies recruit typically changes from year to year, so it is a good idea to determine which companies are coming to campus and the types of positions for which they are hiring, early in the recruiting season.

Career Search Step #3: Research and Conclude on Immediate Post-Graduate Employers

The telecommunications industry has traditionally been divided into the following segments. As mentioned earlier however, firms are present in multiple segments, striving to be the "one stop shop" for telecom services (see Bibliography for acronym definitions):

Type	Company Examples
Long Distance Service Providers (IXCs)	- AT&T - MCI Inc. - Sprint - Cable & Wireless - plus over 400 others

RBOCs	− Verizon − Qwest − SBC − Bellsouth
Other LECs	− GTE − Sprint − Plus 1,400 others
Paging	− Skytel − PageNet − AirTouch Paging
Wireless - Analog, Digital, and PCS Cellular	− Verizon Wireless − Sprint PCS − Cingular − T-Mobile − Most large providers are offering wireless services (RBOCs, IXCs)
Video on Demand Service Providers	− Pacific Bell Video Services − US West Video Services − Bell Atlantic Video Services
Satellite	− DirecTV − Dish Network − Regional Players
Entertainment	− Fox − Viacom − Time Warner − Disney
Equipment Providers (Handsets, switching systems, network equipment)	− Lucent − Motorola − Northern Telecom − Qualcomm − Ericsson − 3Com − Nokia − Cisco

Despite the large number of players in the telecom industry, the service side of the industry is dominated by a handful of firms; AT&T, Sprint, WorldCom, and the RBOCs. Additional firms that have taken a strong position in recent years include Qwest Communications and Level 3 Communications.

While many of these employers recruit on campus, you may need to work off campus to network with those that do not recruit at Ross (especially with employers with West Coast/Northwest headquarters). Arranging informational interviews is a great way to start to build your network of knowledge and contacts throughout the industry. Remember how important it is to keep up with the rapid changes - mergers, restructurings - in this industry.

Career Search Step #4: Develop a Career Search Strategy

As a generalization, telecom companies have only recently begun to value business education - both MBA and BBA. Therefore, although many of them have "advanced development" or "accelerated path" programs, recruiting efforts may seem less structured and timely than those of other companies with which you interview.

Specific steps important to the career search include:

- **Conduct research --** Seek out periodicals or on-line sources which provide industry news. Because so many events occur daily, you must be abreast of and understand changes in the industry. Begin to research firms both on and off campus in order to execute a comprehensive search. As there are many related industries and functions that are linked to the telecom industry, it is important to teach yourself how these dynamics operate. See resources section

- **Network/talk to alumni --** This helps you put the information you read into perspective. A company may announce a strategic alliance in one year, with a huge press release extravaganza, but wait to fully merge operations for a few years. Talking to alumni can help you have more of an 'insider's' perspective. One example of this is a consortium organized by Microsoft to offer a worldwide satellite cellular service. By talking to an alum, you would find that the project is still in the embryonic phase, that the project area is very small within Microsoft, and that your best bet may be to write to this group on your own, rather than interview through the on-campus process.

- **Prepare yourself**. Get involved in projects that relate to the telecom field, either in or out of class. The Telecom Club is a great resource to get involved with companies who are recruiting as well as network with your peers interested in the field.

- **Utilize CS services.** CS sponsors a number of workshops that will help you market yourself to target firms. Workshops include resume and cover letter preparation, interview skills and the off-campus job search. Office hours are available for counseling for all aspects of the career search and skills development process.

Additional tips:

- Understand the industry and its players.

- Know who is allied with whom. Some companies you may consider to be competitors may actually be working together on a special project, and you wouldn't want to portray the partner in a bad light under any circumstance. For example, in brand management, you wouldn't want to speak well of Procter and Gamble to a Unilever representative, but it may be the case that you want to speak well of Bell South when talking to their Cingular partner SBC Communications.

- Read and learn about the industry everyday. It is a fast changing industry and you need to keep up all the time.

- Talk to others interested in the industry about the most recent developments.

- Emphasize your technical background if you have one.

Bibliography of Information Resources

Industry Definitions

ARPU: Average Revenue per Unit, tries to give a measure of how much revenue the average customer brings in.

CAP: Competitive Access Provider - an alternative, competitive local exchange carrier, such as MCI Metro.

Cellular: Typically refers to pre-PCS analog wireless telephone technology. However, cellular is also often used when referring to PCS as "digital cellular."

Churn: An industry measure of customer (consumer) turnover. Calculated as the number of people who stopped service, divided by the size of the base. Monthly churn of 4%, for example, is considered very high.

CLEC: Competitive Local Exchange Carrier. CLECs intend to compete on a selective basis for local exchange service, as well as long distance, internet, and entertainment. They will either build their own local loops or lease them from the ILECs for resale to end users. CLECs include IXCs, cable providers, CAPs, power utilities, and PCS providers.

FCC: Federal Communications Commission - federal agency with the authority to regulate interstate, but not intrastate, communications. The FCC developed the Telecom Act of 1996 and auctioned spectrum for cellular, PCS and other wireless services. (See PUC).

ILEC: Incumbent Local Exchange Carrier. Local service providers that until deregulation had a monopoly position in their territories. Includes companies such as the RBOCs, Sprint, GTE, etc.

IXC: IntereXchange Carrier (a.k.a. long distance companies). Companies providing long distance services, e.g. Sprint, AT&T, MCI, WorldCom, etc.

LEC: Local Exchange Carrier. Any company providing local service, includes ILECs and CLECs.

Local Loop: The last link (copper wire) between the local provider's switch and the home.

PCS: Personal Communication Services. There are currently two definitions of PCS being used. The broader definition defines PCS as enhanced wireless services such as paging, voicemail, telephone, email, etc. Provided over a single network, usually using a single device (handset). Some additional features of PCS are:

- personal numbers assigned to an individual, not a location
- call completion regardless of location ("find me")
- calls to the PCS customer can be paid for by the caller, or by the PCS customer
- call management services giving the user much greater control over incoming calls

The more narrow definition describes PCS as a digital cellular service operating at the 1.5 to 1.8 Ghz frequency range (compared to analog cellular at 800 - 900 Mhz). The intent is that the phones and air time would be cheaper, and use digital technology instead of analog. Due to its smaller cell size (less range), more towers (cells) would be needed. The FCC held PCS auctions for spectrum in this frequency range. PCS currently employs one of three technical standards; CDMA, TDMA, and GSM.

PUC: Public Utility Commission - state agency with the authority to regulate intrastate communications. Each state will have its own PUC.

RBOC: Regional Bell Operating Company. Originally the 7 "Baby Bells" broken off from AT&T in 1984. The 7 have been reduced to 4 through many mergers; SBC acquiring Pacific Telesis and Ameritech, Bell Atlantic acquiring NYNEX to become Verizon and Qwest purchasing US West.

They currently provide local service within their regional areas (with the exception of areas covered by other LECs) and some offer other services such as wireless, internet access, paging, etc.

Telecom Act of 1996: Legislation enacted to "open up" the telecommunications industry, allowing increased competition in all markets. Since the long distance and wireless markets are currently competitive, the greatest impact is expected in the local marketplace. Legal actions are currently being taken which dispute the legality of the Telecom Act. The act was signed into law on February 8, 1996 "to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage rapid deployment of new telecommunications technologies."

Some useful resources:

- CareerLeader™
- Career Packets, Kresge Library
- **Wet Feet Press** Insider's guides, available in Kresge Library
- **Newton's Telecom Dictionary by Harry Newton**: A very useful dictionary of every telecom term you can think of and more. A great reference and well worth the investment if telecom is your chosen field.
- **CIS 580: Business Telecommunications**: Primarily a data networking class, but a critical piece of telecom. A solid introduction to some of the technologies and applications in the industry.

Internet Site	Web Address
United States Telephone Association	www.usta.org
Federal Communications Commission (FCC) homepage	www.fcc.gov
Ross High-Tech Club	www.umbs-hitech.net/
Yahoo Telecom news site	http://biz.yahoo.com/n/x/x0007.html

Magazine	Web Address
Tele.Com (free subscription)	www.teledotcom.com
America's Network (free subscription)	www.americasnetwork.com
Telephony	www.internettelephony.com
Information Week(free subscription)	http://techweb.cmp.com/iw/601
Data Communications(free subscription)	www.data.com