

## Cisco® HealthPresence™ : From Concept . . . to Pilot . . . to Market

### Cisco IBSG Healthcare Solutions Visionary Helps Make “Healthcare Without Borders” a Reality

Cisco HealthPresence, conceptualized, designed, and piloted by the Cisco Internet Business Solutions Group (IBSG), the company’s global consultancy, is transforming the way we experience healthcare. By combining high-definition video, audio, medical devices, and medical information, the care-at-a-distance solution has created an environment that is remarkably similar to what doctors and patients experience when they meet face to face. Because these interactions can take place between people who are hundreds or even thousands of miles apart, it turns the concept of “healthcare without borders” into reality.

Nick Augustinos, the Cisco IBSG senior director who conceived of Cisco HealthPresence, says it has sweeping benefits that span the healthcare spectrum. “HealthPresence promises to make healthcare more affordable and accessible, to increase the efficiency of care delivery, and to increase the availability and flow of medical information,” he said.

Augustinos guided Cisco HealthPresence from his initial concept through early prototypes and successful international pilots. And although the sophisticated end product addresses some of healthcare’s most complex problems, Augustinos started with a smaller-scale vision when he joined the Cisco IBSG Healthcare Practice in 2005.

“It started with us trying to figure out how to scale the healthcare system in a different way than we’ve done before,” he said. “We started thinking basically about how technology can optimize scarce resources.”

#### Framing the Issue

Traditionally, healthcare systems have responded to increased demand by adding more and more people to the care-provider ranks—an approach Augustinos says is simply unsustainable. At the same time, demand for healthcare will continue to grow as the world’s population ages, people live longer with chronic conditions, and more people in emerging countries join the ranks of the middle class. “In China and India, there are hundreds of millions of people who haven’t had access to health services, and now they’re demanding them,” Augustinos said. “So there’s stress on the system, no matter how you cut it.”



## Laying the Foundation

One of the projects in the pilot stage when Augustinos joined Cisco IBSG was the Health Care Interpreter Network (HCIN), developed by the Cisco Unified Communications division as one of the company's first healthcare solutions. The HCIN gave its 13 participating hospitals in Northern California quick and easy access to language interpreters via video conference or telephone. Interpreters responded to calls in Cambodian, Hindi, Hmong, Spanish, and Tongan, and the hospitals found that patient satisfaction and quality of care greatly improved.

"Video interpretation provided certain benefits, because the doctor could explain things better to the interpreter, which ultimately translates to the patient understanding better," Augustinos said. The HCIN also improved medical staff productivity and boosted interpreter program capacity at all of the participating hospitals.

The distinguishing characteristic of the HCIN was the way it made use of network capabilities. Rather than requesting a particular individual who might or might not be reachable online, users could enter their criteria—a Spanish speaker, for example—and let the network do the work of finding the first available match.

That principle was the foundation Augustinos built upon for Cisco HealthPresence. Adding blood pressure cuffs, stethoscopes, and other devices to the video technology would allow clinicians to assess patients, as well as see and talk to them, providing the next-best thing to an in-person doctor visit. But the truly transformational aspect, in Augustinos' view, was the potential for optimizing resources.

"If you were to have a well-established network of clinical expertise, then suddenly you can have these pods that patients can go to and access a whole variety of services," he said. "So in essence, we're bringing the services to the patient, versus bringing the patient to the services."

The possibilities enabled by that approach were enormous. Residents of remote areas could be treated by big-city specialists without having to travel; general practitioners could refer patients to specialists on the spot; doctors could make themselves available to the network if they had appointment cancellations; workplaces, hotels, and retail outlets could offer convenient healthcare facilities; new financing models could be designed.

Augustinos believed the HealthPresence concept held great promise, but in 2006 it was only that: a concept. "Everything was still all on a PowerPoint [presentation]," he said. "I started looking within Cisco and said, 'You know, there's this idea—where do we go to see if it's even feasible?'"

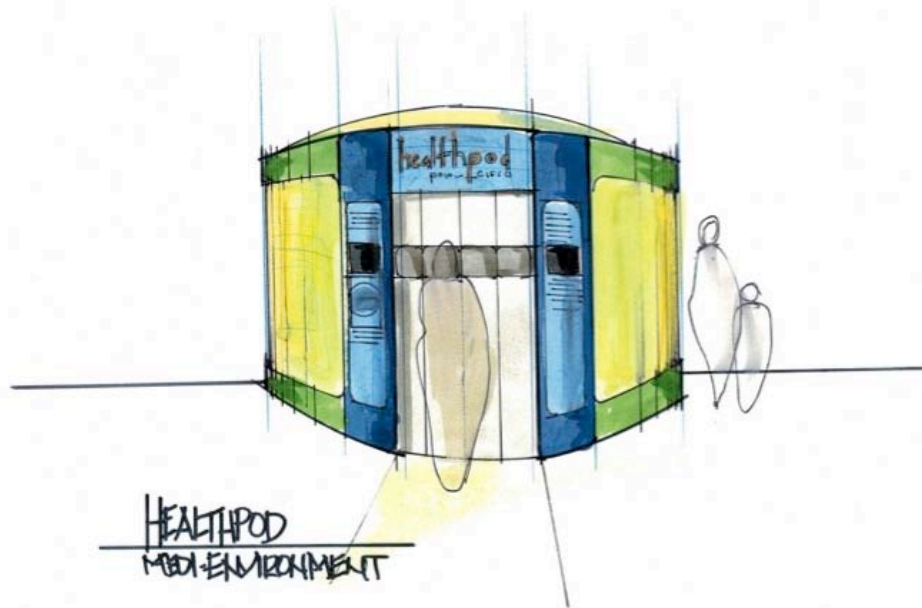
## A No-Frills Prototype

His search led him to the Cisco Technology Center, an innovation hub that initiates and encourages commercial development of strategic new technologies. Augustinos described what he envisioned—two-way video in conjunction with medical devices so a patient could receive care and a doctor could get physiological information remotely. Six weeks later, the Tech Center had built a doctor's station and a patient's station, each consisting of some

basic medical equipment and a video camera perched on a desktop computer. The next iteration, a week later, incorporated a printer for prescriptions and patient care instructions. It wasn't much to look at, but it worked.

"Basically they had proven that a concept such as this one could be created effectively with existing technologies," Augustinos said. "But to show it to healthcare executives and garner their attention, we needed something a little bit more polished."

Figure 1. Early Conceptual Illustration of Cisco HealthPresence—Then Referred to as "HealthPod"



Source: Cisco IBSG, 2006

At that point, Augustinos approached Cisco IBSG Senior Vice President Gary Bridge, and persuaded him to fund a design phase to integrate the technology into a comfortable patient environment. "The first impression that this design would create would be extremely important," Augustinos said. Patients are accustomed to visiting a doctor's office and being in the same room, "so if you're going to change that, in a way that some might think of as less desirable, you might as well try to create the best experience possible."

By late 2007, Augustinos had a prototype ready to unveil for health industry leaders at Nobel Week in Stockholm. The clean, sleek design offered the "wow" effect he was looking for, and the video technology had been updated with the then-new Cisco TelePresence™, making the experience even more immersive.

Augustinos and his colleagues demonstrated the system, but between demos, they just watched people's reactions as they looked it over. "It was interesting. People started role-playing, kind of letting their imaginations run," he said. "People could visualize in their mind what this could be."

Figure 2. Nick Augustinos (right-rear) Demonstrates Cisco HealthPresence Prototype in India, 2007



Source: Cisco IBSG, 2007

### Global Pilots: Making the Concept Real

Cisco IBSG began pilot programs in 2008 to get real-world feedback on Cisco HealthPresence. The first was conducted at the Aberdeen Royal Infirmary in Scotland by the Scottish Centre for Telehealth, Cisco, and the National Health Service. It provided a remote clinic experience for patients with non-life-threatening illnesses and injuries. The San Jose pilot, operated by UnitedHealth Group and Cisco, in partnership with HealthCare Partners, was conducted at Cisco headquarters. Each Cisco HealthPresence unit was staffed by an attendant trained to operate the medical devices under the instruction of the remote healthcare professional.

A patient survey from the two programs found that more than 95 percent of patients were satisfied with the Cisco HealthPresence experience; more than 95 percent of patients felt that the visit was confidential; and more than 90 percent would recommend the service to others.

Pilot programs also have been conducted in North Carolina, Paris, and New Zealand. In January 2010, Cisco announced a groundbreaking initiative with Molina Healthcare, two community health centers in San Diego, and the state of California to provide health and wellness services to underserved communities throughout the state. As part of this program, Cisco is contributing \$10 million of product, services, and support.

**Figure 3.** The Scottish Centre for Telehealth Pilot Generated Positive Responses from Patients and Doctors



Source: Cisco IBSG, 2008

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"I found the Cisco HealthPresence visit wasn't any different from a visit to my regular family physician, except it was on campus and more convenient. The diagnostics were much faster, and quality of consultation experience was better than what I'd expected."

**Shashi Kiran**  
Patient in Cisco HealthPresence trial, San Jose

"Clearly from the outcomes of our study at the Aberdeen Royal Infirmary, technologies such as HealthPresence can be transformative in our ability to deliver care effectively by bringing services to citizens as opposed to citizens to services."

**Richard Wooten**  
Director, Scottish Centre for Telehealth

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As Cisco HealthPresence enters the market, Augustinos is pleased with the outcome created by "a village" of people and departments inside and outside Cisco. "Starting from our initial thinking, the technical capabilities of Cisco allowed us to create momentum around telemedicine like we've never seen before," he said. "And that's kind of the journey that we took."

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### More Information

Cisco Internet Business Solutions Group (IBSG), the company's global consultancy, helps CXOs from the world's largest public and private organizations solve critical business challenges. By connecting strategy, process, and technology, Cisco IBSG industry experts enable customers to turn visionary ideas into value.

For further information about IBSG, visit <http://www.cisco.com/go/ibsg>.

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