Innovating the Standard
Market Expansion Strategies for an Interconnected World

Technology continues to advance; and meaningful innovation always does so with a keen eye on what has come before. Change is good. It has a way of improving our lives and unlocking new sources of revenue. However, a prime directive of evolutionary innovation is to enhance the existing technology – improving on the existing standard.

Building upon existing innovation to achieve market success

The Economics of Change

Companies abhor unplanned obsolescence; and people don't like change. Most businesses have accepted that change is inevitable. The cost of ignoring change is market irrelevance. Smart companies manage the pace of that change by identifying and seeking out ways to use innovation for market advantage, rather than crushing it out of existence. In today's connected world, it's nearly impossible to engage in such outdated predatory practices without immediate backlash.

To that affect the leading oil and gas companies have evolved into energy companies. Trucking, shipping and airfreight companies are now intermodal logistics organizations. Telephone companies have evolved into diverse communications services organizations. And they've all done it by innovating on top of existing standards, rather than trying to recreate the established infrastructure.

So – let's begin our exploration of standards-based innovation with some perspective. The following examples highlight how this approach can reshape and create new revenue opportunities both within and outside the original market sector of the invention.

1. Vehicle Fuel Delivery
2. Standardized Containers
3. Telecommunications Networks and the Internet

Fill Her Up!

Let's take a look at the once humble gas pump. It offers a classic example of how innovation layered upon the existing infrastructure expands markets, reduces barriers to market entry for new products and services, and expands multi-industry economic growth.

If you owned a car anytime in the last century, you'd drive up to a filling station, pull alongside the pump and fill your car with fuel via a hose and nozzle. It doesn't matter where the fuel is stored, what type of fuel you buy, how you pay or what type of vehicle you drive. Regardless of additional services, like pay at the pump and car wash choices, the process has remained relatively consistent for nearly 100 years.

| Gravity Pump | Mechanical Pump | Multi-Fuel Pump | Electric Car "Pump" |
| Circa 1930 | Circa 1960 | 2012 | (Coming soon) |

The pumping process, and pump placement, has been fixed for nearly 100 years – even if you are *"charging" a battery instead of pumping fuel*

The pumps of the future, just as those of the past, seamlessly integrate with the "filling station" infrastructure. They require little to no employee or consumer training. While your Tesla is recharging you can order a latte, browse the Web and check your email. For an extra few bucks, you can even plug in your car to see why that annoying "service engine" light is illuminated.

Fuel pump technology respects filling station and automobile standards. It enables new revenue generating services for station owners, energy companies, content creators, coffee brewers and carwash mechanism producers. The consumer is happy. New services and points of service delivery are created. Revenue reaches beyond the station owner. Everyone wins!

Containerization

As a technology innovation, standardized shipping containers may not be sexy, but what an economic impact they make! Standardization of the intermodal-shipping container has revolutionized import-export economics by decreasing the time to market, expanding product diversity within markets, minimizing shipping and delivery costs, simplifying logistics, reducing inventory shrinkage and maximizing revenues. One might even argue that the standardized practice of containerization, which began in earnest after World War II, was a key enabling

technology for the massive economic growth in the latter half of the 20th century. Before that time, shipping required the constant loading and unloading of goods between domestic and international seaports, train depots and trucking distribution centers. It was labor intensive and dangerous.

They all share the same core dimensions to **work within the exiting transportation infrastructure**

Key to the innovation was looking at the existing standards ship design, rail gauges, train cars, roadways, and truck chassis – across the globe. It had to take into consideration standards that existed in the manufacture of televisions, cars, refrigerators and other goods and along the most common routes traveled. Standard ISO containers had to fit within the existing transportation and manufacturing infrastructures to ensure widespread adoption and maximum economic benefit. They enabled new business opportunities in automated loading/unloading machinery and software. Like the gas pump, it broadened the markets for tangential products and services, like mobile refrigeration, security systems and even vibration mitigation technology – to name a few. Today, container shipping systems are so optimized that an added second of delay in handling a container can translate to tens of thousands of dollars lost per ship, per year.

Telephone Networks

Analysis of the telecommunications industry shows a similar respect for the standard.   From rotary pulse connections and manual switching, to DTMF or touchtone dialing and automated routing and switching, we now find ourselves transmitting digital data and using voice-activated dialing.   Our modern telephone infrastructure is a complex network of "layers" and "signal channels" that connect, disconnect and transport voice and data signals. Lasting network innovations were designed to blend the old and new. This ensures the basic infrastructure – which can take decades to update – remains functionally intact as new technologies or services are invented and adopted, allowing for planned obsolescence that mitigates financial impact.

| **Rotary Pulse Network** | **DTMF Network** | **Digital Data Network** |
| *Developed in the late 19th century & used through the 1970s and they still work today* | *Touchtone was introduced in 1963 and still in use today with slightly more modern design* | *Modems were developed in the 1950s and are still in use today, although "built-in" and quiet* |

Both Rotary Pulse and the newer Touch Tone (DTMF) technologies co-exist within the existing infrastructure. The DTMF 'sub-channel' enabled more information and control signaling without disturbing the existing infrastructure. Digital information transport using frequency modulation/demodulation (modem) across the existing telephone network infrastructure was the next layer to be added. This enabled military and corporate network access, and eventually, the modern Internet connection, as we know it today.

Of interesting note, many old rotary dial phones were used during the 9/11 terrorist attacks and Hurricane Katrina. Why? The available DC current from the telephone line powers these phones, which means when the power is out and cell towers come down, the original infrastructure saved the day!

Data Networks & The Internet

The Internet has quite literally built fortunes and changed lives. It is a multi-billion dollar ecosystem - ranging from search, to social media, to SAAS delivered business services, digital advertising, nanny cams; even most mobile apps are Web dependent. But innovation for information and control must be added for World Wide Web use to advance economic outcomes.

The base layer of Web infrastructure is the Internet Protocol, or HTTP. It is the standard by which all Internet communications take place. In fact, there is even a committee, the World Wide Web Consortium (W3C) whose sole purpose is to ensure Web standard interoperability. So once again, we see that the prime directive continues to ensure that NEW 'technologies' co-exist with the existing infrastructure and require minimal changes to the existing Web infrastructure in order to ensure industry-wide adoption.
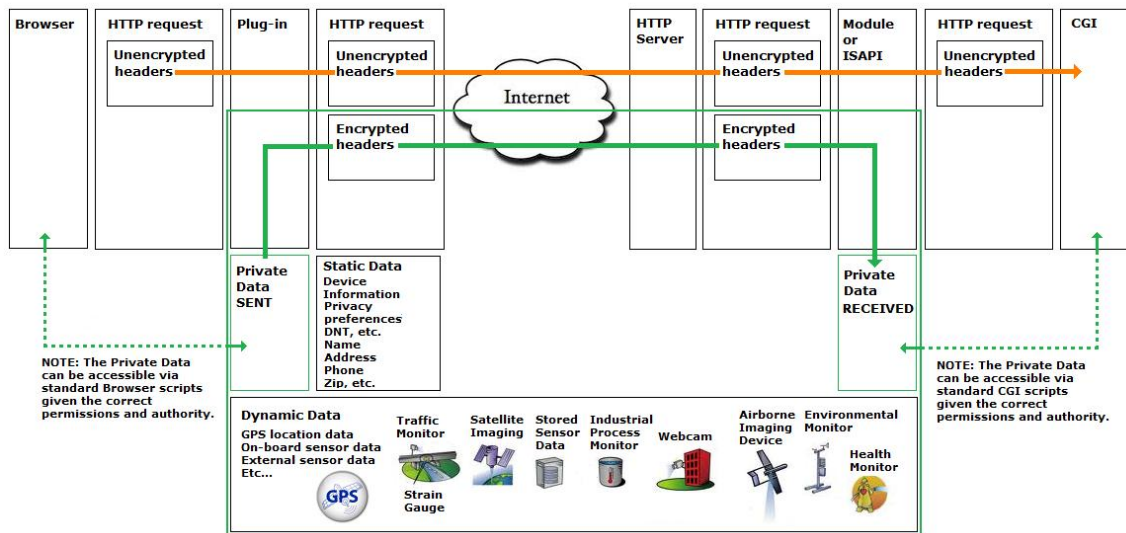
Basic Web Infrastructure: a browser "talks" to a Web server using the various components of HTPP
Enhanced HTTP: a new data channel sends real-time "private" data *utilizing the core Web infrastructure*

Enhancing HTTP - Adding a Channel for Privacy, Performance and Personalization Data
The need to transmit private data over existing HTTP infrastructure is increasing. 3PHealth believes the best approach is to use an encrypted channel inside the standard HTTP protocol

itself. Like on a telephone network, this data is hidden during transmission, but recognizable by a Web server. The 'Private Data' being added to the HTTP request can be either STATIC (privacy preferences, personal information, performance enhancing data) or DYNAMIC (GPS, sensor data, etc.). It is added using accepted HTTP standards, such as headers and cookies, so devices and developers need not learn anything new.

The addition of a private data "channel", just like the channels added to the phone networks, enables countless new revenue opportunities without disrupting the existing HTTP protocol or infrastructure. It inserts seamlessly into the existing protocol, to ensure no disruption and no new learning by developers and IT professionals. Location-based services are the first to be monetized and a privacy preference "switch", like the Do Not Track (DNT) header is currently being considered by governments and the W3C. A sampling of what standards-based, private data channel innovation enables includes:

- **Enhanced Privacy**
    - Enterprise policy management & compliance monitoring
    - Secure transmission of biometric user authentication
    - Identity Wallets and consumer sharing choice
- **Personalized Web Services**
    - Personalized content and advertising
    - Managing policy, promotion and simplifying navigation via browser menus
    - Mobile apps that can rival native apps in UI and functionality
- **Performance Optimization**
    - Real-time, real-world device and wireless network performance testing
    - Real-time performance monitoring by device, network or location
    - Mobile SLA analysis & remote device testing and management via the Web

Innovating the Standard... 3PHealth™

Since the very beginnings of 'transmission technology', every time a standard has emerged and has been adopted for wide use, there have been 'alternate channels' invented and applied to those standards for the purpose of transmitting 'more information' than the original technology was designed to transport…

… all without disrupting or replacing the original technology.

3PHealth, with it's Choice® technology, applies this time-tested and proven approach. The company's intellectual property adheres to the premise that the most valuable technological advances enable the successful introduction of valuable products and services *without disrupting the existing technology or economic base*. Choice® is additive. It provides a path for new technological and economic growth – without requiring immediate change to current business practices or Web infrastructure.   Effectively, the company's contextual data communications platform simply extends the HTTP protocol with a new 'data channel' designed to support Web privacy, personalization, and performance-enhancing products and services.

3PHealth's approach allows organizations and individuals to change - without forcing the pace of that change. It does so by respecting standards and utilizing existing programming skills for the

HTTP protocol. And while many will argue that all standards-based solutions should be open source, one need only look at the number of FRAND and cross-licensing arrangements in play in modern Web and mobile ecosystems to know that while it may be the desire of some, it is not the reality. Market advantage and positive economic innovation and growth is created by early adoption of innovative technologies that plug into the existing infrastructure. Strategically minded organizations have the opportunity to be the first to deliver and monetize products and services that utilize the 3Ps – and avoid the negative market impact regulation can impose on them.

Early adopters will gain the largest economic advantage, but everyone can participate for decades to come. As a standards-based technology, the 3PHealth approach is easily integrated into the enabling infrastructure - just as new services have been added to the fuel delivery, container-based shipping industries. It layers opportunity - just as tone-based dialing and data transmission have been added to the telephone network, or as digital data transmission has evolved beyond simple information about the type of browser.

More data, faster transmissions, more choice in data sharing and management, means, quite simply, more opportunity for the development of profitable products and services. Successful innovation, like Choice®, is additive. It respects the technology that has preceded it. It enables yet-to-be defined monetization models. It ensures replacement revenue for established products and services as they reach their end-of-life. It supports both privacy and personalized content and services – with or without tracking. It is the next major evolutionary step in Internet communications.

For more information, please contact us or visit us at www.3phealth.com

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