The Informating Framework

THIS TOOL CAN HELP YOU DETERMINE THE VALUE OF AND RETURN ON INVESTMENT FROM AN INFORMATION PROCESS.

BY FRANK POTTER, CMA

CMAs are often asked to implement new information systems or make existing processes more efficient or cost effective. Your Information Systems (IS) department will have excellent tools and models to document these systems. What's missing from the IS tool kit is a framework that describes how an information process adds value to the organization and (without too much technical jargon) what the individual activities of the process may be.

The Informating Framework is such a tool, and you can use it to incrementally increase the return on investment or value created from an information process.

A PSYCHIATRIC PROBLEM

Before we get to the framework, a trip to a psychiatric hospital is in order. The hospital is a large mental institution with a number of services, including a Forensic Psychiatry department. Patients within this department are there as a result of a judicial interaction. Because of this, the practicing psychiatrists are paid from a hospital "sessional fee" budget, which covers activities that aren't insured but are still required. Patient interactions, hospital administration, teaching, and travel are a few examples.

Unfortunately, this budget hasn't kept pace with inflation, nor have the information systems. Forensic psychiatrists currently fill out a paper-based sessional claim listing each service or cost for which they are eligible. The department's clinical director approves these claims manually before sending them to the local Finance department. Finance verifies the calculations and compares the entries to the daily duty rosters to try to catch any errors.

Once Finance has verified the information, it completes a payment requisition for each physician. The requisition and the original claims are sent to a corporate Medical Affairs department. Copies are made, and the medical affairs director approves the requisitions, which are then sent to the corporate Accounts Payable department. The requisitions are entered as invoices, and payment is on its way within a week.

Confused? It gets worse. Because of poor processes, physicians are often months behind in submitting claims, and the department is significantly over budget. What can be done? As a CMA with some information systems experience, you have been asked to chair a working group to find a better way to process session fees and address the following key problems:

◆ Delays in paying the physicians and in the physicians submitting claims.
◆ Loss of revenue, such as if the physician records that a patient has no insurance, yet the cost may be recoverable from other sources—the state, for example.
◆ Multiple data entry of the same information.
◆ No summarized reporting for any of the approvers.

THE OBJECTIVES

The working group is composed of four other individuals: a physician, the Forensics clinical director, a Finance representative, and an IS representative. When you ask the members to describe the problem, their responses resemble the fable of the blind men and the elephant.

◆ **Blind Man #1 (Physician):** The problem is the paper

Figure 1: The Informating Framework
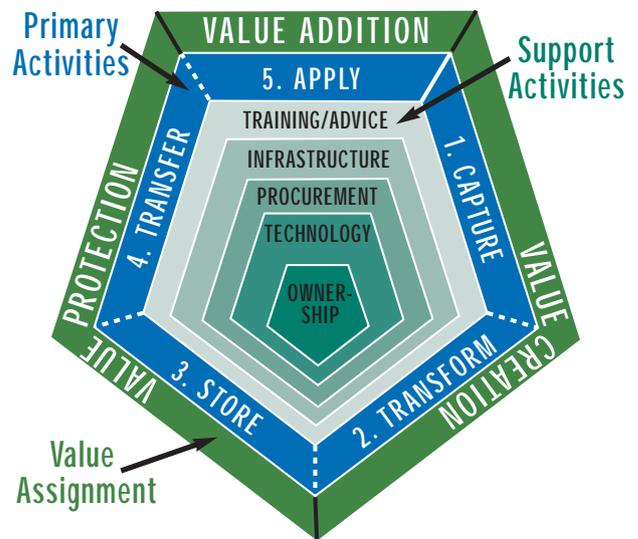
forms. They must be improved, and the pay cycle must be streamlined.
◆ **Blind Man #2 (Clinical Director):** The problem is a lack of management reporting or mechanisms to recover lost revenue efficiently.
◆ **Blind Man #3 (Finance):** The problem is that sessional fees are over budget and there's a lack of accountability and controls on the process.
◆ **Blind Man #4 (IS):** The problem is that the process is paper focused; it needs a database.

You quickly realize you need an overarching conceptual model that can break the larger sessional fee problem into manageable units and that all members of the working group can understand. It must also help you accomplish the following objectives:

1. **Assign and define ownership:** Clearly understand who is accountable, what the risks of information processes are, and how best to manage these risks.

2. **Improve Actions or Decision Making:** Continuously increase the number and quality of decisions/actions the organization is making.

3. **Rationalize Resources:** Continuously reduce the cost and cycle time of information processes, particularly through the automation of repetitive human activities.

Fortunately, before meeting with the working group you have read this article and realize that the Informating Framework is the right tool to systematically categorize and analyze all of the activities of an information process and its interactions.

A QUICK INTRODUCTION

The Informating Framework can be illustrated by seven inlaid pentagons (see Figure 1). The five green inner structures represent the various support activities. The blue pentagon represents the primary activities. The dark green outside pentagon describes the value each primary activity brings to the information process.

Before I continue, three important credits are in order. The first goes to Michael Porter and his Value Chain, on which the Informating Framework is loosely based, particularly the concept that support activities are an integral and important part of an organization. The second tip of the hat goes to Susan Cisco and Karen Strong, who developed the Value-Added Information Chain. This model is the basis for the primary activities.

The final acknowledgment goes to Shoshana Zuboff, who put the "informating" in the framework. In her 1988 book *In the Age of the Smart Machine*, Zuboff coined this term to describe the one-two punch that technology has on organizations.

The first punch is that technology automates repetitive processes. As a result, organizations need better-educated and more knowledgeable individuals to operate their information systems. Through automation, the level of information available to an organization and its operators increases.

In many cases, the operators are better informed than their supervisors or managers. This is the second punch of informating. As Zuboff explained to *Network World* magazine, informating is "translating and making visible at the most basic level" information previously unavailable to the organization or available only at senior levels.

PRIMARY ELEMENTS

Back to the hospital. Your group has agreed to use the Informating Framework to analyze the session fee problem. Your first step is to explain the primary activities and the principle of amalgamation when managing these activities.

Primary activities (the blue ring) are organized into the three value categories:
◆ Value Creation,
◆ Value Protection, and
◆ Value Addition.

Value Creation: Capture and Transform Activities
This category focuses on capturing data and transforming it into information. Data can be acquired internally through data entry or information systems or externally through customers and electronic data exchanges or by buying it. Transformation converts data into a usable form through aggregation, combining data sources, and mapping the data to organizational structures.

Value Protection: Store and Transfer Activities
The focus here is the protection of your organization's investment against loss, theft, spoilage, corruption, and unintended use. The secure store of information is just as critical as the process of transferring the right information to consumers as quickly as possible. Information must be transferred in a cost-effective medium that allows the end consumer to quickly and efficiently apply it to a decision or action.

Value Addition: Apply Information
Value Addition is the group of activities in which an organization recoups its investment in the information process by taking an action or making a decision—even if the decision is to "not" make one. Without a decision or action, all effort up to this point will have been a waste of organizational resources.

THE AMALGAMATION PRINCIPLE

Your working group agrees that there are three independent processes involved in paying sessional fees: verifying the fee, approving the request to make a payment, and making the actual payment and accounting for it. See Figure 2 for the processes.

Because you've read ahead (which I wish you would stop), you know that the greatest efficiencies or improvements to effectiveness are achieved by amalgamating related information processes. Amalgamation is achieved by building on preexisting primary activities of an information process. The further upstream in an information

process an amalgamation occurs (i.e., at the capture or transform stages), the greater the savings and efficiencies.

◆ **Analysis:** Each successive process is dependent on the successful completion of the prior process.

◆ **Recommendation:** Attempt to amalgamate at least two of the three distinct information processes. If this does happen, ensure that the approval and verification purpose of having three distinct processes isn't lost.

◆ **Analysis:** Because the three sessional fee processes are independent, redundancy and reentering of the same information occur.

◆ **Recommendation:** Sessional fee information should be entered once and then used for a number of different applications including management reporting, approving/paying the physicians, and recovering lost revenues.

◆ **Analysis:** At present, information is stored on paper-based claims. It's difficult and costly to transfer this information or reapply it to uses other than the one for which it was immediately intended.

◆ **Recommendation:** Sessional fee and approval data must be moved to a secure digital environment where it can be applied to a number of different uses.

At this point, your working group's recommendations are hardly surprising. What *is* surprising is the relative ease with which all members agreed upon the problems and the potential solutions. No longer do they see only their part of the proverbial elephant—the Informating Framework has helped them understand the problems of the entire information process. Now it's time to move on to the support activities.
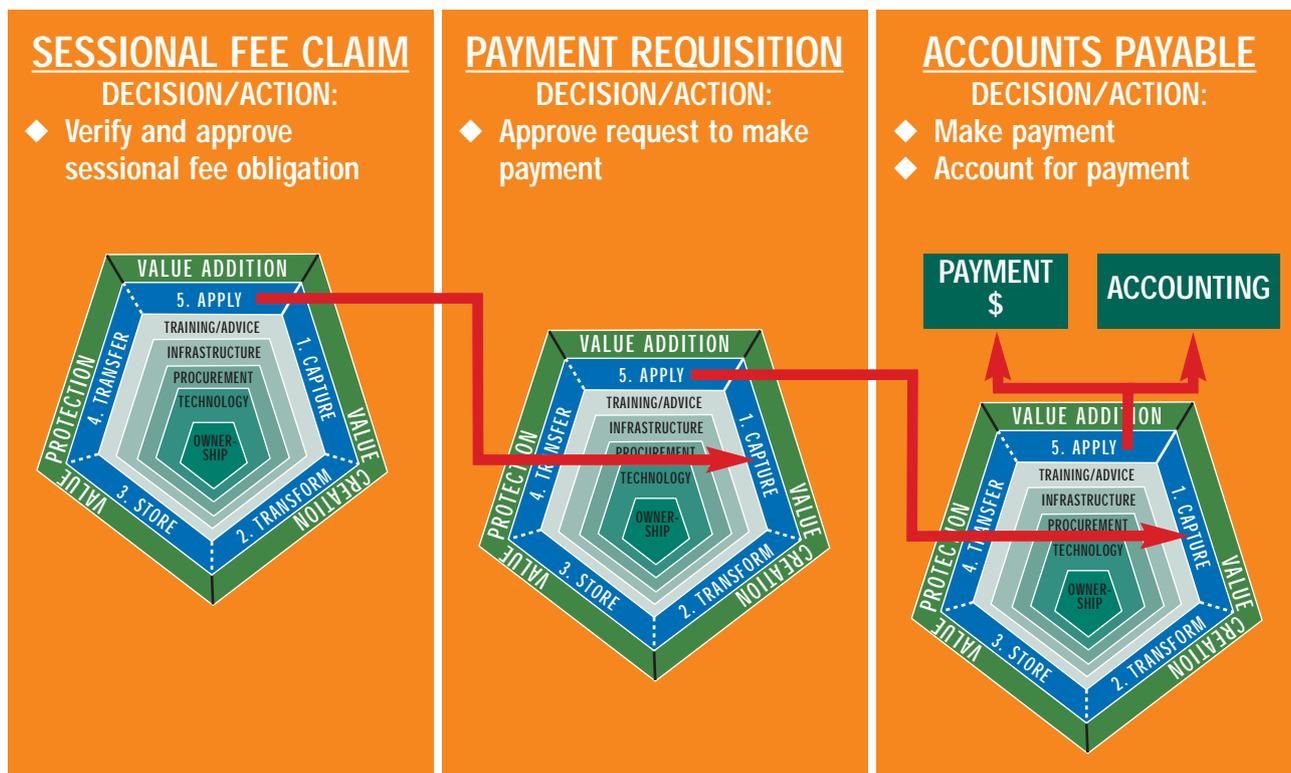
SUPPORT ACTIVITIES

The primary activities are dependent on the five support activities (the inside, green pentagons). At the center of the Informating Framework is the critical question of ownership. Outside this core are the two project-like activity groups: technology development and procurement. The outer two support activities, training and advice and information infrastructure, are critical for the framing or understanding of information inside the firm.

Ownership

Air and sunshine belong to no one, and information processes are often seen the same way—as communal property. Alternatively, they may be jealously guarded and protected by one or two special-interest groups, possibly to the detriment of the entire organization.

Instead, information processes should be treated like a utility: reasonably regulated to protect the common good, have clear accountabilities and responsibilities (which

Figure 2: Session Fee Information Processes

includes paying your utility bill), and have an overarching governance process to solicit, filter, and apply input from stakeholders. This support activity considers the difficult questions of who can make decisions about an information process, who has a veto, who can lobby, and who is affected but disenfranchised.

Principle: Clearly defined ownership relationships create better decisions about the process.

◆ *Analysis:* Your working group members represent the key stakeholders in the sessional fee process.

◆ *Recommendation:* The clinical director is to have primary ownership of the process and work with the other stakeholders. Corporate Medical Affairs, Finance, and IS each have a veto on proposed changes.

Procurement and Technology Development

Finding new data to be captured is a procurement activity. Procurement may or may not use a new technology to achieve the resulting change. While procurement refers only to changes to the "capture" primary activity, new technology development can be applied to any primary or support activity. In addition, technology can have an enormous impact on competitiveness or cost reductions throughout the entire Informating Framework.

Principle: Procurement and technical development must be in response to an ownership directive with clear value-addition or cost-improvement objectives set and managed to.

◆ *Analysis:* The sessional fee process is well suited to a database environment. Databases, software technology, and development skills are familiar to the organization, so there are few design risks. But 70% of the current psychiatrists have poor computer skills—or none at all.

◆ *Recommendation:* Automate and computerize, but with the buy-in of the physicians. Consider using technologies familiar to them, such as the telephone (I'm not kidding). Implement error checking at the capture phase, and streamline the approval process. Integrate as much as possible through existing systems.

Infrastructure

Data needs an infrastructure to transform it into information. Infrastructure refers not only to the physical plant aspects of the Informating processes (such as servers and databases) but also to the filtering, structuring, indexing, and organizing of data, information standards, business rules, and reporting requirements. As the authors of GAAP and the keepers of charts of accounts, fiscal periods, and reporting hierarchies, accountants have

a long tradition with infrastructure.

Principle: Infrastructure must use the best applicable technology, and this technology must be clearly defined and reused across multiple information processes.

◆ *Analysis 1:* Numerous (and sometimes conflicting) statutes, corporate policies, and procedures control the sessional fee process.

◆ *Recommendation 1:* The clinical director will align sessional fee policies and procedures with corporate ones and ensure that all statutory obligations are met.

◆ *Analysis 2:* A sessional fee claim form references other information, such as physician name, division, cost centers, and account (cost-object) codes. Currently this information is written on the form.

◆ *Recommendation 2:* All reference information will come directly from the relevant source, such as physician duty roster or the general ledger.

Training and Advice

This is a critical area of expertise for accountants. It isn't enough for decision makers to have information products that they can apply—they must also have context and consequences of actions or decisions. Zuboff asserts that in order for organizations to benefit from Informating, they need a better-educated and highly skilled workforce that will understand and act on the information base of the organization.

Principle: Users of an information process must be well trained and coached in order to best apply the information to a decision or action.

◆ *Analysis 1:* Much of the training for the process is done from "corporate memory."

◆ *Recommendation 1:* Finance will take the lead in developing a hard-copy and online training manual for the entire process.

◆ *Analysis 2:* Because there has been a lack of management reporting, little advice can be provided to the clinical director or physicians.

◆ *Recommendation 2:* Finance will work with the Forensics department and the clinical director to develop man-

Significant Activity Changes

| INFORMATING FRAMEWORK	SIGNIFICANT ACTIVITY CHANGES—BUSINESS CASE EXAMPLES
Capture & Transform	◆ Physicians enter their information into the SFMT via the Web, via a spreadsheet (which is then uploaded into the database), or via the telephone (a small fee is charged to the physician for dictation services). ◆ Sessional fee information for the prior week must be in by Sunday night. It is approved Monday by the clinical director and paid on Thursday. ◆ Approval is done online. ◆ A pay status on the claims is updated via a return file from the A/P system.
Store & Transfer	◆ Information is stored in a networked database. ◆ Transfer is done primarily by a Web interface although a query tool for creating reports and analyses is also used.
Apply	◆ Sessional fees are verified, approved, and paid. ◆ Reporting tools allow the clinical director to better manage the physicians' workload. ◆ Sessional payments are made each Thursday for the prior week.
Training & Advice	◆ Ongoing training is provided to all physicians and to the clinical director. ◆ Finance provides suggestions to the clinical director on process issues.
Infrastructure	◆ Internal IS built most of the database and Web tools for minimal cost. ◆ The clinical director updates the policies and procedures on a yearly basis and monitors the need for new sessional fee codes. ◆ The database is interfaced to the general ledger and the duty roster and receives daily updates.
Procurement & Technology Development	◆ The physicians are currently testing new functionality that will further integrate the duty roster and the SFMT in hopes of eliminating one or the other information system. ◆ IS and some physicians are testing the use of a PDA interface that also holds the physician schedule and patient chart information.
Ownership & Governance	◆ All parties agree that the sessional fee process belongs primarily to the clinical director with key support from the physicians, corporate Medical Affairs, IS, and Finance.

Figure 3: Sessional Fee Management Tool
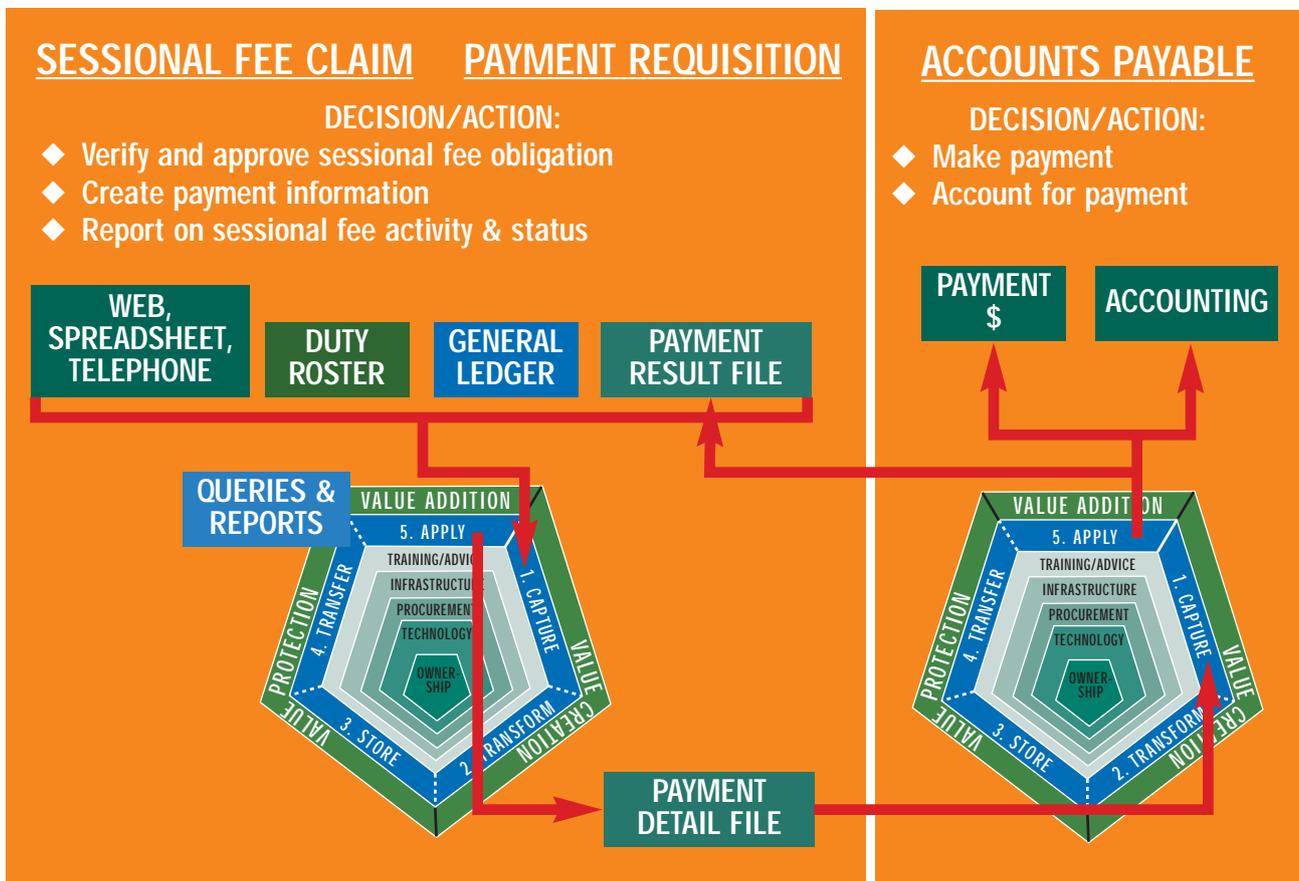
A SESSIONAL FEE MANAGEMENT TOOL (SFMT)

Congratulations! By using the Informating Framework as a guide, you and your working group have successfully overseen the development of the Sessional Fee Management Tool (SFMT). The SFMT (see Figure 3) pays physicians faster and more accurately, timely reporting is available to those managing the process, and everyone is doing less work and achieving better results.

Central to the SFMT is a relatively simple database that collects and manages the verification and approval of sessional fees. Electronic interfaces allow for the interchange of payment information to and from the Accounts Payable system. A query tool and secure Web interface allow individual physicians, the clinical director, Finance, and other stakeholders to quickly access the information they require.

While building the SFMT, the hospital's IS department used a number of tools to analyze information process problems. While these tools were central to designing and building the system, they couldn't answer the difficult questions: Why is this process important? What value does it add? How can it be improved? The Informating Framework can help answer these questions in conjunction with—not as a replacement for—the techniques and models IS will be bringing to the table. For more information and examples of significant activity changes, see the sidebar on p. 30.

A NOTE ON ETHICS

There is no moral imperative within Porter's Value Chain. Cost reduction or an increased competitive advantage would support moving jobs offshore or even clear-cutting endangered forests. The Informating Framework is no different. It can help reduce costs and change how information is used in an organization, but the organization's corporate culture and senior leadership must ensure that such changes are ethical and best for the organization and its stakeholders. ∎

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