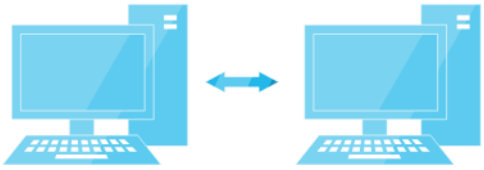
4.2: Understanding System Integration

System integration is the process of linking multiple systems together, so they function as one coordinated system. Integration can be as simple as physically connecting two computers or as complex as creating entirely new software systems.

By integrating, many processes become more efficient. Data collection becomes streamlined: information only needs to be collected once and then shared between systems; wait time is lowered because data is accessible; and communication between different departments or users can be improved.



How Integration Works

System integration is a very simple connection between two data sources. For example, let's say you have a home visiting program that enters patient data in forms built on Word documents. Excel sheets are also used to track appointment information. A macro (programing an instruction to be automatic) can be created to take information from the Word document and entered into cells on the Excel sheet. This is an example of a very simple integration.

Integration also uses more complex data sources. Picture a health clinic that provides prenatal care to expectant mothers and refers some mothers to a home visiting program. The home visiting program also refers families to the clinic for medical services. Each has its own data system for handling records. By connecting the two systems, the patient record is only created once; then the data is shared between the two programs.

Systems can also often "scale up" to include more organizations and processes. For example, the clinic and home visiting program could integrate their systems with a local hospital and a county public health service. They could even integrate with state or national health services, sharing data on a massive scale.

Listed are topical questions to consider when preparing for integration between organizations.

Data Agreement. What data is to be shared and what is kept confidential? If the organization is outside of the tribal nation, how will the program retain ownership of data?

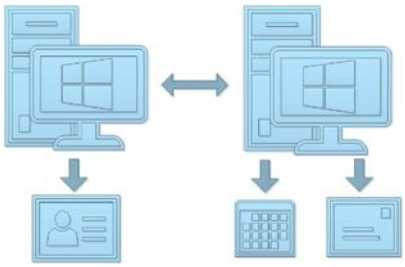
Policies. What policies govern the use of data by each organization? Are they compatible?

Technology. What are the technological challenges involved? Are both organizations using the same database formats? Can they be adapted to support integration?

Consult Module 3 for more information on Data Agreements

Types of Integration

The technology side of systems integration links many types of functions. However, most integration falls into one of three broad areas.



Data Integration refers to linking or combining the data used by different systems. For instance, importing an Excel spreadsheet containing client contact information from a home visiting program into the database of a system used by a health clinic is an example of data integration. Connecting databases between two systems to share the same data would be another example.

Application Integration is connecting two or more applications (i.e., software that performs a function) so they work together to perform a task. An example might be connecting a system used by a home visiting program to Microsoft Outlook so scheduled visits would appear on the home visitor's calendar.

Process Integration refers to linking or combining processes used by more than one group or organization, which doesn't necessarily require the use of technology. If the health clinic and home visiting program decide to use a common set of forms, then they would be performing a type of process integration.

Planning for Integration

Two specific steps, "best practices," that can be used to properly complete a system integration process are listed below. These will help ensure the integration goes smoothly.

1. **Define and Document the State of Your Current System.** The first step in any integration is to document every part of your data system involved in the integration effort. Proper preparation requires you to plan for every possible data system element. Even a simple list of components can make the difference between failure and success. For example, a home visiting team is looking to integrate its system with a health care facility to track well-child

visits; the integration may not work if the two teams haven't documented the systems to know which data elements will provide the information they need, how the elements are linked to client identification numbers, in what format will the data fields be, and the relationships between these data and others in each system.

2. **Select the Systems or Methods to Accomplish Your Integration.** If the data systems or applications have not been selected, a next step might be to compare the features and interfaces available in various systems with integration in mind.

Consider What Comes After the Integration. Finally, you should reflect on the requirements of your agency/program once the integration has been completed. Three areas for further consideration are—

- Scalability is the ability to expand the system. What are your future prospects for growth? Will you need to make system changes to meet them?
- Usability tells you whether your post-integration system is easier to use. Will it require extensive training?
- Support is necessary. How will support be provided for the overall system? Will support options vary for different parts of the system?