

# Controlling Information Technology Costs

By Tom Honan & Vince Ciotti

Healthcare executives are increasingly frustrated by Information Technology (IT). Although our industry is often accused of under-investing in technology (hospitals average 2-3% of their costs in IT, compared to other industry's 8 – 10%), when IT investments are made, they fail to reflect demonstrable return in the bottom line. . Yet the effective deployment of technology is so critical to the success of the organization and can in itself cause the failure of a healthcare system. While being forced to invest significant amounts of resources in the past two years preparing for Y2K, healthcare organizations have come under increasing financial pressures due to other industry developments:

- The Balanced Budget Act – of 1996 greatly reduced reimbursement from the federal government for Medicare at a time when the aged portion of our population is increasing.
- Managed Care – has transferred the former “cash cow” of commercial insurance plans into HMOs that negotiate competitive contracts at minimal or break-even profit margins.
- Charity Care – in many states, such as New York and New Jersey, has been reduced to a fraction of the costs hospitals actually incur for bad debts and charity allowances.
- APCs – Ambulatory Payment Categories promise to lower outpatient utilization just as DRGs shrunk inpatient lengths of stay, further stressing hospital operating margins.
- “To Err is Human” report as to medical errors calls into question the adequacy of the use of systems in preventing erroneous medical events.

Meanwhile, Information Technology (IT) budgets continue to grow due to new technologies, such as Client/Server Systems, the Internet & Optical Imaging, which have created demands for systems that as yet have an unproven return on investment (ROI). Also, on the horizon, HIPAA threatens to impose strict new standards on IT security that are forecasted to cost hospitals further *billions* in compliance over the next few years with rather questionable promises of cost savings.

How can hospitals meet these increasing pressures to increase IT budgets with bottom-

lines that are shrinking? This article offers suggestions for Healthcare executives to reign in burgeoning IT costs, not to blindly “just say no” to budget increases, but rather by eliminating waste that has crept into many IT departments and by spending the few dollars that will be available for new IT projects more wisely.

## **IT STAFFING**

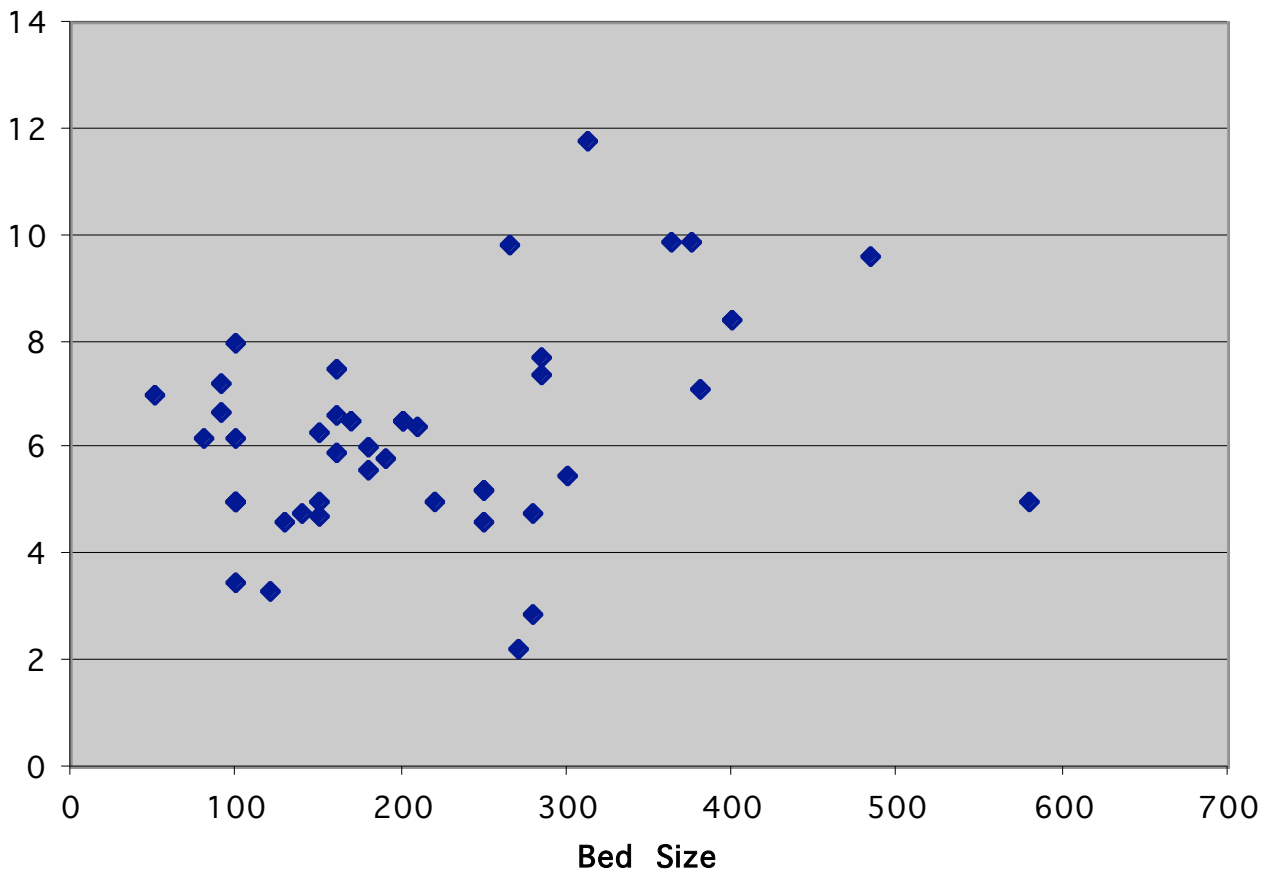
As in other hospital departments, 50% or more of IT department costs are payroll, which makes the question of “right-sizing” the number of FTEs there critical. In addition, high tech positions are demanding far greater salaries in general industry, forcing hospitals to match commercial industry for such in-demand positions as system analysts and network engineers. So just how many of these costly and even hard-to-retain IT personnel should your hospital have?

Many studies have been published purporting to give the percentage of a hospital’s overall budget that should be devoted to IT, such as MECON, SIDA, CHIME, etc. Figures in the range of 2%-3% are given, with some variation for size and complexity. However, few studies delve into the question of ideal FTE staffing levels, since hospitals are so unique, ranging from multi-hospital integrated delivery networks (IDNs) with *thousands* of acute care beds supporting many non-acute modalities, to standalone community hospitals under 100 beds on a single campus. In addition, the computing approach itself can have a large bearing on IT department staffing, such as inhouse mainframes, mid-range systems and remote processing. Following are averages from the 100+ hospitals we have assessed, given in terms of the number of IT FTEs per 100 beds (adjusted for outpatient visits and non-acute modalities):

- Remote Processing – the “shared” systems of yesteryear, such as SMS’ Invision or HBOC’s “HFC,” save hospitals the cost of computer operators for the mainframe or mid-range CPUs run by vendor staff at a central data center and average the lowest IT staff: 5 FTEs per hundred beds.
- “Turnkey” Systems – which usually run on mid-range CPUs which supposedly require far less operators and few or no System Programmers. The software is also modifiable by system analysts, obviating the need for programmers, keeping their FTEs per hundred beds to an average of 6.5

- Client/Server (C/S) Systems – which utilize large PCs or mid-range CPUs as servers, and relatively powerful PCs as “clients” on user desk-tops. C/S systems have become de rigeuer in the IT industry of late. Despite vendor claims of lower costs, however, they require more IT support for desk top applications than “legacy” turnkey systems and increase the FTE count per hundred beds to 7.5
- Inhouse Mainframes – require larger staffs: several operators per shift to tend to these room-sized CPUs, costly system programmers to maintain the complex operating systems, and analyst/programmers to customize code to meet the needs of the large medical centers which generally follow this approach. Their average IT staff per 100 beds is 9.
- Multi-Hospital IDS/IDNs – generally require the largest staffs, since these IT departments must support many non-acute modalities, large physician practices, and a combination of mainframes, mid-range and C/S systems, raising their average IT FTEs per 100 adjusted beds to 14.

Note that these figures are *averages* only, and there are many mitigating circumstances that might cause your facility to vary, such as mergers, implementations, voluminous interfaces, etc. Figure A illustrates how wide the single category of turnkey mid-range systems alone can vary. However, if you are processing remotely and have 10 FTEs per 100 beds, or are running an inhouse mainframe with only 5 FTEs per 100 beds, it may pay to question such wide deviations from these norms. It can be just as unwise to *understaff*, as to *overstaff*: we have seen hospitals so understaffed in IT that they are under-utilizing a multi-million dollar IT system for want of a few thousand dollars in IT salaries.



(Jake: if you see a red X here, click on it twice to open the embedded graphic)

## RIGHT-SIZING IT STAFF

If you find you are on the high side of these norms, here are several techniques you could use to keep the need for full-time employees in IT at a minimum:

- “Super Users” – sometimes called “Hospital Application Coordinators” (HACS), are FTEs in user departments whose job description is mastering the vendors application in their area, supplanting the IT department in training and front-line support. For example, many nursing departments have an “Informatics” RN whose job in full-time mastery of the systems used for such nursing applications as Order Entry, Results Reporting, Nurse staffing/scheduling, Critical Pathways, etc. These people need not be systems analysts transferred from the IT department, but rather vice-versa: users who show a proclivity for the system being used and desire to concentrate more on IT. Every hospital department should be encouraged to develop such an internal resource to master the nuances of their application (profile options, master files, report writers, etc.) leading to greater self-sufficiency and end user buy-in. HACS can provide initial on the job training and ongoing refresher classes, answer “dumb questions” about PCs, and in general lessen their department’s reliance on IT department for basic, day-to-day support.
- Selective Outsourcing – not the wholesale turning over of the *entire* IT department, but rather, contracting with an outside vendor for a part of the IT function that is not working effectively. A prime example is PC and/or network support. There are many firms who specialize in these areas, have a large, well-paid staff available either on site or via phone, and can provide support far better than indigenous resources. The key here is negotiating a favorable price that is less than internal costs, not just abdicating responsibility because hospital or IT management cannot correct the problem. Careful reference checking, highly competitive bidding and strenuous negotiations of service level agreements are all required, but if done correctly, selective outsourcing can lower personnel costs in problem IT sub-departments.

- Not Hiring Consultants – this recommendation may seem strange coming from the authors who are both consultants, but we have seen time and time again *full time* consultants who have been working for many years in a hospital IT department. No matter how low the hourly rate can be negotiated (the “going rate” for analysts, for example, is about \$125 per hour), multiplied by 2,080 hours per year, the cost is prohibitive, and simply reflects the price one pays to sell one’s problems. IT consultants should be used temporary assistants with specialized expertise hired to solve a specific problem, yet we have seen situations where *dozens* of “consultants” are manning full-time positions in IT departments, some even as managers and CIOs. Granted, hiring and retaining IT staff is a critical problem, and finding a “guru” in a specific area such as Meditech’s new Client/Server system might be hard to do in your city. However, it is wasteful to pay over \$200,000 per year in consulting fees for a single employee whom the consulting firm is paying less than half that amount. Any request to hire an hourly consultant to fill a full-time slot until the right person can be hired should be considered a desperate measure limited to a few weeks or months, at best (or worse!).
- Process Re-engineering – too often healthcare institutions engage supposed IT and system experts who provide recommendations for obtaining benefits from the use of the systems either through business process modifications or purchasing “additional modules”. Most times these projects come with a high cost. The healthcare executive is challenged with evaluating of the probable rate of return, on cost justification studies that appear to be self-serving from the vendor/consultant. The vendor/consultant is stressed recognizing that their recommendation will only work if the client is willing to change the business process to accommodate the new systems. As a result, the inability to establish the appropriate accountability often may be a barrier to successfully implementing a solution.

## CONTRACT AUDIT

The next highest area of costs in the typical IT department is vendor fees, whether the processing fees for a remote system, or the software license and maintenance charges for an inhouse system. A productive way to potentially lower costs is a *critical* reading of the initial vendor contract, which might be old and yellowed, but still governs large in monthly fees. Some

of the following examples we have found auditing such agreements over the years might seem implausible, but these are *real* examples from hospitals that were able to lower their fees substantially:

- Application/Module Fees – usually included as “Exhibit A” of most HIS agreements, the back of your contract should be a list of the various applications and modules you agreed to purchase from the vendor when the contract was initially signed. Unfortunately, in the real world, many of these systems are never actually installed, be it for want of user department support, vendor failure to deliver, or changing priorities in the institution. Surprisingly, we once saw a situation where a hospital had been paying remote processing fees for a half-dozen applications that for various reasons were never installed. Fortunately, the vendor in this case agreed to a credit for the past fees, but not until some strenuous negotiating sessions concerning the hospital’s willingness to continue processing *any* applications with that firm...
- “Free” Services – many vendors provide free services in their agreements that hospitals sometimes fail to take advantage of. An example is an annual system “audit,” usually performed by the vendor’s experienced installation personnel and aimed toward generating a list of system features that are not being used optimally or not at all. Such a service might cost tens of thousands of dollars if performed by an outside consulting firm, who probably does not know the system half as well as the vendor! Not only can this service save the fees to an outside firm, but it can result in substantial improvements in system usage which might positively impact the bottom-line, either by increasing revenue or decreasing clerical costs.
- Renewal Dates – contracts often provide for automatic renewals of maintenance or processing, unless notice is given to the contrary. Such automatic renewals usually carry terms that favor the vendor, such as increasing to their “then-current” rates, which might an egregious jump far higher than the CPI. Most vendor account managers know *to the hour* when these renewals are scheduled to occur, since they are paid a commission on the revenue their accounts generate. Hospitals are often unaware of these critical deadlines and allow contracts to roll over at much higher rates. Better to make a strategically timed call to the vendor before the deadline stating that you are weighing your options before renewing and asking what the best rate the vendor could offer to avoid an RFP being issued.

## INVOICE AUDITS

The monthly invoice from HIS vendors is another classic area of cost-cutting opportunities. All too often, invoice “review” is simply a question of various IT department personnel placing their signature on an invoice and rushing it to the AP department in order to qualify for a “prompt pay” discount. Unfortunately, some vendors have created invoice documents so thick and baroque in complexity (comprised of unintelligible acronyms that make sense only to the vendor) that it can easily take several *weeks* to fully audit them for correctness. Again some real-life examples of line items on invoices we have successfully questioned follow

- Travel Expense Abuses – even though hospitals are increasingly asked by third party intermediaries to provide more and more supporting documentation for their UB-92s, IT vendors are providing less and less supporting documentation for this costly item. Most contracts allow for the billing of out-of-pocket expenses, and their invoices contain expenses from many people who claimed to travel to your hospital. However, with out-of-pocket expenses for a system installation running into six figures, it is well worth asking to see the expense report for every trip charged to your hospital to check out:
  - was that person really there? We have seen “errors” on invoices where people are charged who never showed up (upon questioning, they were at another site).
  - did that person follow economical travel guidelines, for example, repeat visits over many months should use “mapped,” advanced fares or connecting flights scheduled to save many thousands in air fare.
  - request receipts for all questionable items. The IRS requires receipts for any dollar amount over \$25, which you should request copies of for suspicious items such as meals over \$50.
  
- “Billable” Support – most software maintenance contracts provide for free calls to the vendor to report bugs or problems. Ever conscious of *their* bottom lines, however, many vendors have begun to charge for these calls on an hourly basis (\$100 to \$150 per hour), claiming they were “beyond scope” or billable. These fees should



be rigorously disputed, as the 18% or more some vendors charge for annual software maintenance is *precisely* for this ongoing support, no matter what their invoice might claim.

Other vendors have instituted a “bank of hours” for such calls, only *they* do the accounting and periodically send you another bill when they claim you have exhausted your hours. In this case, keep a log of every call yourself, and insist the vendor provide a detailed matching log before writing another large check.

- Extra Copies & Special Reports – some remote processing vendors actually charge hospitals for every report generated, and sometimes even every page of every report! These inch-thick lists of report runs should be carefully reviewed for reports that are shipped to users departments, stacked in a corner unread, and then shipped to an outside firm who charges the hospital to shred and dispose of them! One technique we have employed is to stop distributing *every* billable report, and then only turn those back on that users call for by name.

We have seen instances where such an invoice review program can lower an institution’s bill by over \$10,000 *per month*, so this seemingly trivial pursuit can be well worth the time and effort. Consider rewarding an IT person with a bonus of 1% of all of the fees they can reduce by reviewing their & disputing vendor invoices. That is far less than the commissions most vendors pay their employees to generate their revenue!

## **COMPETITIVE PURCHASES**

Having analyzed many hospitals IT operations, often on the identical vendor systems, we never fail to be amazed by the wide swing in prices we see paid for the same system, often not in any relation to bed size or other volume parameters. In truth, hospitals all too often succumb to “sole source” acquisitions, whereby a user department is so enamored with a sales rep from a given firm, that they badger IT or hospital management to not consider any other vendor but just please approve the PO.

As in buying a car, it is foolish to go into a dealer and ask for their best price, unless you also go to another dealer and compare. Better yet, tell *both* dealers you are price shopping and you want their “best and final” before making up your mind. Just as this simple consumer

exercise can save thousands from the price of a new car, wise hospital buyers can save millions off of the price of a new system by following a few basic techniques:

- *Never* buy “sole source,” but insist the IT and/or user department bring a minimum of two bids to the table before approving an IT system purchase. If the vendor says they won’t negotiate unless they are the “chosen” vendor, eliminate them! No system is so unique and above its competition that it is the “only” that will do the job, especially if it is costs substantially more than competitors.
- *Offer them your figure*, rather than try to discount their price down. Just as Consumer Reports suggest negotiating up from a car dealers invoice, rather than down from the window sticker, tell a vendor a fair price you have in mind, and remind them that you are making the same offer to the other vendor who you have kept in the competition. Vendors hate to lose, and their “list” prices are arbitrary, not calculated by a detailed cost study, but rather the highest they think they can ever get from someone naive enough to pay top dollar.
- *Time* your contract negotiations to conclude on a quarter-end or year-end. Most IT vendors are publicly held, and their executives scramble to meet earnings per share estimates of stock analysts at these critical times. Salesmen’s quotas are usually calculated on a calendar year (W-2) basis, so time major contract negotiations during Christmas, and you find Santa Claus on the other side of the negotiating table!

## ***REAL ROI ANALYSES***

Almost any IT systems can be cost-justified on paper, while very few seem to have a positive effect on a hospital’s bottom line. The reason is that most ROI calculations are based on hypothetical fractions of FTEs supposed to be eliminated by new systems, as in the scenario given in Figure B.

Figure A: **How to Falsely Cost-Justify An IT System**

1. Manual Process

- a. Nurse writes TPR on slip of paper = 1/2 minute
- b. Nurse walks back to nurse station = 3/4 minute
- c. Nurse transcribes TPR onto Kardex = 1/2 minute
- d. Shift report to summarize all patients = 5 minutes

**Total = 6.75 minutes**

2. Automated Process

- a. Nurse writes TPR on Palm Pilot = 1/2 minute
- b. Nurse docks Palm Pilot into PC = 1/2 minute
- c. Shift report printed for all patients = 2 minute

**Total = 3 minutes**

3. Savings

- a. Manual process = 6.75 minute
- b. Computer process = 3 minute
  - Time Savings = 3.75 minutes
  - Multiplied by "x" nurses
  - = "y" hours per RN per year
  - Multiplied by "z" hourly rate
  - = \_\_\_ **million dollars per year**

Such hypothetical exercises are the bane of any CFO, as the FTEs they claim to “save” are never real people, and the hypothetical dollars calculated by these fractions of FTEs never really come off of the payroll. Following are a few simple techniques to see that any ROI studies used to cost-justify IT systems generate *real* savings:

- Name Names – whenever FTE reductions are claimed, insist that the actual name of a live person (eg: Nurse A is retiring and will not be replaced) or an actual position (eg: all unit secretaries on the third shift) are specified for supposed savings. Anything less than a whole person will leave you like King Solomon having to cut the baby in half!
- Champions/Sponsors - from both the IT *and* user departments are named and asked to sign the supposed ROI savings document. They should be managers or supervisors, rather than executives or directors, so they are close to the actual savings anticipated.
- Align Financial Incentives – the most important step of all, the annual increase and/or bonuses of the managers involved in the project are made variable based on the supposed savings. If *more* dollars are saved, then bonuses/increases will be made higher, if less savings are realized, then bonuses & increases might be reduced.

This last step might seem draconian, but it is precisely how highly profitable IT vendors stay that way: they provide incentives for every employee possible to achieve tangible objectives, and pay them in dollars or stock options for successes. If goals are not met, vendors will cut dollars (in the case of salespeople, they will even cut employees!), but few hospital cultures allow penalizing employees earnings for missed targets. However, just having the managers *willing* to risk their bonuses or increases accomplishes what you want: their 100% commitment to achieving stated savings. Whether or not you actually do is always up to management’s discretion.

## **AVOIDING “LEADING EDGE” SYSTEMS**

Possibly the greatest waste of money we have seen in Healthcare IT is the purchase of a “pilot” or “beta” site system. It is as hard to say what motivates hospital executives to risk their facility to de-bug and test the feasibility of a new system, as it is easy to understand the motivation of vendors seeking such a guinea pig. Time and time again we have seen these projects fail due a myriad of causes: vendor programmers vastly underestimating the time it takes to write the code, hospital users not receiving the features they were promised, cost and time overruns of several orders of magnitude, and eventual turnover in the hospital executives originally sponsoring the projects

No matter how great the supposed discount (how can one determine the fair market value of something that has never been done before?), it is never worth the millions of dollars to rip it out and install a replacement system when the pilot fails. Vendors often prey on the egos of hospital executives when selling such “opportunities,” promising national prominence for being a flagship site, media exposure, etc. Think of a Healthcare example to help you avoid this temptation: how much of a discount would it take to entice you to be the first surgery using some new, untested technique from a young physician eager to make both of you famous? Why would you put your healthcare assets at risk?

The simplest cure to avoid this “bleeding edge” syndrome is to demand in a Request For Information (RFI), which should always be the first step in a system selection process, a client list of at least 10 users of the system you are considering, with telephone numbers for reference checking. If the vendor hasn’t at least 10 sites up and running successfully, let some other hospital find all of the bugs for them.

## **OUTSOURCING**

Providing IT services is not the core competency of hospitals and healthcare systems. Hospitals and healthcare systems need to remain focused on the provision of high quality cost-effective care. Yet the effectiveness of the IT solutions can impact business performance significantly. Management needs to internally assess their ability to recruit and retain on a *long-term* basis the resources required for technology deployment. With the turnover rate in healthcare executives including in the technology sector, the outsourcing of this function can result in a

longer term, business based approach to solutions, and allow management to focus on its core competencies. However, just as in buying a new system, the process of selecting an outsourcing vendor and negotiating a contract needs to be strenuously competitive, to insure that the resulting costs will be *lower* than are currently incurred. Outsourcing has become well-publicized of late, and management must be careful to not fall into the “me-too” syndrome, but rather insure this drastic step will lower, not raise IT costs.

## **CONCLUSION**

At a time when hospitals are experiencing severe strain on their bottom lines due to Managed Care and the Balanced Budget Act, information technology is demanding more and more of scarce capital and operating funds. Healthcare executives need to scrupulously review all requests for spending, especially in areas as new and rapidly evolving as IT. The end result may well be a larger percentage of healthcare dollars being invested in technology solutions, but by following the techniques in this article, hospitals can trim unnecessary fat from current IT departments, and insure that future investments have a greater chance of real pay back.

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