

Common Sense Strategies for Successful Data Conversion

At the heart of any software implementation is the data conversion: successfully moving the data you have over to the new software, and identifying what should be different about the information you are currently capturing. Ninestone has compiled these Best Practices for the data conversion portion of a software implementation project.

It is important to note that data (i.e., the information you will capture in the new software and the existing information you will convert) should have been an important consideration during vendor selection and contracting, keeping in mind future as well as current needs.

The phases for data conversion Best Practices described below are not strictly sequential; they do overlap on the timeline. The example we will use throughout is the data conversion for an EHR (electronic health record) implementation.

Inclusive Planning

One key to a successful data conversion is thinking of it as an opportunity to redesign business processes and possibly uncover inefficiencies that evolved over the years. Representatives from each area of the company (the common term is “Subject Matter Expert” or “SME”) who use, or who are impacted by the data, should comprise the data conversion team and be involved in every aspect of the planning and analysis. In the case of data conversion for an EHR implementation, this would include clinical, managerial, administrative and technical staff, and possibly others depending on the organization. Overseeing the implementation is the Project Manager who manages timelines and coordinates activities across all teams.

Equally important to success is comprehensive executive support for staffing the data conversion team as well as the entire implementation project. Budgeting for and allocating the appropriate resources will reduce the possibility of timeline delays or costly mistakes. The reality is that changing from one electronic system to another can result in a full overhaul of some business processes. It falls to the leadership team to participate fully in the planning, thereby establishing the project as a priority for the company.

New System Configuration

As with any new software implementation, system configuration is inextricably linked to the data conversion. Decisions about the design and configuration of the software affect the flow of the screens which affect decisions about data fields which affect the business processes.

Try not to think of the new software as an upgrade to your current system. The legacy system may have been around for years and it accommodates how you did business when it was installed, possibly with very few adjustments as the business grew and changed. This should be an opportunity to consider your five or ten year strategic plan and design for future as well as current needs and reporting requirements.

The data conversion team's role during this phase is to determine the best way to capture data to serve the business needs. For example, when statistical reporting is needed, data fields to be tracked should be designed as pre-defined lists of values rather than allowing free text entries so trends for each value in the list can be reported.

When working with the vendor to customize the software to your needs, remember why you purchased this particular piece of software and what it's designed to do so you can resist the temptation to make it all things to all people. For example, if you are implementing an EHR and you want to track staff information, try not to duplicate what is already being tracked in your HRMS system. The work you will do during the **Data Analysis** will provide a clear path to the company's core needs.

Comprehensive Data Analysis

As with Planning, the Data Analysis is more a business analysis than simply a technical exercise, so this phase should get everyone's full attention. The Project Manager should make sure the team of representatives from across the company is fully engaged. Don't forget, your existing data system(s) probably reflect how you did business when they were put in place years ago, so approach this phase with a critical eye, a view to the future and a mindset open to change.

Steps to prepare for the data analysis:

1. The data conversion project starts after the software and specific modules have been selected based on the company's needs, so the first step is to work with the vendor to understanding the capabilities and limitations of the underlying tables and structure. This will give you a framework within which to make decisions about the data set you will convert.
2. Document your current workflows for each business process affected by the new software; in an EHR implementation this would include tracking referrals, admissions, discharges, clinical appointments, insurance authorizations, etc. If done thoroughly, this will identify inefficiencies and gaps in the business processes so they can be redesigned and improved.
3. Document where current data is stored (existing client record system, worksheets, paper, etc.) with as much detail as possible about the nature of the information being stored and what it is used for.

Use the information gathered in these three steps to develop a comprehensive data analysis. The analysis should identify the data fields to be converted over to the new system, the data fields that are no longer needed and the data fields to be added because they are not currently being captured.

The decisions made at this stage will determine the quality of your company's reporting capabilities for many years to come, so considerations should include licensing and regulatory reporting requirements, as well as your company's strategic plan to inform what information will be needed to achieve business goals.

Data Transformation

Once you have a clear idea of the data elements you'll need in the new software, this phase is about determining the best method for moving your existing data, including not only your electronic information but also the data you have on paper. This phase might seem to be purely technical but again, business decisions will need to be made at this time. The documentation that came out of the Data Analysis phase will serve as the foundation for planning how to move your data into the new system.

Data from electronic sources: Your technical staff will work with the vendor to “map” each data element to the corresponding field in the new software so everything will all end up where it should. Reviewing your data from this perspective almost always reveals duplicate data or other issues but it's a great opportunity to start fresh. For example, when reviewing clinical data for an EHR implementation, you may decide you want to start tracking reason for discharge. A list of values for reporting would be created (perhaps your funding source already has a list) so that field would become a “closed” or drop down list. Then each instance of discharge reason in your current system would have to be mapped to the values on your new list prior to conversion.

Data on paper: Transferring information from paper can present challenges; you'll have to weigh the importance of having that information in the new software against the staffing costs required to get it there. The basic options would be:

- Data entry, which can be the best way to get that data into the new system, but aside from the staff time needed, it presents logistical issues around timing when you go live; or
- Scanning, which will also take a surprising amount of staff time, but the information will be available for viewing in the new software. One drawback is that data is not searchable and can't be used for reporting. (See “History” discussed below.)

History: Decide how much historical information should be converted to the new system. Timeline and personnel constraints are factors but shouldn't be the only ones. Here are some things to consider.

1. *Reporting.* If you want to generate reports with outcomes and trends using your existing historical data, analyze how easy or difficult it will be to convert all data vs. combining the data from your legacy system with data from the new system in order to generate those reports.
2. *Keeping the legacy system.* Find out if it's an option to continue running the legacy system for looking up or extracting data when it's needed. Depending on the age of the software and the limitations of system requirements, you might need to maintain separate, older servers in order to keep it running.
3. *Scanning.* If you want historical data accessible in the new system but the time and cost of converting it is prohibitive, one option is to scan it into the new software. An advantage of this approach is that scanning can happen as soon as the software is

installed and configured and you don't have to wait for the final go live date. A disadvantage is that scanned data isn't available for querying or reporting.

Data clean up: Databases always have errors, e.g., transposed numbers, misspellings, duplicate records and so on. Take this opportunity to clean up your data so those mistakes don't carry forward. When errors are discovered, they should be corrected in the existing software prior to the conversion. (New errors might be introduced before the final data conversion but the number will be small and easier to correct at that stage.)

Testing

A representative group of users with expertise in your current software, as well as your subject matter experts, should participate in the testing. If your business processes have been changed because of the new software, or even if they remain the same, feedback and suggestions from these experienced users will be extremely valuable to ensuring a smooth transition to a new system. There is the added benefit that these key users will become proficient in the new system and can eventually help or even train others.

Best Practice is to test in two steps, configuration testing and data conversion testing.

1. *Configuration testing*. Test the newly configured software to assess the workability of the design. Uploading existing data is not necessary for this; in fact, it is a good idea for staff to enter fake records allowing them to get a feel for the workflow. When staff were originally asked to document workflows and data needs (during the Comprehensive Data Analysis), it probably felt like an academic exercise that didn't have real-life meaning, but when users start simulating their daily work in a new system they'll discover where it does or does not allow them to do their jobs. Sometimes the resulting configuration changes are significant and the testing must be repeated to ensure the changes don't introduce different problems.
2. *Data conversion testing*. By now, your technical staff will have worked with the vendor to design a data extraction and import method (see Data Transformation). This second testing phase will check the accuracy of that extraction and import process using a comprehensive sampling of data from your existing system to import and test. Again, your experienced staff representing each business process should participate.

Staff Training

Best practice for training staff on new software is to create a separate "Training" copy of the system. The isolated copy of the data allows staff to learn and experiment with familiar information without affecting the production (live) version of the data. To learn more about Training Best Practices, see Ninestone's *Common Sense Strategies for Training*

Go Live

There are two widely used models for rolling out new software to the daily work environment. The first is the Phased Rollout (smaller segments of the company over a period of time, for example by location or by department) and the second is the Big Bang (every location, every user all at once). Selecting a model requires complicated discussions around all aspects of the implementation project and should include executives and the entire implementation team. For example, can your organization provide enough training and technical support if every employee starts using the new software on the same day?

The considerations discussed here focus on those that affect or are affected by the data conversion specifically, but no one point can stand alone; each is affected by every other aspect of the implementation so the discussion should happen within a wider context. Conversion considerations are:

Business Functions: Consider the critical business processes the new software will support.

- Phased Rollout is a good option if the business processes can continue with both software systems (old and new) running concurrently over the course of the rollout.
- Big Bang is the best option if the data being captured must be on one platform in order for the affected business processes to function.
- Example: for an EHR rollout, consider which programs or locations share client information (e.g., appointment schedules, treatment plans or medications); if all clients are shared across the company, the Big Bang model would be considered. If different segments of the organization have their own clients and do not rely on other programs or staff, the Phased Rollout might be a good option.

Data Conversion Timing: A clean data cutover should plan for a “stop use” of the old system at a pre-determined point in time so the data can be migrated to the new system. The data conversion itself takes time, but equally important is the review of the data after conversion to make sure no errors occurred.

- Phased Rollout is an option if you have a large amount of data to convert (if for example, you’ve decided to bring over history or if a lot of data entry will be required). The stop use will have to be carefully choreographed so only the specified users at each stage of the rollout stop using the legacy system while others continue.
- For the Big Bang option, consider the results of the data conversion testing, including the completeness of data that was converted for testing, the issues that were encountered and the effort it took to resolve them. Then consider how those results will scale when all data is being converted on a tight timeline.
- Example: In your EHR testing, the ranking of client diagnoses did not convert accurately due to inconsistent data entry. If the data was not cleaned up or you know that the data entry issues have continued and will jeopardize a successful large-scale data conversion, consider the Phased Rollout as a way to get ahead of the problem in a more controlled manner.



The planning for and execution of a successful data conversion must be informed by the requirements of entire implementation project as well as the business needs of the company. The variety of factors to be considered when making decisions about data conversion methodologies will be different for every company but Ninestone can help identify the considerations unique to your business so these Best Practice strategies can provide a framework for success.