

Predicts 2008: Greater IT Use Will Change Roles and Drivers in Healthcare Delivery Organizations

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Here are five predictions that reflect the evolution of IT from a transaction-oriented service to a fundamental enabler of the changes in clinical processes necessary to improve healthcare efficacy and efficiency. CDOs that are not on the leading edge of these changes must recognize their necessity and decide how not to fall behind.

Key Findings

- The role of chief medical information officer (CMIO) is changing from an advocate for clinical systems to a leader of information-based change in clinical processes. This change implies a need to change the reporting of the CMIO from the CIO to a very senior position in the care delivery organization (CDO).
- There is a rush to acquire business intelligence (BI) tools. CDOs have not yet come to grips with the reality that using BI technology is only truly effective when it becomes integrated into the basic management and clinical processes of the institution.
- CDOs are reacting to the combination of growing complexity and "full-time, real-time" operation by outsourcing or investing in their own management capabilities. Among those taking the latter approach, the Information Technology Infrastructure Library (ITIL) is the management framework best-suited to their needs.
- Health information exchanges (HIEs), serving societal goals more than those of individual CDOs, will often be driven by governmental initiatives. However, they cannot succeed without IT improvements in the systems of CDOs. In many countries, HIE demands are the "tail that wags the dog" by supporting investment in CDO IT projects.
- For U.S. CDOs, the information management standards of The Joint Commission will supplant HIPAA as an authoritative guide for planning security and privacy remediation.

Recommendations

- CIOs should accept that the role of CMIO is changing and belongs in medicine. They must be prepared to modify how they interact with the CMIOs.
- CDOs that are selecting and implementing BI tools should embrace the feedback loop inherent in their use; early success on even limited projects can produce organizational learning to improve the upstream inputs and the downstream ability to change based on BI findings.

- Organizations should employ ITIL with the goal of decreasing the amount of time IT spends on reactive and unplanned work and increasing the time spent on proactive and planned work.
- In many countries, vendors should look to government HIE programs as a gating factor in overall purchases of healthcare IT systems
- U.S. CDOs looking for standards to guide security and privacy planning should use the information management standards of The Joint Commission.

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STRATEGIC PLANNING ASSUMPTIONS

- By 2011, the majority of CMIOs will report outside of IT.
- Through 2011, 75% of CDOs investing in BI with clinical data analytics will fail to use this new capability to achieve significant competitive advantage in cost and quality.
- By 2011, 40% of CDOs with 1,000 or more employees will adopt ITIL primarily to improve their change management processes.
- By 2011, 20% of global healthcare IT spending will be justified by HIE programs.
- By 2011, more U.S. hospitals will rely on The Joint Commission's information management standards rather than HIPAA when planning for privacy and security audits and infrastructure investments.

ANALYSIS

1.0 Background

For people in healthcare IT, recent history illustrates the homily, "Be careful for what you wish for; you may get it." For years, we have worried that healthcare would never truly realize the potential of the computer-based patient record (CPR) system, BI and the societal benefits of clinical interoperability. Rising healthcare costs and increasing awareness of deficits in quality have finally reached the tipping point, where policymakers are demanding the use of IT to improve quality and reduce healthcare cost. Clinical and business management is turning to IT demanding rapid support in undertaking the fundamental organizational and process changes necessary to achieve true clinical and business optimization.

This year, Gartner's Strategic Planning Assumptions for CDOs all reflect that IT has been moved into the foreground and must perform as an equal partner with clinical and administrative departments. We examine the changing role of the CMIO, moving from an advocate of the CPR system to an advocate of clinical process change, where the CPR system is just one tool. We then describe how, although CPR systems create the data with which to change processes, CDOs are discovering that they need BI tools to realize the potential. We predict a learning curve for BI similar to the learning that CDOs have undergone with CPR systems.

For IT to be a reliable partner in the business of the CDO, it must reform its management framework to deal with geometrically growing technical complexities. Here, we look at possible frameworks and pick a winner.

In this research, we also deal with the difference between corporate and governmental goals for IT. Although individual CDOs often see the need for interoperability beyond their own doors as a burden with no benefit, policymakers, payers and sponsors of healthcare take a broader view. We recognize the impact that this external view has on the entire healthcare IT market, both for HIE technology and for systems within the CDO.

U.S. CDOs have often found the HIPAA regulations on privacy and security enigmatic. This year, we predict the use of a better source for guidance in planning remediation efforts.

2.0 Strategic Planning Assumptions

2.1 CMIOs

Strategic Planning Assumption: By 2011, the majority of CMIOs will report outside of IT.

Key Findings: A decade ago, there were only a handful of CMIOs. Today, industry surveys indicate that as many as 34% of CDOs employ one, and the numbers keep rising. Early on, as CDOs began to implement clinical systems, the role of the CMIO was primarily one of CPR proselytizer or, perhaps, target, because many physicians were less than eager to interact with a computer system. Most often, CMIOs were part of IT and reported to the CIO. In Gartner's 2007 CMIO survey, 56% of respondents report to CIOs, with another 7% reporting to the CIO and another executive. However, only 14% recommend this reporting structure. The difference reflects the growing understanding that CMIOs are change agents and that their newer role is to promote and facilitate clinical optimization, not just clinical automation. Content development and maintenance (for example, order sets, clinical decision support rules, guidelines and documentation templates) are essential and must be under the auspices of respected clinicians that also understand technology. CMIOs clearly fit this bill. However, there is growing realization that to fully accomplish their tasks CMIOs must be part of the CDO leadership team and not just a cog in IT. In fact, reporting to the CIO can even be a barrier to success because other clinicians may believe that the CMIO has forsaken the clinical path to become part of the technology problem. Reporting to the chief medical officer (CMO) can be an improvement; however, reporting to the CEO or COO is even better. In either case, it is clear that the CMIO is acting to fulfill the mission of the entire organization. For these reasons, by 2011, the majority of CMIOs will report outside of IT.

Market Implications: After the implementation of the CPR system, the responsibility for fusing medical processes with IT belongs in medicine. As in other areas, the business process owner must have the responsibility for the impact of IT. This is not a defeat but a victory for the CIO.

As more CMIOs report outside of IT, they will concurrently be seen as having more organizational support for their activities. They will no longer be seen as just a part of an IT project. This is essential if clinical optimization is to become an ongoing and successful process and not just a series of small unrelated projects. It is also sound organizational policy: The business process owner should not be IT.

CDOs that use CMIOs in this manner will be able to better reduce unnecessary clinical practice variations and will be able to achieve greater overall quality improvements. Furthermore, other successes will include faster demonstration of successfully achieving new pay-for-performance initiatives and will even find simpler and more-positive outcomes from quality and safety audits.

Recommendations:

- CIOs should accept that the role of CMIO is changing and belongs in medicine. They must be prepared to modify how they interact with the CMIOs.
- CIOs need to be proactive in establishing close ties with the CMIO, regardless of to whom that individual reports.
- In addition to close working ties, organizations should establish more-formalized processes for governance of CPR content than were needed with the CMIO.

Related Research:

"Results of the 2006 Gartner-AMDIS Survey of CMIOs: Bridging Healthcare's Transforming Waters"

Analysis By: Thomas J. Handler, M.D.

2.2 BI in CDOs

Strategic Planning Assumption: Through 2011, 75% of CDOs investing in BI with clinical data analytics will fail to use this new capability to achieve significant competitive advantage in cost and quality.

Key Findings: Sophisticated BI systems enabling combined financial and clinical analytics are beginning to emerge as one of the "next big things" for healthcare in the post-paper era. The great progress made in implementing CPR systems has created the opportunity and demand to leverage this clinical data to derive new understanding and breakthrough insights to improve patient outcomes and the corporate bottom line. Based on surveys, focus groups, healthcare interest in Gartner's BI events and our inquiry process, by 2011 Gartner expects that at least 60% of U.S. multihospital and integrated delivery systems with Generation 3 CPR systems will have implemented processes to load data from business/financial and CPR systems into a data warehouse. A few institutions will use the newfound data to constantly stimulate and guide innovations and adjustments in resource management and processes. Most CDOs, however, will find themselves with, to quote one CIO, "tons of data, tons of tools, and not much of a clue what to do with it all."

Market Implications: CDO leadership, with CIOs and CMIOs as key advocates, must do far more to create the right going-forward strategies, structures and organizational mind-set. The right analytics combine with clinical and operational systems to monitor resources, processes and outcomes. They will explain, predict and prevent failures and rapidly facilitate greater consistency and enterprisewide adoption of best practices. Most organizations will advance their abilities to provide more-timely data to meet requirements for external reporting and traditional key performance indicators. By 2011, though, the CDOs that stop there will fall behind those agile organizations that have strong leadership, change-conducive culture and more-sophisticated performance insights.

This is important given the overall dynamics of the healthcare delivery environment. To the extent that payers pay a bonus for quality or reduce payments for preventable errors or suboptimal outcomes, CDOs that are late to change will lose margin to those that are agile. The more-prepared players will also create cost and brand advantages that position them to regularly acquire and then improve underperformers or those too small to afford these types of advanced information investments.

Recommendations:

- CIOs of larger hospitals and integrated delivery systems should champion a process for achieving business/clinical sponsorship for creation of an enterprise BI core competency center and related data warehouse investment.
- Organizations should build use cases through internal interviews and by leveraging external resources (such as The Joint Commission's current and planned core measures and tracer survey method — Bridges to Excellence — and consultant-provided examples).
- CDOs that have CPR systems should take care to push for use modes that generate structured, standardized data about patients, problems and therapies, overcoming the resistance of some physicians.
- Though internal development of major IT systems is quite unusual in healthcare, BI is one area where self-development can be considered as a complement or alternative.

- Organizations should "walk before they run" with limited data sources and tangible business goals, but they should design their data model and system for expansion of sources and a growing number of users.

Related Research:

"Gartner's 2007 Criteria for the Enterprise CPR"

Analysis By: Vi Shaffer

2.3 CDO Adoption of ITIL

Strategic Planning Assumption: By 2011, 40% of CDOs with 1,000 or more employees will adopt ITIL primarily to improve their change management processes.

Key Findings: CDOs increasingly need to come to grips with challenges such as service management and delivery. They are looking for process frameworks like ITIL, Control Objectives for Information and related Technology (CobiT) and Capability Maturity Model Integration (CMMI).

ITIL will emerge as the approach of choice because it is more specific and prescriptive and can be extended to accommodate a particular domain. ITIL is a publicly available set of guidelines for "best practice" IT service management. It is a standard process framework for integrated IT service support and delivery processes used to manage an IT operations environment.

The need for such a framework arises because the advance of clinical and business automation has introduced a significant amount of infrastructural and operational complexity into the healthcare provider IT environment. This complexity is a direct outgrowth of the increased deployment of clinical and business systems that offer rich domain functionality that, in turn, depend heavily on a pervasive and responsive wired and wireless network, vast amounts of networked storage, highly available server capacity, and a comprehensive security infrastructure. These systems also demand new levels of integration and interoperability and often challenge the CDO's existing maintenance, configuration and change control mechanisms and the contingencies for disaster recovery and business continuity. The requirement to extend the reach of these complex and expensive systems to new constituents further contributes to the overall complexity. The privacy and security rules and specifications set forth by compliance, regulatory and accreditation bodies often result in a web of complex and overlapping security controls that are difficult to manage effectively. The CDO's ability to satisfy these requirements can result in reduced service levels and increased amounts of unplanned work. Many CDOs have turned to outsourcing, managed services and remote hosting to shift some of this responsibility to external agents. Those that are looking inward, however, will increasingly choose ITIL.

Market Implications: ITIL is currently in the Trough of Disillusionment on Gartner's 2007 IT Operations Hype Cycle. By year-end 2008, it will emerge from the trough and begin on the Slope of Enlightenment. During that time, CDOs will see more and better ITIL service and tool offerings as vendors attempt to take advantage of increased interest and adoption. CDOs should temper their expectations and realize that ITIL does not cover all IT processes or organizational issues. CDOs should demand that their remote hosting, outsourcing and managed service vendors employ ITIL or other best-practice frameworks as part of their service offerings.

Recommendations:

- Address change management process improvements, because poor change control is at the root of most service delivery issues.
- Employ ITIL with the goal of decreasing the amount of time IT spends on reactive and unplanned work and increasing the time spent on proactive and planned work.

- Only invest in ITIL tools that will significantly improve your ability to achieve your overall IT service management goals.
- Begin with ITIL v.3 because it is more prescriptive and specific, and ultimately less frustrating.

Related Research:

"Hype Cycle for IT Operations Management, 2007"

Analysis By: Barry Runyon

2.4 HIEs as a Driver for Global Health IT Spending

Strategic Planning Assumption: By 2011, 20% of global healthcare IT spending will be justified by HIE programs.

Key Findings: Many countries, including England, France, Finland, Singapore and Australia, have major programs in place to create HIEs. As an example, Canada's Infoway was created to promote the adoption of a lifetime electronic record. It is a conduit that provides direct funding not only for the mechanisms to exchange health information but also for acquiring the systems used by healthcare providers to capture and use the electronic information. This approach is quite common among large, regional initiatives. They cannot focus solely on the exchange of patient health information because there is an inherent requirement for the foundational system implementations, IT re-engineering and infrastructural investments required for participation. The latter spending, while not directly part of HIE projects, will have its budget, direction and timing predicated on regional HIE initiatives.

On a global scale, total projected spending on surrounding HIEs will be 20% of the total money spent on hardware, software and professional services; however, country-level details show some variance.

Market Implications: The influence of government-led national and regional initiatives will play a much larger role in the IT priorities of healthcare providers. Organizations must plan to be compliant with the data sharing and interactions required by HIEs. Their focus cannot be solely on implementation of new systems. CDOs must upgrade or replace legacy systems, modernize outdated infrastructure, and implement IT security and governance policies.

Recommendations:

- Coordinate healthcare organization IT purchasing and deployment initiatives with regional efforts to ensure that efforts are not duplicated or do not go to waste.
- Actively pursue working on HIE efforts in your region, particularly where funding is available.
- Expect government interest or oversight on purchases of healthcare IT systems.

Related Research:

"The U.S. Nationwide Health Information Network Will Be a 'Network of Networks'"

"A Clear Definition of the Electronic Health Record"

"Case Study: Denmark's Achievements With Healthcare Information Exchange"

"Connecting for Health: The Progress of England's Healthcare IT Program"

Analysis By: John-David Lovelock

2.5 U.S. Security and Privacy Standards

Strategic Planning Assumption: By 2011, more U.S. hospitals will rely on The Joint Commission's information management standards than HIPAA when planning for privacy and security audits and infrastructure investments.

Key Findings: The Joint Commission (until 2007, The Joint Commission on Accreditation of Healthcare Organizations) evaluates and accredits thousands of healthcare organizations and programs in the U.S. It is one of the nation's predominant healthcare standards and certification bodies.

Among The Joint Commission's important areas of focus is information management (IM). These standards set forth broad requirements in areas such as privacy and confidentiality, security and data integrity, disaster recovery and business continuity, clinical records management, identity and access management, and HIPAA compliance. The Joint Commission's IM standards are broader than those of HIPAA and bring together what HIPAA separates into its privacy and security rules. The Joint Commission standards related to IM dovetail with the HIPAA security standards and are intended to assess how well a hospital ensures the integrity, confidentiality and availability of patient information. While The Joint Commission should not be construed as "HIPAA police," by including confidentiality and security under IM, The Joint Commission is able to assess a CDO's HIPAA compliance program. CDOs are scored against various IM standards and associated elements of performance, and it uses its Tracer methodology to reveal shortcomings in workflow, policies, procedures, controls and documentation.

Although The Joint Commission conducts operations in several countries, this prediction applies to U.S. hospitals.

Market Implications: CDOs will seek out privacy and security consultants, products, and services that are more aligned with The Joint Commission's IM standards and elements of performance. In turn, vendors must better understand The Joint Commission's IM standards and structure their audit processes around The Joint Commission's Tracer methodology and their audit checklists around the IM "Elements of Performance."

Recommendations:

- Even if a survey is not imminent, periodically use The Joint Commission's self-assessment for IM to evaluate internally how well your privacy and security programs are designed.
- Map elements of your enterprise security plan to the appropriate IM standards and elements of performance.
- Understand that The Joint Commission's Tracer methodology is an effective way to determine if a CDO's privacy and security policies, procedures and controls are effective. Use a similar approach to identify residual risk.
- Use supporting materials required by The Joint Commission to assist the CDO in meeting HIPAA's privacy and security documentation requirements.

Related Research:

"The State of IT Governance in Healthcare Delivery Organizations and How to Make It Better"

"Findings: CDO Safety Is Not Equal to the Sum of Its Security Products"

Analysis By: Barry Runyon

3.0 A Look Back

In response to your requests, this year we are taking a look back at a few key predictions from previous years. We have intentionally selected predictions from opposite ends of the scale — one where we were wholly or largely on target — as well as one we missed.

On Target: 2004 Prediction — Through year-end 2007, at least one enterprise healthcare vendor will suffer serious business damage as a result of failure to meet the NHS's performance criteria.

This prediction was important because the English National Health Service (NHS), as part of its National Programme for IT, had recently awarded multibillion-pound contracts for CPR systems and national HIE components to consortia comprising system integrators and enterprise CPR vendors. Worldwide attention was drawn to the monetary value of the contracts, their very ambitious scope and timescales, the fact that they withheld the bulk of payments until the vendor's software was installed and being used, and the provisions they included for replacing vendors that failed to satisfy NHS requirements.

The difficulties experienced by several firms involved in the program demonstrate that this prediction was on target:

- IDX Systems, a U.S.-based CPR vendor (subsequently acquired by GE Medical), announced in June 2005 that it was lowering its 2006 revenue forecast by \$30 million and its 2006 profit forecast by \$0.15 per share. It cited the decision by Fujitsu Services to replace IDX with Cerner after difficulties in modifying the Carecast CPR system to meet the needs of NHS trusts.
- iSoft, the chosen CPR provider for three regions of England, experienced in 2006 a series of crises that threatened the company's survival. The crises were caused by iSoft's failure to deliver its Lorenzo product, and by the revelation that the company had been inappropriately recognizing revenue from the NHS. Its share price collapsed, and it became the subject of investigations by financial regulatory authorities. iSoft had to restate its accounts, renegotiate its banking agreements and replace its senior management team. In November 2007, it was acquired by Australian vendor IBA Healthcare.
- Accenture, a global system integrator, announced in March 2006 a pre-tax provision for future losses of \$450 million related to delays by iSoft and higher costs for development and integration.
- ComMedica, a U.K.-based vendor of picture archiving and communication systems (PACSs), announced in February 2006 that it was closing its diagnostic imaging business and laying off 100 employees. The announcement followed a decision by CSC to drop ComMedica as its preferred supplier of PACSs due to delays and technical problems with the PACS solution. ComMedica appears to be no longer in business.

Missed: 2004 Prediction — Through 2008, knowledge management will be the CPR system capability that experiences the most growth.

Generation 3 CPR systems are fundamentally about assisting clinicians in using medical knowledge to improve care. Two key challenges are: 1) managing the process of encoding that knowledge in clinical decision support rules and order sets, and 2) providing the most efficient interchange between the enterprise and external sources for evidence-based medicine. This is

the reason that we added knowledge management to our core list of CPR capabilities. However, we underestimated the other challenges of making the CPR systems operational in CDOs, and the degree to which those precursor activities would dominate the attention of enterprises. In mid-2007, we began to see recognition among CMIOs and other clinicians that the existing tools and procedures for configuring medical knowledge into CPRs are woefully inadequate for the volume and complexity of medical knowledge. One such clinician told Gartner "we have order sets that are three-years-old and haven't been reviewed because we don't have the bandwidth with existing tools." At the same time, clients are telling us that they do not perceive that their vendors "get" the requirement to provide advanced content management capabilities to support the configuration of their products. We believe that this issue will become increasingly recognized whether or not it can ever be characterized as experiencing the most growth.

RECOMMENDED READING

"Predictions for the Healthcare Provider Market in 2004"

Note 1 About Predicts 2007

Recently, Gartner conducted an independent survey of its clients. Your direct feedback is underpinning the activities we have under way to continually improve our research. This year's Predicts report is one example of those changes.

You told us to simplify the number of different terms we use. In the past, we used two different terms to identify our most important statements about the future. We are now standardizing on one term — Strategic Planning Assumption (SPA).

You told us that you value our research most when we are direct. Your confidence in our advice comes from the facts and assumptions we provide in supporting our positions. The numerical probabilities we used with SPAs outlived their usefulness. Starting with this report and going forward, we will no longer use numerical probabilities.

You told us that you wanted us to be open about tracking the accuracy of our predictions. In this report, we are taking a look back and highlighting where we were on target — and where we were not — and why.

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