Silicon Valley
WORLD INTERNET CENTER

A New Bermuda Triangle?

Telcos, Internet Service Providers, and Internet Portals

December 9, 1999
Proceedings

http://www.worldinternetcenter.com

Executive Summary

We all want access to Internet information. Traditional telecommunication companies (Telcos) provide the lines, the Internet Service Providers (ISPs) and offer a gateway to the net, while the Internet Portals (Portals) are aggregating information. These roles are changing as Internet opportunities arise.

The Think Tank Session on December 9, 1999, drew forty executives and technologists from Tecos, ISPs and portal markets to debate the current challenges of the triangulated roles. For this new "Bermuda Triangle," the participants identified leverage (the power to act effectively) from which to set forth their predictions for the next 12 months of development.

For a century, Telcos have been transporting information, mostly voice and, more recently, data and video content, through a neutral medium. The industry has built an extensive reliable infrastructure, offering physical access and locators to its users. The technological underpinnings have been, and still are, packet switching, lines and nodes, and effective billing systems. Their success factors, aside from allowing remote conversations, are to offer reliable universal access with high quality of service at a reasonable price. The main revenue source stems from customers paying to use existing infrastructure.

ISPs utilize Telco infrastructure to provide access to the Internet while creating their own point-of-presence infrastructure. Additionally, they offer services like email and web hosting. ISPs have invested in technologies such as routers and protocols, connections, and user applications. The low rate of success experienced by many ISPs is linked to unreliable Internet access and low service levels. Revenue models are built upon subscriptions and advertisement.

> **ISPs have utilized Telco infrastructure to provide access to the Internet while creating their own point-of-presence.**

Internet Portals are both a first port of Internet entry and a destination. They offer search engines to ease web exploration while attempting to guide users through a transaction from which Portals benefit. The Portal technology landscape is expanding, but typically covers content engines, registration and authentication, indexing and profiling, data mining and transaction management software. A portal's success is linked to its ability to slim down and manage information overload. Revenue comes from a percentage of transactions and advertisement.

Shaping the future requires selective use of limited resources, hence, the importance of leverage in selecting the first step. Leverage was identified in the New Bermuda Triangle as follows:

Telcos have the largest customer base and revenue stream. Their extensive infrastructure, paired with operational experience and capable billing systems, has result- ed in customer trust.

ISPs, because of their local pres- ence, are uniquely positioned to introduce additional services such as B-2-B web hosting, eCommerce, or to become a competitive local exchange carrier (phone company).

Portals have eyeballs and the ability to person- alize the user experience, based upon knowledge of user/visitor behavior. This has allowed them to create brand names, an accomplishment which continues to challenge ISPs.

Session participants identified the following top three areas of leverage as having the highest level of impact for "leverage":

1. Availability of capital
2. Knowledge of customer base
3. Customer base

What are the next eSteps? The essence of the Bermuda Triangle is the realization that players are in the business of delivering and managing information. Data, video and audio delivered securely, interactively and personalized are the next customer needs. The winners in the next 12 months will be those companies taking advantage of existing leverage, setting new standards, combining cross-industry opportunities and supporting eCommerce.

The Benefits of Hindsight

A captain will sail her ship away from stormy waters and toward the sunny path. Nonetheless, for centuries the waters of the Bermuda Triangle were rumored to swallow boats and crews. The sunny path for Telcos, ISPs and Portals, are rumored to be hidden by a fog bank. Hence the desire for hindsight in selecting the optimal route. What decisions would you have made had you known AOL would be 18 million strong, there would be 7,000 ISPs in the US, or Alta Vista would become a free ISP?

In setting the stage for future success, the players in the New Bermuda Triangle must observe themselves from afar. They must break through the self-imposed borders and act outside their sandboxes. Questions to ponder include AOL's market growth, Portals becoming ISPs, Telcos buying Portals, or ISPs becoming Telcos. By examining the alternatives the future may reveal itself and benefits of hindsight can be had today.

Where are we today?
Telcos

A traditional Telco provides the following services:
- Transport provider of data, video and voice (bit-pipe)
- Physical access through Telco infrastructure
- Locator – address and directory

Bear in mind that Telcos spent this century achieving the current level of service and reliability.

- A wide range of value-added services (example: voice mail)

An important attribute of the transfer of data, video and voice is content neutrality. Given a sender and a receiver, the Telcos transport any content. Another important aspect of this industry is a high degree of government regulation to ensure universal access at a reasonable price.

The technological underpinnings for the above services are:
- Circuit packet switching
  - Lines & nodes
  - Metered billing systems
  - Technologies supporting value-added services (example: voice mail)

Reliability and a high level of service are expected from and provided by most Telcos. In developed countries a dial tone is always within reach. Some data mining of customer behavior is performed, but this is mostly to expand the current customer base and usage by offering a more competitive price. Note that in Europe phone records are only kept for a few months for mitigating billing disputes. Hence, data mining is very limited.

A differentiation among Telcos has traditionally been local vs. long distance carrier. This is changing. For example, in Norway, a recent development was to offer local rates to any phone call made within the country.

Revenue is primarily generated by:
- Usage (time and distance)

Table 1 shows Telcos generating income from usage.

Internet Service Providers

The ISPs are gateways to the Internet. Today there are about 7,000 ISPs in the US. This number is expected to grow significantly during the next 12 months.

Table 1: Telcos Today

Revenue is primarily generated by: Usage (time and distance)

Products & Services	Technologies	Success Factors	Revenue Sources
• Transport Provider • Physical Access • Locator • Value-added services	• Packet switching • Lines & nodes • Billing systems • Value-added technologies	• Universal access • Reliability • Quality of service • Price	• Usage

Core services offered by ISPs are:
- Access to Internet (access to content on the Internet)
- Point of presence infrastructure (enabling different types of access to the Internet)

Additional services are:
- Email & web hosting
- Personal presence (your personalized web page / Portal)

The challenge is to provide reliability similar to a Telco's dial tone. Bear in mind that Telcos spent this century achieving the current level of reliability and service.

ISPs rely upon the following technologies:
- Routers and protocols
- Data link control
- Connection (level one)
- User applications (wide range of different technologies)
- Technologies related to expanded set of ser--vices (example: email)

The above technologies are easily deployed given appropriate skill sets. Nonetheless, the combinations of these are complex and integrated by highly paid individuals.

ISPs obtain revenue applying one or both of these models:
- Subscription (monthly fee)
- Advertisement (no or low monthly fee)

An interesting realization is that ISPs are not defined by brand (there are a few exceptions), but rather by function. What does this mean to customer loyalty? It may only be temporary at best.

One approach to classifying ISPs is by these attributes:
- Free v.s. fee
- Fast v.s. flow (dedicated v.s. dial-up)
- Content v.s. no content
- Interface differentiation v.s. vanilla browser
- Reliability/availability/serviceability v.s. lack thereof
- Vertical market segment focus

Table 2 displays sample firms in the above categories as well as their URL, while Table 3 summarizes products & services, technologies, success factors and revenue sources for ISPs.

Internet Portals

One can argue that the very first ISPs were also portals. Today's grueling experience of locating information related to you and your geographical location can be a daunting task. Portals seek to resolve this challenge to your and their mutual satisfaction. The first question to ask is "Who is satisfied?" The initial Portals were focused. Today we experience portal sites wanting to be everything to everyone. In essence, they reintroduce the Internet chaos we were escaping from.

Traditional portal roles were centered on these areas:

Table 2: Sample ISP Attributes and Companies

Attribute	Company	URL
Free	NetZero Freeserve ISP Altavista FreePC	http://www.netzero.com/ http://www.freeserve.com/ http://www.zdnet.com/downloads/altavista http://www.free-pc.com/home.tpwww.fr
Fast (dedicated)	DSL Network Flashcom	http://www.dslnetwork.net/ http://www.flashcom.com/
Content provider	America Online	http://www.aol.com/
Interface differentiation	America Online	http://www.aol.com/
Reliability, availability, serviceability	AT&T	http://www.att.com/globalnetwork/
Vertical market segment focus	Earthlink UUNet MindSpring PSINet	http://www.earthlink.com/ http://www.UUNet.com/ http://www.mindspring.com/ http://www.psinet.com/

Table 3: ISPs Today

Products & Services	Technologies	Success Factors	Revenue Sources
• Access • POP infrastructure • Email & web hosting • Personal presence	• Routers & protocols • Data link control • Connection • User applications Value add specific	• Reliability • Level of service • Value add services	• Subscription • Advertisement

• Search Engine
• Directory (1st Internet stop)
• Destination
• Interface to information

Portals often segment themselves through vertical markets, offering information or products related to one area such as health food or cheap air travel.

The new and expanded Portal role now covers:

• Content providers
• Subscription to information or services
• Transaction assistants
• Knowledge assistants
• Web store
• Media channel
• Advertising channel

The new Portal segmentation is how information over-

load problems are resolved. Once segmentation has been addressed the Portal company is ready to expand information coverage and provide the user with an ever increasing line of products and services.

Portals apply a wide range of technologies to provide users with solutions. The key technologies include:
• Content engine
• Registration/authentication
• Indexing / profiling
• Data mining
• Transaction management

The question of how to differentiate Portals is challenging, as there is no apparent list of attributes to apply to Portals. One approach is to look at target customers:
• B2C (business to consumer)
• B2B (business to business)
• B2E (business to employees)

Sample B2C Portal firms are:
• Excite   http://www.excite.com/
• Lycos   http://www.lycos.com/
• Yahoo   http://www.yahoo.com/

• AOL   http://www.aol.com/
• Amazon   http://www.amazon.com/
• eBay   http://www.ebay.com/
• Travelocity   http://www.travelocity.com/
 Sample B2B firms are:
• Chemdex   http://www.chemdex.com/
• Ariba   http://www.ariba.com/
 A sample B2E firm is:
• Cisco   http://www.cisco.com/
 Table 4 below summarizes the Portals of today.

Leverage

The New Bermuda Triangle is a place where fortunes are easily gained (or lost). The desire to identify opportunities results in the subsequent matching of leverage, supporting technologies and ePioneers. Experts from each corner of the triangle came together into virtual corporations. We also included investment expertise to secure a fiscal viewpoint. During the course of the exercises these corporations were temporarily able to extend their knowledge base to arrive at the following conclusions.

Table 4: Internet Portals Today

Products & Services	Technologies	Success Factors	Revenue Sources
• Search Engine • Directory • Destination • Info interface • Content providers • Subscription • Transaction agents • Knowledge agents • Web store • Media channel • Ad channel	• Content engine • Registration/ authentication • Indexing / profil-- ing • Data mining • Transaction man- agement	• Information over- load solution	• Percentage of trans- actions • Advertisement

Telco Leverage

Customer base and revenue stream are the most prevalent. The main focus for a Telco is to hold tightly onto customers and revenue for as long as possible.

Billing system expertise and installed infrastructure combined with operational experience result in a quality of service which again rewards Telcos with high levels of customer trust.

Enabling technologies cover installed copper (voice, DSL, ISDN), fiber (bandwidth) and wireless (mobility).

These ePioneers take advantage of any or all of the above leverage points:

- Teledesic   http://www.teledesic.com/
- Globalstar   http://www.globalstar.com/
- Iridium   http://www.iridium.com/
- AT&T   http://www.att.com/
- WorldCom   http://www.wcom.com/

ISP Leverage

There are many options when moving from a traditional ISP to a 21C-ISP (21st century ISP). Because of a local presence and customer base ISPs are positioned to introduce a wide range of new products and services. For example, an ISP could offer B2B or B2C web hosting. Technologies and protocols such as broadband, telephony, SIP (Session Initiation Protocol, a simple signaling protocol for Internet conferencing and telephony), and MGCP (Media Gateway Control Protocol) make a foray into B2B or B2C possible. ePioneers utilizing these technologies are:

- Deltathree   http://www.deltathree.com/
- Vocaltech   http://www.vocaltec.com/
- Masterlink   http://www.masterlink.com/
- Cox   http://www.cox.com/

Implementing eCommerce is becoming easier thanks to Cisco and Lucent. Just look at AOL. To learn more about these companies look at their web sites for products offered:

- Cisco   http://www.cisco.com/
- Lucent   http://www.lucent.com/
- AOL   http://www.aol.com/

Another approach an ISP can take is to define and implement eServices through partnerships. Examples are application hosting and VPNs (Virtual Private Networks). This is obtained by extending existing server technologies combined with a layer of access security. Leading firms are:

- Masterlink   http://www.masterlink.com/
- Deltathree   http://www.deltathree.com/
- Nousoft, Inc.   http://www.nousoft.com/

An ISP can become a Competitive Local Exchange Carrier (CLEC), a telephone company directed by the same rules and regulations as the local operating company. A CLEC competes with Incumbent Local Exchange Carriers (ILECs), for example GTE and Pacific Bell. A CLEC typically offers the same set of services as provided by the ILEC. Companies like ITXC, iPass and GRIC offer enabling alliances and networks. ITXC claims they have the largest Internet telephony termination footprint. iPass enables remote access to the Internet, email and corporate networks, with a local call, anywhere in the world. The GRIC Convergent Services Platform is a single OSS platform enabling service providers to deploy and manage multiple Internet services across the global GRIC Alliance Network.

Their URLs are:

- ITXC   http://www.itxc.com/
- GRIC   http://www.gric.com/
- iPass   http://www.ipass.com/

Some approved CLECs in California are:

- AT&T   http://www.tci.com/
- Time Warner Connect   http://www.pathfinder.com/corp/
- Optel Network   http://www.optelinc.com/

- Global Crossing http://www.globalcrossing.com/
- UUNet http://www.UUNet.com/

For a list of CLECs in the US look at: http://www.robot-ics.net/clec/

Offering wireless Internet access seems a natural next step for any ISP. Enabling technologies include WAP and 3G. ePioneers are:

- Sonera http://www.sonera.fi/english/
- NTT DoCoMo http://www.nttdocomo.com/
- Sprint http://www.sprint.com/

An ISP can take advantage of their customer proximity and build a distribution channel for hardware and software products. For example: cellular phones.

Another ISP leverage point is to become a community portal based upon local customer intimacy. Knowing the needs of a geographically contained user base makes it possible to offer local services via the ISP gateway.

In closing, an ISP has many opportunities in broadening its services. The question is not "whether to expand" but rather "what to expand." Standing still is a perilous option.

Portal Leverage

A future-looking Portal company should closely track visitor activities. It could, then, easily achieve the following leverage:

- Eyeballs (profile)
- Ability to personalize (personal investment)
- Knowledge of user (visitor) behavior
- Brand awareness
- Loyalty (temporary)

Supporting technologies to obtain the above include:

- Authentication
- Authorization
- Personalization & customization
- Indexing & profiling
- Security

- Data mining
- Ad serving
- Application serving

An ePioneer would need to have the following areas fine-tuned:

- Regional focus (move into local ISP)
- Branded trust
- Think "media"
- Advertising revenue
- Transaction revenue

Portals must seek to expand their brands into vertical markets, to better serve individual customer needs.

Investment Opportunities

Having identified opportunities across the New Bermuda Triangle, a necessary question to ask is, what is the funding availability? In other words, what are the attributes of a successful funding request? Three characteristics were agreed upon. A successful request:

- Takes advantage of cross -industry opportunities
- Is a standard setter
- Is an ISP which is moving to eCommerce

Investment criteria to be applied are a combination of typical items, such as the management team, to more specific items, such as vertical focus. Investors, ISPs, Portals and Telcos agreed upon this list of investment criteria (items are in no particular order):

- Infrastructure access / availability
- Value add products and services
- Vertical focus
- Ability to personalize
- Growing revenue model
- Device independence
- Market strength (customer base)
- Full service (one stop)
- The team (firm)

The Next eSteps

In the last session of the day, the group focused on ranking leverage points across the New Bermuda Triangle. Next, they asked the all-important question "What business are we in?" The session concluded by delineating those features that would make a business in this arena successful.

First, unique leverage in the Triangle was reiterated:

• Infrastructure
• Innovation
• Brand
• Knowledge of customer base
• Customer base
• eServices

The relations between them are depicted in Figure 1.

Figure 1 was created by ascertaining relationships between each pair of items independently from all others. For example, having a customer base enables capture of consumer behavior. On the other hand, having the knowledge of the customer base may lead to growth in market share. Such an expansion does not come from knowledge directly, but rather from brand awareness. Therefore, in this example, the driver of the relationship is the customer base. In cases where no strong and clearly defined relationships existed, no arrows were drawn.

Examining figure1 (counting arrows going out vs. coming into a box), the top three ranked leverage areas are:

1.Capital
2.Knowledge of customer base
3.Customer base

Figure 1.
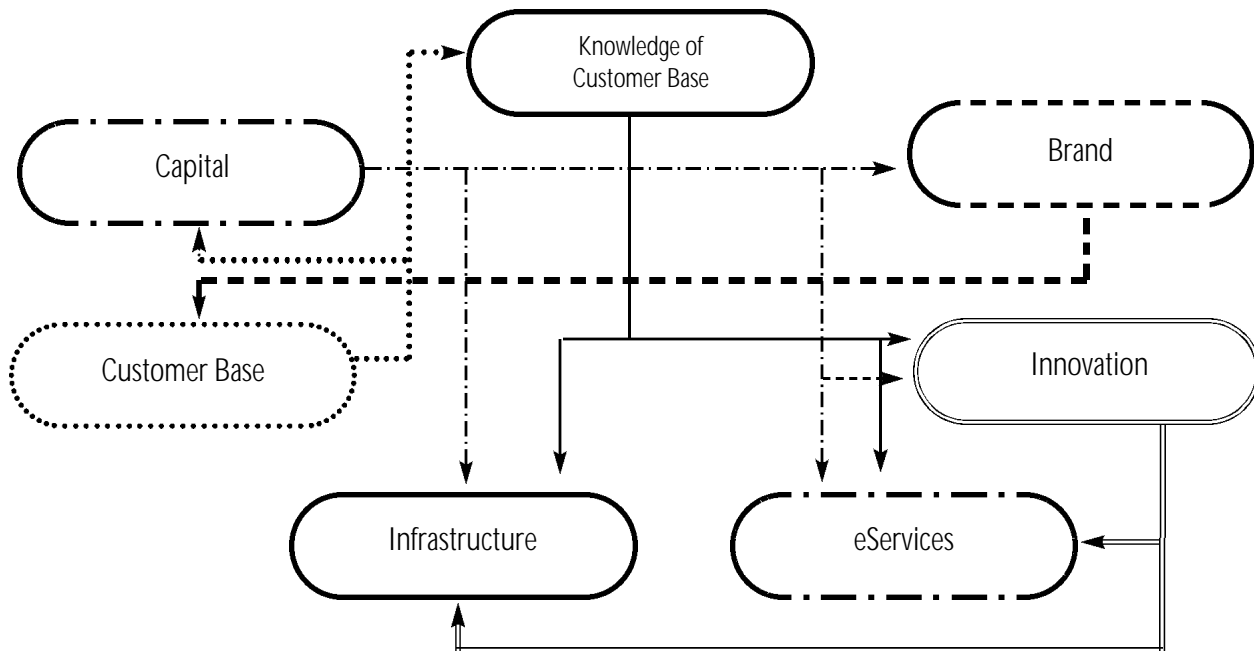
Interestingly, these findings were characterized as "Marketing 101." The identification or capture of the customer base along with an understanding of customer needs or behavior is fundamental to a marketing campaign, a funding request and to an achievable business strategy. Even more important is available funding to implement the strategy or marketing campaign.

In the New Bermuda Triangle, Telcos have capital, portals know the most about the customer base, and the ISPs have the new type of customer we all want. The key question raised was: "What so we do next?" Combining the strengths of the players in the Triangle seemed obvious. The next question immediately followed: "We are joining forces to do what?" The participants quickly arrived at the following statement, set out to capture the essence of the new business model:

IDM (information delivery & management), data, video and audio delivered securely, interactively and personalized, is the next customer want. Content creation is not the focus within the triangle. It will take place for specific purposes, but mostly for making the experience appealing for users.

This observation leads to the sudden insight that IDM rests upon building relationships with existing and new breeds of content providers.

Conclusion

Within the New Bermuda Triangle, Telcos, ISPs and Portals are expanding and overlapping in products and services, technologies and target customers. Each player is advised to utilize available leverage and invest in business propositions focusing on delivering and managing information (voice, video and data). The winners will be those who are able to leverage relationships to integrate enabling technologies, making IDM a reality. The challenge is making it easy (almost invisible) for the customers. An example of a parallel, albeit different, business is credits cards. Visa deployed a system making it possible to instantly execute a monetary transaction anywhere in the world. It is simple, fast, and just works! The customer does not care (or even want to know) how it all works. Internet users have yet to find the comparable experience in the New Bermuda Triangle. Hence, the opportunity awaits the standard setting, deep pocket, and customer aware IDM coalition of the 21st century.