

eBiz Networks: Foundation Services for Commerce

Net Forecasts – Peter J. Sevcik
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Everyone has a plan for making money on the Internet. The recent burst of the dot-com bubble has many folks adjusting their plans and looking towards infrastructure as a sure thing.

But in order to really enable commerce and profits, the infrastructure has to be more than just big pipes. The automobile did not succeed just because roads were paved, it also needed proper intersections, service stations, fast-food restaurants and even rest areas for long trips.

Over the last 157 years, we've had six successful electrical communications "revolutions" -- telegraph, radio, telephone, television, computer and now, the Internet. Each was a "disruptive technology," and grew generally following a path described by Clayton Christensen in his book, "The Innovator's Dilemma." However, the Internet has

had an extra step which should not cloud our vision for the Internet's true potential.

Figure 1 describes a very high-level view of the three phases the Internet has gone through in its development to date. As recently as the mid-'90s, debates still raged over which communications protocol would serve as the foundation for next-generation networks. There were proponents of proprietary solutions and advocates of open standards, such as ISDN and ATM. Today, it is clear that the Internet Protocol (IP) will serve as the foundation for *all* new networks; ATM will be deployed but is relegated to point solutions.

Now we face the more interesting question: What will be built on top of IP as shown in Figure 1. Note that subsequent phases of development build upon and use the protocols of preceding phases (e.g., TCP is used in phases 2 and 3).

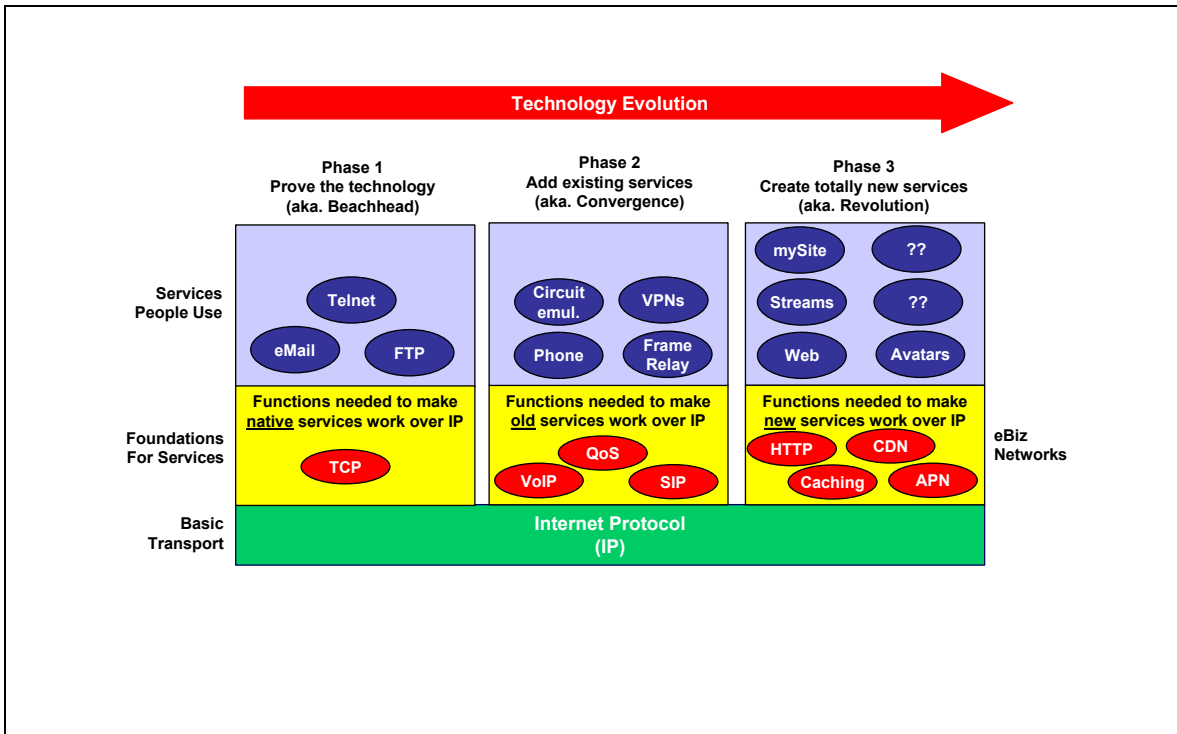


Figure 1 – Evolution of a Successful Technology

Phase 1 – Proof of Concept

The IP protocols date back to January 1980, when RFC760 was first published. Like all successful technologies, TCP/IP had to prove itself with some new, but seemingly unimportant applications, which at the time were remote host access via Telnet, computer file transfer and a totally unregimented method of exchanging messages called email. It is important to realize that these applications only had meaning to those who were using the ARPANET -- they were viewed as completely inconsequential to -- and by -- the rest of the networking community.

When the open systems movement converged on TCP/IP rather than the ISO protocols and email started to spread in the late '80s, the IP protocols began penetrating the mainstream markets. However, the Internet community did not rest, and has been generating an average of two new RFCs per week for the past 21 years! The invention of the Web suddenly thrust the Internet into two new phases of evolution that are occurring in parallel.

Phase 2 – Migrate Old Services

Once the economic benefits of packet switching were understood, the world made a sudden decision to build packet-based networks (see my article "Why Circuit Switching is Doomed," in *BCR* September 97, page 33). However, the world didn't -- and hasn't -- flash-cut to packet switching. The transition to packet has been most apparent -- and appropriate -- for enterprise networks, green-field networks and in specific international network situations where traditional circuit-base architectures have been very expensive. But it's important to note that in this respect, the migration of existing services to IP has been a unique phenomenon without precedent in the previous communications revolutions. In this case, IP has simply replaced ATM for the proponents of unification.

Indeed, all of the emphasis on migration and integration of multiple services onto IP in the name of convergence has been for the benefit of service providers. Think about it: convergence ostensibly reduces costs, but it does not create any new services. In fact, VPNs, Frame Relay over IP, voice over IP and the rest, all pride themselves on their ability to reconstruct or emulate the original technology with wonderful fidelity.

And there's the rub. If a customer can't tell the difference between the old way and the new way, the customer will not change their buying behavior. While pricing the new approach at a lower price may cause a short-term pop, price elasticity is soon exhausted. The bottom line: convergence is a zero-sum game.

Phase 3 – Build New Services

The real challenge in a technology's evolution is to build new services for new applications, applications that none of the previous or current technologies has ever supported. The Internet got its first taste when the Web was introduced via HTTP and HTML using a browser. Even though the Web is a great innovation, it is just the first step; the next involve streaming, XML and, most recently, Extensible Stylesheet Language (XSL).

Note, however, that even these latest innovations provide *foundation* services. They're of interest to us in the networking business, but the rest of the world doesn't care about them; instead, they're interested in being able to do something new. And that's where we're at today -- the new services enabled by the eBiz Networks foundation will usher a revolution in information and entertainment.

The Interactive Content Pallet

Today's eBiz foundation services are full of "hidden" functions, like DNS, caching, load balancing, content deliver networks (CDNs) and application processing networks (APNs). However, each is becoming more application- and user-aware, with the goal of giving each user what they want, whenever -- and in whatever format -- they want.

Furthermore, "content" is becoming much more than static Web pages; it is turning into composites of network resident objects, which include software and video. I envision service providers soon supplying a national "Interactive Content Pallet," upon which application artists will paint a completely personal experience for each viewer.

Imagine surfing for a movie listing with the following return. DoubleClick selects you for a Mercedes-Benz ad. And since Mercedes has national promotional relationships with the National Basketball Association (NBA) and the

Professional Golfers' Association (PGA), they check which sport you prefer. So, you wind up seeing a national ad for a new model car, the latest news from the NBA along with a great basket scored within the last 5 minutes somewhere in the world, and the availability of cars at your nearest Mercedes dealer. And, you'll also learn where the movie is playing along with drive times from your location, all delivered within one second.

The key is personalization -- the response will be completely customized to you, including a link to your bank for the car loan. The next user who asks about the same movie will receive a totally different response. Even your subsequent inquiry will show a different team scoring a new basket in another game!

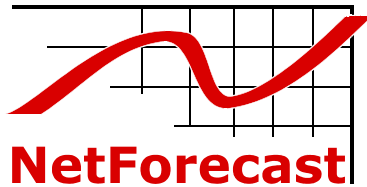
Welcome to customized infotainment, where many interactions and complex compositions are pulled off an Interactive Content Pallet that operates 1,000 focused news and entertainment channels of totally fresh content -- facts, figures, photos and videos. And user terminals can access all of these network-based channels within 5 milliseconds.

NetForecast measures application profiles, user behavior and network statistics to predict performance, adoption, and market impact of new technologies. The firm has helped leading service providers, enterprises, and vendors navigate the changing competitive landscape of the Internet economy. We supply key technical and market guidance to ensure the success of network-based projects, products and services.

Conclusion

To make this scenario work will require a rich services foundation infrastructure, and an open application design environment that will unleash the creative abilities of site designers. The people, companies, products and technologies in the forefront of this effort will be on the podium and exhibit floor at the eBiz Networks Conference (www.bcr.com/ebiznets) in June, and it promises to be much more exciting than figuring out how to use the Internet to carry cheap phone calls. Join us at eBiz Networks, and become part of the Internet's *real* future.

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