

VoIP: Impact and Strategy for SBC/AT&T
Technology, Business Opportunity, Marketing Strategy and Economics
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Executive Summary:

This research paper is prepared to explore the Technology, business opportunity, marketing strategy and economics for AT&T/SBC in the communication market.

The AT&T/SBC merger has created a biggest communication giant in the world. However, the incumbent has not given so much consideration to the VoIP in their business. On the other hand Skype.com has reached up to over ten millions.¹

VoIP is a disruptive technology that uses the killer apps to set up the whole new business models. Telecommunication companies provide very simple service and made incredible amount of profits without sharing or investing in the emerging technologies that could have added value into the consumers.

VoIP is a Internet based telecommunication service that offers much more convenience at almost no cost unless the call is not terminating on the local carriers network. It offers the flexibility and convenience of virtualization. We can use our laptop to check the voice messages, caller's info from one part of the world to the other without paying the roaming charges!

Avaya analysis is presented in this paper that shows in 2005 companies installed more VoIP lines than the conventional phone lines. The experts predicted that in 2008 there would be approximately 50 millions VoIP lines and approximately 10 millions conventional phone lines. Based on this analysis it seems very compelling that VoIP would wipe out the conventional phone systems and the incumbents phone career.

¹ CNet.com Telecommunication

Introduction

Internet telephony or Voice over Internet Protocol (VoIP) began in 1994 with PC-to-PC connections over the public Internet, pioneered by Israel-based Vocaltec. While these services remain, they are effective only between computers enabled with the same software. Nonetheless, it is a category that is growing (Clark, 2004). As the market continues to grow and new providers enter the market, consumers will be the winners benefiting both from cheaper telephony and innovation. When VoIP technology was developed there were concerns over voice quality, security, and reliability. With improved technology, those concerns are fading and VoIP is starting to take hold. Businesses large and small are turning to VoIP.

Technology and VoIP:

VoIP allows making telephone calls using a computer network, over a data network like the Internet. VoIP converts the voice signal from telephone into a digital signal that travels over the internet then converts it back at the other end so, speak to anyone with a regular phone number. When placing a VoIP call using a phone with an adapter, you'll hear a dial tone and dial just as you always have. VoIP may also allow making a call directly from a computer using a conventional telephone or a microphone.

The logical explanation of VoIP²:

The figure is adapted from <http://www.fcc.gov/voip/> for academic research purposes only.

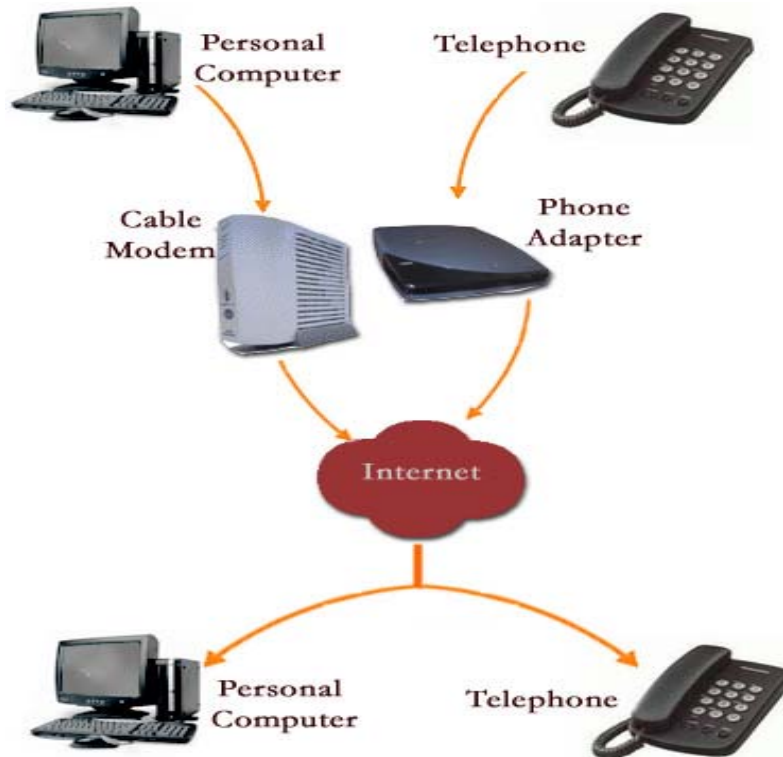


Figure 1.

In figure one a logical explanation of VoIP is presented. As explained in the paragraph above that a VoIP call is generated by two ways. It can be originated from a regular phone which is connected with an adapter. The adapter is plugged into an Ethernet connection that is connected to the Internet. The call could be terminate either on the PC or on the regular phone. However, if the call is terminating on the regular phone the local phone company may bill the caller for the termination charges. However, if the call is terminating on the PC using the Internet technologies then there is no termination charge because the call travels only on the Internet infrastructure and the local phone companies do not get involve in the termination process.

² <http://www.fcc.gov/voip/>

The change is supposed to be happening due to expedite usage of broadband services around the globe. Computer ownership and Internet access have grown remarkably. According to the Pew Internet & American Life Project, nearly two-thirds (63%) of American adults use the Internet and nearly 75 percent of those between 12 and 17 use the Internet³. Nearly 56 percent of U.S. households have one or more cell phones, nearly 150 million users.

The following paragraphs are adapted from the speech of FCC Chairman Michael K. Powell

Chairman, Federal Communications Commission

***THE AGE OF PERSONAL COMMUNICATIONS” Power to the People” The National Press Club,
Washington D.C. January 14, 2004***

High speed broadband connections are being adopted quickly as well. Nielsen Net Ratings reported last week that 50 million Americans now access the Internet from home using high speed connections. When I became Chairman, that number was a mere 12 million. And, if we need any further evidence that high speed Internet connections are approaching a tipping point, consider that during the six months between last May through November, 10 million people were added to the broadband ranks.

The Internet is growing rapidly as a critical source of information. Between 2000 and 2002, the online news population grew by 50 percent; those seeking health information online grew by 59%; the number seeking religious information nearly doubled; those searching for political news increased to 57%; the number who used government web sites grew by 56%; the number using e-commerce grew by 63%; and online banking grew 127 percent.

A striking fact from a more recent study is that this year nightly network news was named as a regular source of campaign nightly news by 35 percent, down from 45 percent four years ago; and

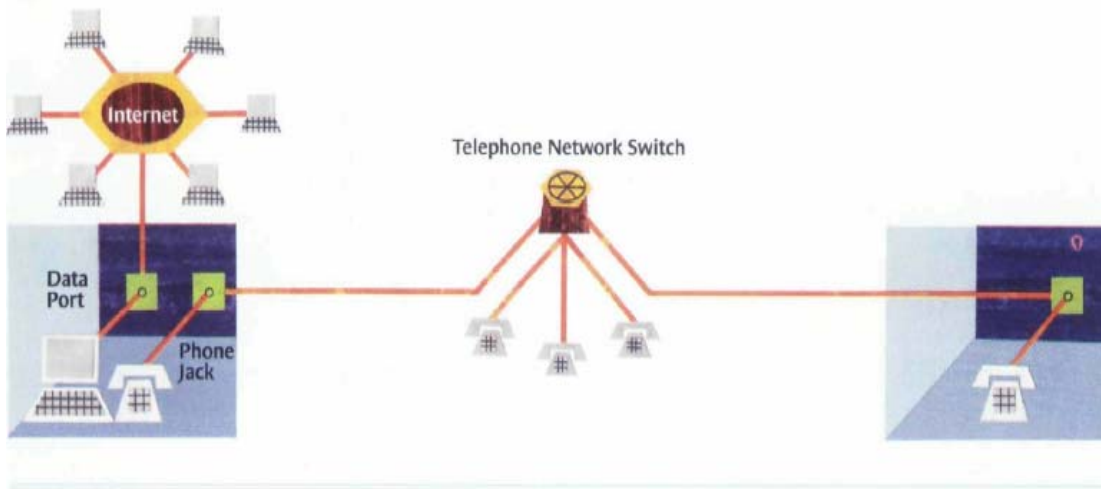
³ Pew Internet & American Life Project, reference published in THE AGE OF PERSONAL COMMUNICATIONS “Power to the People” (As prepared for delivery) The National Press Club, Washington D.C., January 14, 2004

newspapers by 31 percent, down from 40 percent four years ago. As Andrew Kohut of PEW stated: “Cable news and the Internet are looming larger as sources of campaign information as fewer people say they’re getting news from traditional sources such as newspapers and broadcast television.”

Conventional and Digital Voice Systems⁴:

Conventional Calling Versus VoIP

Conventional telephony sends voice communications over a dedicated telephone network that is separate from the Internet.



VoIP telephony turns speech into digital packets that can travel over the Internet and interact with other data and devices that use the Internet. Calls can move between conventional phones with VoIP converters, specialized VoIP phones, and computers running VoIP software.

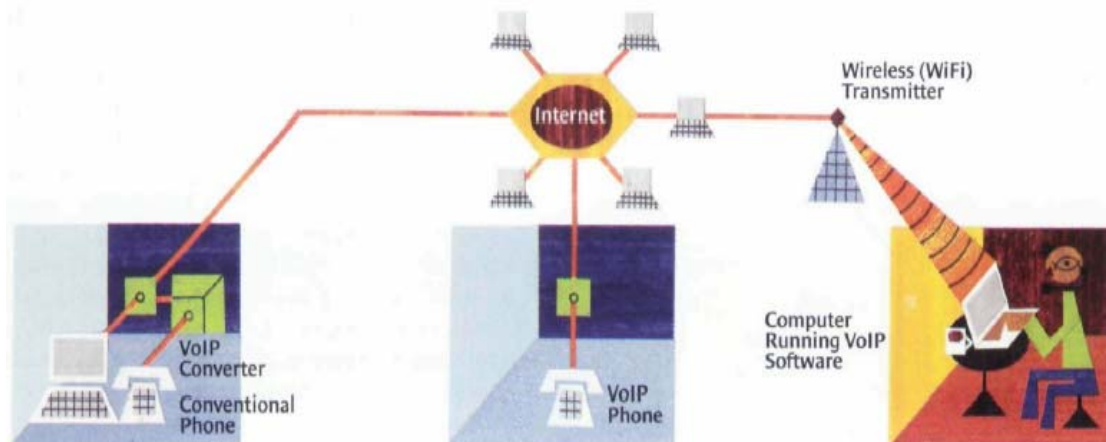


Figure 2.

⁴ Source: Using VoIP to Compete; Harvard Business Review, September 2005, page 143

This figure is adapted from Harvard Business Review, September 2005 issue. The article was published by the Kevin Werbach, Assistant Professor, Wharton Business School, University of Pennsylvania. Professor Werbach explains the process of VoIP in these two diagrams titled as figure two. The first part of figure two is conventional and the second part is IP based. Setting VoIP system is a very basic thing that does not require any complicated installation or deep tech knowledge. Using a conventional phone is easy as someone just need to set the adapter with the Ethernet line and setting up the PC to PC VoIP is again a very basic operation. For personal use some can just use Skype.com to make phone calls for free of cost. However, VoIP is a something the can be customized to full fill the special needs of any organization.

Professor Werbach mentioned in his article with reference to a research completed by Avaya Analysis, research completed by multiple analysts. The graphical explanation is give at the end of this picture as a figure three.

Worldwide VoIP Lines and Conventional Lines, Avaya Analysis⁵:

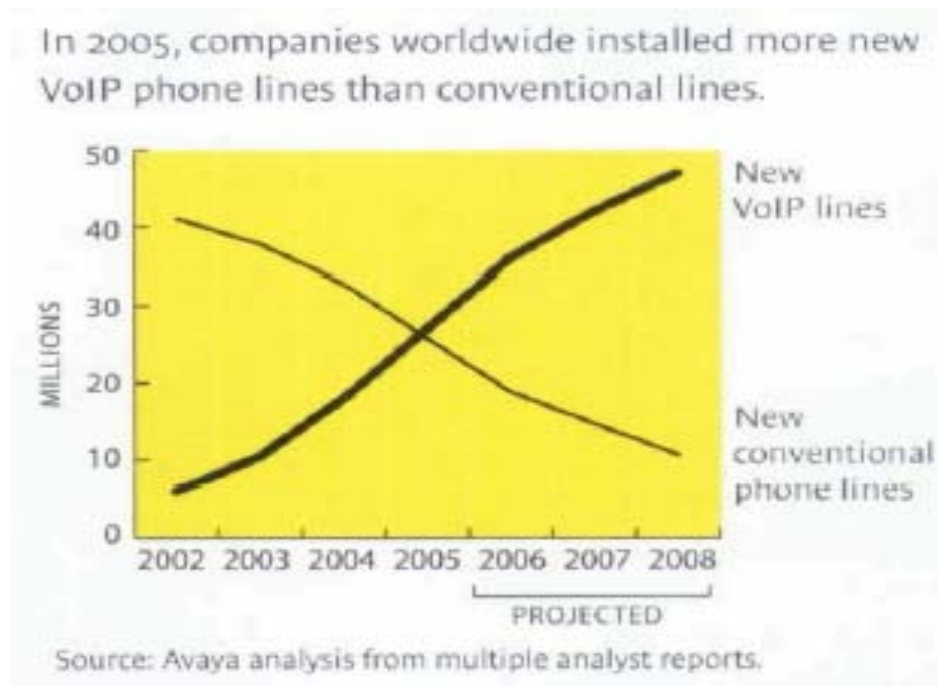


Figure 3. Adapted from Harvard Business Review, September 2005 Issue. Page # 144

The very interesting thing that could be analyzed is the trend of VoIP connections and the conventional lines. In 2005, VoIP and conventional lines were equal and analysts predict that in 2008 the VoIP connections would increase to approximately 50 millions whereas the conventional phone lines would decrease to approximately 10 millions. There is compelling reason that the disruptive technology is adding value that incumbent phone companies never did before.

Professor Werbach in his article published in the Harvard Business Review in September 2005 mentioned that VoIP's potential as a strategic tool, consider its roles in terms of three type of capability: virtualization, customization and intelligence.

⁵ Source: Using VoIP to Compete; Harvard Business Review, September 2005, page 144

VoIP as a technology offers the facility to take the virtual version of phone at any location. In the virtualization author describes the following:

Virtualization:

Portability; the virtuality of VoIP offers the service of portability. For example a person with laptop that has VoIP software installed could take the phone calls in another continent, check the voice messages and talk to caller without being worried of paying enormous amount in long distance or roaming charges.

Scalability and Redundancy; with the arrival of a new employee a new phone line could be set within minutes without calling the phone company. All the services that employees would like to have are also offered without any difficulty like voice mail, message forwarding and so on.

Flexibility; VoIP is so flexible that developing new applications could be developed without any thorough knowledge software development in just minutes to meet the demands of every business. New business can be developed on the existing technology. For example, call centers are adopting the VoIP business model to provide better services to customers and employees.

Customization:

VoIP made it easy to develop new features without any difficulty and delay. Features can be added, deleted or modified to meet the specific needs. The customization offers the followings:

Brand Building; the VoIP application helps to build the brands to make the business unique. For example welcome messages can be set to meet the goal of the organizations or certain messages could be set for certain timings.

Customer Service; Wynn Las Vegas has installed VoIP services for guests as a strategy to delight its guests.

Internal Communications; Since the messages are saved in the digital data form they can be retrieved from the servers at anytime to improve the customer service environment.

Intelligence:

VoIP would make it possible to integrate the information due to its digitization quality. Although we are all aware of the potential of VoIP but it is too early that would be evolve of this technology.

Linking Communication and Processes; with VoIP it is possible to connect all devices that has the ability to connect to the Internet. Laptop, PC, PDA or mobiles phone are all capable of utilizing the VoIP functionality.

Business Opportunity

A recent Radicati Group study indicates that the number of worldwide corporate telephone lines that use VoIP will leap from 4 percent to 44 percent by 2008. Meanwhile, Gartner Dataquest predicts that enterprise spending on IP phone systems in North America will more than double during the next few years to reach \$4.2 billion in 2007 (VoIP, 2005). A report by the Yankee Group, a market research firm, predicts the US consumer VoIP market will explode from 130,00 subscribers at the end of 2003 to 17.5 million subscribers by 2008 (Ortiz, 2004). With the savings and flexibility that the technology already offers, and new advances just ahead on the horizon, we can expect those numbers will only increase in the future (VoIP 101, 2005).

Today, VoIP is a substitute for traditional telephone service. The market must be expanded to

include all wire-based consumer telephone services. Currently, wireless telephone service is a different market, though VoIP wireless is in early development. In the near future, traditional telephony, VoIP and wireless telephone service will be recognized as substitutes for each other, and thus should be subject to the same regulatory standards.

Although the technology has been around for over a decade, most Americans have never heard of VoIP. But once the word gets out about the capabilities and cost savings of VoIP, millions of people will be lining up to change over from their traditional long distance calling plan. VoIP will revolutionize how and what people think and know about the current phone systems. Simply put, VoIP turns analog audio signals and turns them into digital signals that are then sent over the internet. What this means is that users can bypass the phone company and the monthly service fees and make phone calls over the internet.

VoIP has come into light recently along with the promotion and availability of high speed Internet access. The first VoIP providers on the market are pioneering companies who have struggled to bring forth the technology to the consumer. Finally, VoIP is getting the attention of the major telephone carriers and cable companies. Realizing the potential of the technology, these telephone carriers and cable companies are rolling out their own VoIP plans throughout the country.

VoIP offers some unique advantages over traditional phone calling for both the residential and corporate customer. For the basic consumer who is not technically savvy, VoIP affords a cheap and simple way to make phone calls from computer to computer for free without a calling plan. What is required is software which is available for free on the internet, a microphone, speakers, a sound card, and of course an internet connection. Today's consumer is becoming increasingly mobile. VoIP technology fits in with this trend by allowing someone to make a call anywhere where there is a broadband connection. With VoIP all that is needed is a laptop and a connection to the internet.

Large companies are already utilizing VoIP technology by conducting all intra-office calls through a VoIP network. Some international companies are using VoIP to route international calls through the branch of their company nearest the calls destination and then completing it on an analog system. This allows them to pay local rates internationally and still utilize the same intra-office VoIP network that they would if they were calling someone in the next cubicle over. Other features of calls made over the Internet include checking your voicemail via your e-mail, or attaching voice messages to your e-mails.

Small and large enterprises are lining up to take advantage of what VoIP has to offer and government legislation is supporting VoIP growth.

The Telecommunications Act of 1996 was written to “promote competition and reduce regulation in order to secure lower prices and higher quality services for the American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies. The Act forced Local Exchange Carriers (LECs) to open their network to Competitive Local Exchange Carriers (CLECS) and set the stage for providers to begin to offer VoIP SERVICES bypassing the LEC network and using the LECs’ access network as a means (Economides, 1998).

The Act also opened up the long distance market to LECs allowing them to provide interLATA (between two Local Access Transport Areas) services. Although Congress planned to promote competition, their intent was to allow the LECs to enter into the long distance market. The RBOCs are urging Congress and the FCC to classify VoIP as a telecommunications service rather than an information service as defined by the Telecommunications Act of 1996 while VoIP service providers seek the opposite. The FCC is treading lightly because a decision on regulation will have a tremendous impact on the future of the technology (Trojecki, n.d.).

As VoIP gains momentum, new legislation is being introduced to address the growing market.

The House Subcommittee on Telecommunications and the Internet is debating a bill that aims to create a national franchising system for cable TV and Internet service providers. If passed, all the major carriers and cable players will fight each other with the all-in-one television, Internet, and voice communications service on a national scale (Bill To, 2006).

The government’s broadband strategy encourages “intermodal” competition (cable companies against regional Bells, for example) while discarding policies that promote “intramodal” competition

(regional Bells against competitive local exchange carriers, for example the government argues that cable competing against the regional Bells' DSL services is sufficient to deploy affordable, high speed broadband. The government is also counting on market entry by fixed wireless, satellite, and fiber services, and by broadband over power lines (A National, 2005).

Meanwhile, the "regulatory underbrush" (mainly rules enabling competitive LECs and others to provide broadband by requiring access to incumbent carriers' facilities at regulated prices), must be removed because it distorts the market and dampens incumbent carriers' investment in broadband infrastructure. The government also opposes promoting intramodal competition by requiring cable companies to give other Internet service providers non-discriminatory use of their broadband pipes (Martin, 2001). But in a market run by cable and the regional Bell companies, a competitive environment seems stifled.

AT&T Strategy

With 80 percent of the U.S. population already subscribing to paid TV service, the TV market will not be an easy one for AT&T and the Bells to break into. As a result, they will need to differentiate themselves in some way. Internet-based TV (IPTV) could be the answer. Viewers can download only the TV show or movie they want, when they want it and can interact with the content. For example, users could set up a slide show of their own digital pictures.

The telcos will need access to movies and TV programming that is already available to cable and satellite operators. Content providers such as Viacom, Disney and NBC Universal will work with the

telcos and add a new distribution channel for their content (Reardon, Hu, 2005).

Another competitor, Verizon, has a different strategy than SBC/AT&T. In order to get to market quickly, Verizon's television service will initially be based on traditional broadcast technology that will allow it to deliver digital and high-definition television over its network, a service that is almost identical to what cable companies currently offer. It plans to add IP capabilities to the service later (Reardon, Hu, 2005).

By contrast, SBC/AT&T plans to go straight for IP-based TV and has earmarked \$4 billion to upgrade its network with fiber-optic lines and newer DSL technology to boost enough bandwidth to support video. Called "Project Lightspeed," SBC has already signed up Microsoft and Alcatel to build out the system for consumers. Microsoft will provide software to power the interface that consumers see on their TV screens, representing a huge coup for the company (SBC "Project Lightspeed", 2004). SBC has said it will start testing its IPTV service by the middle of 2005 with commercial deployment by the end of the year (Cauley, 2005).

SBC's IPTV service, called U-Verse, allows SBC to add more digital features, such as digital video recording and more high-definition stations, without needing a lot of bandwidth. Viewers will get on-screen caller ID when someone calls, and the ability to watch multiple screens showing multiple

angles during live events (Cauley, 2005). SBC has hired a number of satellite TV executives to help the Bell strike deals to host outside content. SBC will begin launching U-Verse to select customers by the end of 2005 (Reardon, Hu, 2005).

Besides an extensive array of communications offerings, the new SBC/AT&T has many advantages over its competitors in capturing a large share of the VoIP market. Even government policy is in favor of AT&T and the telcos. The federal government says it wants everybody to have high-speed, affordable broadband service and is removing the regulatory underbrush to create a competitive environment (Martin, 2001). The government's broadband strategy encourages "intermodal" competition (cable companies against regional Bells (A National, 2005), But in a market run by cable and the regional Bell companies, a competitive environment seems impossible. Again this is good news for AT&T.

AT&T's position in the VoIP market is very strong and the competitors are taking notice. With the acquisition of AT&T, SBC Communications has officially become AT&T Inc. and has become the largest telecommunications company in the United States and one of the largest in the world. The combined company is the largest U.S. provider of high-speed DSL Internet services and local and long-distance voice services and the No. 1 provider of data services to the Fortune 1000 (SBC To Acquire,

2005).

AT&T's current VoIP services for business include solutions for corporate networks, branch offices and call centers. Corporate networks can receive high quality voice communications and seamless connectivity. Branch offices can receive advanced features and benefit from productivity enhancements of IP telephony. Call centers evolve to be IP based thus gaining new efficiencies and capabilities to serve customers. These services are powered by AT&T's IP-MPLS network which is standard based and designed to support open protocols such as Session Initiated Protocol (SIP) which provides the interoperability and scalability that your business needs for next-generation communication applications (Convergence, 2006).

AT&T's strategy also includes deep price cuts on their DSL service. AT&T will offer 1.5 Mbps for \$15 per month, and 3.0 Mbps for \$25. But subscribers must sign up for one year and also subscribe to SBC's phone service. After the first year, DSL rates go up to \$50 per month for 1.5 Mbps and \$60 for 3.0 Mbps (Wilhelm, n.d.).

The new AT&T owns 60 percent of Cingular Wireless, which is the No. 1 U.S. wireless services provider. The combined company is poised to lead the industry in one of the most significant shifts in communications technology; the deployment of integrated services based on Internet Protocol, giving

customers access to virtually any services, anytime, anywhere (Cingular Nabs, 2004).

Cingular Wireless has dabbled in bundling services and integrating products from its parents with its own wireless service. The hope is that if customers buy more than one service, they will be less likely to cancel any one service in that bundle. The benefit for customers is simplified billing, better value on the total package of services they are buying, and in the future, more integrated services. Eventually, cable operators and phone companies will offer similar service packages. But it is a lot easier to launch a VoIP service to compete against the phone companies than to build a new network to compete against the cable companies on video (Reardon, 2005).

Edward E. Whitacre Jr., chairman and CEO of AT&T Inc. said it best. "The combination of SBC and AT&T companies gives us the local, global, and wireless network resources and the expertise to set the standard for delivering meaningful innovations and making the promise of integrated communications and entertainment a reality for consumers and businesses (New AT&T, 2005).

If AT&T wants to establish a dominant share of the VoIP market, it must entice businesses and consumers alike to transition over to VoIP. The strategy must be geared towards the needs of the market which are evolving as the technology evolves. But meeting customers' needs with regards to product offerings is not enough. With telcos, cable and other providers offering up similar products and bundling options, AT&T strategy must be to set itself apart from the crowd. AT&T must focus on the entire

customer experience if they are to lead the pack.

Research indicates that companies emphasizing the customer experience see higher profitability. One of the leading thinkers of the customer experience is Frederick Reichheld. Reichheld describes the three “D”s of customer experience in a recent article written for the Harvard Business School: design the right offers and experience for the right customers, deliver these propositions by focusing the entire company on the customer with an emphasis on cross functional collaboration, and develop capabilities to please customers again and again (Simpson, 2005).

Customers interact with different parts of the organization across a number of touchpoints, including purchase, service and support, upgrades, billing, and so on. A company can't turn its customers into satisfied, loyal advocates unless it takes their experiences at all these touchpoints into account.

To ensure effective delivery, the leaders must first create and motivate cross-functional teams—from marketing to supply chain management—to deliver their value proposition across the entire customer experience. Second, they must treat customer interaction as a precious resource. The ultimate test of any company's delivery lies in what customers tell others. The best companies find ways to tune in to customers' voices every day (Allen, Reichheld, Hamilton, 2005).

Top-performing companies also create processes that seek direct, immediate customer feedback—not simply to ensure that things are going well but also to build in methods of systematic innovation and improvement. AT&T should create a group of customers for ongoing web-based focus

group who discuss issues, complaint, and concerns which may need attention (Allen, Reichheld, Hamilton, 2005)

Competitors

An analysis of AT&T's main competitors for the VoIP residential market share yields some interesting results. Among the players are Vonage, Primus, Cablevision and 8X8. Some of these companies are established in the market, nevertheless their names may not be familiar to the average consumer. Some of their offerings cross paths with AT&T.

As of 2004, Vonage has enjoyed a healthy growth rate at about 250,000 subscribers. Vonage leads the pack of competitors with regards to service coverage, mind share, channels, funds raised, first mover and subscribers. Vonage's aggressive advertising presence includes print, radio and internet. Most importantly Vonage has developed an extensive channel coverage including Radio Shack (over 3700 locations), Stspls (over 1100 locations), Circuit City, Best Buy and Office Depot (Arnold, 2004).

AT&T's recent rollout of CallVantage has established itself as a strong alternative to Vonage.

AT&T operates the largest IP network in the United States, and can provide all the requisite features for full primary line replacement--QoS, LNP, 911 and CALEA compliance. AT & T is developing channels is in over 600 locations, primarily with Best Buy, and Amazon. For the DSL market, AT & T has

partnered with Covad for local access. More than any other VoIP provider, AT & T has the brand name; a critical intangible that gives it an edge for long-term growth. Furthermore, of all the VoIP operators, AT & T might have the most at stake to succeed in this market (Arnold, 2004).

Primus' VoIP offering, Lingo, was launched in June of 2004, and like AT & T, it is entering the market primarily to counter the decline in its core long-distance business. Lingo actually has a broader footprint across the United States, although AT & T is quickly expanding its rollouts (Arnold, 2004). . Primus, with operations in North America, Europe, Australia and Asia, first entered the VoIP market in 1999 and owns and operates an extensive global network, including a VoIP network which spans 150 countries and carries nearly 2 billion minutes of worldwide VoIP traffic annually (About Lingo, 2005). Similar to AT & T, Primus operates its own network, and has an edge over virtual operators such as Vonage and 8X8 in terms of QoS. Primus is adopting a price leader approach. Primus operates an extensive global VoIP network, which allows it to market Lingo as an international offering (Arnold, 2004). With more domestic and international coverage than any of the major VoIP phone providers in the U.S. today, Lingo consumer and small business subscribers can select U.S. phone numbers from over 300 major markets, and international phone numbers from cities in 15 foreign countries (About Lingo, 2005).

Cablevision Systems Corporation (NYSE: CVC) is one of the nation's leading telecommunications and entertainment companies. Its portfolio of operations ranges from high-speed internet access, robust digital cable television as well as advanced digital telephone services, professional sports teams, world-renowned entertainment venues and national television program networks (About Cablevision, n.d.).

Cablevision's Optimum Voice was launched in September 2003, and has been the most successful VoIP launch among MSOs.. With an aggressive \$90 bundle for voice, video and high-speed access, Optimum Voice has attracted some 115,000 subscribers, which represents 10-percent of its 1.1 million broadband subscribers (Cablevision Chooses, 2004).

In addition to the \$90 bundle, Cablevision is offering to set up VoIP for up to five phones in the subscriber's home for free. These combined offers may fuel the success of MSOs as the other majors roll out VoIP (Arnold, 2005).Cablevision's Optimum Online and Optimum Voice have been named the top high-speed Internet and VoIP services in the nation by the readers of PC Magazine (Optimum Online,2005).

Another company, established in 1987, is winning industry accolades. Although a small company, 8x8 Inc., originator of the Packet8 Broadband Phone Service, is one of the industry's leading

VoIP and videophone communications service providers. The company currently holds 49 United States patents with additional patents pending (Company Overview, n.d)

The Packet8 residential phone service incorporates 8x8's proprietary technology in an affordable, easy-to-use calling service delivered over DSL, cable modem or other high speed internet connections. 8x8 introduced the Packet8 Virtual Office system, a full-featured hosted PBX VoIP solution for small to medium sized businesses. The Packet8 DV 326 Broadband consumer VideoPhone was unveiled at Supercomm 2004 and has since received high marks for its exceptional quality, ease of use and consumer friendly pricing (Uniden and 8X8, 2004-2005).

It is believed that 8X8's subscriber base is one-tenth of what Vonage reports, making it the second-largest operator. Faced with the major challenge of acquiring subscribers on a cost-effective basis, 8X8 has chosen the price-leader approach. In contrast, Vonage employs heavy marketing to attract subscribers. 8X8 develops much of its software and endpoints in-house. As a result, its offering is low priced, but really only suitable for second-line service (Company Overview, n.d.).

Like Vonage, 8X8 has developed several channel partners, including Zones, CSI and Fry's Electronics. Interestingly, 8X8's main point of difference is a videophone offering. 8X8 is arguably the most successful virtual operator after Vonage, but it is impossible for 8X8 or any other providers to

duplicate what Vonage has done (Arnold, 2004, pg 9).

Cable operators are looking for ways to compete with the phone companies and to take a slice of their market away from them. Cable operators like Comcast are offering bundling services aimed to compete with the telephone companies (telcos). Offerings include high-speed data, telephony, TV, and now wireless. Part of their approach is to form strategic alliances with cellular phone providers. In November of 2005, Comcast, Time Warner, Cox Communications and Advance/Newhouse Communications announced a \$200 million joint venture with Sprint Nextel to offer customers wireless telephone service. The cable companies will get access to Sprint Nextel's 46 million wireless subscribers, and Sprint Nextel will get access to the 75 million homes that the four cable companies have already passed (Reardon, 2005

Cable companies such as Comcast, Time Warner Cable and Cox Communications have taken a significant lead in offering broadband Internet access to their TV customers. Many cable companies have packaged voice calling into their plans, creating a "triple play" of services that have caused customer erosion among the Bells (Khalilian, Mohammadi, 2004).

The Bells have responded by investing heavily in upgrading their networks to create their own triple-play packages. Verizon is in the process of running fiber-optic lines directly into millions of

homes to offer faster Internet access, hundreds of TV channels and calling plans. SBC and BellSouth are not running fiber into homes. Instead, they're running lines to neighborhood "nodes" and then delivering their services through common copper wires (Reardon, 2005).

The new alliance with Sprint Nextel will allow these four major cable companies to package wireless services with their Internet access, VoIP and television offerings. These bundles will be offered at a discount initially to attract customers. Bundling may not be profitable in the long run, but there is an opportunity to create unique products that are not available on their own. Experts predict that in the near future the cable companies and Sprint will integrate their services in ways in which wireline and wireless phone companies have not yet done. Some of the new product ideas that Sprint Nextel and the cable companies have talked about include a converged wireline-wireless voice mailbox, access to unique video content and the ability to remotely control digital video recorders, or DVRs (Reardon, 2005).

Verizon Communications is well on its way to challenging cable providers head-on in the paid TV market, as it rolls out an advanced new fiber-optic network and begins to attract high-level programming partners. Verizon's push into the TV market with its FiOS TV highlights the competitive pressures local phone companies are facing from their cable rivals (About FIOS, 2004 Its deal with

NBC Universal marks Verizon's first step toward tackling cable providers head-on in the paid-TV market. But the NBC Universal deal is its first major broadcast and cable content provider (Hagar, 2005).

AT&T Position

Finally, AT&T can squeeze small providers like Vonage out of the market by engaging in a price war. One of the challenges with Vonage and competitors of Vonage is that pushing through to national markets is a challenge as they are up against giants such as AT&T, Bellsouth, Verizon and Qwest. The other challenge is that the bigger VoIP service providers are able to offer small businesses nice discounts while this is difficult for the smaller stand-alone VoIP provider (Competitors to Vonage, 2004-2005).

Economics of VoIP:

Skype.com and VoIP⁶;

Skype is the pioneer in the VoIP market. It started Kazaa.com that changed the music world and then the two brilliant guys from Sweden came up with the compelling idea of having phone number without having it changed again and again. The idea is that if we do not change our email address no matter what part of the world we are at any given time, then why we should change our phone number

⁶ http://www.alwayson-network.com/comments.php?id=3723_0_8_0_C

and infact pay for the call. It definitely make sense and we strongly agree with the Skype.com founder Niklas that no one should pay for the phone calls!

Skype has grown more quickly than Kazaa (it passed 10 million downloads recently, just seven months into its release). Yet like Kazaa, and other viral, well-loved Internet utilities (HotMail, ICQ, Napster), its stated revenue strategy is difficult to fathom. Without a large user base, Skype would be nothing. And on this score at least, the product is an unqualified success. Skype, which is free to download and use, is one of those perfectly viral applications, and it's also good software. It's easy to install and use, works through firewalls, and lives up to its simple claims of providing clear Internet voice communications to it's users.

Economically, Niklas claims that one of Skype's biggest plusses is that he doesn't have to spend much money to acquire customers. Ordinary telephone companies spend upwards of \$700 to land a customer, according to Niklas. Even VoIP pioneer Vonage is advertising like crazy. Skype is growing faster than any other phone or VoIP service, and it's all happening by word of mouth.

The Economics and Benefits of VOIP in the Real World:

The following research is completed by Level3.com a 1025 Eldorado Boulevard, Broomfield, Colorado 80021 specialized in the Voice over the Internet Protocol.

VoIP today makes up a relatively small percentage of overall communications revenue. But the technology is growing rapidly. *Telephony Magazine* recently published figures stating that more than a third of all business phones shipped during the second quarter of 2003 were IP-enabled. Last year, Cisco

announced it had sold its 2 millionth IP handset. Gartner, the industry analyst firm, estimates that retail revenues from **VoIP** in the U.S. will grow at more than 40 percent a year through 2007.

It is impossible to enumerate all the advantages Voice over IP, in large part because the technology is so new, and many of its features have yet to be developed. But here is a sampling of the benefits:

Lower costs: VoIP leverages the inherent economic advantages of IP and allows voice services to be delivered at lower cost to end-users.

Convergence: VoIP allows the seamless fusing of voice and data applications onto a single platform – a concept known as “convergence.” A converged network offers businesses numerous advantages over the old, two-network voice and data system, including lower costs, simpler network management and the ability to deploy new applications that heighten both productivity and customer service.

Innovative tele-working: With Voice over IP, employees are less tied to bricks-and-mortar offices. For instance, a stay-at-home parent who works in technical support could use **VoIP** to direct incoming calls to his home office between the hours of 8:00 a.m. and 3:00 p.m., while his children were at school. During that “on” period, he would use his broadband connection to receive tech support calls at home, with full access to customer and product data stored on a remote company server. Such flexibility allows telecommunications-intensive companies to use part-time employees spread out in areas across the country.

Multimedia conferencing: VoIP enables multiple users to communicate with one another via voice and video while drawing on data sources like spreadsheets and financial statements. For example, it would allow members of an engineering team located in different parts of the world to work together on the

design of a building. They could collaborate via voice and share data and documents in real time to revise design specifications for the project.

High-power call centers: VoIP communications will enable call-center operators to provide more focused assistance to customers. IP technology allows the operator to receive calls and relevant customer data simultaneously. The operator can access case histories, account and credit information, inventory and shipping data – at the exact moment the customer makes contact.

Unified messaging: VoIP allows a user to have a single message platform for all types of communications. Rather than receive e-mail on a computer, voicemail on the phone, faxes on fax machines, and pages on a pager, Voice over IP can route all to a single unified mailbox. A voicemail can be converted into text using voice recognition software, and an e-mail can be converted into a voice message. Users can organize, store, and prioritize these messages in the manner that suits them best.

Location scheduling: VoIP users can create a daily location schedule (and update it anytime from anywhere) indicating where communications should be forwarded. In other words, a user could direct communications (of any form) to a mobile device during her commute, to her office during the day, to her brother's house during the holidays, and to a unified messaging center when she is eating dinner.

Simplified relocation: VoIP makes moves and changes much less painful and less expensive. In a circuit-switched system, a company moving an employee to a different office has to map extensions, re-program special call-handling features, activate new phone sets, and re-customize the employee's phone configurations. **VoIP** simplifies this process. Employees moving to an office in another country take their customized features with them automatically because configuration data is tied to the user rather than a physical extension. It's worth noting that, with traditional phone service, the set of features

available to businesses and consumers today – call waiting, caller ID, etc. – represent the pinnacle of technological achievement for the PSTN. With IP voice communications, by contrast, sophisticated features of the kind listed above are first-generation building blocks from which untold future applications will evolve and grow.

Conclusion

Although there is room for everyone to enter the VoIP market, entry for startups and virtual operators may be difficult. The scenario is bright for AT&T who as a facilities-based operator, will in all likelihood control much of the market. Furthermore, as VoIP matures, success will be driven more by marketing and brand recognition than the underlying technology, which plays into AT&T's hands as a major player in the field. The AT&T/SBC merger has created a biggest communication giant in the world. In this scenario, some of the virtual operators will be acquired or driven out of the market, and others will find a viable niche, probably on a regional basis (Arnold, 2004, pg 7).

AT&T can count on its venerable brand name to keep pace in a race for dominance. The new AT&T will lead the industry in delivering the next generation of new technologies (Internet telephony, wireless communications and on-demand television), and integrated solutions that deliver on the promise of virtually anywhere, anytime connectivity (Skillings, 2005).

Industry experts agree that VoIP is a technological revolution promising to enhance productivity

and increase the standard of living for all those who use it. Former Congressman David McIntosh says the U.S. could create more than one million high-tech jobs through universal deployment of broadband (Wilhelm, n.d.). In exploring the Technology, business opportunity, marketing strategy and economics for AT&T/SBC in the communication market, the results show that this communications giant will not only survive but will eventually lead the VoIP market.

Reference List

A National Broadband Strategy. (2005). Department of Communications, Information Technology and the Arts. Abstract retrieved April 4, 2006, from [http://www.dcita.gov.au/tel/internet and broadband services/overview of internet and broadband services/a_national_broadband_strategy](http://www.dcita.gov.au/tel/internet_and_broadband_services/overview_of_internet_and_broadband_services/a_national_broadband_strategy)

Arnold, J. (2004, November). VoIP on the verge: with incumbents and new entrants alike capturing residential market share, VoIP is on the threshold of something big. Telecommunications America. Retrieved April 1, 2006, from http://www.findarticles.com/p/articles/mi_m0NUH/is_11_38/ai_n8579931/pg_9

Bill to allow nationally franchised ISPs, VoIP under consideration. (2006, April 1). TG Daily. Retrieved April 4, 2006, from http://www.voipnow.org/2006/04/bill_to_allow_n.html

Business Plans. (n.d.). Lingo. Abstract retrieved April 4, 2006, from http://www.lingo.com/voip/business/office_plans.jsp

Cable Goes for the Quadruple Play. (2005, November 7). CNET. Retrieved April 2, 2006, from http://news.com.com/Cable+goes+for+the+quadruple+play+++page+2/2100-1034_3-5933340-2.html?tag=st.num

Cablevision Chooses IDT Telecom For International Long Distance Phone Service (2004, September 23). Retrieved April 3, 2006, from <http://ir.idt.net/profiles/investor/ResLibraryView.asp?BzID=566&ResLibraryID=7159&Category=30>

Can Employees Influence Culture. (2005, December). Cultural Intelligence. Retrieved April 3, 2006, from <http://www.keystone-management.com/newsletters/CI72.pdf>

Cauley, L. (2005, August 16). USA Today. Retrieved April 4, 2006, from http://www.usatoday.com/tech/products/gear/2005-08-16-iptv-sbc_x.htm

Cingular nabs AT&T Wireless for \$41B. (2004, February 17). CNNMoney.com. Retrieved April 1, 2006, from http://money.cnn.com/2004/02/17/technology/cingular_att/

Clark, R. (2004, February). The VoIP revolution telecom's biggest ever threat but not yet: uptake may yet be a trickle, but the cost-effectiveness and simplicity of IP will make it especially disruptive as it lowers the barrier to entry in the voice market. Telecom Asia. Retrieved April 4, 2006, from http://www.findarticles.com/p/articles/mi_m0FGI/is_2_15/ai_114325655/pg_7

Company Overview. (n.d.). 8X8, Inc. Abstract retrieved April 2, 2006, from http://www.8x8.com/index.php?s=company_overview

Competitors to Vonage. (n.d.). VoipReview.org. Retrieved April 3, 2006, from <http://www.voipreview.org/news.details.aspx?nid=5>

Convergence, A Four Point Framework. (2006). AT&T Portfolio White Paper Series. Abstract retrieved April 1, 2006, from http://www.business.att.com/service_portfolio.jsp?reporid=ProductCategory&reporitem=eb_voip&serv_port=eb_voip&segment=ent_biz

Corporate Information. (n.d.). Cablevision. Abstract retrieved April 3, 2006, from http://www.cablevision.com/index.jhtml;jsessionid=WRUKS1SUSFD3MCQFSALCFEQ?pageType=about_cablevision

Economides, N. (1998, September). The Telecommunications Act of 1996 and its Impact. Retrieved April 2, 2006, from <http://www.stern.nyu.edu/networks/telco96.html>

FCC Ignores Digital Divide While US Broadband Drops Worldwide - US Broadband Penetration Nears 60% in July - August 2005 Bandwidth Report. (2005). In Website Optimization (chap.) Retrieved April 3, 2006, from <http://www.websiteoptimization.com/bw/0508/>

Frederick, A., Reichheld, F., & Hamilton, B. (2005, November 7). The Three "Ds" of Customer Experience. Working Knowledge. Retrieved March 17, 2006, from <http://hbswk.hbs.edu/item.jhtml?id=5075&t=marketing>

Hagar, S. C. (2005, April 18). Verizon and NBC Universal Cable Reach Extensive Agreement for Distribution of NBCU Cable and Broadcast Networks. TMC net. Retrieved April 2, 2006, from <http://www.tmcnet.com/submit/2005/apr/1135325.htm>

Jani, T. (2000, May). Internet telephony: going like crazy. Retrieved April 4, 2006, from <http://ieeexplore.ieee.org/Xplore/login.jsp?url=/iel5/6/18231/00842135.pdf?tp=&arnumber=842135&isnumber=18231>

Khalilian, M., & Mohammadi, F. (2004, June). Carriers Win Big with Triple-Play IP Services. Soap Box. Retrieved April 4, 2006, from <http://www.phoneplusmag.com/articles/461soap.html>

- Legler, J. (2003, December 16). Regulating VoIP. Retrieved April 3, 2006, from http://web.syr.edu/~jslegler/writings/reports/regulating_voip.pdf
- Lent, L. (2004, October 1). The Transformation of the Telecommunications Industry. Retrieved April 3, 2006, from <http://web.si.umich.edu/tprc/papers/2004/334/Lent%20Paper.PDF>
- Martin, K. J. (2001, October 26). Framework for Broadband Deployment. Paper presented at the National Summit on Broadband Deployment. Retrieved April 1, 2006, from <http://www.fcc.gov/Speeches/Martin/2001/spkjm101.html>
- New AT&T Launches. (n.d.). SBC Knowledge Ventures. Abstract retrieved April 3, 2006, from <http://www.sbc.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=21906>
- Ortiz, S., Jr. (2004, December). Computer. Retrieved April 2, 2006, from <http://ieeexplore.ieee.org/iel5/2/30050/01377037.pdf?tp=&arnumber=1377037&isnumber=30050>
- Pascoe, M. (2004, October 14). SBC "Project Lightspeed" Targets Rapid Fiber to the Node Deployment. Converge! Retrieved April 12, 2006, from <http://www.convergedigest.com/Bandwidth/newnetworksarticle.asp?ID=12617>
- Power to the people who have fiber optic TV. (2004). Fios TV. Abstract retrieved April 4, 2006, from <http://www22.verizon.com/FiosForHome/Channels/FiosTV/aboutfios.aspx>
- Reardon, M. (2004, June 21). Rumble in the 'triple play' jungle. CNETNews.com. Retrieved April 2, 2006, from http://news.com.com/Rumble+in+the+triple+play+jungle/2100-1037_3-5242738.html

Reardon, M., & Hu, J. (2005, April 20). Verizon's Salvo on Cable TV. ZDNet News. Retrieved April 4, 2006, from http://news.zdnet.com/2100-1035_22-5677274.html

Reardon, M., & Hu, J. (2005, April 20). Verizon Communications is well on its way. CNET News.com. Retrieved March 12, 2006, from http://news.com.com/Verizons+salvo+on+cable+TV/2163-1037_3-5677274.html

SBC To Acquire AT&T. (n.d.). SBC and AT&T. Abstract retrieved April 10, 2006, from <http://sbc.merger-news.com/materials/am.html>

Skillings, J. (2005, December 29). Big ad campaign to usher in new AT&T. CNETNew.com. Retrieved April 1, 2006, from http://news.com.com/Big+ad+campaign+to+usher+in+new+ATT/2100-1033_3-6012123.html?tag=st.bp.story

Trojecki, M., Sr. (n.d.). VOIP Regulation. Retrieved April 2, 2006, from http://www.quovia.com/resources/PDFs/white%20papers/qovia_voip_regulation_wpaper.pdf

Uniden and 8x8 Introduce New Generation of Co-Branded VoIP Products; Packet8-Enabled UIP165P Delivers Complete, Feature-Rich Internet Phone Service Solution. (2006, January 5). VOIP Magazine. Retrieved April 2, 2006, from <http://www.voip-magazine.com/content/view/1342/20060105005080/>

VoIP 101: Voice over IP Explained (2005, March 18). Retrieved April 3, 2006, from http://www.voipnow.org/2005/03/voip_101_voice_.html

VoIP Market Trends: VoIP Gets Down to Business. (2005). Altigen Communications. Abstract retrieved April 2, 2006, from http://www.altigen.com/recent-articles/recent-art_FierceVoIP_1-05.html

Wilhelm, W. B. (n.d.). TMCnet. Retrieved April 5, 2006, from
<http://www.tmcnet.com/voip/0705/regulation-watch-bringing-affordable-broadband.htm>