

The Age of Open Systems

How Component Software Is Changing the Landscape of Healthcare IT

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Increased prevalence of vendor partnerships provides medical practices with advanced functionalities and an improved user experience.

Although faster processors, high-bandwidth connections, and a little happening called the Internet tend to get all the credit, there are other drivers behind the information technology boom in health care.

Roughly since 2000, healthcare software has truly matured in its

capabilities and transformed how physicians, nurses, administrators, and other healthcare professionals do their jobs. More powerful hardware has helped us crunch numbers more quickly. Broadband keeps us connected 24/7. In addition, the World Wide Web has generated limitless opportunities to improve businesses and remain competitive. But none of these innovations has specifically impacted software's ability to accommodate the inherent complexity of medical and healthcare administration as directly as component software.

By component software—also called “componentware” or “embedded software”—we mean something along the lines of this common

definition: “software designed to work as a component of a larger application.” Without getting too technical, componentware allows core software applications to incorporate new, complementary services, data sources, and features without having to collect the data and design the solution from the ground up.

As a simple analogy, consider auto manufacturing. To make an “American” car, a hypothetical automaker in Detroit may order parts from China, manage subassembly in Mexico, and assemble the finished product in Canada. In fact, the Honda Accord is more “American” than the Ford Fusion based on at least one measure of component origin and assembly location.²

Though they may or may not be going global, healthcare IT vendors are getting less proprietary and more creative in how they build software features to better accommodate the complexities of the medical field. In the case of auto manufacturing, it all fits together thanks to precise machining. In health care, it all fits together thanks to better software design, more common operating systems, and widespread adoption of data format standards.

Impact of Open Systems Approach

Unless you're a technophile, component software is probably more common than you realize. Most large software packages—practice management and electronic medical record (EMR) systems—contain a significant number of integrated components or embedded subsystems.

As a limited, unscientific snapshot to gauge the prevalence of componentware, we looked at the top 25 healthcare IT companies by revenue. Not all of them are candidates for our products, yet four of them use our software developer's toolkit or use our software as an integrated component. Between our two companies, MEGAS and Unicor Medical have more than 30,000 end users, but many only know our products as components within larger applications from companies like Allscripts, Cerner, Misys, or Sage Software.

This open systems approach is changing the way healthcare organizations work, and it is a relatively new concept in healthcare information technology, compared to the days when provider organizations were locked into exclusive contracts or dedicated hardware. Rather than having good intentions to add certain software functions, IT firms are increasingly ready and willing to find a partner. Greater openness in technology platforms and a common toolset mean vendors are less and less likely to reinvent the wheel. For medical practices, that means software packages can help manage more and more challenging tasks.

The first important impact of this open systems approach is that medical practices can do entirely new things. With access to a powerful engine for reviewing rejected claims, for example, they can put a denials management program in place. With core applications that rely on a constantly updated pharmaceutical database, physicians can write electronic prescriptions with medication safety checks tailored to their specialty. And, with "expert systems" modules that drive clinical decision support, applications can guide physicians with suggestions based on the latest clinical knowledge.

For many medical practices, the real transformational aspect of this lies in the fact that even smaller practices can gain access to these advanced functionalities. The econo-

mies of scale behind the technology are now such that software developers can support a business model that serves the interests of even small, rural practices. To carry forward the automotive analogy, many base model cars today come with air bags, power windows, anti-lock brakes, and other standard features that were costly options 10 or 15 years ago.

The second impact is an improved user experience. Component software will be a familiar concept to any office staff member who has used a special report-writing module or the transcriptionist with a specialized dictionary or thesaurus that works seamlessly with his or her word processing application. You probably use plug-ins or add-ins every time you surf the Internet, enhancing the performance of your Web browser.

With embedded software, applications can do more while maintaining a seamless integration that doesn't overly complicate the user experience. As a result, physicians, nurses, and office staff work smarter and maintain productivity.

Application development decisions are increasingly customer-driven.

Componentware and the Revenue Cycle

To examine how componentware is changing health care, we look more closely at the area in which we are most familiar, the revenue cycle. The experience of Houston-based Practice Insight demonstrates how this software integration can support a business model that levels the playing field for very small medical practices versus health plans and payers, who typically employ highly advanced claims adjudication and review systems.

Practice Insight's claims management solution, EDInsight, serves practices as large as 1,700 physicians, but its primary market is smaller medical practices with a staff of 5 or fewer. With EDInsight, practices

file insurance claims, track payer responses, monitor pending claims, and directly rework claims through either a server-based or application service provider-based (ASP-based) solution.

"Minimizing bad claims helps our clients avoid payment delays, which is critical because physicians have been getting squeezed in terms of reimbursement in recent years," explains C. Houston Johnson of Practice Insight. "It takes time to research and correct claims on the back end, so we wanted to incorporate a claim scrubber functionality to help our practices capture reimbursement for the full allowable amount. But for our end users to see the value, we had to develop it the right way."

Claims editing or "claim scrubbing" software has historically remained out of reach for medical groups without the capital to invest in such solutions. True claims editing software automatically reviews claims to validate diagnosis codes, procedure codes and modifiers, confirm medical necessity based on Medicare Local Coverage Determination (LCD) policies, perform a variety of claim-level technical edits, and more. Based on the claims editing feedback, end users may then correct the claim before submission.

The right way to provide claim scrubbing, for Practice Insight and its client base, was a transaction-based "pay-as-you go" option that does not require set-up fees from the medical practices. Working with MEGAS, the developer of ClaimStaker software, Practice Insight was able to incorporate component software as a way to allow for real-time claims editing. To the end user, getting started is simply a matter of clicking on a button within the Web-based EDInsight solution. Behind the scenes, however, EDInsight is sending files to ClaimStaker, which returns results through a custom interface.

"We do a great job of transmitting claims, getting them paid, reporting

on status, and all the other aspects of EDI,” says Johnson. “But we simply don’t have the time or the people to capture all the millions of possible clinical edits or keep up with the constant rule changes. MEGAS has been doing this for decades, and the company’s technology supported our pricing model perfectly.”

Called the EDI Clinical Claims Scrubbing option, released in 2005, the claim scrubbing module has been received enthusiastically by Practice Insight resellers and end users alike. A cardiologist in Texas discovered he was miscoding a heart catheterization process, costing his practice \$400 per instance. Another medical practice improved in so many areas they refer to it as “an insurance policy.”

Cleaner Claims, Greater Efficiency

Ulrich Medical Concepts confronted a challenge to improve its software while avoiding duplicate data entry. By using the component software approach, the addition of enhanced functionality would not have to compromise usability.

Ulrich Medical Concepts, based in Paducah, Kentucky, provides a combined scheduling, billing, and electronic medical record (EMR) system called Team Chart Concept (TCC). With TCC, being seamless is paramount. “Our whole focus is the integration, in eliminating the need to re-enter demographics or patient information,” says Sandra Ulrich, chief operating officer. “We absolutely abhor duplicate data entry.”

Over time, Ulrich Medical Concepts noticed that many of its smaller, mostly rural medical practices simply lacked the billing expertise to consistently generate clean claims. In the latter part of 2005, Ulrich Medical Concepts began to focus specifically on the challenge of improving charge entry. Due to the complex, constantly changing nature of reimbursement rules, building the feature was impractical. They knew they would need a partner with

coding expertise and an extensive claims database, but they also required the flexibility to integrate the component software technology fully within TCC.

Adding software features to a core application is a much speedier proposition these days.

To embed charge entry, Ulrich Medical Concepts turned to Unicor Medical’s software developer toolkit, Alpha II CodeWizard. With it, Ulrich’s in-house developers could acquire a range of functionalities and incorporate them into TCC and other software applications.

The new charge entry editing functionality, known as SmartCoder, which is “powered by Alpha II software solutions,” now complements other software components the company had already developed internally, such as SmartTicket and SmartChart. TCC users can initiate code search and code assignment guidance simply by clicking an “Edit Encounter” button. The system’s editing ability encompasses CCI bundling, LCD/NCD, proprietary medical necessity, modifier, and ultimate specificity. A physician may then either review and correct codes as he or she documents the encounter or defer to the staff for the more complicated billing edits.

“When we explain what SmartCoder does, billing staff managers’ eyes usually get pretty big,” recalls Ulrich. About 80 percent of its clients—including all new clients—use SmartCoder. And since it was introduced, the number of client practices achieving a clean claims rate of 99 percent has more than quadrupled.

“Given that the industry average cost of filing a claim is eight dollars, this represents a huge boost in cash flow for our customers,” says Ulrich.

As a next step, Ulrich Medical Concepts and its sister company, Revenue Solutions, have been collaborating on another major enhancement. This component will integrate the MEGAS ClaimStaker functionality for payer-specific claims scrubbing.

“It wasn’t really feasible to develop the ability to check payer rules in-house,” says Matt Wurth, a software developer at Ulrich Medical Concepts. “Why reinvent the wheel? Companies like Unicor Medical and MEGAS allow us to get up to speed more quickly.”

A Sign of the Times

Adding software features to a core application is a much speedier proposition these days. For health-care IT vendors, it takes months, not years, to introduce even very complex, data-intensive capabilities for their medical practice and hospital customers.

As a result, application development decisions are increasingly customer-driven. Obviously, this favors the medical practices and other provider organizations that use the software day in and day out. When switching to a new core application, it’s not uncommon for end users to require the new vendor to add a third-party service to its product as a condition of the new agreement.

In health care, component software is a practice that’s gaining ground and growing in sophistication. The good news for doctors, nurses, and other healthcare professionals is that more comprehensive, more current software features are now available to help them both maintain compliance with fast-changing regulations and improve business operations in an age of constantly mounting pressures on reimbursement. The best news of all, however, is that more effective information technology can support clinicians with their mission of providing better care and more effective services.

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