# 1 - Explain an Installation Plan

## Installation Plan

There should be a documented installation plan for installing the system. There are a number of steps that must be considered for an installation.

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| \*Note: Some of the steps may not apply in all installations, but the relevant steps should be detailed in a formal installation plan. |

* **Migrate data from an existing system to the new system.** If the installation is an upgrade or is going to use existing data, ensure the data is transferred to the new system.
* **Rerun tests with actual data.** This mayhave been done during acceptance tests,but if not, the system should be tested with actual data. Make sure you are getting actual data from your user.

**Roll out the new system for a few users (pilot users).** Make the system available to a few users to try out on a trial basis. These users can provide feedback on the functioning of the system.

* **Provide user training.** Present training courses. Deliver user manuals / installation manuals.
* **Run new system in parallel.** It may be a good idea to run the new system alongside the old system for a period of time. Data is entered into the old and new systems. Both the old and new systems perform necessary functions. This will prove that the new system is functioning correctly.
* **Switch to the new system.** The new system takes over primary function. The old system may be left in place so that it is easy to back out if something disastrous happens.
* **Retire the old system.**  Back up data from the old system. Turn off the old system once everyone is confident that the new system is stable and performing its job.

# 2 - Explain data conversion issues

## Data conversion

It is important that no data is lost or altered during conversion. For a new system installation, there may be existing data stored in some other manner like a database or file. For an upgrade to an existing system, there may be difficulties in converting or transferring data from the existing system to the new system.

## Data conversion plan

It is important to design a well thought out and complete plan of how the data conversion will be accomplished. The data should always be completely backed up before any conversion is attempted. The following tasks should be performed as part of the data conversion plan:

* Detail the exact format of all the existing data. This could include all the fields and tables. The data type for each field should also be documented.
* Detail the exact format all the data will be stored in the new system.
* Determine how all the existing data will be stored in the new system. Detail which fields and tables in the existing system need to be mapped to fields and tables in the new system.
* Determine if any conversion of the data is required.
* Create an automated conversion program to convert existing data into the format required by the new system.
* Validate that the data was converted correctly.

The data conversion process becomes even more complicated by live systems that cannot experience any downtime. This requires the ability to deal with data being created while the data conversion process is going on and would likely require a two-step process in converting the data.

# 3 - Discuss User Training

## User Training

It is important to provide adequate training to users on the system to be installed. Even though the operation of the system may seem logical to the developer, it may not be to the user. In some cases, users are scared of change and concerned about using new technology. User training is very important in putting users at ease and increasing the chance that the user will feel the new system is a positive step forward.

There will likely be productivity loss when moving from one system to another system while the users are attempting to understand the new system. Good user training can minimize the severity of the productivity loss.

## Steps to provide good user training

There are some steps that should be followed in developing good user training:

* **­­Set training goals** - Create realistic goals for providing and completing user training. The complexity of the system will dictate timeframes that will be used.
* **Asses user needs** - Evaluate what users will need from the system. It may be necessary to create more than one user training package if users are diverse in their requirements of the system.

For example, one user may be responsible for performing administrative tasks and another user may be responsible or data entry. It is also important to understand what each user requires from the system so that the training material covers all necessary user functions.

* **Training Delivery** - Determine how the training will be delivered. This can include options like: classroom setting, individual hands-on, computer based or training books. The delivery method chosen will be dependent on a number of factors, such as: user skill level, number of users to be trained, and the time frame for training.
* **Create a training program.** - Create training material.
* **Make training program flexible** - It is important to keep the training program flexible so that it is possible to train small groups of users or larger groups of users. For example, it may be necessary to train a large group of users right at installation time, but in the future it may be necessary to train a few users here and there as new employees are hired at the customer organization.

## Creating a training package

The focus of the training program will be on the functions the users need to perform on the system and this should be the bulk of the training. The following items should be included in a good training package:

* Purpose of the system.
* Detailed descriptions of the functions of the system.
* Changes from previous version.
* Common problems that may be encountered.
* Security issues.

# 4 - Prepare a software user manual

Software user manuals are an important part of user training. While project team members or on site trainers may be available for the initial release of the software, they will likely not be available for the entire lifecycle of the project. A complete user manual is essential for new users of a software project, and can serve as assistive documentation for existing users.

## Components of a software user manual

Software user manuals should include, at a minimum:

* The version or release number of the software product.
* An overview of the project and basic functionality.
* High level descriptions of each major software component.
* Low level, step-by-step descriptions for common use-cases of the software.
* Contact information where users can request additional assistance.
* Installation and basic maintenance instructions for the software.

User Manual Template.docx

## User manual guidelines

* Ensure that the user manual has a clear, organized structure. Users should be able to quickly navigate to the information they require.
* Create a table of contents, and organize content into logical groups (type of user or major functional area).
* Keep your target audience in mind. Depending on the size of the manual you might create multiple different user manuals for different target audiences or only provide different sections in a single manual.
* Avoid long paragraphs of descriptions of functionality or rationale. Instead use numbered steps.
* Include pictures, screenshots and diagrams to aid users in typing the descriptions in the user manual to the interactions they see in the software.
* Be consistent in your use of domain language terms and visuals. Include links to an index terminology so that new or unfamiliar users can learn the terms.
* Keep a changelog of different released versions of your user manual. If major changes are made to a certain section, this should be logged and easily available to the users who could be affected by the change.

# 5 - Discuss data privacy and disposal

## Data Privacy

It is important to consider privacy concerns when retiring a system. Any confidential data or information must be destroyed properly. The customer organization may be in major trouble if the sensitive data was inadvertently made accessible.

There are both federal and provincial laws that cover the collection, use, disclosure and storage of private data. These laws must be kept in mind when destroying data. Examples:

* The Privacy Act - Federal
* Personal Information Protection and Electronic Documents Act - Federal
* Federal Bank Act - Federal
* Health Information Protection Act – Provincial - Sask

When destroying data that is no longer required, it is important to ensure all traces of the data are removed from a system being disposed of or reused for another purpose. It is not sufficient to just delete files; hard drives must be wiped clean. If the data to be destroyed is extremely sensitive, it may be a good idea to get a computer forensic expert to ensure the data has been completely removed.

## Hardware Disposal

During the retirement stage, it may be that there is hardware that is no longer going to be used. It is very important to ensure that any computer hardware is cleared of all important data. The following issues should be considered when disposing of hardware:

* Make sure all data and files are cleared off.
* Determine if equipment will be reused for another purpose or destroyed.
* When destroying equipment, make sure an environmentally acceptable method is used.

Videos

<http://www.youtube.com/watch?v=4WIMSP_lMGs>

<http://www.youtube.com/watch?v=RDZyQ4WEb7Y>

<https://www.youtube.com/watch?v=6pIFUOav2xE>

## Data Disposal

When a system is retired, it may be necessary to destroy all data associated with the system. This is not always the case as the data may still be needed, and there may be an alternative way to perform necessary functions with the data.

The following steps should be performed for data destruction:

* Backup the data to portable media and store in a secure location.
* Determine the data to be destroyed.
* Purge data from the system. It is important to clean the hard drive of the computer rather than just deleting the files.

Read article: <http://www.huffingtonpost.ca/2016/01/28/bc-lost-hard-drive_n_9105122.html>