

# A Review Paper on Digital Subscriber Line- Introduction, Technology

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**Abstract**— Digital subscriber line (DSL-originally digital subscriber loop) is a family of technologies that are used to send digital data over telephone lines. In telecommunications marketing, the term DSL is widely understood to mean asymmetric digital subscriber line (ADSL), the most specific installed DSL technology, for Internet access. DSL service can be transferred simultaneously with wired telephone service on the same telephone line. This is possible because DSL uses higher frequency bands for data. The data rate of consumer DSL services typically ranges from 256 kbit/s to over 100 Mbit/s in the direction to the user (downstream), depending on DSL technology, line conditions, and service-level implementation.

**Key words:** DSL, VDSL, ADSL

## I. INTRODUCTION

DSL is a telephone loop technology that uses existing copper phones lines, and provides a dedicated, high speed Internet connection. One of the major advantages of some DSLs (notably ADSL), are that they can co-exist on the same line with an old voice service such as "POTS" (Plain Old Telephone Service), and even ISDN. This is accomplished by utilizing several frequency ranges above the voice range (voice is up to 4 KHz). Essentially, this provides two lines in one: one for voice/sound, and one for Internet connectivity. When all is working normally, there should be no disturbance between the two "lines". This gives DSL a potentially wide consumer base, and helps minimizing prize for service providers.

DSL is situated for the Home and Small Office (SOHO) market that is looking for high speed Internet access at genuine prices. Since it also typically gives dedicated, "always on" access, it can be used for interconnecting small to mid range bandwidth providers, and provides a great access solution for small LANs. It is also great for those Linux power customers that just want a fat pipe.

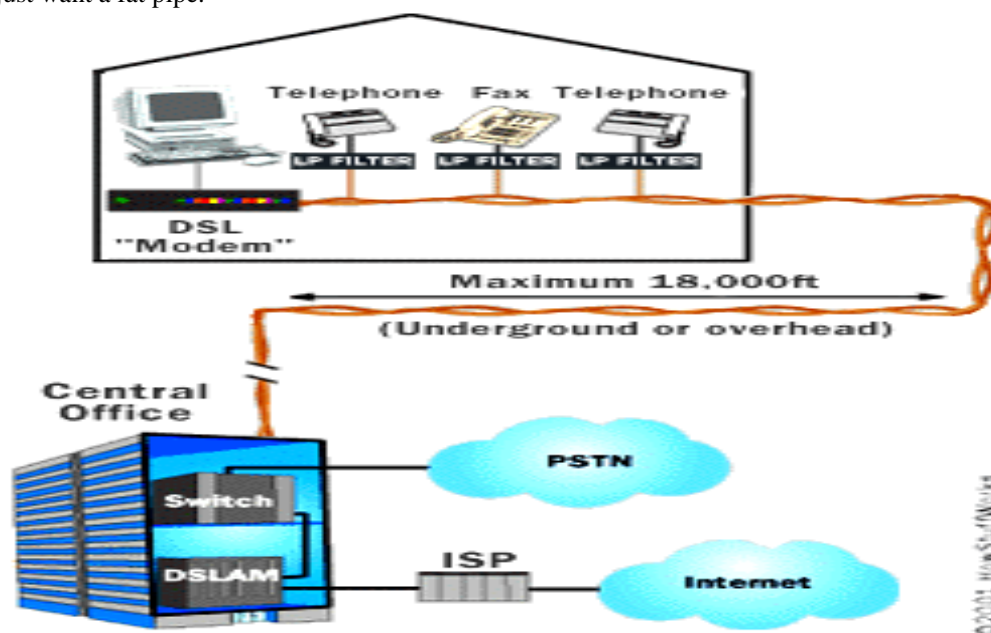


Fig. 1: working of DSL

## II. ADVANTAGES

- You can leave your Internet connection open and still requires the phone line for voice calls.
- The speed is very higher than a regular modem
- It does not necessarily require new wiring. It can use the phone line that you already have.

## III. DISADVANTAGES

- A DSL connection works better when you are nearer to the provider's central office. The farther away you get from the central office, the weaker the signal becomes.

- The connection works better in receiving data than it is for sending data over the Internet.
- The service is not available everywhere.

#### **IV. APPLICATION**

As the demand for the video service dramatically increases including IPTV, every effort to enhance the capacity of access networks has been made recently. DSL methods as described here address that challenge and the recent DSM methods serve a DSL path to bidirectional transmission of 100s of Mbps to each and every customer, thus DSL is a strong alternative option to the much higher cost alternative of trenching a fiber to each and every customer that is required in termed as "passive optical networks (PONs)" or more generally fiber-to-the-home (FTTH) systems. The high speeds obtained using VDSL, ADSL (asymmetric), and DSM has enabled high-speed internet services in addition to visual and real-time television broadcast delivery. Voice over internet (protocol) or VoIP services are most often also today considered over DSL connections, offering the possibility to arugment or to replace existing phone service. In addition, future vectored-DSL systems or CuPON systems would enable a variety of new applications to be supported, for example, new generation home networks.

#### **REFERENCES**

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