

# Process Automation Robots from Admissions to Business Office

By The Shams Group (TSG)

**Key Words:** *System-wide solutions, cash flow, workflow robots, automation tools, community-wide scheduling, smart agents, forms automation, EMPI, data warehousing, point-of-service document scanning, continuous quality improvement*

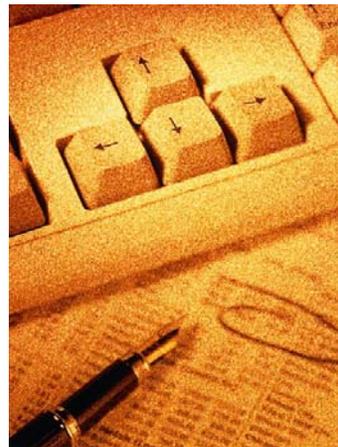
The healthcare marketplace has grown and evolved over the last 50 years from two major perspectives. It has survived the mergers and dissolution of early healthcare giants, and has seen a resurgence of managed care organizations in the last decade or so. With this development, we have seen a restructuring of how healthcare is provided, and a new focus on ambulatory care. Moreover, technology has moved from dumb terminals to PC solutions and DOS based applications to thin client strategies and web/windows based applications.

*The innovation in information technology has paved the way for the next level of investments, but many enterprises lack the infrastructure to properly support them. Therefore, we must maximize our existing systems with either the choice of departmentalized solutions that require significant maintenance, or system-wide solutions that promote best practices and process automation.*

In opting for a system-wide solution as opposed to the IS department's nightmare of supporting fragmented and proprietary departmental solutions, two immediate benefits are apparent. Information flow is improved through the entire cash flow process, and process is accelerated through workflow robots.

Patient and financial data captured in the early standards of healthcare software were very

task/work specific. Whether it is MEDITECH, SMS or HBOC, the software was designed to suit the industry and its model of 15-20 years ago. Today these systems, while still the



foundation of most hospitals' network, require a more robust functionality. Cash flows have evolved with the demands of insurances and HMOs, and "front end/backend" language has

become more prevalent as the entire process is reevaluated. This is where the automation tool's impact can be most effective.

These early software standards left much of the information flow to patient charts, phone calls and outdated/inundated reports. Again, we must remember that the industry has morphed over the decades, and new emphasis has been placed on a faster, more quality driven health system paradigm of ambulatory care. The concept of a "quicker process" is perhaps misleading. The process is quicker, but more importantly, it is policy driven. With the use of software robots, clients are navigated through the system. As their current systems were not specifically designed for their needs today and tomorrow, automation tools are a powerful, adaptable and error free solution.

In order to understand workflow automation to improve the cash flow process, the following discussion focuses on Scheduling, Admissions, Order Entry and Billing/Accounts Receivable. Each of these areas represents the basic links in the HIS module chain. To start, many facilities are not utilizing Community-Wide Scheduling. Despite complaints that it is difficult to work with, it is a great tool to manage resources, track appointments, and improve the patient's experience. Scheduling, like the other three above mentioned modules, has a combination of issues. The application itself has many fields that are no longer utilized by the facility. Some of these may "require" an entry. Other fields are used but not really required, forcing a standard entry to be used 90% of the time. In these cases, automation robots navigate the client through the unutilized fields, and default standard values into others.

Within the basic software are customer-defined screens, and custom required fields. Most of these had been designated decades prior by the facility, and have gone without evaluation. Choice then must be made to update these fields in the software, or navigate past it. As a rule, the foundation software should be updated prior to robot deployment, but time constraints often necessitate the immediate impact of this automation. As a result of manually dealing with these fields over time, clients often enter past them, failing to understand their impact on the rest of the system. Smart Agents within automation can validate the format of these



entries and/or compare the information for congruity with other entries in the system. To add yet another layer, these Smart Agents can prompt client action via decision trees, dependent upon a given matrix of data.

The above problems and the solutions that automation provides are merely the beginning. There are several other ways to automate processes outside the standard software. Standard face sheets, patient emboss plates, insurance forms and print shop forms can all be streamlined through forms automation. Again, based on a given matrix of data, these forms print automatically on a laser printer, eliminating the trip from printer to printer, and sorting through a collection of miscellaneous forms out of pigeonhole shelving or stacked bins. Realizing that current EDI and EFT applications are geared toward Materials Management and Accounts Payable, it is worth mentioning that this form of automation is also a huge return on investment, and would directly impact the enterprise's overall cash flow.

*Despite HIS systems' fully integrated suite of products, information does not always transfer from module to module as a client might expect.*

This results in a lot of double entry, and at times data integrity issues. Process automation can store the data for the client to be applied later as the workflow directs. Furthermore, process automation can move the client from one module to another at the click of the mouse, without the complication of expanding the usually limited HIS menus.

There are still other ways to automate the collection, storage and transfer of information

across modules. In a multi-entity enterprise, the Electronic Master Patient Index organizes each patient across facilities, cleans up the duplicates and updates demographic information with the designated data to be shared with all entities. Data warehousing consolidates the pertinent information across modules. This is extremely effective in reporting as HIS systems are difficult and incomplete in their reporting capabilities. Relational databases are the key, and SQL is the platform of the future.

Granted software robots and process automation can do a great deal with your existing stable software systems, but communication will always be at the center of an efficient and informed enterprise.

*Tasks, patient notes and instant messaging all allow the client to track issues, maintain records, and update other clients.*

Point-of-service document scanning is another communication tool that has many important automation facets. It provides a record for insurance company correspondence. It is an information transfer and archiving tool. It allows many different security validated people to access the same information online.

In order to implement workflow robots in a healthcare facility, project planning is the first step. Hospital must ensure that the infrastructure is able to support the technical and user-based needs of the software, and resources are identified and tasks assigned. Resources must also be held accountable for delays. The second step is communication with the users, as their buy-in will only help to facilitate the transition and knowledge transfer.

The third step is strategy formation. Goals for the future must be mapped out to give the healthcare system a direction. Finally, methodology must be selected appropriately. Each healthcare system has its own mission statement and culture. However, many lack the methodology to attack and achieve identified goals. The following components must be considered when selecting the right methodology of implementation.

- Capture information once
- Capture it at first point of service
- Capture it error free
- Capture it with least number of keystrokes
- Simplify all complex processes by developing pop-up decision trees when possible
- Automatically communicate vital information to all downstream stake holders
- Turn policy into process
- Establish metrics for reduction in error rates

In conclusion, two other factors remain that are vital to a successful automation robot's deployment: continuous quality improvement and FTE support requirements. With JCAHO promoting the FMEA (Failure Mode & Effects Analysis) strategy, continuous quality improvement is driven to the forefront. No longer will analyses/assessments be reserved for existing issues, but embraced as an extension of the current processes. Without aggressively evaluating these processes, the healthcare system does not evolve.

*The healthcare system must not fail to leverage these automation robots as this technology helps to leverage the core MEDITECH software system.*

In deploying these strategies, the healthcare system must also ensure that proper support is provided. Information systems departments often overlook the human resources required for these projects. Automation robots are not “plug and play” technology. IS support does not end on the “live” date. Again, a continuous quality improvement strategy should be incorporated to reap full benefits of workflow robots.

---

The Shams Group (TSG)  
A Knowledge Management Consulting &  
Software Company  
972-906-9313  
[sales@shamsgroup.com](mailto:sales@shamsgroup.com)  
[www.shamsgroup.com](http://www.shamsgroup.com)

Published in the Spring 2002 Issue of MUSE  
Matters  
Volume 13, Number 1, pages 30-31