

Table 1: Comparison of different types of DSL Technologies

DSL Type	Symmetric/Asymmetric	Loop Range (kft)	Downstream (Mbps)	Upstream (Mbps)
IDSL	symmetric	18	0.128	0.128
SDSL	symmetric	10	1.544	1.544
HDSL (2 pairs)	symmetric	12	1.544	1.544
ADSL G.lite	asymmetric	18	1.5	0.256
ADSL	asymmetric	12	6	0.640
VDSL	asymmetric	3	26	3
	asymmetric	1	52	6
	symmetric	3	13	13
	symmetric	1	26	26

Table 2: Comparison of xDSL with other Technologies

DSL vs. Dial-Up

Issues	DSL	Dial-Up
Speed	<ul style="list-style-type: none"> • DSL offers guaranteed speeds (symmetrical up to 1 Mbps or 35 times faster than 28.8 Kbps analog modem). 	<ul style="list-style-type: none"> • Dial-Up access offers speeds up to a maximum of only 56 Kbps.
Flexibility	<ul style="list-style-type: none"> • DSL provides Internet access to multiple PCs/end-users on one single connection, thereby not charging extra for all additional PC/end-user access. • DSL is a fully scalable service possessing a wide range of potential speeds that are inexpensive and easy to upgrade. 	<ul style="list-style-type: none"> • Dial-Up access is capable of providing Internet access to only one PC/end-user, thereby charging extra for each additional PC/end-user access. • Dial-Up access is not a scalable service due to its bandwidth limitations of 56 Kbps.
Reliability	<ul style="list-style-type: none"> • DSL, by being dedicated, avoids disruptive and time consuming process of dialing in for Internet access. 	<ul style="list-style-type: none"> • Dial-Up access is faced with the sometimes tedious process of dialing in for Internet access.
Price	<ul style="list-style-type: none"> • DSL is priced on a flat monthly rate with no additional usage/toll charges. • DSL can be cost-effectively divided among multiple end-users for simultaneous access on a single connection. 	<ul style="list-style-type: none"> • Dial-Up access can have costly per-monthly usage/toll charges in addition to Internet access. • Dial-Up access must be provided with individual lines and modems for multiple end-users to have simultaneous access.

DSL vs. Cable Modem

Issues	DSL	Cable Modem
Speed	<ul style="list-style-type: none"> • DSL offers a wide range of guaranteed speeds as high as 1 Mbps (symmetrical). 	<ul style="list-style-type: none"> • Cable Modem exists on a shared network thereby making speed performance unpredictable; it is entirely contingent on network traffic volume.
Security	<ul style="list-style-type: none"> • DSL is on a closed, dedicated circuit making it less susceptible to outside hackers. 	<ul style="list-style-type: none"> • Cable Modem is on a shared network making it more vulnerable to hackers.
Reliability	<ul style="list-style-type: none"> • DSL is on a closed, dedicated circuit enabling Crocker Communications to offer guaranteed speeds. 	<ul style="list-style-type: none"> • Cable Modem exists on a shared network thereby making speed performance unpredictable. • Cable Modem may have multiple sources (or companies) providing local service and Internet access to consumers which takes away the convenience and accountability that comes with a single-source service provider.
Accessibility	<ul style="list-style-type: none"> • DSL utilizes ubiquitous, 100-year-old telephone infrastructure (RJ-11 jacks, copper phone wire, data backbones, etc.), which makes up nearly 100% market accessibility. 	<ul style="list-style-type: none"> • Cable Modem utilizes young network infrastructure that is shown to have sporadic and inconsistent service availability. • Cable Modem has a slower rate of market infiltration because growth of accessibility is often on a case-by-case basis.

DSL vs. ISDN

Issues	DSL	ISDN
Speed	<ul style="list-style-type: none"> • DSL offers a wide range of guaranteed speeds up to 1 Mbps (symmetrical). 	<ul style="list-style-type: none"> • ISDN offers guaranteed speeds only up to 128 Kbps (which run on two channels at 64 Kbps each).
Flexibility	<ul style="list-style-type: none"> • DSL is a fully scalable service possessing a wide range of potential speeds that are inexpensive and easy to upgrade. • DSL offers access speed (SDSL, ADSL) variations to best suit specific operational and economic business needs. • DSL can potentially replace or augment other existing services (dial-up, ISDN). 	<ul style="list-style-type: none"> • ISDN is not a scalable service; its maximum bandwidth is 128 Kbps making it unable to accommodate growing bandwidth demand.
Reliability	<ul style="list-style-type: none"> • DSL has a low risk of ownership due to minimal hardware requirements. 	<ul style="list-style-type: none"> • ISDN has a high risk of ownership due to extensive hardware requirement.
Price	<ul style="list-style-type: none"> • DSL has a low start-up cost by standard phone line(s) utilization and minimal equipment requirements. • DSL is typically priced on a flat monthly rate for Internet access-- with no additional usage/toll charges. 	<ul style="list-style-type: none"> • ISDN can have costly per-monthly usage/toll charges in addition to Internet access.

DSL vs. T1 Line

Issues	DSL	T 1
Speed	<ul style="list-style-type: none"> • DSL is on a dedicated, closed circuit and therefore provides guaranteed speeds (symmetrical up to 1 Mbps and asymmetrical up to 7 Mbps). 	<ul style="list-style-type: none"> • T 1 is on a dedicated, closed circuit and therefore provides guaranteed speeds up to 1.54M (max).
Security	<ul style="list-style-type: none"> • DSL is on a secured dedicated circuit which makes it less susceptible to hackers. 	<ul style="list-style-type: none"> • T 1 is on a secured, dedicated circuit which makes it less susceptible to hackers.
Flexibility	<ul style="list-style-type: none"> • DSL often offers bundled, value-added services (voice/data, managed network services, long distance and local services, web hosting, and e-mail) from one provider on one invoice. DSL is a fully scalable service with quick and easy speed upgrade (no truck roll out). 	<ul style="list-style-type: none"> • T 1 is a fully scalable service; however, a site visit is required for speed upgrade. • T 1 often times has more growth potential than DSL because it is not distant-sensitive. • T 1 has extensive and costly start-up with install of fiber lines and hardware (CSU/DSU).
Reliability	<ul style="list-style-type: none"> • DSL is on a dedicated, closed circuit and therefore receives guaranteed speeds. There is a higher degree of accountability due to the fact that DSL is often a single source of contact because it offers bundled services including IP. 	<ul style="list-style-type: none"> • T 1 is on a dedicated, closed circuit and therefore receives guaranteed speeds. • T 1 is not distant-sensitive and may have more growth potential (no contingencies on location and availability).

<p style="text-align: center;">Cost</p>	<ul style="list-style-type: none"> • DSL has low start-up cost and per-monthly fees by existing phone line(s) utilization and minimal equipment needs. • DSL is usually priced on a flat monthly rate with no per-minute charges. 	<ul style="list-style-type: none"> • T 1 often has costly start-up (line and hardware install) and per-monthly fees from line usage charges in addition to bandwidth.
<p style="text-align: center;">Long-Term Stability</p>	<ul style="list-style-type: none"> • DSL is intended as a long-term business solution because it not only provides dedicated, high-speed access, but also bundled, value-added services from a single provider on one invoice* • DSL is here to stay because it utilizes a ubiquitous infrastructure (RJ-11 jacks, copper phone wire, Class 5 switches and data backbones). • DSL can potentially replace or augment other existing services (T 1, dial-up, ISDN). 	<ul style="list-style-type: none"> • T 1 will most likely be a long-term business solution because it has superior market confidence from long history of proven performance and boundless availability/accessibility.

Accessibility	<ul style="list-style-type: none">• DSL utilizes existing ubiquitous infrastructure (RJ-11 jacks, copper phone wire, Class 5 Switches, data backbones) and thus dramatically enhances the likelihood of present service availability.• DSL has greater exponential growth compared to rival technologies (Cable) due to wide range of coverage from CO implementation.• DSL is most likely to be available in commercial areas because DSL providers purposely target regions with a high density in businesses and phone lines.	<ul style="list-style-type: none">• T 1 has boundless availability/accessibility and consequently is not inhibited by technological, geographical or political barriers that rivals can not match.
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