A Call to Arms:

Beyond Plan, Build, Operate & Maintain

Steven Shepard

Shaping Today's Telecom Industry

It begins with a single dot of paint on a blank canvas. Another. And, another. And weeks later a masterpiece emerges from the dots. The style is Pointillism, it was perfected by Georges Seurat, and it yielded such masterpieces as his *Channel at Gravelines, Evening.*

Our industry is pointillism at its best. So many disparate vectors guide the industry that it is often difficult to step back and see the masterpiece as opposed to a collection of unrelated dots of technological paint. As you read the following vignettes, think of them as inconsequential pieces of fabric in a quilt, or spots of paint on a canvas, the combination of which yields something complex and dazzling.

One

Many factors have combined to create the telecom industry as we know it today. One of the earliest is the arrival of widespread mobile telephony and the "training" of the marketplace to accept lower quality service in exchange for the freedom of mobility. But *most* important is the training of the market to accept lower quality service – *period.*

Two

Equally critical is the growth in broadband access availability and the widespread use of and reliance on the Internet and World Wide Web. In lockstep comes the promise of convergence.

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And as the technology advances and demonstrates increasing levels of capability, demands for better QoS lead to better control of jitter, latency, and packet loss.

Three

The ongoing convergence of technologies leads to the convergence of IT and telecom in the enterprise space. The promise of application integration, bundling, and unified messaging leads to experimentation with packet voice and ultimately to the introduction of VoIP.

Four

Bottleneck reduction becomes the order of the day. Broadband access, high-speed routing at the edge of the network, the rise of MPLS, and growing support by vendors for carrier-grade routers such as Nortel, Cisco, Lucent and Juniper move the bottleneck inexorably out of the network and into the application.

Five

The burst telecom bubble, beginning in 2001, creates intense marketplace heartburn. The love affair with technology ends abruptly; a romance with services and business enhancement begins. Customer intimacy, solution selling, Customer Relationship Management (CRM), Enterprise Resource Planning (ERP), data mining and knowledge management become the most oft-heard phrases in business lexicon. Technologists jump out of the driver's seat (or, more likely, are pushed); the customer jumps in with the big four on their short list of requirements. The big four are remarkably simple in their demands, impossibly difficult in their execution: If I buy from you, will your product or service measurably enhance my revenues? Will they reduce my overall costs? Will they somehow enhance or at least stabilize my competitive position in the market? And will they help to mitigate the downside risk I face, operating in an increasingly and aggressively competitive market? Scratching their Information Superhighway road rash, service providers and manufacturers look to reinvent themselves as "solution providers."

> "He's gone from Internet poster boy to Internet piñata."
>
> --Venture capitalist John Doerr of Kleiner Perkins Caufield & Byers on Jeff Bezos and the Amazon roller-coaster.

Six

Calls for customer service reach an all-time high. Call centers and contact centers grow like mushrooms on a summer lawn. Enterprise speed and agility, particularly as they relate to customer service, become prime differentiators. The ability to maintain customer contact and continuity is viewed as a critical contributor to customer satisfaction – and revenue assurance.

Seven

Recovery from the burst bubble leads to inevitable industry consolidation, buy-down and intensifying competition. Customers react predictably, pitting one vendor against another in a pricing and service delivery frenzy.

Eight

Regulatory reform favors the ILECs and facilities-based competition, leading to an upsurge in cable, wireless and power companies offering voice over their newly deployed IP infrastructures. They do it because they can and because voice was, is and always will be the killer application. Suddenly IP represents the fundamental underpinning of the "triple play" (voice, video and data) and a growing realization that the ILEC is no longer the only game in town for carrier-grade service.

Nine

VoIP and related technologies continue to evolve and improve as networks become broader, faster and more capable. In response to the broadside attack on their services bastion by cable, wireless and others, the telcos counter, announcing service packages that include entertainment and broadcast content delivered over DSL, in effect their own triple (and in some cases, quadruple) play.

Ten

The game has become one of offering boutique services in a commodity market. Basic technology has indeed become a commodity, as have Internet access, storage, wireline voice, long distance, content of many types, switching, routing and wireless.

Eleven

As if commoditization isn't enough, the industry reels from attacks by the modern day equivalent of Visigoths and Vandals. Blows against the beleaguered empire come from Skype and Vonage, Yahoo! And Google, Virgin Wireless, Microsoft, and an increasingly demanding and technologically adept customer base. Skype and Vonage successfully undermine the ILECs' positions of circuit-switched power, demonstrating just how good – *and free -* VoIP (over Internet) can be. Yahoo! and Google make IP-based mail, chat and storage applications available to the masses – at no charge. Google's GMail offers a gigabyte of storage to every user. Virgin Wireless proves (1) the power of brand and (2) the increasing irrelevance associated with owning the network – and the power inherent in owning the customer and working the brand loyalty game instead.

Microsoft codifies everything, extending their desktop and set-top-hungry tentacles into every possible customer touch point. They are desktop, set-top, palm-top, mobile, gaming, content, application, operating system, and central office. They don't want the infrastructure; they just want the customer. So they revamp Windows XP, call it Longhorn, and upgrade their embedded Istanbul-codenamed Messenger service to include a carrier grade VoIP client. And the customers? They … just … want … more.

These forces - Skype and Vonage, Yahoo! and Google, Virgin Wireless, Microsoft, and the customers – behave like biological viruses. They infect and multiply, and the world around them changes as a result.

Twelve

Devices converge, get smaller, become more capable. Desktop phones now integrate IP-based Web browsers. Mobile devices combine full-function PDAs and phones and connect to the network at high-speed. Vendors roll out Wi-Fi telephones, further facilitating convergence over the enterprise network and offering untold bypass opportunities.

Thirteen

The consumer and enterprise markets bump and rub against one another as corporations send waves of employees home to work. These Small-Office/Home-Office (SOHO) workers, together with the burgeoning small-to-medium business (SMB) market, create demand for centralized service quality delivered over a fully distributed network to increasingly remote workers. Follow-me and find-me services, sometimes called 'presence applications,' become highly desirable as mechanisms for logical convergence.

Fourteen

The convergence of IT and telecom nears completion. In the enterprise, where VoIP has become widely deployed, voice has morphed into "just another data application." It is, after all, nothing more than a sporadic contribution of packets to the overall network data stream, and with the broad deployment of edge bandwidth and digital compression an increasingly small percentage of that data is devoted to voice. As this realization dawns, CTOs throughout the enterprise domain make a bold move: They issue mandates that cause their IT organizations to absorb the functions and responsibilities of their historically dedicated voice service organizations. This move does two things: It formalizes enterprise recognition that VoIP is *clearly* an enterprise application and further recognizes that *voice* is *not.* Consider this: the packets emerging from a traditional data application such as e-mail are remarkably forgiving of delay and jitter because the asynchronous application that creates and consumes them is equally forgiving. If the message is delayed in its arrival by an additional ten minutes, for the most part no one cares. On the other hand, E-mail is extraordinarily intolerant when it comes to packet loss. The loss of a single packet can result in catastrophic data corruption.

Voice, on the other hand, has precisely the opposite behavior. The human ear is such a poorly engineered listening device that 40% packet loss can often go undetected. But introduce 30 milliseconds of delay into the packet stream and customers begin to turn surly.

So the coming together of voice and data is a powerful and compelling thing as far as the customer is concerned. For the service provider, however, the result is a complex architectural and logistic problem, the management of which is not optional.

Fifteen

Many companies have jumped on the VoIP bandwagon, but not always for the right reasons. Rationale ranges from "gotta go VoIP because it's cool" to "huge reduction in expense" to "unified messaging." Implementers, however, must never forget one thing: *Voice* is the *application. VoIP* is a *technology option.* The sounds that emanate from a standard telephone

and the sounds that emanate from an IP-based device are identical. The decision, therefore, to go with a VoIP solution must be based on a clear and emotionless understanding of the inner workings of a typical telephone network, how it differs from a VoIP network, and the pros and cons of each.

The power that comes from a wisely thought-out telecom strategy is all about knowledge: *knowing* why you are choosing to evolve, *knowing* what to expect, *knowing* when to make the change, *knowing* how it will all happen, *knowing* where the technology, service, application, human resources and management changes will take place, and *knowing* how to respond to them all. There's a wonderful line, reputedly from Alice in Wonderland, that says, "If you don't know where you're going, any road will take you there." And of course the only way to know where you're going is to know where you've been. In response to that, an old quote from the Texas cattle drives seems appropriate: "When you're driving a herd to market, take a look back now and again to make sure they're still there."

Next Steps

The major players in the technology industry must change the way they view themselves and their customers and must take steps to redefine the manner in which they interact with each other. We begin with Service Providers. These companies must:

NOT consider the roll-out of a new product or service before they answer four critical questions:

- Will it raise the customer's revenues?
- Will it reduce the customer's OPEX and CAPEX costs?
- Will it stabilize or enhance the customer's competitive position?
- Will it mitigate the downside risk a customer faces as they operate in an increasingly competitive marketplace?

Develop a culture of regulatory compliance and must embrace structural separation if they are to survive.

STOP focusing on preservation of access lines and minutes of use and START focusing on preservation of customers.

Let go of technology as a differentiator.

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Accept the fact that in the new technology business model, they can have *some* of the money or *none* of the money. To that end they must learn to enter into alliances and partnerships that don't involve hegemony.

Pay a great deal of attention to the Millennial Generation and the so-called Indigo Kids. They will soon be the most important and influential employees, customers and competitors you have.

Chart a path toward becoming a content provider – and must recognize that they already are. Voice is the single most important content component of all.

Follow the radical new rules for innovating in an increasingly competitive and fast-moving market.

Stop trumpeting the value of their solutions. Instead, they should first strive to make the market understand that they know what the problems are.

Develop a comprehensive telecom/IT attack strategy, given that telecom is being subsumed by IT in the enterprise space.

Challenge the existing paradigms: local loop, application demand, mobile requirements, customer demand.

Challenge everything by asking, at every turn, these three questions: "What's it for?"; "Why are doing this?"; and "Are you sure?". Then and only then can service provider be sure that they are ready to proceed to the next step.

Consider the nature of the ideal access appliance – or appliances.

Meanwhile, the manufacturers must:

Take the lead by reorienting compensation plans so that rewards are paid based ion customer satisfaction and solution effectiveness rather than on sales levels of the "product du jour."

Create a "Chief Integration Officer" whose organization is tasked with the functional elimination of product line silos.
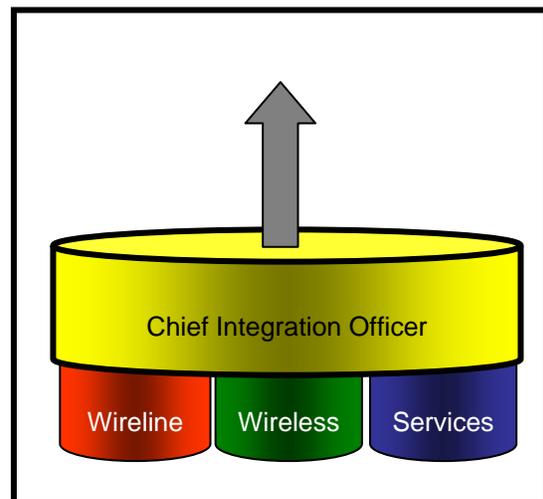
*Become a contractor or a*rchitect. Their product is business problem resolution; the tool is the combined efforts that they and their business partners offer.

Recognize that wireline and wireless are not distinct product lines. They're access, no more and no less. If you disagree, ask a Millennial.

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