Strategies in Corporate Finance

Healthcare Information Systems

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Shattuck Hammond Partners LLC is a full-service investment bank serving all sectors of the healthcare industry. Our professional staff of over 40 investment bankers is one of the largest and most experienced groups on Wall Street dedicated to healthcare. Through offices in New York, San Francisco, Atlanta and Chicago, Shattuck Hammond Partners provides corporate finance services to healthcare providers, vendors and payers nationwide. Our services include strategic advisory and capital planning services; valuations and fairness opinions; mergers, acquisitions and divestitures, private placements of debt and equity and restructuring.

Shattuck Hammond Partners has recently extended our more than 10-year unmatched franchise in healthcare services to the healthcare information technology industry through several strategic hires and a clear commitment of resources.

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Executive Summary

Healthcare information technology, while having tremendous potential to impact positively both the cost and quality of medical care has, overall, been disappointing to both users and investors. A number of key drivers such as improved technology, awareness of medical errors, legislation and physician adoption lead us at Shattuck Hammond Partners to believe that the technology and the industry have matured and can finally begin delivering on or even exceeding its promises with a degree of consistency.

Over the past decade, both public and private investors have poured money into this sector with a variety of success, with a few consolidators often driving ultimate returns and liquidity. The vendor market place is now split between the larger and the smaller companies with 20 companies driving close to 80% of industry revenues and half of them having revenues of less than $50 million - what a sizable health system might spend on IT in a year. While the smaller players might have great technology, they too often lack the marketing budgets to attract attention and the balance sheets to assure prospects of their staying power. With the IPO markets shut to all but the highest quality and cleanest stories, we believe that an increasing level of consolidation is likely to occur as investors and entrepreneurs seek liquidity. While the traditional consolidators are no longer active, larger players will pick up key technologies and outside companies will enter the market through acquisition. Further, we would expect private company to private company mergers to increase, creating the necessary scale, product breadth and financial runway to compete effectively. While challenging to execute, given the necessary negotiations, they can create competitive businesses with the scale to succeed and flourish.

Overview

Healthcare information technology (HCIT) is using information to change, manage, measure or optimize the delivery of and payment for healthcare. It includes categories of software as diverse as: labs results reporting and billing, electronic prescribing, physician office management, hospital billing to aiding physicians in the diagnosis and treatment of illness. The sector includes the software used to process insurance claims as well as the services to run hospital IT departments or improve transcription. For the past decade, the performance of this sector has been mixed at best, with many companies and their executives over-promising and under-delivering, both to their customers and shareholders. But at this juncture, we believe a confluence of forces has moved the industry to where it can finally begin delivering on its promises of lower costs and higher quality, as well as increased shareholder value. The key drivers include: (1) improved technology (including but certainly not limited to, processing speed, wireless innovation and bandwidth); (2) heightened concern over issues of patient safety and avoidable medical errors; (3) legislation (both state and Federal); and (4) promising signs that the physician community is becoming more willing to adopt and embrace new information technology. To paraphrase Churchill, we believe we are witnessing the end of the beginning in this market, where more promises will be delivered than disappointments and that this increased application of information to healthcare will have a profound and beneficial influence on the healthcare system. As we will explore below, the landscape appears bifurcated between the "littles" or the farm teams that develop great application software and have the spirit of entrepreneurs, and the "bigs" or the major league players that can bring national (or international) distribution, healthy balance sheets, and access to capital to bear on the challenges of the sector. We believe we are entering a phase of increasing consolidation caused by several factors as the "bigs" continue to use the "littles" as development shops, much like some pharmaceutical manufacturers use the biotechnology sector, and the "littles" face a sell, partner or stay the course decision.

This paper is meant to serve as either an introduction or a refresher on the health information sector. We will discuss the following:

- Brief review of where the industry stands
- Where it's headed
- What's driving its development
- A very brief history and our view of the playing field as it stands today
- Some perspective from the "field"
- Our view on the capital markets and cycle of investment in the HCIT sector
- Concluding discussion regarding what we believe to be a crucial strategic dilemma for many companies/investors in this sector

Current Status - Where We Are

Healthcare Market - Massive and Constantly Changing: Healthcare in the United States represents the largest sector of the largest economy in the world. According to Federal Centers for Medicare & Medicaid Services (CMS) healthcare spending currently amounts to $1.5 trillion (14.7% of GDP) and is expected to reach $2.6 trillion (16.8% of GDP) by 2010. Driven largely by an aging population and innovation in medical technology and pharmaceuticals, healthcare cost inflation has put innumerable pressures on the healthcare system, businesses and individuals. As a result, the population of uninsured individuals is rising (currently 40 million Americans), employers are shifting a greater proportion of the healthcare cost to employees, the providers' costs of delivering healthcare are skyrocketing (note striking physicians over malpractice insurance rates) and managed care is continuing to evolve.

HCIT is an Effective Tool: Faced with shrinking resources, increasing demand and declining reimbursement, the economics of healthcare delivery are under enormous pressures. We believe (as we have for close to

a decade) that information technology represents a key component of the solution to these pressures. IT in healthcare has the demonstrated potential to save money for its users, providers, patients and employers alike. Cost savings include eliminating or at least reducing waste (e.g., reduction of repeat procedures due to lost results), reducing non-revenue generating overhead, simplifying administrative procedures and limiting potential errors (which can be extremely expensive in both human and economic terms). Yet despite these advantages, the healthcare industry, which often eagerly embraces new technology related to treatment, often fails to recognize the value of information in the delivery of patient care.

HCIT Spending Continues to Grow: Healthcare information technology spending, while growing more slowly than the costs of healthcare, continues to rise. Where the spending was roughly $19 billion in 2000, it is expected to grow for the next two years at roughly a 9% rate to reach $25.6 billion[1] . Despite these increases, hospitals continue to spend a smaller fraction of their operating budget on IT than do virtually any other information-based industries. Where banks and financial services firms, for example, spend 3.9 - 4.1%, 54% of hospitals spend only between 2.1-3.5%[2]. This is all the more astounding given that healthcare is by its nature extraordinarily information-intensive. The majority of what happens to a patient in the healthcare system is dependent on obtaining information and acting upon it, be it lab results, referrals, prescriptions or claims.

Key Drivers of Accelerating Change

Patient Safety Driving Clinical System Investment. In 1999, the Institute of Medicine released a landmark study, "To Err is Human: Building a Safer Health System,"[3] which showed that medical errors are now a leading cause of death in America, killing an estimated 98,000 people here each year. According to the study, there are more deaths in hospitals each year from preventable medical mistakes than there are from vehicle accidents, breast cancer, or AIDS. In part as a result of these findings, the U.S. Business Roundtable formed the Leapfrog Group, whose name has become synonymous in the industry with patient safety. Two of Leapfrog's initial recommendations for industry-wide safety standards are likely to increase both attention to and investment in information technology. These are: Computerized Physician Order Entry (CPOE), having physicians enter orders into a computer rather than writing them down on paper; and Evidence-Based Hospital Referral, selecting hospitals with proven outcomes or extensive experience with specific high-risk conditions or procedures that have a high risk of death or complications. National concern for patient safety has continued to build, and senior hospital managers are finally making it a key performance objective (at last!). With the State of California mandating some form of CPOE within its hospitals by 2005, we expect legislative attention in this area to expand nationwide in the years ahead.

Disease Management and Evidence-Based Medicine Grow in Significance. It is no less than terrifying that a patient's cancer survival rate or likelihood of surgery can vary dramatically from city to city or depending on where a physician trained. Evidence-based medicine, the idea that treatment variation should be reduced to drive both higher quality and more cost effective care, and disease management are beginning to address this in part by standardizing the care patients receive. Related to this phenomenon, a recent RAND Corporation study revealed that only 55% of patients are receiving the proper diagnosis and treatment for a fairly broad spectrum of common disease states, both chronic and acute.[4] We believe findings such as this further support the clear need for ongoing measurement and management of medical care to improve outcomes and lower associated costs. In the words of Andy Grove (Chairman and former CEO of Intel), healthcare needs to go through a transformation [analogous to the transformation from mainframe to the low-cost PC] within the next ten years. It's been said before and can't be ignored, with an aging and vocal generation of baby boomers, healthcare must be redesigned to be more patient-centric, more cost-effective and able to deliver better outcomes; otherwise the system is in danger

1. Sheldon Dorenfest and Associates press release on www.dorenfest.com
2. Modern Healthcare's annual PwC survey; February 10, 2003
3. All relevant IOM reports are available and worth reading at www.iom.edu\reports
4. The Quality of Health Care Delivered to Adults in the United States; N Engl J Med 2003; Jun 26, 2003.

either of collapse or of damaging the U.S. economy. Information is the key enabler to survival. The "80/20 rule" holds especially true in healthcare - a handful of high cost diagnoses (asthma, chronic obstructive pulmonary disease, or diabetes, to name a few) are often responsible for the bulk of healthcare claims costs. Disease management, or the realization that it is often more cost effective to keep these patients healthy and out of the hospitals, is further driving interest in using information technology, especially smart diagnostic and communication tools such as remotely monitored scales, glucometers, etc.

Technology Continues to Improve: Improvements in technology and technological infrastructure are without question key reasons that the adoption of IT solutions is accelerating within the healthcare sector. With faster and more powerful computers dropping in price virtually every month, systems become both easier and less expensive to use and maintain. Tablet PCs, PDAs, wireless technology, think-speed computing and improved voice-recognition and computer-aided decision support are just some of the tools that have become affordable as computers gain speed/power and lose size/weight. Furthermore, the Internet, although over-zealously touted as the HCIT silver bullet during the dot-com era, remains critical and effective for the delivery of web-enabled services and consumer-directed healthcare.

Evolution Continues; A View from the Field

At Shattuck Hammond we conducted an informal survey of some of our hospital clients to gain some insight from their experiences using HCIT systems. The first thing we learned is that if you've spoken to one CIO, you've spoken to one CIO, because they all have very distinct opinions and preferred methods. Vendor selection strategies, for example, ranged from single source to "best of breed" to "best of few". While some hospitals are downloading rounds to Palms and Pocket PCs, others are concerned with security and won't provide or support them, preferring some form of mobile PC. What becomes clear is the continuous evolution of technology, business issues, and adoption cycles. As shown in Exhibit 1, health systems are adopting technology as it evolves and in support of the business issues they face rather than cheerfully purchasing version 1.0 of whatever their vendors are peddling (as had happened all too often in years past). While technology and deployment methods continue to evolve and reimbursement and treatment foci shift, certain elements (such as physician satisfaction) remain constant areas for attention.

Exhibit 1

Past	Present	Future
Technology		
Mainframe	PC-based client/server	Browser-based
Hard wiring	Internet-enabled WAN	802.11b (wiFi)
Financial systems	Integrated clinical, patient management and financial applications	Revenue Cycle Management
Dumb terminal	Desktop at nursing station	Handheld (PDA or Tablet PC)
Departmental islands	Enterprise solutions	Multi-enterprise incorporating payer data
Organizational and Business		
Single entity/single focus providers	Integrated delivery networks	IDNS and specialty hospitals
Inpatient focus	Ambulatory	Ambulatory and alternative site (including LTC)
Case-by-case care	Outcomes-based care	Evidence-based medicine and protocols
Fee-for-service reimbursement	Managed Care	Consumer-driven healthcare
Hospital CEO Headaches		
Physician satisfaction	Physician satisfaction	Physician satisfaction
Y2K	HIPAA	CPOE
Survival	Profitability and revenue cycle management	Patient Safety

CPOE - Yes, It's Happening

All of the hospitals we spoke with were moving towards CPOE but at varying stages. Some have already eliminated the majority of paper (although 15 or so forms remained) while others are planning to roll CPOE out to selected departments within a month. One community facility had been using a CPOE system for three years (clearly, early adopters) with 60% physician compliance and no perceptible change in admitting preferences, while another facility was continuing to debate CPOE vendors after twelve months of review. The common thread in this area was an emphasis not on systems (many different vendors were used) but on the adoption process needed to drive change. If a physician sees the promised benefits of the system, such as faster lab results or reduced errors, and is taught to use it without a delay in rounds, adoption will occur. In our interviews several CIOs emphasized the

importance of making it easy on the user. While that seems intuitive (consider 1-click ordering at Amazon.com), a clinical rule that is difficult to act on (even as simple as ordering lab tests when digoxin is prescribed) will be ignored more often than not if there is a real or perceived "hassle factor."

Technology to Solve Business Issues

While lacking the sizzle of CPOE or wireless technology, revenue cycle management is clearly an important topic among CIOs and of keen interest to the CFO who holds the organizational strings. With intense pressure on the reimbursement process, there is strong interest in methods to improve speed and efficiency of billing and revenue collection. We have spoken with several hospitals that are using both technology and outsourcing services to improve revenue cycle management capabilities. Areas such as transcription, coding, health information management and in some cases the entire IT department were noted as ripe for new technology and service solutions. In several instances, CIOs stressed the importance of a blend of technology and services. For example, several hospitals were automating elements of their transcription workflow while retaining third party service providers during peak load times. In another instance, a hospital CIO deployed a contract management system, which brought over $40 million to the bottom line over time.

HCIT - Reflecting on the Past and Observing the Present

To understand HCIT, it is critical to understand the dynamics of each constituency in the healthcare delivery system - physicians, hospitals, payers and other market participants.

Hospitals - it began with financial and is still moving to clinical

Healthcare information technology, especially in the acute care setting, began simply as financial systems. Companies such as HBO & Co. and Shared Medical Systems (both since acquired) dominated in providing software to manage the financial infrastructure of the enterprise. This significantly increased the likelihood that bills were generated and collected promptly. Next, many laboratory, radiology, pharmacy and other clinical departments were "wired," although the application focus remained on the business aspects of healthcare. It was only in the mid-1990s that software companies such as Cerner began embracing a more holistic, clinical approach, viewing the patient, not the patient invoice, as the ultimate unit of a system's focus. Over the past few years, clinical software has been both the highest profiled and fastest growing sub-sector in the group. A large number of companies have been founded on this premise, yet market leadership remains in the hands of a few. Many of these other vendors lack the distribution and support systems to capitalize on the market, and therefore they must partner or merge to gain the necessary scale.

Who are the current players? Most of the larger companies in this sub-sector have grown in part through acquisition of both customers and products, each one looking to grow horizontally through acquisition to leverage its channel. All have been active channel partners as well. As it stands today, the large enterprise software market leaders (in alphabetical order) are:

- **Cerner** - Primarily focused on inpatient care, Cerner's vision of clinically driven computing has pervaded the industry. Cerner has become a strategic acquirer, buying small installed bases in need of upgrade paths such as Dynamic Healthcare Technologies for its lab base or niche technology applications such as Zynx Health, a leader in evidenced-based medicine, while tending to exercise strong price discipline.
- **Eclipsys** - Primarily offering inpatient solutions, Eclipsys is best known for its flagship CPOE software, which was developed at a major academic medical center. Eclipsys was formed through the acquisition of several companies but has not made an acquisition in recent years, focusing instead on internal development. The company recently announced that severe response time issues have affected its latest generation system and are once again suspended providing financial guidance. These events, while not fatal, clearly will lead to credibility gaps with both customers and investors.
- **GE Medical Systems** - After acquiring Medicalogic and Data Critical, GEMS moved beyond the radiology suite and now offers more enterprise solutions, more recently adding Triple G Systems for its lab base and product. With virtually unlimited access to capital, GE is the industry's 800 lb. gorilla. GE can leverage its significant product breadth, bundling in software with

equipment as it did in a recent seven-year contract worth potentially hundreds of millions of dollars with New York-Presbyterian Hospital.

- **IDX Systems** - While its roots are in providing office management systems to large academic physician group practices, IDX has a strong clinically focused product for the inpatient enterprise, further enhanced by a recent strategic alliance with eMedicine to integrate contextually linked clinical content to the point-of-care. Its imaging products have enjoyed strong success and the company recently divested its foray into transcription.
- **McKesson** - (formerly HBO & Co.) Now recovered from the HBOC debacle, McKesson is trying to drive a one-stop shopping approach as it does in its hospital supply business. While software sales appear to be slowing, the company has reported good success focusing on Horizon Clinicals, its CPOE offering acquired from an academic medical center. We believe that McKesson continues to be in the market for attractive acquisition candidates.
- **Meditech** - Focused on smaller hospitals, a key driver of Meditech's success early on was whenever Columbia/HCA acquired a hospital, it would replace the existing systems with Meditech. Meditech is employee owned and has never had IPO plans.
- **Misys Health Solutions** - Through its acquisitions of Sunquest (lab, radiology and pharmacy departments), Medic (physician office software), HCIS (homecare) and Patient1 (CPOE, enterprise systems), Misys now offers a full complement of HCIT applications.
- **Siemens** - (formerly Shared Medical Systems) Primarily inpatient and financial systems focused and with a large installed base, Siemens has been working to develop a new clinically driven product, Soarian, and to leverage its clear strength in the imaging suite.

In addition to these larger companies, hospital software vendors can be divided between smaller enterprise systems that offer full solutions, such as **QuadraMed** or **CPSI**, and niche vendors that focus on a single suite of products at the departmental level. The latter include companies such as **IMPAC Medical Systems** (radiation oncology software), **Merge Technologies** (PACS and related software), **Scheduling.com** (enterprise wide scheduling), **Omnicell** (supply and medication dispensing), **Picis** (critical care software), **VISICU** (intensive care unit monitoring and management software) or **Mediware** (blood bank operating room and pharmacy systems). Among this group, we expect to see continued consolidation, both horizontal and vertical, as vendors seek to acquire scale and increase their customers' wallet share. We expect to see others with unique technology absorbed by larger vendors.

Physician practices - where even free isn't cheap enough

On the physician side, the adoption of IT correlates directly with its impact on the physician's wallet. This is a mixed blessing, as the typical physician practice view of IT has been: "If it isn't broken (and sometimes even if it is), don't spend any money to fix it." As such, software first made its appearance to help manage the business aspects of medical practices such as scheduling, billing, accounts receivable, contract analysis and the other components of practice management. This has historically been a two-tailed market. On the low end, where it was almost a cottage industry, at one time there were more than a thousand vendors of home grown office management software. At the other extreme are large and still independent software vendors, such as **IDX Systems** and **Epic Systems**, which dominate the large, academic and multi-specialty medical group market. Additionally, the broad reach of the Internet gave rise to multiple web-based services companies that offered solutions for the physician market based on their own proprietary technology. A mix of consolidation and Y2K shrank this market substantially over the last few years. Still, there remain numerous vendors today that have reached a plateau in their business and must consolidate to reach the next level. Like the hospital market, the physician market is beginning to focus more on clinically relevant products, such as electronic medical records and electronic prescribing. These markets have been glacially slow to evolve and, in our opinion, given the price inelasticity of physician demand, will remain that way absent an outside regulatory or legislative influence.

Handheld Application Vendors. Because physicians are, in many ways, the ultimate mobile professionals, many companies focus on delivering the tools they need at the point-of-care. While this space was particularly frothy during the dotcom times and many companies have gone by the wayside, a few significant players not discussed elsewhere exist. We would divide handheld vendors into two groups. Tool-based companies offer specific software

solutions such as charge capture, e-prescribing, rounds dictation, etc. Strong representative private companies would include **PatientKeeper** (with a broad product suite) and **MedAptus** (focused more on charge capture and dictation). Content-based companies (often working with publishers) focus on bringing high quality content and dynamic decision support when it is most important. With medical knowledge growing exponentially, the importance of this is critical. **Skyscape**, with multiple medical publisher relationships, is able to integrate content dynamically from several sources for its clinician users at the point-of-care. **ePocrates**, which has focused primarily on formulary and drug reference materials, is believed to have the largest number of clinical subscribers.

Who are the current players? Physician groups, especially the smaller ones, have been notorious for their resistance to purchasing information technology. They probably spend a smaller portion of their revenues on it, even in an industry known for its IT stinginess. While there are seemingly countless small vendors selling into this market, noteworthy players not discussed in the Hospital Overview include:

- **Allscripts Health Solutions** - The leader in e-prescribing, Allscripts is focused on the creation of an electronic medical record ("EMR") system for ambulatory care settings. Its close relationship with IDX Systems gives it access to IDX's large installed base. Allscripts has made two small acquisitions recently and emerged from the dot-com era with a strong cash position and plenty of momentum. Through its Physicians Interactive division, Allscripts also targets the pharmaceutical marketing dollar through e-detailing (on-line physician marketing).
- **A4 Health Systems** - Led by the founder of Medic Computing (now Misys' physician group), A4 provides solutions (both clinical and financial) to physician offices and emergency department and clinical data repository systems for hospitals. Several of these products came through acquisition.
- **Epic Systems** - Fiercely privately held, Epic is trying to expand from its strong ambulatory offerings to the inpatient/CPOE realm. While its recent $1 billion contract with Kaiser could be risky, as Kaiser contracts have damaged several HCIT companies in the past, Epic has shown focus and strong execution, winning another major multi-facility inpatient contract recently.
- **Quality Systems** - QSI's NextGen product has enjoyed both strong growth and industry acclaim. With a dental division showing limited growth opportunities, we would expect them to focus more on building out their physician service portfolio.
- **WebMD** - Through its acquisition of Medical Manager, WebMD became the largest vendor selling software to midsized medical practices. With close to $1 billion in cash, we expect WebMD will once again become an aggressive acquirer as it works to integrate Medical Manager with recently acquired Advanced Business Fulfillment, focusing on horizontal growth as it seeks to grow customer wallet share and Medifax - EDI (for $280 million!) to further increase its range of service offerings.

Payers - run like a business (because they are)

Because most of what they do is move information around, healthcare payers have traditionally been the most willing to adopt technology as well as related technology outsourcing services. In fact, insurance companies were among the earliest users of computers in business. As the party at risk for the ultimate payment of healthcare services, payers are in constant search of methods and processes to improve efficiency and mitigate their economic risk.

At the peak of the dotcom boom, concerned that Healtheon and WebMD were significant threats, a consortium of seven major insurance companies formed **MedUnite** to compete. Each payer contributed initial capital of approximately $11 million and the venture began its somewhat typical dotcom existence with grandiose visions and palatial office space. At its peak valuation, when it purchased **NDCHealth's** physician claims clearinghouse, MedUnite enjoyed a valuation of close to $300 million. Unfortunately, like many of its Internet brethren, MedUnite's business kept pace with neither its vision nor valuation and it was acquired by **ProxyMed** for $23.4 million in cash and convertible debt.

Who are the current players? We divide payer software companies into three main groups: claims processing (which encompasses all the aspects of running a managed care plan), decision support/care management and the emerging consumer-directed enabling companies. In addition to a software license model, many of the claims processing vendors offer a business process outsourcing

(BPO) component where they can perform as much of the claims function as their client wants to outsource.

- **Claims Processing** - After in-house development, publicly held **Trizetto Group** (whose acquisition of Erisco in 2000 catapulted them to the top of this list) dominates the claims processing IT market. Several other independent participants, such as **QCSI**, and divisions of larger companies such as **CSC** and **Perot Systems** (which acquired Health Systems Design Corp), also compete in this segment. More recently, the landscape shifted with Whitney & Co.'s acquisition of **AMISYS** and its sister company **Synertech** from **Platinum Equity**. With the former CEO of AMISYS returning to run the combined entity, we would expect it to show more signs of aggressive growth going forward, especially on the BPO side of the Synertech business.

- **Decision Support** - While claims processing vendors offer some decision support tools, niche vendors typically have more robust solutions. They usually target a specific, discrete segment of the pre-payment or post-payment claims process, such as provider profiling, appropriateness of care, claims analysis, post-payment audit, etc. As mentioned above, disease management technology and services are also growing in importance as payers become more aggressive and proactive in addressing high cost disease states. While there are dozens of vendors with different decision support tools and methodologies, some of the larger players merit special note. **Ingenix**, a subsidiary of **United Health**, has amassed a broad and deep product portfolio including the recently acquired Symmetry Health, the industry-standard episode grouping tool, provider profiling and claims unbundling tools and more. McKesson's Payer Solutions Group has strong claims analysis and care management tools. **MEDecision's** utilization management products are noteworthy, as are **ViPS** fraud and abuse products. This is an area ripe for consolidation where a leader could create some methodological standardization and business leverage.

- **Consumer-Directed Healthcare** - One proposed partial solution to healthcare cost inflation has involved plans that offer consumers greater control over their healthcare spending while asking for greater financial responsibility. While Forester Research expects over 2.7 million members enrolled in some form of defined contribution program by 2005, we expect adoption to be slower than expected. Regardless of the pace of the change, however, we do expect increased cost sharing of this type to emerge, and note that most of these plans have significant IT requirements. While the traditional vendors (both of software and the plans themselves) are developing solutions, emerging companies such as **Definity Health**, **Lumenos**, **Vivius** and **Myhealthbank** have raised varying amounts of venture dollars and are beginning to achieve reasonable traction.

Additionally, unlike hospitals or physicians, payers can both demand the use of technology by their employees and afford to pay for it. According to a Cap Gemini Ernst & Young study, managed care organizations nearly doubled their investments in information technology between 1999 and 2002. Average IT spending among the surveyed plans reached $5.41 per member per month, primarily on the sales and marketing front, although medical management spending increased by over one-third.

In addition to software, payers were among the earliest adopters of electronic data interchange (EDI) to receive and process claims. EDI/Connectivity has expanded to encompass many of the other myriad transactions involved in delivering and paying for care such as verification of eligibility, referrals, pre-certification, etc. WebMD and ProxyMed are two of the larger vendors providing some of these services but smaller players (often with a regional focus) such as **Passport Health Communications**, **Payerpath**, **NaviMedix** and **RealMed** are all worthy of note. Business models vary, as companies sell to both providers and payers, focusing on different transaction types but with the goal of saving time and paperwork to increase efficiency and shorten time to payment. This area has excelled at delivering real value to its clients and, while we would expect pricing pressure to always be a threat, see increasing opportunity in this space.

Other Constituents

Pharmaceutical Manufacturers

While clearly not healthcare IT companies, several other large constituents are also worth noting. The pharmaceutical industry has the interest, need and capital to impact the HCIT landscape significantly. In areas such as disease management (including key issues such as patient compli-

ance), clinical trials or physician detailing, the pharmaceutical industry has pursued a range of opportunities in this sector. On the physician software front, ranging from **Glaxo's** foray into electronic medical records (HealthPoint - now part of **A4**) to **Pfizer's** support of **Amicore**, the record is mixed. In other, perhaps less grandiose areas, however, drug companies have shown that they can often speed drugs to market, influence physician prescribing and enhance patient compliance through the application of information tools and services. While we don't see these companies as significant acquirers, as customers (and deep pocketed ones at that) they will continue to influence the sector from all sides.

Publishing

Recognizing the explosive growth in both the volume of and need for medical information, large publishers have also entered the market. From **Thomson Publishing's** acquisition of Medstat Systems to smaller ventures and explorations by **Wolters-Kluwer** and **Elsevier Science**, the large publishers have had a material impact on the HCIT industry. We expect them to remain interested participants with a clear focus on point-of-care applications.

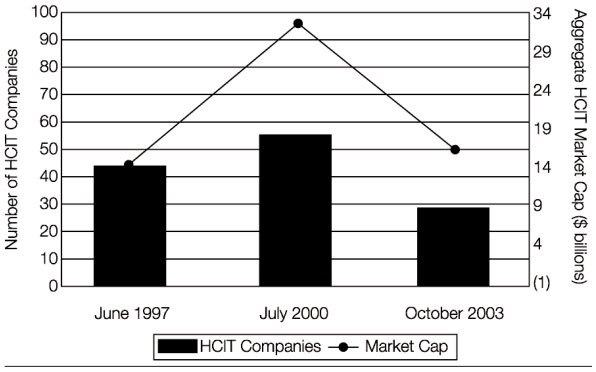
As can be seen, the application of information technology is highly customer- and situation-specific. While the adoption of IT is a function of multiple factors, including the impact on patient safety and quality of care, the most significant driver of adoption is tangible economic benefit. Only the parties that will reap the benefits of cost savings and/or enhanced revenues will eagerly embrace the technology that can drive these benefits.

The larger companies (described above) have typically acted as consolidators. They enjoy the sales strength, balance sheet and other benefits of scale. While some, notably Meditech and Epic Systems, use their independence from the public markets as a source of competitive differentiation, many others alternatively have the benefit of a liquid currency and the ability to hand prospective customers SEC filings and research reports supporting their legitimacy.

The Private Company and Investor Dilemma

Over the past several years a very interesting dichotomy has developed within the healthcare IT space. The allure of the Internet and technology in general and the massive size of the healthcare market theoretically created the "perfect recipe" for investment success. Big market opportunity, a historical trend of under-investing in technology, emerging new and innovative technologies, and consumer-powered healthcare were all themes hailed in business plans. Between 1996 and 2000, the healthcare IT sector attracted close to $5 billion in private equity investment.[1] During the same period, the public equity markets supported multiple HCIT offerings and, at its peak, the HCIT universe had over 55 public independent companies. By contrast, it contains fewer than 30 pure play companies today, seven of which trade below $5 per share.

Public HCIT Companies and Their Aggregate Market Cap



Source: Shattuck Hammond Partners Research

While this tidal wave of investor dollars was building, the purchasers of healthcare IT (hospitals, providers and payers) were operating for the most part on a status quo basis. In fact, during this period of investment growth in HCIT, actual spending on technology increased only marginally from historical norms. This clear supply (in this case of both, capital and companies) and demand imbalance led to many business failures and has created an interesting dilemma today for all participants in healthcare IT - companies, clients and investors.

Consolidation Considerations. One of the drivers of shareholder value for the healthcare IT sector in the past

1. VentureOne

was the existence of clear industry consolidators. Through the mid-1990s, HBO & Co. acted as the dominant force in the sector, growing both its product line and its earnings in part by bringing organizational, capital and selling scale to many of the smaller innovators in the market. While part of this was the traditional financial engineering inherent in a roll-up (not to mention the accounting irregularities that later came to light), HBO & Co. allowed smaller companies to broaden and deepen their market reach. Strong players ranging from Enterprise Systems to Clinicom often saw divisional revenues grow under the HBOC sales engine. In the dot-com era, Healtheon, WebMD, and CareInsite eagerly filled this role. Using their disproportionate market capitalization to add products, revenues, and ultimately, one assumes, earnings, these companies ultimately became one, WebMD, which, by all appearances, is executing well. The key point here is that many of the HCIT business plans we saw up until 2001 concluded: "and then we sell to HBOC" (or Healtheon - depending on the date). In this halcyon scenario, everyone was happy, customers didn't worry about their vendors failing, developers saw their products in more hands, and management teams and investors got both capital gains and liquidity. This is clearly no longer the easy option it once was.

Déjà Vu All Over Again

As we are all keenly aware, the public capital markets in the years leading up to the burst of the technology bubble in 2001 were very accommodating. Investors set aside their traditional investment textbooks and subscribed to a new set of rules, which focused on growth at all costs. This approach at the time had its merits and for many created significant wealth. However, it subjected the companies prematurely to the costs, scrutiny and volatility of the public markets and it has created significant clutter in the public capital markets. Today, and even after the challenges of the last 18 months, the public capital markets are host to hundreds of small technology and healthcare companies that have limited stand-alone opportunity.

Because of this clutter and the investment indigestion that investors continue to experience, the public capital markets have become more difficult to access. The profile of initial public offering candidates has changed significantly from the late 1990s generation of Healtheon and Allscripts, among others. Interestingly, it is reverting to the profiles of the first generation of HCIT public companies, such as IDX, HPR and Enterprise Systems. At the time of their initial public offerings, these first generation companies, on average, generated $53 million in latest fiscal year revenue, forecasted approximately 35% in revenue growth and were all profitable. In contrast, the initial public offering profiles for Healtheon and Allscripts reflected on average less than $30 million in last twelve months revenue, had over 80% forecasted revenue growth and posted significant historical operating losses.

We believe that the IMPAC initial public offering in December, 2002 and, to a marginally lesser extent, the CPSI initial public offering in May, 2002 are barometers of the hurdle rate for future healthcare IT IPOs. At the time of its IPO, IMPAC generated $45.7 million in latest fiscal year revenue, forecasted 33% in future revenue growth, was nicely profitable and had a leadership position in serving the radiation oncology segment. Our assessment is that the public capital markets will require future new issue candidates to have a similar profile.

The tightening of the public capital markets has had a ripple effect on the private capital markets and the private company universe. As we have witnessed over the past 18 months, the volume of new private equity investments in healthcare IT has contracted significantly. Many private equity investors have been forced to focus more of their time inward and work through their existing portfolios rather than pursue new investment opportunities. Additionally, the uncertainty of the public market exit has created significant paralysis around many company boardrooms and is tightening access to follow-on investment for many companies. At the same time, several other private equity investors have shifted their mindset from healthcare IT to healthcare outsourcing services opportunities where scale, size and, importantly, cash flow exist.

What is a Company To Do?

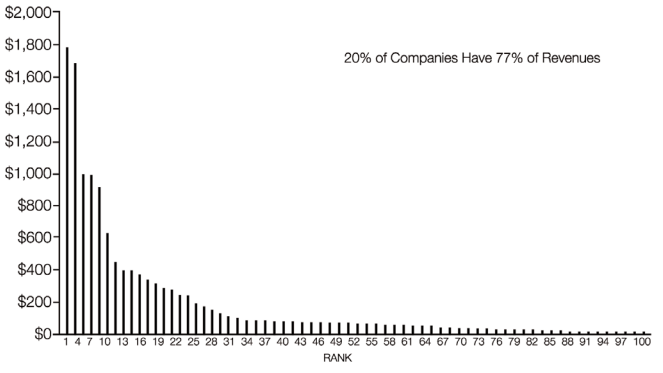
As a result, there exists a very real dilemma for company management and investors alike. Should an investor continue to fund and management continue to support a private company through this cycle? If not, what are the liq-

uidity opportunities available to them, if any? Unfortunately, as we have seen on several occasions, groups are opting to take the middle road and fund the company month-to-month on the hope that a buyer will emerge. In our opinion, this approach is flawed because it jeopardizes product development and in many instances the competitive position of the company that is looking to sell.

A Further Capital Conundrum - Size Does Matter

This leaves the marketplace in a state of bifurcation. The current Healthcare Informatics Top 100 List reveals a marketplace divided, in effect, between the "Big Leaguers" and the "Farm Teams." As of the 2003 edition, 69 companies on this list had less than $100 million in revenues; half were below $50 million and 28 below $25 million. While the energy, entrepreneurial spirit, and innovation of the smaller companies are undisputed, in too many cases they lack the scale to be economically viable in the medium to longer term. Too many customers might value their innovation but doubt that they have the staying power to be the long-term partner that their managers and boards require of vendors going forward. The larger players, in contrast, might not have all the innovation or creativity, but they have national sales organizations, significant marketing budgets, and, often most importantly, balance sheets that will assure a potential customer that they're in

Top 100 HCIT Companies by Revenue



Source: Healthcare Informatics

no imminent danger of demise.

Healthcare IT M&A is Gaining Steam

The M&A environment for healthcare IT and related services is beginning to build some momentum. As the healthcare market generally begins to stabilize and as many companies finish integrating prior acquisitions and rationalizing their internal operations, we are seeing activity pick up and M&A dialogue increase. We are not yet predicting a market turn by any stretch, but we are clearly witnessing management teams beginning to look at more external growth opportunities. There are some changes from earlier M&A cycles, however. Most obvious to us is the fact that current M&A oriented growth plans must be clear and rational, while the pricing must be disciplined. Equally clear is the fact that the list of buyer candidates is significantly narrower. As such, valuation expectations of a seller must be realistic.

Over the past 12 months, we have seen a range of transactions announced and completed. In some instances, industry leaders have purchased businesses to fill technology gaps. McKesson's acquisition of A.L.I. is a good example. In other instances, we have seen buyers pursue acquisitions that will grow their business horizontally, such as WebMD's acquisition of Advanced Business Fulfillment. We have also witnessed buyers enter new markets through acquisition, including **Kodak's** recent acquisition of Practiceworks. Furthermore, we have seen some vertical market segment participants look to strengthen their competitive position in their targeted segment through acquisition. The formation of Merge eFilm and the subsequent acquisition of RISLogic is a prime example of this trend. We believe these transactions provide good examples of the direction of healthcare IT M&A and expect activity to continue at this pace as long as the public capital markets remain a difficult liquidity option for investors and management teams alike.

On a side note, one trend we are not seeing that intuitively we would expect, is private company to private company mergers. These types of transactions have the potential to (a) create the necessary scale for the combined company to compete more effectively, (b) establish a broader portfolio of products and technology and (c) rationalize duplicate operating expenses and provide the financial runway to compete. Yet, these benefits often do not outweigh the control and economic debates that exist in private-to-private negotiations. If these issues can be overcome we believe that there exist several opportunities to create very competitive businesses for the future using this

model.

Concluding Thoughts

We remain convinced that healthcare IT is finally "crossing the chasm." Recognition that these tools are effective and can change (and improve) the process of care delivery is virtually undisputed, and physician adoption, in part due to better technology, is finally occurring. Further, we expect that evidence-based medicine and patient safety will continue to be key drivers of clinical software investments, but the landscape overall is continuing to evolve. While capital markets are and will remain somewhat daunting for many of these companies, growth, liquidity and exit opportunities will continue to exist.

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