

# CASE STUDY

## University of Pittsburgh Medical Center

### *Blending the Expertise of Industry Giants To Achieve Enterprise Transformation*



Upholding its longstanding stature as a world-class technology leader, UPMC established a multi-faceted relationship with IBM that addresses many of the universal challenges faced by health-care organizations today. Through this visionary alliance, UPMC will access continuous technology upgrades and will re-engineer its IT infrastructure to an on-demand virtualized environment.

The bottom line results for UPMC are impressive. UPMC projects capital savings in excess of \$100 million over 8 years and a reduction of 15-20% in annual operating expense. Concurrently, UPMC will achieve a complete technology overhaul, including infrastructure, hardware/software, network configuration, organizational design and processes.

Additionally, UPMC and IBM will create a technology transformation model that can be accessed and replicated by other forward-thinking health systems.

### The Trend Toward Obsolescence

Noted for IT innovation, UPMC has consistently ranked #5 across all industries nationally and #1 in the health care field in Information Week's annual technology survey. Yet, the organization still faced many of the same challenges common to all healthcare organizations: infrastructure capacity/obsolescence and the need to provide more services with fewer resources.

In recent years with the increasing demand for new technology, IT funding has been directed primarily toward new applications. As each new "best of breed" solution is purchased, the existing infrastructure bears greater strain and the risk of overload.

The complexities and costs of configuring systems to run multiple, disparate applications are substantial. Compounding these costs are the added expense of licensing, maintenance agreements, floor space, power, and specialized staff to manage each platform.

Caught up in the day-to-day race to meet the demand for new applications, health systems recognize the growing gap with their aging infrastructures, but do not see a clear solution within existing budgets. Their choices are limited: increasing resources, outsourcing, or infrastructure re-engineering.

The principals of Innovative Health Strategies LLC, a subsidiary of Gardner Carton & Douglas LLP, were instrumental in guiding UPMC toward completion of this groundbreaking partnership with IBM. Drawing upon its proven expertise in large-scale technology procurement and outsourcing solutions, Innovative Health Strategies assisted UPMC by expanding its vision and finalizing the terms of this strategic alliance, from design through documentation.

## Dynamic Collaboration

UPMC recognized an impending crisis. Resources, budget and space were being stretched to the limit while demand continued to grow exponentially. It was essential to channel funds into a more robust, reliable, and nimble infrastructure capable of responding to emerging demands and innovative technology. UPMC's goal was to totally re-engineer the infrastructure including hardware, software, organizational design and processes.

The task at hand was daunting. During initial evaluation, UPMC projected the costs to purchase technology under its current system at the best known discounts for the next eight years. With that budget in mind, vendors were eager to enter negotiations to become a single source supplier of goods and services. Previous successful outcomes with IBM, coupled with its commitment to propagate advancements in the healthcare industry, made the technology giant a clear choice for UPMC's undertaking.

The alliance of these two world-class organizations provides unprecedented benefits for both entities. With significant savings over projected costs, UPMC is positioned for a complete enterprise transformation enabling swift response to future demands and new technologies. IBM will not only appreciate the financial benefits of this long-term relationship, but also will partner with UPMC to develop and commercialize solutions that promise to shape healthcare of the future.

## Components of Enterprise Transformation

### ▲ *Continuous Technology Upgrades with No Additional Spend*

Key to the 8-year agreement is a commitment for continuous **hardware refresh**, including servers, storage, personal computers and network equipment. IBM will replace one-third of UPMC's hardware each year, ensuring continued access to cutting-edge technology. This includes projections for growth of servers, personal computers, and storage required to keep pace with UPMC's continued growth, estimated at 7% annually. If additional equipment is required over and above these projections, IBM has guaranteed preferred pricing.

### ▲ *Conversion to On-Demand Computing*

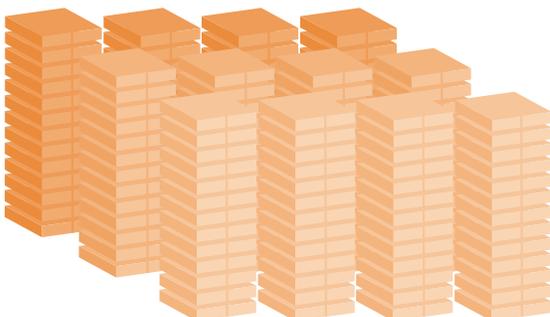
The typical IT infrastructure consists of multiple silos that house distinct and separate technologies and processes. Although the numerous configurations required for each application group rarely operate at full capacity, the unused portion is unavailable for use by other resources. Each silo requires its own hardware, footprint, and technological expertise. The infrastructure required for these multiple applications is immense and there is substantial underutilization and redundancy.

The crux of UPMC's transformation project is conversion to an **on-demand** computing model

## Consolidation

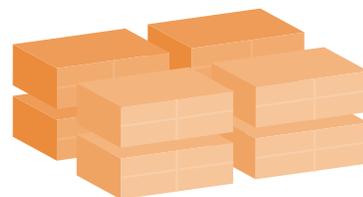
### BEFORE

- 786 servers
- 40 storage configurations
- 9 operating systems
- 9800 sq. ft. data center

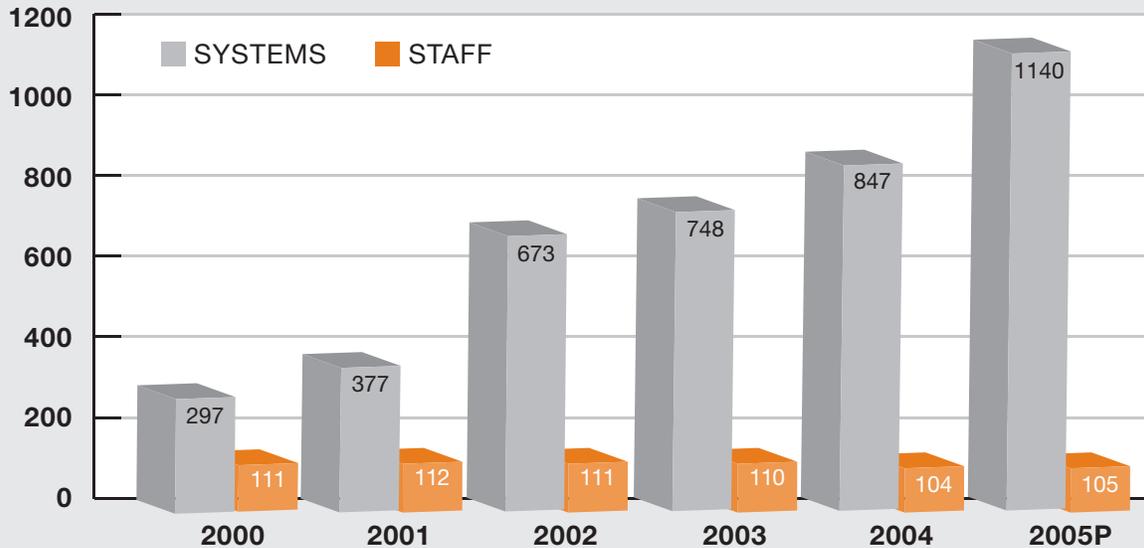


### AFTER

- 305 servers
- 2 storage configurations
- 4 operating systems
- 3000 sq. ft. data center



## UPMC Systems/Staff Trend



using **virtualization** and an **autonomic computing system**. Converting to on-demand computing will break down UPMC's silos and its attendant limitations to allow for shared resources capable of fluid response to organizational urgencies.

Virtualization transcends traditional hardware solutions by partitioning single physical servers into an easily accessible virtual resource pool. The virtual server is dynamic and can rapidly shift capacity to and from specific functions to accommodate changing application workloads. Autonomic computing systems will result in more efficient server management, minimize system disruptions, and support disaster recovery strategies.

All of this creates opportunity for **consolidation** of diverse applications into fewer and more powerful servers. UPMC expects to combine its current 786 servers and 40 storage configurations into 305 servers and 2 storage configurations. In addition to simplifying and streamlining operations, this will open up two-thirds of the current data footprint.

### ▲ **Enterprise-Wide Re-Engineering**

In concert with the technological changes, IBM will provide staffing and services to help UPMC transform its IT organizational design and processes to achieve consistency and efficiency in accordance with worldwide best practice standards.

This re-engineering will enable UPMC to support more systems with less staff, and simultaneously deliver superior service and performance.

### **A Clear Path to Success**

Perhaps the greatest factor leading to this groundbreaking alliance is the recognition from the highest levels at UPMC that IT is not just a critical support function. Instead, UPMC's core belief is that IT is the key strategic asset that will position the organization to manage, access, and use data to improve patient care quality and enable the health system to meet increasingly complex challenges.

Next, is the proactive nature of UPMC's leadership to look beyond day-to-day operations to see the big picture and identify potential system flaws and breakdowns. As with many healthcare organizations, UPMC's infrastructure was being pushed beyond its limit and the need for an immediate solution was recognized.

Third, UPMC captured a comprehensive forecast of future spend, and established a defined goal to spend smarter, completing the transformation at or below projected levels.

The fourth key success factor was to put the right people around the table. With IBM, UPMC found a partner that could enhance its expertise and resources to create a new paradigm in healthcare.

## Pioneering The Future of Healthcare

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By leveraging its spend through a strategic alliance, UPMC created an expansive relationship with IBM that will benefit the industry at large, while simultaneously creating revenue-producing opportunities. These two entities, each a powerhouse in its own arena, will invest resources totaling \$50-\$200 million to co-develop and market new medical technology products and systems. Whether it be the impending threat of bioterrorism, the move to fully interoperable electronic medical records, or a challenge that is not yet on the radar screen, UPMC and IBM have committed funds and knowledge to equip the healthcare industry with solutions.

## Build It, Use It, Share It

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UPMC's Enterprise Transformation Project sets forth many models that can be replicated and/or accessed by other organizations, regardless of size and technological sophistication.

**Technology Transformation** – All healthcare organizations must face the challenge to stay ahead with technology yet improve efficiency and reduce operating costs. With reduced capital expenditure, UPMC will have the most advanced technology and achieve 15-20% annual operational savings. The basic principles behind this re-engineering initiative are applicable and adaptable to other health systems.

**Access to UPMC's On-Demand Infrastructure** – When considering options to address infrastructure inefficiency and obsolescence, some healthcare organizations may decide to outsource rather than re-build. Once UPMC has completed the initial phases of its transformation, the potential exists to service other healthcare organizations with its on-demand computing services.

**New Products and Systems** – UPMC and IBM will make available the new products and systems they develop through their joint R&D strategic initiatives.

## Fast Financial Facts

### Pre-Agreement

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▲ Projected spend over 8 years: \$435 million

### Post-Agreement

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▲ Actual spend over 8 years: \$317 million



- State-of-the-art infrastructure
- 15-20% savings in annual operating expense
- 6,000 square feet of space freed up for other uses
- Total hardware refresh every 3 years

## Innovative Health Strategies LLC

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