

An Evening With The Stars of Telecom

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part 1: Introductions

ESTHER SMITH: Celebrating Internet Entrepreneurship

Welcome to this Netpreneur Program CEO Forum, *An Evening With The Stars Of Telecom*. Is this a great night or what?

Tonight we celebrate Internet entrepreneurship. How many of you are netpreneurs? And how many of you are planning to be netpreneurs? We have a lot of people here tonight. Did you have any idea there were so many of us?

The Netpreneur Program <netpreneur.org>, and this evening's event, is produced by the Morino Institute as one of the four strategic initiatives of the Potomac KnowledgeWay Project <knowledgeway.org>. PKW's goal is to help make Greater Washington the global leader in the creation, production and delivery of digital information products and services. The Morino Institute <www.morino.org> and MCI Telecommunications Corp. <www.mci.com> are the two charter sponsors of the Netpreneur Program. I'd like to recognize a few friends of the Netpreneur program as well. The sponsors who are making tonight's fabulous event possible are EXODUS Communications; Ernst & Young LLP; Friedman, Billings, Ramsey; & Co., Orion Network Systems; Ryan McGinn and Morino Institute. Please join in thanking each one of these with a big round of applause.

Think of us at the Netpreneur Program as network central. Many of you have participated in one or more of our informal monthly *Coffee & DoughNets* <netpreneur.org/doughnets> networking sessions. Last June, 750 of you showed up to meet the Barons of the Beltway <netpreneur.org/barons> and you outstripped all of our expectations. Tonight, you have really ramped up the attendance and now we have quit worrying about scaling. We are just deep into crowd control.

If you wanted to plot the growth curve of this program, it would look like an Orbital Sciences launch trajectory. And I think it's fair to say, Netpreneurs are having a galactic impact on our economy, our business culture and our society. And of course, on our hopes and dreams. I predict that one day netpreneurs here in this room will be the center of Washington's economic universe.

To those of you who were at the Barons event and asked, "Can you top this?" Well, I want to know—do you have the answer? Yes?

Tonight we have five fabulous guests who have been there and done that in the revolutionary industry that enables global scale communications. The Stars of Telecom

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A Unique Opportunity. A Unique Time. A Unique Place.	

demonstrate that you can make your dreams happen. They include Morgan O'Brien, founder and Vice Chairman of Nextel Communications, Inc., who, believe it or not, started out as an attorney. Morgan turned his experience with the FCC, and later as head of the telecom practice at Jones, Day, Reavis & Pogue, into an idea, a company and a global network, with no roaming charges. Right?

MR. O'BRIEN: You've seen our ads.

MS. SMITH: Right. John Puente is currently Chairman of Telogy, an *Inc.* 500 privately-held company, which recently raised \$13 million in a private round of funding. You should know that a \$13 million bet on John is about as solid as it gets. Former Chairman and CEO of Orion Network Systems, John was also a founder of DCC and shepherded it through a brief iteration as a Maycom subsidiary before it was acquired by Hughes to become Hughes Network Systems. John is also, I'm proud to say, a Greater Washington High-Tech Awards Gala entrepreneur of the year.

Brian Thompson left the executive vice president's job at MCI Communications for the high-risk opportunity to lead the turnaround of LCI International. During his six years as chairman and CEO, LCI has become one of the fastest-growing long distance and data carriers in the world. Early in Brian's career, he was a McKinsey consultant and I guess he practiced on the firm's telecom clients before turning into an entrepreneur. He is a former keynote speaker at the annual Greater Washington High-Tech Awards Gala, as was David Thompson, and Brian is a man who truly put competition into deregulation.

David Thompson is a winner of the National Medal of Technology and also a Greater Washington High-tech Awards Gala entrepreneur of the year. He created Orbital Sciences Corporation, around the commercial possibilities of a new space industry paradigm. Its Pegasus launch system ushered in a new era of realistically-priced space transportation which the company's Orbcom subsidiary now successfully exploits in two-way communications.

I've got to tell you, it wasn't too many years ago that I heard David present the Orbital Sciences business plan at an MIT enterprise forum session here in Washington. A few days before his IPO, the *Wall Street Journal* implied on a front-page story that David was a space nut. Now that's true, but the *Wall Street Journal* didn't mean it as a compliment. Well, we knew better. And now David has made it all happen, and hey, Netpreneurs, it can happen to you.

Mark Warner, a cofounder of Nextel, earlier created the secondary market for investment partnerships in the cellular telephone industry. Cofounder of Columbia Capital Corporation, Mark is a pioneer financier of wireless communications. He is a devoted alumnus of George Washington University and, you'll be pleased to know—although Mark did not authorize me to say this and I actually got it on the street—he still has so much money left after his campaign for the US Senate, that he looks at deals on a daily basis and remains a proactive investor in new age communications.

Now, here's the plan. Each Star will give a seven-minute presentation and then we'll move into a town hall format with questions and answers. We want an open and informal session, an interactive dialogue among netpreneurs and these mentors on stage. If you want to ask a question, please go to one of the mikes in the aisles, state your name and company and speak clearly into the microphone. The event is being taped and transcribed. The press is here. We'd like to capture your comments.

Now, let me introduce the godfather of the Netpreneur Program, the man who built an international software company and then began a second career as a social and civic entrepreneur. The grassroots leader of our netpreneur culture, Mario Morino.

MARIO MORINO: The Book Ends of a New Digital Economy

Good evening and thanks for being here with us tonight. I know it's going to be a very exciting evening, one that I intend to listen to and learn from.

Greater Washington is emerging—I think to the surprise of many—as one of the few regions capable of assuming the mantle of economic leadership for the 21st century. Supremacy of the past two decades has been centered around computing technologies, but we are now beginning to usher in a new era of convergence—the convergence of communications, computing and content. While we are strong in all three sectors, in reality the opportunities and potential will be played out in this region to their fullest, largely because we may well own the “book end” sectors of the convergence—communications and information content. Arguably we already dominate the former and we will absolutely dominate the latter over a 10-15 year period. You could argue that that Greater Washington is itself the center of this convergence, and may be one of the best, if not the best, positioned area in the world to capitalize on the economic opportunity of the 21st century.

Let's talk about these book ends for a moment. At one end—and representing the core focus of PKW—is that this region

will become a dominant producer of digital information products and services—the content. Why? Because we are home to some of the richest bases of information and cultural objects in the world. Just think what can happen with the mining of the vast information banks of the Federal government, the tremendous information concentrations in health from the NIH and Johns Hopkins University, space information from NASA, tourism with the National Trust, the media around the Freedom Forum, the Newseum, and the many different publication sources based here. We are the very center of the newsletter industry. Then, there's rich base of cultural content in the arts, history and the humanities from places ranging from the Smithsonian Institution to Howard University. The list just goes on and on.

So, we have a tremendous base of the raw information based in intellectual capital. And we already enjoy the intellectual advantage in programming and production of such information at companies like America Online, Discovery, Digital Inc., BET and a host of start-up and emerging new media firms.

At the other book end, and more immediately apparent today, the region possesses a remarkable concentration in the communications sector. It is arguably the hub of the telecommunications industry, a distinction that will only grow as deregulation and innovation in areas like satellite and wireless continue to redefine opportunities in this sector.

The Stars of Telecom and their firms are living proof of both the region's success and its potential. Each has played a pioneering role in communications, not only in this region but in the world. The region's prowess in communications should be no secret. This is the place where Bill McGowan pioneered MCI from a concept that challenged a world power, into a world power itself. More recently we have seen events like an IPO by Ciena make Wall Street stand up, watch and wonder what's going on in this region.

UUNET and AOL demonstrated a collective muscle with the acquisition of CompuServe. The action of around MCI right now couldn't be hotter—triggered by the bold action of WorldCom, countered by GTE and . . . what tomorrow?

The activity goes on. Whether it's a series of transactions by Orbital Sciences or Loral's purchase of Orion Networks, the convergence is at play. It is operating in this region and the intensity of activity is enormous.

How vibrant is this telecom energy centered here? One noted observer is quoted as saying, "Washington is the Silicon Valley of communications and the Federal government has the technology customers leading the way."

Who said that? Was it a regional business person? One of the institutional people? No. It was from Mark Andreessen, founder of Netscape, being interviewed by Shannon Henry in *Washington Technology*. The headline was "Andreessen Watches Washington."

I love to watch headlines. Sometimes it's good just to scan them to get a sense of climate. Let me read you just a handful of some recent ones. Absorb them and the whirlwind of activity they represent, because they barely scratch the surface of what's taking place here.

**CAIS Internet Is First ISP To Offer Web-Enabled Phone Service
Access Beyond Secures \$40 million in Private Funding.**

I want to pause here. These were not in my original notes. They were both announced today. I had to change the speech as news feeds were coming in to our group. Here are some more:

MandI Takes Teligent Public

L-SAT International Proceeds with Network Expansion Plan to Purchase New Fiber Route

GTE Joins Bidding War for MCI

WorldCom Bids to Acquire MCI

Wireless Company WinStar Bases Operations Here

Nextel Locates in the Greater Washington Region

Orbital Sciences Announces OrbCom and OrbImage

Yuri Systems is Business Week's Hottest Growth Company

Orion Brings Satellite Service to Europe and Latin America

Telogy Attracts \$13 Million in Funding

Coherent Communications Opens New World Headquarters

LCI to Acquire USLD

Iridium Launches Seven New Satellites

University Online and Global One Launch Virtual Campus

WorldCom to Acquire CompuServe and AOL's ANS Communications

Orbital Completes Purchase of CTA Space Systems

Ciena Corp. Goes Public, Sets Record on Wall Street

Orion acquires Gateway for Asia Pacific Operation

Nextel Successfully Completes \$500 Million Private Placement

GTE Spacenet Concludes the Acquisition of Tridom

L-SAT International Prices at \$350 Million Debt Offering

Worldcom Announces \$300 Million Expansion to the UUNET Architecture

Intermedia Buys Digex

Is something going on here? You bet, and it's hot. However you choose to view our future, it is already clear that our region is an important center for innovation and policy development for the digital age. Communications is a major asset of the region and a vital part of its promising economic future.

We are fortunate tonight. Our five Stars cover nearly every facet of the communications industry. As founders of their companies, they represent the fierce drive and creativity of the entrepreneur. They're here tonight to share their stories with over 1,000 of you who, in your own right, represent the spirit and future of this region.

I'd like to say a special thanks to Mark Warner who helped us put the program together; to Morgan; to John; to Brian and Dave, for being here tonight; to April Young of the Potomac KnowledgeWay Project to all of the sponsors that make the Project possible; and to the Netpreneur Program team. Thanks for all of your efforts to make this program click.

Most of all, thanks to all of you. You are the enthusiasm, the drive, and the future of this Program and this region. The Netpreneur Program is about building community and weaving a social fabric. It's about coming together and working together to change your individual destiny and, of course, the future of this region. We wish you the best of success and welcome you to an *Evening with the Stars of Telecom*.

And now, it is my distinct pleasure to introduce our first Star, Morgan O'Brien.

Part 2: The Stars of Telecom

Morgan O'Brien: **Never Give Up**

Thank you. Back in 1987, here in Washington, DC, I was practicing law. I was a telecommunications lawyer, but I wasn't comfortable in my skin. I just knew that being a lawyer wasn't my destiny. I had tried several times before to launch a business and just had not found the right formula.

But in 1987, I had lunch with Mark Warner and I proposed an idea. Mark went from the beginning of lunch to the end of lunch and said, "Well, I'll split whatever initial money we have to put into this thing. Try not to make it too much. Let's get started."

The entire Mark analysis of the process was not even a long lunch. So, with less than \$100,000 committed between the two of us, we went to New York. Actually, Mark took me to New York. And we went knocking on doors to find money. We put a team together and this team later became as close to me as my family. The members of that team, I love them. There is no way to put it more bluntly. That's the kind of relationship I developed with this team. And as a team, we then went forward with our plan. That was 1987—we had \$100,000, the enthusiasm and optimism of Mark Warner, and the idea.

In 1997, that plan has become Nextel Communications which has somewhere around 5,000 employees. It's a public company traded on NASDAQ. It is both national and international in operations. We are operating currently in ten of the top 25 cities in the world and 70 of the top 100 MSAs in the United States. We have roughly 1.3 million customers and we are adding them daily at a remarkable rate. Nextel's capitalization has gone from our less than \$100,000 to something now in excess of a billion dollars. That's in the course of ten years.

If I told you the whole story, of course, I would exceed my seven minutes. I could make you laugh and I could certainly make you cry if I told you what went on between 1987 and 1997. But I thought what might be more useful is to say, if you are thinking about starting a business, then my invocation to you is, "Thinking about it is not going to do you any good at all. You have to do it."

And I'm here to say that I'd be completely satisfied with tonight if one person out of this group went home and said, "I'm not thinking about this anymore, I'm going to do it, just like Morgan O'Brien did because how hard could it be?"

So, that's my mission. However, having said that—do it, don't think about it—I want to have you exercise great caution. Because my experience is that failure in business is so much easier than success. Success is not an entitlement. You are not entitled to success. Nobody is going to let you be successful. You have to make yourself be successful. A thousand things have to go right to be successful. One thing can go wrong and you'll fail. It doesn't water down my advice that you should do it, but the benefit of my experience is you have to do it and you have to be cautious.

Here are a few practical suggestions drawn from my experience. Some are from the part that would make you laugh; some from the part that would make you cry.

If you are going to start a business you have to know it, you have to be an expert in it. All the things about that business that you could know, you have to know. And if you don't know them, you have to wait until you do know them and you have to ask somebody that knows them and write it all down. Because if you're not an expert, you are not going to make it. You have got to know what you are doing.

On the other hand, I don't want to over-intellectualize it. Having gotten through the knowing-it stage, you also then have to feel that this is something you have to do. That's not an intellectual process, that's an emotional process which you must never eliminate from this whole scenario. You have to know it and you have to feel it.

You have to be a grownup. You would be amazed at the number of people in business who aren't grownups. I define a grownup as somebody who sees the world the way it is. I say that to my kids all the time. I say, "The difference between maturity and immaturity is accepting the way things are." So you have to be a grownup. You also have to know yourself. If you're not an optimist, then certainly you can't start a business because there are many times when there is no reason to keep going except that you are an optimist.

When building your business plan, you also have to understand that the future, by definition, can't be known. The future is unknowable, and you have to cope with the fact that it is unknowable. But at the same time, you have to make some informed assumptions about the future. And you say, "Well, no one knows the future so my guess is as good as anybody else's." Particularly if you are informed. So you say, "This is the future as I see it." That's exactly what we did at Nextel.

In 1991, we said there are certain things that we are just going to assume are going to happen between now and the end of the decade. These things will happen. Technology will move in this direction, the market will move in that direction. This is what will happen at the FCC. And when somebody said to me, "How do we know that?" I said, "We don't know that. We are going to be partly making it happen, but we have to put some stake in the ground."

Having said that, you have to be able to accept uncertainty and many people think they can but they can't. Can you live with not knowing where you are going to be from one day to the next or who you are going to be talking to from one day to the next or what's going to happen from one day to the next? You have to be able to accept that there are some things that are not certain and you just have to keep going.

One day, one of our most talented early employees at Nextel quit. When he quit I was heartbroken, and I said, "Why are you quitting?" and he said, "Because you could not possibly have known that that was the right price to pay and this was the right time to buy that particular property." I said, "Well, how much more study do you want to do?" He listed all of these things that were basically unknowable.

I said, "Don't you hear those footsteps?" He said, "What footsteps?" I said, "The footsteps of everybody else that's going to be doing this idea if we don't do it now."

So I don't have all the information but we just have to do it. We just have to keep going.

Next lesson: Expect terrible things to happen. And this is serious, because if you have expected a certain budgeted amount of terrible things. . . somebody comes in and says, “Something terrible has happened!” You say, “Well, okay, I can understand that. It’s bound to happen.” Sometimes that can be your finest hour when something terrible happens.

Next thing: Keep moving. Most times when we look back we see that the decision, right or wrong, wasn’t as important as the fact that we kept moving.

Another issue: Feelings. I talked about that before. Some feelings are good feelings. For example—and this will sound strange—but envy is a great feeling, because envy is nature’s way of saying somebody else is doing something or has something that you should have, that you should be. Whenever I find myself reading the incredible press of this business and I envy something that’s happened, maybe even to somebody at this table up here, I say, “Why am I envying that? What does that suggest about an action that we should take?”

There’s lots of other advice I could give you, but at the end of the day, a couple of things are important. Be as lucky as I was and have a spouse—and mine happens to be sitting here tonight—who doesn’t care whether you fail. She cares more if you are happy pursuing your dream. If you don’t have that, you’re going to be sunk. Then I have asked several people—these are other entrepreneurs—what advice I should give you in conclusion and they all said the same thing: Never give up. Never give up. Never give up. Thank you.

I’d like to introduce our next speaker, John Puente.

John Puente: There Is No Barrier Too High For A Great Idea

Morgan, there’s two things I want you to know. First, thank God I was really naive when I started this business or else I would have never done it, because all the things Morgan said can happen to you, do happen to you. And the second is something, Brian said on the way up to me, “What is an Hispanic doing with all these Irishmen up there?”

MR. O’BRIEN: It was affirmative action. It was affirmative action.

MR. PUENTE: I have had the opportunity to be a part of three start-up corporations. Digital Communications Corporation (DCC) was started in 1971. It is now Hughes Network Systems with sales over \$1 billion. Telecom USA, a fiber-optic-based long distance carrier, was sold to MCI for \$1.2 billion. DCC started with \$40,000, and we had a little more money when we started the second company. But they gave me a great deal of experience in dealing with Orion Network Systems. I’d like to discuss Orion from the point of view of overcoming high barriers of entry which all of you in this room are going to experience, and a 90-degree turn that happens all the time, in every business.

Ninety-degree turns means “What happened? Why are we going in that direction?” I was asked to become Chairman and CEO of Orion in 1987. The company consisted of a satellite application to the FCC, a single employee, Chris Visas, and \$750,000 of debt. Orion had filed to the FCC for a license to launch a satellite for international communications between the United States and Europe. This was the first license request ever made to the FCC for a private international system.

The challenges for Orion were difficult. What I mean is there were really high barriers of entry in three areas: regulatory, market and financial. On the regulatory side, not only did the FCC have to approve our license, but, because of the Intelsat Treaty, the Department of Commerce, Department of State, the Executive Branch, the Department of Defense and everybody in the government got involved. Would Orion get a license?

Intelsat is a consortium of monopoly telephone companies—it still exists today—who represent their countries in the Intelsat organization, COMSAT being the US representative. Until the time of the filing to the FCC, international satellite communications was completely controlled and run as a monopoly, by monopolies.

Intelsat did not want Orion to get a license. Monopolies love monopolies. Fortunately, at that time the US was in a general mood for breaking up monopolies—AT&T, for example. After years of work, President Reagan agreed that there should be competition in the international satellite communications and the FCC issued a license to Orion, but there were some very serious market conditions.

The market barrier we had to face was this: the international market in 1980 was primarily voice traffic. Over 95% of the traffic going between the US and Europe was voice. Intelsat, being owned by telephone carriers, wanted that part of their business protected. The agreement struck with the Reagan administration had a provision that Orion would not provide economic harm to Intelsat. That is to say, don’t compete in their voice business. In order to get our license we had to agree to this provision.

The ridiculous result was that Orion, a pure start-up corporation, was not allowed to compete in what was 95% of the international market against monopoly telephone companies which had revenues of over \$200 billion a year. Because of this provision, Orion targeted business customers for data transmission and another applicant, PanAmSat, went after the video distribution business. The irony is that by the year 2000, data will surpass voice and transmission capacity requirements on a global scale.

Next item was the financing barrier. How do you finance this? Because of the regulatory and market barriers and the fact that deregulation had not yet begun in Europe, that is to say, allowing Orion to carry traffic into Europe, we had a financing situation that was very questionable. We put together a financial team of Merrill-Lynch, Flemings (a UK banker) and Drexel Burnham. The sum needed to launch a satellite, buy the insurance and cover the debt was approximately \$350 million. The financing plan included equity capital for investors, transmission capacity guarantees, people who said they would take the capacity, bank debt and a high yield bond.

That was the structure of the financing. Equity capital and corporate guarantees were to be obtained from strategic investors—people who really wanted to get into this business with us who also joined us in a partnership with Orion as a general partner.

British Aerospace was our first strategic investor, for which it received the construction of two satellites. In all, there were seven partners. We now had partner equity investment plus guarantees that these partners would purchase enough capacity over the spacecraft to cover our bank loan.

Just as we were about to work on the fourth element, the high yield bond with Drexel Burnham, a strange thing happened. Michael Milken got into very serious problems with the Securities and Exchange Commission. I can tell you I was at the airport to meet with Michael Milken when I was told he wasn't in his office and wouldn't be there for a while.

This was really a major setback because we were looking for a \$250 million high yield bond. It caused us an additional year delay. We lost a partner we had to replace. Our partners eventually took up the slack in our financing with corporate guarantees in addition to their transmission capacity requirements. The FCC approved the partnership structure and we proceeded to build Orion I, which is up and operating now.

In 1995, we issued an IPO after a previous failure. We actually went out earlier and we had to pull it because the market wasn't ready. In 1996 we went to the market with a high yield bond offering \$350 million for our next satellite. Here's where luck really plays a part of this whole game, and luck is, I think, part of every entrepreneur's success. The bond market was hot and we were vastly oversubscribed. The bond actually yielded \$720 million. Now we had sufficient capital for our next two satellites which are currently under construction.

These were very high barriers to entry which all of you will face in one way or another. You can overcome all of those barriers with good strategic positioning of your company, hard work, tenacity, some luck and you can't get discouraged. Never give up, I agree. Just never give up because there is many a time you want to walk away. You just can never give up. Become creative and you can win.

Finally, as you may know, after we did all of this, we announced two weeks ago that Orion was acquired by Loral Corporation. The closing should be complete first quarter next year. These startups all started in the Washington metropolitan area which I believe is slowly but surely being recognized for investors and biotech also. So dive in. Get started. I wish you every success. And remember one thing, there is no barrier too high for a good idea. Thank you.

I'd like to introduce Brian Thompson, who has done one incredible job at LCI International.

Brian Thompson: The Courage To Be An Entrepreneur

Am I glad I'm not an entrepreneur! I wouldn't have the ability to put up with the things these guys have.

I can't clear my throat in seven minutes, so I'm going to apologize in advance to Esther, but I'm liable to run on a little bit.

There are a lot of stories I could tell you about John and some of the other people on the podium, but I'll leave those for questions and answers later on. When I first met John, he was wearing a lab coat out at COMSAT Labs back in 1969, I think it was, and it's been a long and interesting relationship.

I'm very pleased, and I want to make this public, to serve on the Board of Trustees on a small college out here called Capital College, which is turning out really hard-driving young people that are taking part-time education, full-time education, and are becoming classic telecommunications engineers as well as technical specialists as a result of John Puente's work with that college over the past decade. It is something to behold and it's right here in this area.

I once heard somebody say that the way to become a leader is find a parade and get out in front of it. I have been very fortunate twice to have been able to do that. The first time was pure happenstance and it was one of the great things that can ever happen to people. You know, in your life, if one good opportunity comes along and you are very successful as a result, you should be very thankful. I have had the great fortune to have that happen a couple of times, but the first time was when I had the great fortune to join a crazy Irishman named Bill McGowan back in 1981. His company had just finished winning a case with AT&T and thought that they were in fat city, but they weren't because \$1.8 billion never did materialize out of the antitrust suit. But I joined Bill in 1981.

I think that it's fair to say, without exaggeration, that the reason that we are all sitting in this room tonight is due in great measure to Bill McGowan's crazy idea. He paid \$50,000 in 1968 to buy a half company which thought it could take on AT&T. From that—from a move to Washington, DC in 1974 because that was where most of the decisions were being made that would affect the communications industry—came a company called MCI, a feisty, irreverent group of people that never gave up, never said no, always took on the difficult if not impossible task. It was a terrific experience to be a part of a team of people that did that. I did it for about nine years. But learning at the feet of one of the masters in entrepreneurship—somebody who is one of those rare entrepreneurs who can start a company with nobody in it, build it to a very large organization and then manage it into a huge worldwide enterprise—that's a rare case. I had the rare opportunity to spend some time with Bill in various stages of sobriety and various stages of success. It happens when you are Irish, and it goes with the territory.

What we did, from 1981 to when I left in 1990, created some very formidable change in this telecommunications business, so the first thing I would encourage you all to do is recognize that the telecommunications industry is a unique opportunity. It's unique because it was a monopoly. It was a de facto monopoly (that was the beauty Bill McGowan found out) rather than a de jure monopoly. Therefore, the long distance portion was something that had never been granted to anybody. By pursuing it relentlessly, the result was the break-up of AT&T and the creation of a vast outflow, not only of new technology coming from places other than Bell Labs, but the development of whole new means of communications and opening up the eyes of the regulatory people that there may be something to competition.

So, we are blessed in the telecommunications business by having on the one side a monopoly that is being broken up—over a long period of time I might add, and still remains to be broken up in many ways. But the great opportunity is that entrepreneurially-oriented people with desire can jump in and grab a piece of that \$150 billion market. It is unique. So I encourage you entrepreneurs to do that. Some of us are too old to be entrepreneurs.

A quick story about what did happen, though, with LCI, because I think it does bear some scrutiny. In 1990, after I left MCI—it was because MCI bought this company that John Puente convinced them was a fantastic opportunity called Telecom USA—after leaving the company I did some investing in various things and tried to be an entrepreneur. I found out one thing you want to do as an entrepreneur is look for money. Find money someplace. Everybody on this table has found a way to find the people who have it. I know Morgan found me about four times.

MR. O'BRIEN: You kept saying no.

BRIAN THOMPSON: I was smarter than I thought. What you need is money. I had located this company called Warburg Pincus in New York and they were successful in venture capital operations. But when somebody told me they had a billion and a half dollars of cash, they suddenly became very good friends. We started an organization to invest in telecom, but a funny thing happened. They had this little company in Ohio that they had started as the equity investor in a leveraged buyout that was done in 1988 by none other than Michael Milken. So you have heard it twice here tonight. I have to say Michael Milken was instrumental in MCI becoming what it was but this was much later in the process. They had done a senior debt offering for this company and equity was taken by Warburg Pincus. Unfortunately, the debt was at 11.75, but that was okay.

The following year they decided to do two acquisitions and they got another trench of junk bonds that Michael put in that was 16.5%. And that was a PIC preferred stock that actually grew to \$70 million. Then in 1991, as Warburg owned the company and as the company unfortunately saw its revenues going south at about 15% a year and its first cash interest payment on all of this debt coming due in June, the chief financial officer in a parking lot after a board meeting in May said to one of the board members, "Oh, we didn't mention it in there, but at the end of June, we have this interest payment that we won't be able to make because all of our accounts payable are at 120 days, and we are paying, unfortunately, very large penalties and we don't have any cash."

Now, this was a \$260 million company with \$302 million of debt. An annual interest payment requirement of \$32 million. When I came back after Warburg said, "Would you like to help us?" and I said, "No." And they said, "Oh, please." And I said,

“No.” And then one night this horse’s head landed in my bed. And I said, “I’ll take four months and tell you what you should do with this company.” And we did.

But the fact of the matter is if you have had the experience, if you have been sitting at the knee of one of the great entrepreneurs of all time, if you have spent a lot of time in your life dealing with the issues of our industry, it is a challenge that’s hard to turn down. We went out there and we took this thing on. We had to lay off about 25% of the people in the first six weeks. Actually we did it in two weeks. We turned the company. We came back to Warburg about two months later and said, “Here’s the deal.” They thought we were going to tell them how we could sell it, package it up. I said, “If you turn the strategy of this company around and if you are willing to come up with another \$38 to \$40 million even though you have already put a lot into it, we think we can probably get this ship turned.”

Shortly after that, our bankers, who were owned in part by Warburg, decided to put us in the workout division. But the fact of the matter is they came through with \$38 million over the next six months. We were able to make the change that was necessary by having a strategy that was clearly understood by everybody.

To date, Warburg—this is six years later—has taken out or has in their hands a value of a little over \$1 billion for the \$38 million that they put in, so they are not terribly unhappy. And the fact of the matter is the company is a force.

Now, let me tell you quickly, because my ten minutes are over, several things. Number one is my case is different. I wasn’t an entrepreneur. I don’t have the courage to be an entrepreneur. But I did take bombs apart for a living in the Navy. So for any of you who have done that, there is great opportunity in telecommunications.

The second thing is, be really dumb about taking something on and don’t ask all the questions. You know, bull your way into it and then find out what the problems are. But make sure you bring along with you people in whom you have a lot of confidence. Dupe them. Tell them lies, but get them involved, okay? And believe me, if you have a team of people around you who are in it as deeply as you are, but they have upside, you are going to have a team that is going to work like hell to be successful.

We have had that. We have been very fortunate. Our company is now a fairly significant factor, at least it seems to be. And there is still a problem when you produce a great quarter like we announced this morning and the stock market says, “Well, I’m sorry but you’re making earnings, so we are going to treat you badly.” It’s a surprise to a lot of people. But we are in unique times. You have unique opportunities.

The people on this panel are witness to the fact that, in telecommunications, as a result of change and the willingness to grab that brass ring when it comes by, you too can be very successful. Because this is a unique time and a unique industry and a unique marketplace. Thank you very much.

In 1983, a young fellow came into my office with an interesting sounding name, Thompson, and said, “This is what we are going to do.” and I said, “You are going to put what out of what?” And he said “We are going to launch satellites out of a B-52.” I said, “Okay.” I’d like to introduce David Thompson.

David Thompson: **Rebels And Pirates**

Good evening, everybody. I would like to talk a little bit about my experience in helping to start and run a company. I have done it exactly once. That’s all I ever want to do it, because I want to keep doing what I’m doing. Orbital was started about 15 years ago and our idea at that time was to build a company that would create space-based networks that would be so inexpensive and so easy to use that millions or tens of millions or maybe even hundreds of millions of people all around the world would, over the long-term, start to use them every day.

Well, that sounds great now, but it seemed like a really farfetched idea in the early 1980s as Brian just indicated. The original founding group at Orbital were three young guys still in their twenties who just decided we were going to start a space company. Here we are in the 1990s and due to the efforts of a lot of people like John in our little part of the telecommunications industry, satellites are indeed changing the way that many people work and live all around our planet.

To those of you who have heard of us, Orbital is probably thought of as a rocket company. Building rockets is where we started and it remains an important part of what we do. But today, the company has a considerably broader range of interests. What we really focus on is developing and operating satellites and ground systems that are designed to collect, communicate and process valuable information that we provide on a global scale and that we hope to provide at much lower costs than anybody else in the markets that we serve.

I believe this is one of the really great opportunities in business and it's going to remain so for at least the next 20 to 30 years. We have conceived satellite systems—like probably others have—as these wonderful things that we think of as information machines which convert photons into revenue. Since our raw material for these photon factories is sunlight and since sunlight is free, once our revenues rise high enough to cover our fixed costs, our profit margins really do go into orbit. The basic question, then, is how fast can those revenues rise?

I think the fundamental answer, not just for us in the satellite business but for all of us in the communications business, lies in some pretty fundamental observations about market opportunities and industry factors. The two main elements of the industry context in which all the companies up here tonight operate, and in which Orbital exists in particular, are the continuing exponential advance of microelectronics technology and the increasingly universal deregulation of communications services all around the world. Now, of course, these two trends that seem so huge are really part of something even bigger—the long wave of 25 to 50 to 100 years which much of the world is now riding and which is bringing increasing prosperity, openness and peace to larger and larger fractions of people on Earth.

Well, in the area of interest to us tonight, this means that communications is presenting unprecedented opportunities. It's like trying to run across the freeway without getting hit by a car. There are so many out there coming at us at high speeds and they are coming at us for a number of reasons.

First, communications services are increasingly going to digital wireless networks that put them on a performance cost curve similar to that of PCs. We all know what's happened there in the last 20 years. Second, computers and communications are becoming interlinked and are beginning to drive each other's growth. And third, and of great interest to us, an era of really ubiquitous connections to global information and infrastructure is beginning. So you put these together and just imagine the kind of opportunities that face the communications industry.

If we assume that current economic growth rates continue, that the pattern of the last 20 years is a pretty good guide to what's going to happen over the next 20, we can look forward to a long-term expansion at about 4% a year in the gross planetary product. So total worldwide economic activity will probably increase by about two and a half times over the next 25 years, meaning it will go from about \$25 trillion of total economic activity this year to probably \$60 trillion or \$65 trillion in the year 2020. Couple this productivity-driven expansion with the fact that world population growth is actually slowing, and we see worldwide average incomes per capita likely to almost double over that 20 years. What does this mean to telecom?

I think it means nothing less than a market explosion of super nova class. Our own history in this country and in the more developed economies around the world shows that there is a very nonlinear relationship in demand for communications as individual incomes rise. This means that the billion or so of people like us who are lucky enough to live in rich and stable countries are going to spend dramatically more on cheaper mobile telephony, video conferencing, email, Internet applications and all those other things that we are beginning to take for granted. In addition, several billion more people in emerging countries are going to want and are going to be able to afford basic voice, data and entertainment-based telecom services over the next couple of decades.

The bottom line? I think a doubling of average incomes per capita may translate into a 10- to 20-fold increase in communication demands, with disproportionately large parts of that going to various types of wireless services, including satellites. The opportunities are really enormous for the kind of things in which all of us are interested.

You could say, "That sounds great, but how might a new entrepreneur get started in the telecom industry?" or, even with a crazier idea, "How so in the satellite segment?" Well, that's a tough question and I have no general answer. The best I can probably do is tell you the main formula, the main points in the formula that Orbital used during our start-up phase in the satellite business. Our strategy may not work in other areas and there may be better ones or equally good ones even in our own industry, but here's the way we did it. First, we tried to attract really superb people. We wound them up and we turned them loose. Now, there is really more to it than that as we learned over the years, but that's where it really starts.

In our case, we looked for very smart people who were also rebels or pirates who could be effective in and help us sustain the rapid growth and the imaginative culture on which we put a lot of value. We spent a lot of time, I mean a lot of time, finding and recruiting these kinds of people. Second, we tried to select small but promising market segments and we tried to get into them fast. Keep in mind that the pirates in any industry have advantages in agility and improvisation, but they also have disadvantages in resources and staying power. So in other words, if you are the industry pirate, don't pick any fights with the Royal Navy where raw firepower alone is going to determine the outcome.

And then, finally, we tried to develop early on among our key products some really powerful competitive advantages that

could strongly differentiate our solution to early customers. That's especially important in situations where you have entrenched competitors who are well-established and where your customers have high switching costs or risk. You have got to wow the early adopters. A marginally better product or service just isn't going to do it.

As Orbital has grown, we have added a few new elements to this list, including some that are related to acquisitions and to financial structure, and we have also modified some of these original points in ways that are important. But these three strategies really moved the company from start-up to about \$100 million in sales in about half our corporate lifetime.

There is no such thing as a "one size fits all" start-up formula. There are many things you have to consider, including the fundamental objectives that you have for an enterprise as well as factors like industry context and so on, but those are the ones that worked for us.

The first point in our start-up strategy is so important that I would like to come back to it. Everyone may not agree with this, but I believe that an "A" management team with a "B" business idea is really better than a "B" team with an "A" idea. That's been rule number one at Orbital, mainly because we couldn't find any "A" ideas for a long time. It's great if you have an "A" team with an "A" idea, but that's not always possible. In our case early on, the fundamental industry factors, the barriers to entry, the capital intensity and some of the things that John talked about earlier just really worked against us. So we went after some great people who were a whole lot smarter than we were. We got 'em charged up and we got 'em committed to the venture. That worked and it continues to today.

My conviction on this point is expressed best by an author I like and a management expert that I think has a lot of important things to say, a guy by the name of Warren Bennis who really hits the nail on the head in a book that he published earlier this year, called *Managing Genius*. In it he talks about the attributes of ultra-high performance work teams and the people in them. For technology entrepreneurs, or those of you who are thinking of becoming entrepreneurs, this book really ought to be on your Top 10 list. I think its lessons are especially relevant when you consider that the cost structure of a company like Orbital includes 50% or 60% of our revenue spent on our people—this year over \$300 million in people costs.

In fact, when we take the knowledge and the creativity that are in those people and we sort of crack their heads open and spread it around the table and add it all up, the labor that those people put into our products cost us three to four times the cost of gold on a per pound of satellite basis. It really makes a lot of sense to staff our organization to get the highest possible return you can on those kind of things. I would just wrap up my comments with a little more practical advice. You have heard some similar points already and I'll leave you with three others.

The first has to do with passion. It really helps enormously if you have a truly deep-seated passion for what you are doing because that passion would be there even if all the material and tangible benefits went away. That's what's going to get you over the inevitable disappointments and setbacks that you will bump into in your enterprise.

The second is financing. Raising money is hard. That's rule number two at Orbital. It usually takes longer and it usually costs more than you think it will, so do it as infrequently as you can. We adopted an "every penny counts" motto and we didn't know it at the time, but we were following what has since become known as the Ross Perot Theorem: money makes you stupid.

Don't forget good blocking and tackling. Not only things like "buy low and sell high," but also the corollary which works for us pretty well "collect early and pay late." Seriously, when you do have to raise outside capital—probably nobody will agree with this except the venture capitalists in the audience—as an entrepreneur, don't obsess on valuation. It's better to do a fair deal with the right people. You'll come out better in the long run.

Finally, let me talk about the downsides. Remember that entrepreneurship does have a lot of them. There is ever-present uncertainty, that Brian and John both referred to. There is risk as well as rewards, and sometimes that materializes and it hurts bad. Also, at least in my case, there is an almost certain commitment to an unbalanced life. Probably for most entrepreneurs, with some very notable exceptions up here tonight, the universe shrinks to just two things: your family and your work. Except for a very few remarkable people, things like community activities, hobbies, interests that you had when you were little, those things are gone. You are going to put those on hold for a long time.

In conclusion, one definition for an entrepreneur which I really like is "a person who relentlessly pursues new opportunities without regard to the resources currently under their control." I think that seems to be a particularly fitting definition in the telecommunications industry, in view of the terrific opportunities. There are just tremendous opportunities that we face, as well as the tremendous challenges that it presents to new enterprises. We are really in a golden age of technology entrepreneurship. We probably don't realize just how fortunate we are to be alive now, to live in America, to be in the Washington area, because—despite all the challenges and setbacks and frustrations and obstacles and sacrifices. There has just never been

as exciting a time in the last 100 years anywhere on Earth to be an entrepreneur in the telecommunications industry in this part of the country. Thank you very much.

It's now my pleasure to introduce Mark Warner who is one of those very rare entrepreneurs who does manage to lead a highly accomplished and a very balanced life. Mark has been active in the telecommunications industry for 15 years. I think all of you are familiar with his founding role and his continuing leadership at Columbia Capital. He is also founder of Capital Cellular and a cofounder of Nextel. In fact, I think he and Chris Lane went to grade school together. In addition to his family and community activities, Mark has also served as chairman of the Democratic Party of Virginia and was the Democratic candidate for the US Senate last year. Mark was educated at George Washington University and Harvard Law School.

Mark Warner: To Succeed, You Must Be Willing To Fail

Thank you, David. Good evening. I've got to tell you, we have a very, very impressive panel here. I want to first to note to Morgan O'Brien that he was kind in his remarks. Morgan, I didn't understand half of what you talked about at that lunch 15 years ago.

Morgan is a true visionary. He saw the opportunity that the SMR spectrum presented long before anyone else did. John Puente is a distinguished veteran of the telecom industry. Brian Thompson, as anybody who has followed the industry at all knows, is truly one of our premiere operators in all business worldwide. And my friend David Thompson, he really is a rocket scientist.

This being Washington, we needed one other person, so I am the former political wannabe. As a matter of fact, I should have talked earlier to Mario and April. If I could have attracted this kind of a crowd last year, I might have a different title now.

David has admitted and I also have to acknowledge that I started as a lawyer. I got out of law school and went to work for the Democratic National Committee (DNC). I always had a passion for politics. As my student loans started to come due, and when I was sleeping on the couches of all my rich law school classmates, I decided to go out and try to start a business. Now, I had been working at the DNC trying to raise money right after Jimmy Carter had been defeated, so the idea of starting a business seemed easy compared to that. I took my life's savings, \$5,000, and invested in and went to work for a small start-up company. I helped that company go broke in six weeks.

My second try, I went to work for a real estate company. It took me six months to help that venture fail. The third time, a friend of mine—a guy who used to serve in Congress, but I knew him as a professional basketball player, Tom McMillen—had told me about this idea of putting telephones in cars. I thought, "I talk on the phone a lot." I thought it was a cool idea and so I said, "Why don't I get into this business?"

All of my friends and all of my law school classmates thought I was the craziest guy in town. Telephones in cars? It will never catch on. I guess if I have a first piece of advice, it is: To succeed, you must be willing to fail. Although David is a glaring example otherwise, failure is a part of almost any entrepreneur's starting.

How did I get my first money? I found one of those classic angel entrepreneurs. He was a real estate developer who had a little bit of background in broadcasting. I got a hearing in front of him. I had read my three or four articles about cellular and went in and pitched him, and after 20 minutes he committed \$1 million. I pinched myself. I didn't have the foggiest idea what I had just done. I didn't know how to cut a deal or how to frame my opportunity.

But what I learned from that individual, and what I have learned as an investor—it's been repeated by a number of people on the panel—is that investing in people is just as important as investing in ideas. You might have the greatest idea in the world, but unless you have the people skills and the business skills and the reasonableness—if you don't have those skills, go out and find them. Go out and bring in that partner right now

I can promise you, any investor or any investor group, whether it's an angel or a professional investor who falls into the category of venture capital, is going to look at the quality of your idea, but also the quality of you and the quality of the team you have put together.

A second piece of advice: although this will again be rebutted by Brian's success, for the most part don't try to take on the industry leader right out. With all due respect to Brian, don't go take on Microsoft or AT&T.

Let me give you a couple of examples of how my firm, Columbia Capital, has tried to approach that. In the early days of the cellular business, when everything was hot and everybody was trying to operate cellular systems around the country, what we tried to find were ancillary businesses. We made an investment in a small billing company for telecom services and that company now has become Saville Systems, a NASDAQ listed company that's got a market capitalization of about \$1.5 billion.

It was trying to focus one-off from where the rest of the herd was going. Take Morgan's idea of using SMR frequencies and going after that marketplace when the herd was all running after the cellular spectrum. It was also an example of one-off thinking. Find your niche. Here's a more recent example that my company has had the opportunity to be involved with. Many of you might be familiar with the recent PCS auctions. Everybody and their brothers was out trying to raise money to buy some of that spectrum. We did as well. Luckily for us, we dropped out of the bidding when the prices got too high. But what we said was, "Here are all these people trying to find literally hundreds of millions of dollars to buy this spectrum. Well, there are already existing microwave users on most of that spectrum. How are we going to relocate those existing users so that the new people who bought this spectrum can get the new PCS services onto it?"

We formed a company called Columbia Spectrum Management that has done relocation for most of the existing PCS operators, and was recently sold to a public company named P-Com. Again, if there is a theme here, it's trying to find your niche. There will be the home run examples like MCI, but there is also tremendous opportunities around the niche markets. If you are going to take on the big player, come at him from a niche or find the niche in your industry. I think that is always good advice to follow.

Another piece of advice: Try to stay true to what you know. If your passion is telecom or if your passion is information technology or if you're building a business that's got a success in a particular area, don't try to be all things to all people. Morgan and I saw countless people who, through variety of luck and skill, became multimillionaires very quickly in the early days of the cellular industry. Many of those people thought, "Well, gosh, I must be smart, let me go try to translate that into building widgets." Very few of those folks who went into these other fields have been successful. Now, in this case I have to admit, please do as I say not as I do, since I spent \$10 million on a Senate race last year, invested in Russia and invested in a new movie company in Petersburg, Virginia.

I guess my final point is this, and I will make my remarks brief, because I know we want to get to your questions. This Greater Washington region is the second largest technology region in the country. It has more technology firms than Route 128 around Boston, more than the Research Triangle, more than Austin and Phoenix. We are second only to Silicon Valley and rapidly approaching those numbers as well. You are all in the right place at the right time.

If you are going to take advantage of that opportunity, one of the things I would urge you to do tonight, ask us questions, come up and talk with us afterwards. However, as important as that is, if we are going to create the kind of entrepreneurial spirit here that Mario has been so valuable in providing leadership for, make sure you find five other people in this crowd tonight and exchange cards with them. Start to build up the social fabric that will make our region realize its potential. We have the intellectual capital in this room, and in our region, to be world class. We are very quickly attracting the financial capital, as more and more angel investors arise, and more and more of the traditional venture capital firms discover what's happening here in Greater Washington. The next piece, though, is that social fabric. Meet your fellow entrepreneurs, visit with them, find those friends. Find those soul mates, even if you are in different businesses because you will have failures. Learn to live with this together.

If we do that, I think the region truly can become the convergence location where this incredible transformation that's taking place in information technology and networking truly converges with telecommunications. I can't think of a more exciting place in the country or in the world to be than right here in this room with you people, talking about how we are going to make that happen. Thank you all very much.

Part 3: Audience Questions

On Capital In The Capital

My name is Mark Dell. I spent most of last year helping a PCS license winner try to raise money. We ended up raising over \$100 million. Every penny of that came from New York. In 1994, I started the MIT Enterprise Forum in this area and the only bank that sponsored us was a Silicon Valley bank. My question is, what's being done and what will continue to be done to bring money into this area, because I think that might be the ingredient that's lacking in making these people successful entrepreneurs.

MR. WARNER: I think your point is extraordinarily valid. If you look at the number of venture capital firms that existed in this area three or four years ago, it was virtually nil. My firm has been investing, but we are not a venture capital firm. We only invest our own money. But if you look at it today, the Netpreneur Program is in touch with over 50 venture capital firms that are active in this community. We weren't on the map three years ago. How many folks even in this audience tonight didn't know before tonight that we were the second largest technology region in the country? Some of us who are part of this community don't know, and it's taken the venture community a while. The venture community is a group of lemmings. Let's face it. They will follow where the deals are. The deals are starting to come here. We have seen organizations have tremendous success, such as Friedman, Billings, Ramsey & Co. and other groups. They will follow to this region.

The banks are another story. It's a difficulty. If you want to see a bank executive, you have to go to Charlotte or New York. But I think most of the sources of capital will come from venture and I think you will start to see it as more and more people become successful, as more and more millionaires are made from the AOLs in the region and as you start to see the creation of angel networks. We have got to do a better job of networking amongst the capital sources and in providing forums like this one so that companies like yours will be familiar with finding sources like myself and others in this room.

MS. SMITH: Is Fran Witzel here? Fran, could you stand up? This is Fran Witzel <fwitzel@morino.org> who runs the investing forum for the Netpreneur Program. He is online, he is somebody you can call. He has networked a number of the venture capitalists. We have an anonymous deal routing program and other resources on and off line. There are other services in the area as well, like the MIT Enterprise Forum begun here in 1980, the Dingman Center at the University of Maryland, programs at George Mason University, the Grubstake Breakfast and so forth. These kinds of things are going to help as well.

On Analog Spectrum Regulation

Paul O'Keefe of Science Applications International. One question I had is about wireless bandwidth. The laws of physics dictate that mobile wireless requires low frequencies of below a couple gigahertz. We have this legacy problem of analog broadcasting being allocated a lot of bandwidth or spectrum which is inherently more useful and more valuable as digital wireless, whereas a lot of those fixed services could presumably be moved up frequency someplace. So here's something of a political question. How do you see the FCC in the future handling this issue of analog broadcasting spectrum becoming much more useful for digital wireless?

MR. O'BRIEN: I am tempted to say when pigs fly. And no sooner. You have to recognize that the link between the political process and running for office and local broadcasting is so powerful, that when it comes to who you want to take on and who you don't want to take on in this world, the broadcasters are always on the top of my list.

Who's Who In Orbit?

I'm currently a student at George Washington University, a junior in the business school. I'm doing a marketing presentation and it happens to be on Orion Corporation, so Mr. Puente, I'd like to speak with you afterwards if possible. Just a couple of questions. But in the meantime, I have a couple of questions for the gentlemen in the panel. What is the difference, in layman's terms, between Orion and Orbital?

MR. PUENTE: Well, we are actually two different satellite systems. Orion is in asynchronous orbit at 22,000 miles. We have, and are planning more, stationary satellites around the globe. We are very high bandwidth and very high capacity so that we can carry voice, video, data, Internet. You can carry 155 megabits of Internet traffic over a transponder. In David's system, he is going after a different market segment and much lower capacity. Maybe David might want to answer that.

DAVID THOMPSON: When we grow up, we want to be like Orion.

On Sustaining Corporate Culture

Julie Chapman from NetStart, Inc. We've talked about money, we've talked about technology, but I personally always like to talk about people. Maybe those of you in the operating side of businesses can talk about how you create and sustain a corporate culture which is truly entrepreneurial and that can move fast enough with the market as it's growing. Maybe Brian, as an MCI veteran, can talk a little bit about how Bill McGowan made that happen.

BRIAN THOMPSON: It's not easy. It's easy when you have four people. But as you start to grow, it really is a function of setting some basic principles in place. Bill McGowan had a unique style in which he said that, having been a consultant in the earlier part of his life, he found out that the right way to deal with problems if you are a consultant is ask people what their problem is and then ask them how they are doing what they are doing. After they tell you that, you just tell them to do the exact opposite. If they are having problems doing it that way, if you tell them to do the opposite, it might work out more than 50% of the time. The fact of the matter is that when McGowan started MCI—and it does sound silly but it's true—he said, "How does AT&T do it?" You would tell him and he would say, "Okay, do it just the opposite." Believe it or not, that was one of the fundamental premises on which MCI was based. If the monopoly does it this way, and if you are going to be a competitor, do it a different way. If they are going to take 15 people to do something, do it with one person part-time.

It is fundamental, and there are basic things about a company that do take on the leaders' view, and there were many things that we did. One of the most important things we did as we got larger at MCI was to spend more and more top management executive time trying to find those people who were trying to write procedures, so you could fire them. It really is true that as you grow fast, one of the most difficult things to do is to keep your hands-on process within an organization such that you are not going to stifle people and yet have creativity take place. Unfortunately, if you are growing fast, as MCI was when I joined and as LCI is today, your major difficulty is in hiring the right people.

One of the most important things you have to do is bring people in that are self-starters, who can deal with terrible ambiguity in their life, who are able to recognize bureaucracy and not take it on. Unfortunately, quite often what happens is you hire people who are highly skilled, who have come from a larger organization, and the first thing they want to do is hire a staff. They want to create those procedures because that's where they came from and that's where they were successful. If you are going to be successful in growing an entrepreneurial culture, pay more than the attention you think you ought to the process of hiring and also to the process of firing, because both of those are critically important to keeping the right kind of an organization.

The other thing I would say that was fundamental at MCI—and I believe in it and I continue to believe in it—is bring in from outside more than half of the people you are trying to put into to new positions in the organization. Bring them from outside because it's critically important that you create a new sense of perspective on your company all the time. When you start to believe that you have got the right answers within the company and the place to hire is within or to promote is from within, I think you got a problem.

MR. O'BRIEN: Yes, I'd like to add one thing which I think is paramount. The question is how does the culture of the company handle mistakes? If somebody makes a mistake, which is what everybody will do sooner or later, are they free to walk in and tell you first? When I say to people—and this is the culture we encourage is—I want to be the first to know. Because maybe it's not a mistake, you just think it is. But even if you're right, that it's a huge mistake, the sooner I know about it the better. We give you so much responsibility here that of course you are going to make mistakes, because average age in our company of 5,000 employees is under 34, so we say, Okay, so you made a mistake, so now let's fix it. Does the culture reinforce that? Is that really what happens when a mistake takes place? I think as the companies get bigger and more bureaucratic and more layers, the culture of dealing with mistakes changes, unfortunately.

Filling Up The Skies?

Hello. My name is Skip Keats and my company is Stoa-Futura Consulting. This has nothing to do with my company; it's purely something that's always been of interest to me. My first memory as a kid was Neil Armstrong bouncing around on the moon. What I am curious to know is, as we go ahead with the space stations—which are from my understanding are somewhere between a low-Earth orbit and geostationary—with all the satellites and things going up, are they going to at some point start to run out of space, one? The other question is, are the satellites being designed so that they communicate not only with the ground but also with what will be—some day presumably—stations outward from the planet?

DAVID THOMPSON: We could have some fun with that one, talking about space stations and such, but let me give you a couple of serious answers. For at least a thousand years, if we are fairly smart in how we do it, we won't need to worry about running out of space. If we are careful, we are unlikely to see physical collisions between satellites. We certainly don't want to see a collision because as we add more and more satellites to a given orbital ring around the Earth, a collision between two satellites will very quickly become a collision between many satellites. Those of us that are in the business of designing and building satellites do pay attention to that, and we are going to have to pay more and more attention to it over the next five years. We currently have roughly 175 commercial satellites in service around the world. That number will go up by at least a factor of five over about the next five years, so it's going to become a little bigger concern.

Today satellites, by and large, are relatively simple in terms of the functionality they provide. A customer on the ground sends a radio transmission up to a satellite. That satellite hears the transmission, shifts its frequency and sends it right back down to some other location on the ground. We are rapidly approaching a point when we will have a lot more satellites that do a lot more than that; smart satellites that know how to do onboard processing of a message to figure out where it ought to go, what's the minimum cost routing for that message to get from point A to point B. Then we'll have a lot of cross-links between satellites. Satellite A will talk to satellite B will talk to satellite C. For the time being, though, that's pretty much the limit of our vision. There is not much application for looking outward. One of these days, a long time from now, there may be. But for the time being, satellites pretty much just talk to people on the ground and occasionally talk to one another.

On Email And Telecom

My name is David. I'm interested to know how you think email is going to affect the industry for companies, revenues, market share, etc.?

BRIAN THOMPSON: They started MCI mail in 1982. I can tell you it was a great idea and it's finally, I think I heard, making profits big time for MCI this year. But it's only an \$80 or \$90 million business. Email is an adjunct business from our point of view. It is a great ancillary to data systems, but it's really not complex and it's something, unfortunately, that most people give away with their basic software. It is a very effective way of communicating, not just Internet but within companies themselves. It's a part of the basic services. I don't see it as a huge revenue generator in the broad scheme of things.

On Now And Then

Do you see the same opportunity like when AT&T broke up years ago as today? Do you compare anything, the same situation or in terms of technology?

BRIAN THOMPSON: In terms of market potential, if you were starting a company today, I think I would actually be looking into how I could get into the local competition. There will be all kinds of opportunities that will range anywhere from joining up with power utilities, through cable television entrepreneurs on their second wave of trying to make this thing work. I think the local marketplace continues to be a monopoly that's going to be under attack for the next 20-40 years. There were 500 billion local telephone calls made last year. There were only 47 billion long distance calls. It's taken us 20 years of hard work to get half of those 47 billion long distance calls onto somebody else's network. We have a long way to go in the local business, so I think I'd encourage people. They are not easy people to go up against, but I think it's a great opportunity.

On Globalization

I'm Steven Hall with the Center for International Business. Mr. Puente mentioned his trials and tribulations with Intelsat. I am interested in finding out, with the recent World Trade Organization ruling on worldwide decontrol of telecommunications, where you see your organizations capitalizing onto that. Also, about the privatization that's going on. We read a lot about these megadeals that some US companies are doing and I'd like to get your impressions of the international area.

MR. PUENTE: Well, I think that Intelsat is still a major powerhouse. It's still made up of all the telephone monopolies in the world. They want to go private. What they really mean by that, they want to be able to go out and raise capital in the capital markets just like any private corporation, except that they don't have a level playing field. In a lot of those countries, you still can't deliver satellites freely, so I would say that all the satellite people have to watch Intelsat and its privatization very closely. They are a major power and they could really overwhelm the start-up satellite companies. Fortunately today, we have other powerhouses like Hughes Networks, Loral, and other major players now entering the field like GE and Orbital. We would have some power to compete. But the Intelsat organization treaty still exists and it's something that has to be watched. They want to break it up, but how? We want to make sure it's on a level playing field.

BRIAN THOMPSON: Starting next year, the international marketplace is going to be unbelievably chaotic. It truly is. If you think we've been playing chess here in the US, this is three-dimensional chess, because of the arcane rules that govern accounting rate treatments and other things that are going to disappear.

Monopolies love order. What we've got is the breakdown of monopolies taking place internationally, especially in Europe, starting next year. There are going to be unbelievable things. They are already happening in terms of technology and other applications. You are going to see a huge change in the next couple of years in the international markets.

DAVID THOMPSON: All of us hate monopolies we don't own. I'm with John. We have been underdogs since we got started. I will say one positive thing about Intelsat—they're a great existence proof for profitability in the satellite service market. Even though they haven't been challenged to be as smart or as creative as they would be in a truly open environment—at least not historically, although that has changed quite a bit over the last ten years—nevertheless, last year on revenues of about \$9 million they had pretax income of almost \$400 million. As an existence proof, that's great.

On People Dynamics

Hi, My name is Timothy Spear of Ventara Corporation. How do you prevent a company that is very fast-growing, where you do a lot of delegation, from getting into turf wars and political infighting and utter chaos?

BRIAN THOMPSON: I think you've really got to work hard on performance-based reward systems. You really do. Human nature, unfortunately, is such that people believe that if they can suck up to somebody at the top, they can get ahead. That's something that really starts at the top. If you ensure that performance is rewarded, that you are able to give people out of the clear blue sky a reward for doing something that's unique—whether it's stock options or a bonus or even just recognition—you are going to find out that your whole organization will come around to recognizing that it's really performance that makes the difference, not collusion.

MR. WARNER: On that same note, team building is at least one of the things that we look at in companies. When we look at the idea and we look at the quality of the people, we also look at the quality of the entrepreneur and how willing he or she is to share equity with their team. Somebody who wants to keep it all for herself or himself is not somebody you want to invest with.

On Training And Education

Bert Katz, ARC International Corporation. A number of you spoke about people. I don't want to use the word "assets" because that implies ownership of people, but in human resources, what issues, what challenges do you see over the next five to ten years in terms of training and human resources? Obviously there is a knowledge component, but there is also a skill component. What kind of issues and challenges do you see our region facing in those areas?

MR. WARNER: We have huge, huge needs. Probably everybody in this room has heard the figures of 19,000 unfilled technology

jobs in Northern Virginia alone. If we don't do a better job in universities and other institutions of higher learning, not just in the region but throughout Virginia and Maryland and the District, these jobs are going to pick up and leave. One thing that is clear with entrepreneurial, technology-based companies, they don't have to be physically in any location. They don't have to be next to the river or next to the railroad line. Unless we can do a better job of training a work force, companies that are here today are going to end up somewhere else tomorrow.

I think to solve that problem we have got to stop thinking about it as simply the public sector's responsibility. It really has to be a cooperation between the public sector and the private sector. American business spends \$75 billion a year on continual training. A lot of us say if the school systems were doing a better job, perhaps they wouldn't have to spend that much. Business needs to recognize that they must do a lot more partnering with school systems a lot earlier. I'd say as early as the middle school. We have to do a much better job of vocational training because not everyone needs to be a rocket scientist. The work force shortage is an area that will be the major policy issue we'll have to face in this region.

On Competition And Commodities

My name is David Gross. I work for MCI and I'm also a private investor. One of the things we are seeing in telecommunications right now is the convergence of many different kinds of services, both wireline and wireless. In telephony, particularly wireless, you are seeing now three to five carriers in each MSA with PCS offices. This is creating a lot of competition. As you get more competitive, there is concern that the telecommunications industry is going to look an awful lot like the airline industry, where you have large capital outlays, lots of competition and essentially product where people are selecting purely on price. One of the results of these price wars is decreasing margins and, ultimately in some cases, takeovers and so forth. My question is, how is the telecommunications industry going to develop some guidelines for pricing power so that it doesn't become like the airline industry—constantly fighting price battles while it tries to cover huge capital costs?

MR. O'BRIEN: Well, since we're in wireless, I'll tell you how we've done it. Starting six or seven years ago, we projected a world that looks exactly as ugly as the world you just portrayed. We said, "What chance do we have in a world like that?" Our answer was, "We don't have any chance at all if we stay the way we are now." That was back in 1990-91. We made ourselves into something that we thought was differentiated from the way the rest of the world was going. So far we have a network that supports a differentiation, and our competitors don't. Now, are our competitors stupid? No. What I always say is you never have to worry about people emulating your failure. You have to worry about them emulating your success.

Of course, you are going to spawn emulation if you are successful. I'm sure our competitors are figuring out ways to knock off our successful differentiation or thinking about how to respond to it—that's what makes it so exciting. It would be wonderful to be a monopoly, but only if you are the monopolist. It's not wonderful to be in the business otherwise. So I'll take it this way. I'll take my chances.

MR. WARNER: Actually, I think the analogy doesn't completely hold. Airplanes move a person from point "A" to point "B." We are adding an incredible number of ancillary services. Look at the growth in the data market in the last few years, and we've just touched the tip of the iceberg in terms of how we are going to move the revolution around. There are a number of new wireless competitive opportunities—fixed wireless local loop, high gigahertz spectrum plays, last mile non-fiber alternatives—that are going to drive the cost of building network constantly lower. Is it going to be a competitive world? Absolutely. But is it going to end up the way the airline industry was a few years ago? I don't see that.

Where Does Wireless Compete?

Peter Shannon with Ventara Corporation. Coincidentally my question is similar to the gentleman before me, it's about competition. Will the emerging space-based communications systems be competing in the same markets as existing wireless and PCS systems? And if so, will that make the cost of entering this market for new players prohibitively expensive?

MR. O'BRIEN: In most cases, satellite systems have a set of attributes that make them very competitive in markets that tend to be poorly served or not served at all by land-based technologies. There are some exceptions to that rule, in the entertainment

segment of direct-to-home TV, for example. Over the last couple of years, we have seen satellite broadcasting go from supplying under-served or poorly-served low-population density areas to competing on a completely different basis with cable in higher population density areas. However, I think in general the model that influences a lot of our thinking is what we call the “doughnut” model.

There are three regions to the doughnut. There is the hole inside, that’s the urban centers. There is a certain set of technologies which work really well there, including a major contribution from fiber. Then there is the doughnut itself, where the explosion of digital wireless technology is probably going to promote quite a bit of growth. Lastly, there’s outside the doughnut—sparsely populated areas or areas which are highly populated but where the income density is low. That’s where satellites really have a strong competitive advantage. It’s going to evolve, and 10 or 15 years from now the proposition will be different, but I think for the near term that governs a lot of the thinking from a satellite operator’s perspective.

Are There Really Opportunities?

Thank you. My name is Bob Smith and I help nonprofit organizations make strategic use of interactive technologies. A year ago Congress passed what they termed landmark telecommunications legislation that was going to open up competition in the telecommunications world. However, since then, we have seen a lot of mergers, big companies getting bigger. Are there really new opportunities for entrepreneurs in telecommunications or networks, or are we going to see more of a contraction over the next couple of years?

MR. O'BRIEN: Do you mean “what is the opportunity?” or “are they out there?” There are a lot of good ones but I can’t tell you what they are.

MR. PUENTE: I think there is a great deal of opportunity out there and there will be some consolidation but there will also be a lot of new companies coming up.

BRIAN THOMPSON: I think it’s going to take a while before the bill finally acts. It’s going to be great. As I said earlier, I think there are going to be great opportunities in the marketplace.

DAVID THOMPSON: I’m also an optimist in that regard.

MR. WARNER: The bigger a company gets, the slower and more lumbering it becomes and the more niche opportunities there are.

On Internet Service Providers

My name is Ken Pittman with Woodard Walker Associates, a telecommunications consulting firm. Mark, can you give me the opportunity to invest in an Internet service provider? If it’s midrange, what’s the ideal profile, if you can, for an Internet service provider and would you take a position on how to break even?

MR. WARNER: I think you are going to see, very quickly, consolidation in the ISP market and, frankly, that’s something we are looking at right now. I don’t know all the specifics, but I think you are going to see a number of opportunities come along.

Part 4: Closing Comments

MARIO MORINO: A Unique Opportunity. A Unique Time. A Unique Place.

First, I want to give our speakers a fantastic thank you, because I hope you realize you got an advanced graduate course in business and entrepreneurship from these people tonight. Thank you very much. There were so many things that rang solid. I just kept shaking my head the whole time. I learned a lot tonight and hope you did as well. I want to recap a few things that were so cogent and vivid and I can't emphasize enough how important they are.

Brian talked about the importance of great people. Never, ever underestimate that one fact about who you are going to war with and how you are going to build the company. David talked about the importance of passion; what he described as being irrationally driven. Mark spoke of the need to find your niche, and be one-off. Great advice. John spoke of the optimism necessary to overcome barriers. Morgan had a great comment about the need to be grown-up, recognizing life for what it is, not trying to do something that is beyond your control, outside your reach entirely.

Morgan also had a point that I'm a firm believer in. You have to have compelling knowledge. If you are into space, no one can know more than you or they are going to eat your lunch. It's that simple.

Brian talked about the need to deal with ambiguity and uncertainty. This is no longer an option; it is an absolute fact of life. It is the staple of how you have to exist today.

Morgan spoke about execution. It's not just ideas or dreams. One piece of advice he gave you: Quit talking about stuff. Go do it. Boy, do we say this over and over again.

And finally, John talked about the issues of unrelenting perseverance. And you heard it from everybody: Don't quit. Don't quit. Keep on going.

But the thing that hit me hardest—I have heard it over and over again, and now to hear these five all say it—listen to how many times the word opportunity was used tonight. They talked about a unique opportunity, the evolution that it's creating. Whether it's AT&T's changeover, deregulation, innovation—it's about massive change and change creates enormous opportunity. You have unique opportunity at a unique time and you are in a unique place. As David said, we are lucky to be here, now, in this situation.

Thank you and good luck.