FiOS

An All-Fiber Network

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Introduction:

Operating in 25 states plus DC, Verizon spent the last decade remaking their wireless, landline
and internet backbone network and expanding the range of products, applications and services they can
deliver to customers. Today customers do more than make phone calls and send e-mail messages. Customer’s use Verizon’s network to watch high-definition TV (HDTV), surf the internet, share photo’s, watch and download video content and conduct videoconferences around the world.

In a bold and expensive move, Verizon began constructing their Fiber to the Premise (FTTP) network which would later allow them to deploy Fiber Optic Service (FiOS) and become a direct competitor in the entertainment business. As of the end of 2008 Verizon’s fiber network is passed 12.7 million premises with a goal to reach 18 million by end of year 2010. Verizon’s all fiber network prepares them for the next wave(s) of growth that will come from a new generation of broadband devices, applications, and services that will use Verizon’s wireless and fiber networks to deliver advances in entertainment, education, commerce, and health care.

As a first mover in building an all fiber network all the way to the customers home Verizon is doing much more that simply connecting individuals. They are developing innovative network services that create communities where friends, neighbors, buyers and sellers, around the world can come together in unique and exciting ways. One of the biggest challenges for customers is bringing together all their digital experiences to make their lives more convenient and productive. Verizon’s one hundred percent fiber optic network will be able to provide a technical solution to the challenge of convergence by combining voice, data, and video services. Verizon’s fiber-optic network delivers a broader, more vibrant entertainment experience than any other provider. Customer’s get the best TV viewing experience possible and the fastest upload and download connection speeds. In providing data download speeds up to 50Mbps and upload speeds up to 20Mbps customers no longer have to wait while large files are downloading.

**Verizon’s Strategy:**
“When Verizon was created in 2000, it was their core belief that investing in technology was the key to creating value in communications. As services like video, photos, data, music, and games converged onto broadband networks, Verizon knew that businesses and consumers would demand access to this surge of digital content – create huge new markets for companies whose networks could transport all those bits and bytes, make them work together and help make customers ‘lives simpler, richer, and more productive” (Ivan Seidenberg Chairman and CEO).

Verizon is investing in technology to compete and grow to stand at the center of a digital marketplace. They strive to be a global leader in delivering innovation in communications, information, and entertainment to offer consumers, business, and government voice, data, and video services over superior wireless, broadband, and global IP networks that meet customer demand for speed, mobility, security, and control. They want to deliver the benefits of these advanced technologies and grow the company to drive the industry forward, which in turn creates value for shareowners, customers, and the communities they serve.

Verizon now has the technology base to grow the way other high-tech companies do; through innovation and win customers by building better wireless, broadband, and global IP networks and delivering the innovative products and content that transforms lives and empowers businesses and communities. Managing through these 6 strategic imperatives, increase revenue, take share from competition, increase productivity, improve profitability, provide the best customer service, create a culture of performance and execute a strategy based on investment and innovation Verizon has built world class networks that serves millions of customers at home, at work and on the move.

**FiOS Technology:**
FiOS video begins at 2 Super Head Ends (SHE) which are farms of satellite dishes that obtain national content via satellites. Each farm has 20 stationary and 3 steerable dishes where content consolidation and grooming into the national channel lineup for transport takes place. After consolidations takes place the content is passed through Verizon’s long haul fiber network where it reaches one of many Video Hub Offices (VHO). At the VHO the national lineup reception from the SHE and local content such as local channels, local weather, local TV guide, emergency alert system content, and public, education, and government (PEG) is consolidated. From the VHO, encrypted content travels through Verizon’s fiber Long Haul Network and then passed onto Verizon’s fiber Medium Haul Network (MHN) where it reaches a Video Serving Office (VSO). At the VSO video broadcasting content is combined with FiOS data and FiOS voice for distribution. Now all services, video, data, and voice are traveling through the fiber network as three different light waves until it reaches the in-home network. Here an Optical Network Terminal (ONT) which is installed either in or outside a home separates the three waves and distributes the voice over the copper inside wire, data content over the cat5e wire and the video through the COAX cable which are all connected to the ONT during an install. Then the customer has service packages which they signed up for.

Verizon vs. Competition

As the nation’s premier broadband and entertainment provider, Verizon leads the way in delivering ultra fast broadband using fiber optic technology. Other companies (cable TV providers) claim to use fiber, but only Verizon’s delivers fiber all the way to a customer’s house. Competition delivers the last couple miles of service through COAX which is non comparable to fiber when it comes to bandwidth. Furthermore, in Verizon’s all fiber network, each Verizon customer gets their own dedicated fiber (glass tube) directly to their home. Competition deliver’s their broadband and TV services through a shared COAX path to a customer home. For Verizon’s competitors this causes users in their neighborhood to compete for available bandwidth during periods of high usages. Verizon’s all fiber network has virtually unlimited capacity, which delivers faster two way speeds and better picture
quality than cable companies can offer. Verizon’s voice, data, and video services are transported through fiber over three separate high capacity wavelengths of light. This allows Verizon to offer more HD content than any other cable provider because Verizon does not have to compress signal to gain HD levels. Verizon delivers true uncompressed HD content.

**Porter’s Five Forces:**

To assess Verizon’s current position in the entertainment market we use Porter’s Five Forces Model. Here we can analyze Verizon’s rivalries, new entrants, consumers buying power, supplier power, and substitutes.

**Rivalries**

Verizon is entering into a new market, transforming from a traditional telecom provider to a broadband entertainment provider. They are entering into new territory that has been controlled by traditional cable TV providers for years. AT&T, Time Warner, CableVision, Comcast, and Charter are direct competition for Verizon. The main technology innovation that separates Verizon from their competition is the fiber service directly to the customer’s home.

**New Entrants**

The threat of other new entrants is considerably low. Traditional cable TV providers are already entrenched into the market and have monopolized it for years. It’s take a very stable and successful company with the capital to built such a network to compete with cable TV providers. Though the threat is low Web TV providers are beginning to emerge with no cost viewing of TV content.

**Substitutes**
The threat of substitution is low. Customers always have the option of not subscribing to TV service period or others can watch TV content on the Web.

**Buyer Power**

From a customer’s perspective they have the buying power of which service provider to choose. This creates a competitive rich environment for service providers.

From Verizon’s perspective they have the “buying power” as far as material, equipment, and tools for building and installing FiOS. Verizon controls Request for Pricing (RFP’s) and which supplier they buy from. Distributing RFP’s controls which vendors supply which material at negotiated pricing. This process is used for their vendors that supply ONT’s, Fiber Cable, Fiber Drop Wire, and routers for example. For smaller items Verizon has their own sourcing department that shop or hunt for the best price when tools and equipment is being purchased.

**Supplier Power**

Supplier power is held to a very low minimum by Verizon. As stated before, supplier power is controlled through RFP’s and Verizon sourcing department. Major suppliers bid according to Verizon’s specifications, pricing, demand, and forecast in order to win Verizon’s business.

**Product Market Matrix (Ansoff)**

We use the Product Market Matrix to map out where FiOS fits in the market. FiOS is building a presence in the cable TV market. FiOS is penetrating the entertainment market that has been controlled by traditional cable TV providers. Verizon FiOS is mapped in the Market Penetration sector of the Market Matrix because FiOS is winning customers away from cable TV providers. FiOS is offer in a present market of customers who already have TV service from a provider. Verizon is offering bundled services to current legacy customers and giving them the option of switching from their current provider. As of the end of year 2008 Verizon has marketed to 10M FiOS internet customers and 9.2M
FiOS TV customers. In the same time period Verizon has 2.5M FiOS internet and 1.9M FiOS TV customers.

**Growth-Share Matrix**

Using the Growth-Share Matrix we see Verizon moving into the STAR category. Market Growth Rate is relatively high but their Relative Market Share is still on the low side but making a move toward forcing an existence into the cable TV market. Total FiOS net adds results for the 1st quarter of 2009 are up 13.5% of the 1st quarter of 2008. March 2009 ended with 230k net FiOS adds which equated to a 30.4% increase over February’s 2009 net adds. Cable TV companies are feeling Verizon presence.

**The Technology S-curve**

The Technology S-Curve shows Performance/Cost savings over time compared to Time/Engineering efforts. Verizon’s engineering effort over time show the transformation of technology going from Dial-up to DSL to FiOS. The transformation of technology takes us from the early stages of broadband use to unlimited bandwidth that exists with Verizon’s fiber network today. As new technologies are engineered network performance increases. Customer demand for faster service increases as they begin to use technology more to make their lives easier. The initial investment in new technology is high but the ROI is planned during the strategic analysis of going forward with new projects. As a technology life cycle matures material, equipment, and maintenance costs are reduces. Just when a technology fully matures a newer technology begins and starts a new S-Curve showing performance and cost savings over time. In the fiber network S-Curve FiOS is in the takeoff stage of its existence. Cost saving haven’t fully been realized, material cost haven’t decrease but the performance of the fiber network is limitless.

**Product Life Cycle**
In plotting FiOS in a Product Life Cycle graph we would view FiOS still in the growth stage. FiOS is definitely making a presence in the entertainment market but is far from becoming a mature product of service. There is much more market share to win from their competitions.

**Timing of Entry**

Timing of entry is crucial to the longevity and acceptance of a new product or service in a new market. In the early to mid 90’s Verizon at the time was NYNEX and tried to deploy fiber to the curb. This was an early version of FiOS but left the fiber at a pole closest to the customer. This technology was trialed and was only successful in some areas. The equipment was bulky and expensive, fiber cable was expensive, there wasn’t enough knowledge around the technology, and there wasn’t enough demand at that time for this product.

FiOS on the other hand was introduced late in 2004. Verizon saw a need from customers for faster data speeds and digital services to be used by new devices used by customers. By 2004 Verizon has been placing fiber for years and upgrading office to office cabling. Customers were getting tired of their traditional cable providers and wanted changed. Other enhancement in technology allowed vendors to make equipment smaller and less expensive lowering cost to the end user. The early 2000’s data transferring, photo sharing, music downloading, and gaming were becoming popular and demanded higher data speeds. Verizon’s fiber network would satisfy these demands and position Verizon for future technology needs demanded from end users.

**First Mover Advantages and Disadvantages**
Verizon’s strategic decision to build the first fiber network all the way to the customer’s home wasn’t decided easily without taking in considering the advantages and disadvantages of being a first mover in constructing an all fiber network. Beginning with the advantages, having a fiber dedicated per customer allows Verizon to offer more products and services that require large amounts of bandwidth. Fiber technology is limitless in terms of supplying bandwidth per customer. Having the ability to create the ability to offer large bandwidth portals allows Verizon to offer more High Definition (HD) video and faster data speeds than any current competitor. Verizon does not have to compress video signals to offer more of these service as do their competitors because of bandwidth constraint on COAX cables. Additionally, the all fiber network does not fall under the traditional telephony regulation criteria. Meaning, Verizon does not have to offer this network to competitor to run their service’s on as they did some years ago in the copper network.

Moving over to some disadvantages, the construction of this network was going to take time and involve large investment back into the company’s construction budget. Secondly, Verizon was challenged in convincing customer’s that Verizon was no longer going to be just a traditional telephony company but a broadband company with the ability to offer entertainment video and data packages. Lastly, Verizon was entering a market that has been monopolized by cable TV providers for years. This challenge was making Verizon to revise and create a whole new marketing and advertising campaign.

**The Lock-in Cycle**

Now that the fiber network has been built and is still being built in additional area’s Verizon is offering their FiOS products. FiOS is sold mainly in double and triple plays. A double play includes voice and data services and a triple is voice, data, and video. Verizon’s lock-in cycle begins first with “Brand Selection”. Here the customer compares, company traits, services, may ask friend or neighbors opinions, or simply may just compare price points. The second stage is “Sampling”. This is when the
customer may visit a site or multiple sites where the service is currently working or visit kiosks to see how Verizon FiOS works. The third stage is “Entrenchment”. This is when the customer makes a durable investment. For example, the customer calls Verizon’s business office and places an order over the phone, or they can order online, or in some area’s Verizon has door-to-door sales reps taking order live and an installation date is giving to the customer. The final stage is “Lock-in”. At this stage Verizon has completed the install, the customer has signed all the necessary paperwork, and after a 15 day grace period where the customer has the ability to change their mind disconnection fee’s apply. An example of switching cost from a monetary perspective and would be the responsibility of the customer are $175 for a triple play and $119 for a double play.

Now that the customers are locked into FiOS they have no choice but to rent or purchase complementary products that FiOS services require and Verizon offers. The complementary products for FiOS video service are standard, HD, HDCVR, router type, and video packages. The customer has the choice as to what additional products they would need. On the data internet products they include data speeds, internet security suite, online backup and sharing packages, premium tech support, and expert care protection plans. Lastly on the voice side products include, voicemail, caller ID, call waiting and wire maintenance plans. All the products discussed are required for FiOS and only supplied by Verizon. There may be an instance when a customer wants to use their own router because they feel it’s a better brand and offer’s them better network protection. This is fine but, they have to install the router they want and wire it to but after the Verizon router. The Verizon router needs to stay in place in order for FiOS to work.

In Summary
Deploying FiOS allows Verizon to redefine the consumer telecom business as a broadband and video business. FiOS delivers ultra-fast internet speeds and more HD video channels than any cable provider in the market today. These features have helped Verizon achieve 25 percent market share for FiOS internet and 21 percent for FiOS TV in four short years. Verizon is well positioned for the next wave of innovation in telecom, which will be driven by advanced services requiring the speed and capacity advantages of an all fiber network.

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