

Bridging the Gap between Certification Standards and the Software Needed to Implement Them

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Executive Summary

"...Certifiers must find ways to become more nimble. Certification programs must evolve and keep pace with the changes in knowledge and skills. If they don't, the market will go elsewhere to satisfy its needs."

Certification: The ICE Handbook, 2nd Ed., Ch. 15, "Future Trends in Certification."

Today's certifying organizations are caught between a rock and a hard place. On one end they have their certification standards, the "thou shalls", that applicants must meet to obtain the certification. Some might say these standards are carved in stone and are meant to be enforced with the utmost of rigidity. On the other end they have the wide world of technology and the need to find the right blend of software to manage the process of certification for the applicants. Some might say keeping up and staying on top of technology is harder than passing the certification exam.

The challenge is to bridge the gap between the certification standards and the certification software needed to implement them. Reducing the gap is less about understanding technology and more about understanding the elements or behaviors that make up a well-designed certification management system. A broad definition of a certification management system is one that integrates an understanding of certification standards, customer service goals, and operational needs along with the appropriate technology, data collection, documentation, and standard operating procedures.

This paper describes 5 key elements to look for when evaluating a certification management system: flexible configuration, exception paths, structured workflow, automated accuracy, and real-time views.

Introduction

“The information gathered during the certification process should be sufficient for the certification body to be able to make an informed decision on certification; for traceability to be available in the event, for example, of an appeal or complaint; and to ensure continued conformity with certification requirements.”

– International Accreditation Forum Guidance on the application of ISO/IEC 17024:2003, Clause 6.3.1

Certification programs and third-party accreditation of those programs have grown rapidly in recent years. By some estimates, there are anywhere from 1,500-4,000 personnel certification programs in the United States.

Why the huge range? According to Jim Kendzel, MPH, CAE, executive director at the Institute for Credentialing Excellence (ICE), certification means different things to different people. “You could go to a training course and end up with a certificate, but that may not be a true certification program,” he explains.

Most certification professionals agree that a “true” certification program must have in place standards for education, examination, experience, ethics, and ongoing competency. Some organizations pursue the next step by seeking third-party accreditation for their programs. In the United States, that typically means going through one or more of the accrediting bodies including the National Commission for Certifying Agencies (NCCA), the American National Standards Institute (ANSI), the American Board of Nursing Specialties (ABNS), or the American Board of Medical Specialties (ABMS).

Accredited program numbers, too, are growing. Kendzel reports that as of 2010, the NCCA had accredited more than 244 personnel certification programs, compared with 161 in 2005. ANSI’s personnel accreditation program, in existence only seven years, has accredited 30 credentialing organizations, according to Roy Swift, Ph.D., senior director of personnel credentialing accreditation programs. Twenty more programs are in the pipeline there.

For many organizations, the impetus for pursuing accreditation is to enhance the credibility and quality of the certification program in the eyes of the public and government, particularly in the case of a new profession. Still others are looking for a competitive edge. In addition, a growing number of organizations in recent years have been prompted to obtain accreditation because of state and federal regulations requiring an accredited certification for professions that affect the health, safety, financial stability, or national security of Americans.

Introduction Continued...

Certifying organizations seeking accreditation through either ANSI or NCCA must demonstrate compliance with prescribed standards. Although the two organizations' standards differ somewhat, there are common themes a certification program should adhere to: legally defensible, fair, valid, reliable, accurate, accountable, standardized, and transparent, among others.

Ayana Nickerson, director of certification at the American Speech-Hearing-Language Association (ASHA), contends that these standards, although voluntary, should be aspired to by all certifying organizations. "Any certifying organization worth its salt will develop a program as if it were going after accreditation," she says.

Where does technology fit into the picture? "Technology can help organize, keep track of and secure data, ensure that standardized procedures are followed, and speed up the process in a cost-effective way," says ANSI's Swift.

According to Gary Diffendaffer, CFP®, deputy executive director—certification at the Investment Management Consultants Association (IMCA), "Technology is a fundamental infrastructure building block in a modern certifying body. In the world of certification, there are so many rules and details to keep track of for each applicant and certificant. That's very difficult to do well without a modern technology system.

"Overall, technology contributes to good management, because it captures the history of policies and changes, maintains certification records and transactions, and tracks communications sent internally and externally," Diffendaffer continues. "In short, it helps a certifying organization run a tighter ship."

A Well-Designed Certification Management System

It is often said that a computer is only as smart as those who build it. And so what does it take to make a system both useful and sustainable, and at the same time, support the common goals of legally defensible, fair, valid, reliable, accurate, accountable, standardized, and transparent?

Our experience has shown that a well-designed certification management system goes beyond software considerations alone. It should integrate an understanding of industry standards, customer service goals, and operational needs along with the appropriate technology, data collection, documentation, and standard operating procedures. More specifically, we identify 5 key elements to look for when evaluating a certification management system: flexible configuration, exception paths, structured workflow, automated accuracy, and real-time views.

“Technology is a tool that certifying agencies can use to meet standards in many areas... A certifying organization must evaluate technology choices based on two criteria: usefulness and sustainability.”

– Certification: The ICE Handbook, 2nd ed., Ch. 13, “Technology and Certification.”

- Flexible Configuration
- Exception Paths
- Structured Workflow
- Automated Accuracy
- Real-Time Views

“Don’t design a system just for today. Build capacity to take the organization into the future.”

– Gary Diffendaffer, Deputy Executive Director— Certification, Investment Management Consultants Association

Flexible Configuration

Configuration is the process of setting up and defining a system to support a set of specific behaviors for an application—in this case, to manage a certification program. “Flexible” configuration means making sure the setup and definition of the system can easily be updated and extended so that the system can grow, change, and evolve as a certification program’s needs grow, change, and evolve.

This is the opposite of a “hard-coded” or “brittle” system that is difficult and expensive to update. Older certification management systems were typically hard-coded to reflect the standards and requirements of the certification at the time the system was built. A change as simple as the certification board voting to introduce a new requirement of a bachelor’s degree for all new applicants could lead to time-consuming and expensive re-coding of the system. To further complicate things, the certification board might decide to continue to recognize the applicants already in the certification process. The system would be tasked with supporting both the old set of standards (no bachelor’s degree required) and the new set of standards (bachelor’s degree required) at the same time.

A certification management system with flexible configuration should absorb and accommodate changes as needed. To accomplish this, a set of standards can be organized into a group of “process checklists” that define the different paths an applicant can take to obtain certification.

Each process checklist is further broken down into a list of “requirement checkboxes” - the specific steps an applicant must meet to complete the certification process. Each requirement checkbox encapsulates the criteria, milestones, and data collection necessary to fulfill the requirement as defined by the standards. Requirement checkboxes should be reusable. In other words, configure them once and then include them within one or more process checklists as appropriate.

In this way, a pool of different requirement checkboxes can be easily assembled into any combination to form process checklists that support the certification process as it is today and is yet to be defined tomorrow.

Flexible Configuration Continued...

Process checklists can be created and named specific to a set of standards required at a point in time, such as 2008 Certification Application. Or, they can be identified by the set of requirements addressed by the process checklist, such as Certification Application with Bachelor's Degree. Process checklists should also be created for recertification processes, Recertification Application with CE, and reinstatement processes, Reinstatement Application with Exam. Requirement checkboxes should have useful names like Education – Bachelor's Degree or Application Fee. Using descriptive names for process checklists and requirement checkboxes makes the certification process self-documenting and useful from a standard operating procedures (SOPs) and training standpoint.

Now when the certification board changes the standards, simply keep the old process checklist with no bachelor's degree for existing applicants, and define a new process checklist that includes a new requirement checkbox for the bachelor's degree. New applicants will use the new process checklist, while existing applicants will be tracked with the prior process checklist.

Another useful application of the process checklist approach is handling legacy data—i.e., data from the organization's prior computer system. Typically when an organization migrates from a legacy system to a new certification management system, as much historical data as possible should be converted. Chances are, however, the legacy system did not collect as much data as the new system may require.

Inventing data to fill in required fields is never a good idea. In addition, no matter how much you scrub and clean your legacy data, the information will likely be a bit suspect due to its age and the potential lack of integrity in the legacy system.

One solution is to configure legacy process checklists in the new system—for example, Certification Application Prior 2010—to help identify the age and reliability of the data within this process checklist. Legacy process checklists actually can serve two purposes. First, they separate legacy records from the new, more complete records collected in the new system. This leads to cleaner reports and processes moving forward. Second, a legacy process checklist alerts users what to expect in terms of the amount and quality of the data in the process checklist.

Flexible Configuration Continued...

The same concept can hold true for requirement checkboxes. For example, you might have a requirement checkbox called Education - Bachelor's Degree. When the certification board votes yet again and decides to require a master's degree, you can define a new requirement checkbox called Education - Master's Degree and add it to a new process checklist called Certification Application with Master's Degree or 2010 Certification Application, depending on your process checklist naming scheme.

Change is a fact of life in the certification world. Flexible configuration can help a certifying organization adapt to change quickly, efficiently, and cost-effectively.

Exception Paths

For every rule, there is an exception. And in some cases, for every exception there is an additional exception. An exception path is the steps staff and the applicant must complete in order to handle the exception encountered.

When a system is not set up to address exception paths, staff is forced to handle the exceptions outside of the system. Staff discovers the exception, makes a correction however feasible, and then gets the applicant back on the path to certification. Unfortunately, key information often is lost or buried in a notes field. The organization may have no record that the applicant presented an exception, staff got involved, and a resolution was reached.

Without this information, disconnected customer service can result. For example, one staff member may be unaware that a second staff member has encountered and resolved the exception, and therefore does not permit the applicant to move forward. Neglecting to program exception paths into the system also hinders the collection of long-term metrics, such as how often the exception occurs and what actions were taken. This makes it difficult to plan ways to reduce exceptions or better handle them when they do occur.

A more serious issue can arise when exceptions are handled outside of the system: It increases the chance that different applicants who present the same exception are handled in different ways, leading to different outcomes. This undermines the goal of processing all applicants with similar situations in a consistent, fair way, and opens the organization to possible legal challenges.

"If there is any exception to the application of policies and/or procedures, it should be justified and documented."

– International Accreditation Forum
Guidance on the application of ISO/
IEC 17024:2003, Clause 4.1.1

Exception Paths Continued...

Exceptions can be divided into two categories: “unhappy paths” and “uncommon paths.” An unhappy path occurs when something that should go right goes wrong. Examples of unhappy paths are applications missing key pieces of information, failing the exam one or more times, or taking too long to complete the certification program.

Handling unhappy paths can be as simple as collecting more information and providing more than one way to meet the same requirement. For example, let’s say an applicant can take and fail the exam up to three times before being dropped from the program. The first useful piece of data to collect would be an exam status that identifies whether the applicant is Not Registered, Registered, Needs Retake, Passed, or Third Failure. This will inform staff about the status for the exam requirement, questions to anticipate from the applicant, and next steps available to the applicant.

The second type of data might be to record each time the applicant took the exam and the results, even if it is a non-passing score. This information will help track whether the applicant has reached the maximum of three attempts. It also enables the organization to run metrics on how often applicants in general need to retake the exam, how much time elapses between retakes, and what the average improvement is in scores from the first exam to the second and third retakes.

Also keep in mind that the system can collect “override” information. If staff—or more likely, management—has the ability to override a requirement, program the system to supply a date and reason for the override.

In addition, the system should account for the fact that a single applicant could have multiple statuses at any given point. Think of the poor applicant who has not provided proof of their education, has failed the exam twice, and is a month away from exceeding the time allowed to complete the program.

In this case, you might expect to see an education requirement status of Missing Transcript, an exam requirement status of Needs Retake, and an application status of Drop Pending. The applicant finally passes the exam on the third try and is now contacting staff to determine what’s next.

Exception Paths Continued...

In contrast to unhappy paths, an uncommon path occurs when the applicant takes a path that is less common than the majority of applicants, but there's nothing specifically wrong. Examples of uncommon paths are applicants under a prior set of standards criteria, using a peer designation to complete an abbreviated certification process, or converting a lesser designation into a fuller designation.

Handling uncommon paths can be as simple as configuring multiple process checklists with new requirement checkboxes designed specifically for the path. For example, the certification board votes to allow individuals with a peer designation to apply for certification. These applicants are not required to provide proof of education or experience because it's assumed that they already provided the proof when obtaining the peer designation. Instead, applicants are required to provide proof of the peer designation. Although the organization does not anticipate receiving many applications with a peer designation, it should be programmed into the system.

Again, a simple solution is to configure a new process checklist, Certification Application with Peer Designation, for the applicant to complete, and define a new requirement checkbox, Peer Designation, for the applicant to meet. Not only does a new process checklist and requirement checkbox help differentiate between the application types, it also prompts staff to obtain information not normally collected and to process the applicant in an appropriate, even if uncommon, manner.

In short, programming the system to handle exceptions helps a certifying organization to both document and justify the exception. This is not only critical from the standpoints of being transparent and legally defensible, it's also just plain good customer service.

“A good computer system can help a credentialing organization evaluate applications in a fair, consistent manner, and manage both current and historical data.”

– Ayana Nickerson, Director of Certification, American Speech-Hearing-Language Association

Structured Workflow

A structured workflow is the combination of technology and standard operating procedures (SOPs). It defines how an application moves from Point A to Point Z in a prescribed way that is traceable, reliable, and standardized.

A prescribed workflow helps ensure that applicants are treated fairly and that the outcome will be the same no matter on whose desk the application lands. A structured workflow also makes good business sense, because it increases efficiency and cost-effectiveness.

Too often, unfortunately, legacy systems were not built to enforce workflow, and SOPs are either not in place, outdated, or not followed in the same way by everyone on staff. The result: Essentially identical applications could land on the desks of two different staff members and, depending on how they use the system and follow (or do not follow) the SOPs, each staff member could come to a different conclusion about the application.

The last thing an organization wants is an application’s results to be dependent on the staff member who processes it, not to mention the issues of fairness and legal defensibility.

Structured workflow helps ensure that every application is handled in the same manner. For example, a series of data entry screens can be combined into an application wizard that dictates the order in which information from the application is entered into the system. Business logic can be added to a screen to ensure the right type and amount of data are entered before moving to the next screen.

In addition, controls can be created to determine in what order requirement checkboxes should be completed. This prevents a later requirement checkbox from being completed prior to one that is designed to occur earlier. For example, an applicant cannot meet the exam requirement without previously meeting the education and experience requirements. If the certification program stipulates this order, the system will not allow staff to process the application in any other sequence.

The computer also can be programmed to do the final check to determine whether the application is complete, rather than allowing a staff member to do it manually. Again, this reduces the chance of human error and is another way to double check that each item has been completed in the appropriate sequence.

Structured Workflow Continued...

Speeding up the certification process is yet another goal that technology can help achieve. One way to do this is to treat every application separately, rather than in a batch. Using a so-called “lean” process keeps each application moving on its own path—a decided advantage over outdated methods in which a problem with one or two applications could hold up progress for the entire batch.

Finally, a structured workflow allows you to track relevant data, which aids in workload balancing, targeting customer service goals, and conducting trend analysis. For example, you could program the system to record important milestones, such as start date, due date, requirement met, extension granted, and so on. Then you can sort the information in various ways for planning purposes. Asking the system how many applicants will take the exam in Denver in June, for example, will help you determine if you need more exam locations in Denver that month.

Think of a structured workflow as a constantly evolving effort to fine tune your operations while ensuring candidates that their application will be handled in a consistent, standardized manner. Technology can enable you to achieve both goals.

Automated Accuracy

A computer’s non-subjective nature makes it the ideal tool for building automated accuracy checks into the certification process. Automation is the programming of a system to do calculations and make decisions based on the information entered into the system and the business rules programmed into it.

A lack of automated calculations can lead to human error and inconsistencies. Staff is left to rely on its own diligence and skills to make sure a calculation is correct. Take, for example, an experience requirement that states an applicant must have 48 months of experience working in the industry. It’s simple to calculate this number when an applicant has worked fulltime for the same company in the same qualifying job for more than 48 months. It gets more complicated when the applicant has worked for two companies part time, took an extended leave of absence (possibly for school or maternity leave), and then went back to work in a different job, working three-quarter time. Depending on their training and skills, staff members could reach different conclusions about the applicant’s total months of relevant work experience.

“Manual processes always threaten to introduce error while technology may reduce error through automation and increase efficiency of decision-making.”

– Certification: The ICE Handbook (2nd Ed.), Ch. 13, “Technology and Certification”

Automated Accuracy Continued...

The solution? Program the computer to do the calculations. Staff would input requested data from the applicant's resume, but the system would calculate if the work experience has been met and, if so, would check the work experience requirement checkbox as complete.

Although we recommend automated check-offs in general, your organization may prefer to provide senior management with the opportunity for final manual sign-off prior to awarding certification. Often, we find that this is a temporary need; after management becomes comfortable with the accuracy of an automated process, they may decide to forgo this manual review. Once again, if the system has flexible configuration, it will be easy to bypass manual sign-off in the future.

As part of increasing the system's accuracy, don't allow it to change history. For example, when certification is awarded, it should not be alterable by the system other than under defined circumstances. In addition, the system should indicate under which set of standards the certification was awarded, including dates, so you can track the history of your standards and the certificants approved under them. An example: individuals awarded certification with a required bachelor's degree in 2005 versus individuals awarded certification with a required master's degree in 2010.

Accuracy is an important goal for any operation, but it's especially critical when certification decisions hang in the balance. Wherever possible, put technology to work to reduce manual errors and increase efficiencies.

Real-Time Views

Real-time views can answer the following critical questions: Who should be allowed to see what information? And when should they be allowed to see it? An appropriate view will show the user (staff, management, executive team, applicant, public) the right information at the right time.

Two extremes can occur when appropriate views are not factored into the system. On one side, every user can access everything. This can result in the release of sensitive information or inappropriate data entered into the system. Too much information can also lead staff to make creative interpretations of the data. On the flip side, the organization might lock down information too tightly, which create staff frustration and higher call volumes because staff and other users cannot access relevant information easily.

“Because [candidate processing] is a candidate’s first and most frequent forum for having contact with the program, it must be done well. This means that procedures must be convenient for the applicant/candidate and information provided must be accurate and up to date.”

– Certification: The ICE Handbook (2nd Ed.), Ch. 4, “Program Policies and Procedures”

Real-Time Views Continued...

Collecting data is one thing; organizing it in a way that works for your organization is equally important. For example, if the organization’s decision about an applicant is challenged, you must be able to quickly access relevant data about that applicant and follow the path that led to the decision. So make sure your system organizes information in a way that makes sense for you.

In addition, determine who should be able to view the data and under what circumstances. “Need-to-know” considerations and confidentiality concerns should be factored into these decisions. A call center employee, for example, probably should not be able to view legal issues regarding an applicant for reasons of confidentiality, and your executive team should not have to wade through a myriad of details when they want a big-picture summary.

As you make these decisions, think in terms of internal and external audiences. Your internal audience is your staff: the executive team, certification director, case manager, call center, legal, accounting, and so on. Determine what view is appropriate for each function and set up the system to provide it. For example, as mentioned above, the legal staff would have access to information about possible ethics violation, but this information would not be viewable by the call center for confidentiality reasons. Credit card numbers would only be available to the accounting department, social security numbers only for background checks, statistical reports for the certification director, and so on.

Your applicants and certificants are part of your external audience. As your “customers,” they should be a primary focus and should have online access to information relevant to them. This could include their contact information, fee payment records, exam score, CE hours, and so on. For their convenience, try to provide this information on one screen or only one click away from the first screen.

The public is another important external audience. Provide consumers with a real-time view of the names and contact information for certificants in their area. If government regulators have oversight for your industry, determine what information should be available for their view.

Real-Time Views Continued...

As mentioned above, showing this information in real time is important. Data should be updated for internal and external audiences as soon as a requirement checkbox is completed. For example, when an applicant pays the application fee, that information should be available immediately to both the applicant and staff, so the process can move forward without delay. Similarly, when an individual is certified (or certification is terminated), that information should be immediately available to the public.

A real-time view supports your effort to protect the public, build good relationships with your applicants and certificants, and increase the efficiency of internal operations in a fair, accountable, transparent way.

Summary

A well-designed certification management system will reflect an understanding of an organization's certification standards, service goals, and operational needs, and integrate those considerations with the appropriate technology, data collection, documentation, and procedures. In particular, the following 5 key elements to look for when evaluating a certification management system: flexible configuration, exception paths, structured workflow, automated accuracy, and real-time views.

- Flexible Configuration
- Exception Paths
- Structured Workflow
- Automated Accuracy
- Real-Time Views

About Stephen Spruce

Stephen is a self-proclaimed “Process Junkie” who believes that even the most complex processes can be broken into smaller and more manageable elements. He received his Bachelor of Science in Computer Science from the University of Colorado at Boulder in 1996 and after graduation developed telecommunication management and provisioning systems for Hewlett Packard and BoldTech Systems. Stephen’s introduction to the world of credentialing came in 2003 when he was hired as the technical lead and architect for Certified Financial Planner Board of Standards where he led a highly successful full implementation of Avectra’s netFORUM Enterprise to manage CFP Board’s certification processes and build a complete online application and renewal process for the CFP® certification.

Stephen co-founded Agilutions Consulting to provide technical solutions with a focus on customer success for the association and credentialing industries. His passion for innovative software approaches led him to evolve the idea of eXtreme Programming (XP) to create the Agile Solution Delivery methodology that Agilutions uses today.

About Agilutions

Agilutions Consulting, founded in 2005, is a Denver, CO based software implementation team working primarily with associations and credentialing organizations. Agilutions is an Avectra Implementation Partner and provides technology solutions based on Avectra’s netFORUM Enterprise – Advanced Association Management System. Agilutions is a member of ICE, CNG, ASAE, CSAE, and AUG.

To learn more, visit www.agilutions.com or call 303-298-8562.

Sources

Certification: The ICE Handbook, 2nd Edition, 2009.

International Accreditation Forum Guidance on the application of ISO/IEC 17024:2003.

