TE Connectivity - Idea Propagation

RP McCoy, Michael Kozlowski, West O'Brien, Brandon Pittaway, Jared Smith , John Stewart

Project Introduction

Problem Statement
TE Connectivity needs a tool to promote best practices across all sub-industries and link similar operations between plants, as well as communicate innovation between plants to adopt and generate new ideas.

Project Sponsor: Sara Bolha
Americas/EMEA Team Leader, Assembly/Automation Center of Excellence

Idea Propagation
Idea propagation is the process by which knowledge and information is shared among various groups within an organization to create economic value, increase efficiency, and promote cultural values.

Literature Review
An article in the Education and Training Journal (Clarke and Rollo) discussed the importance of knowledge sharing and information flows.
- Critical to build communities and tools that cross team, geographical, and business unit lines.
- "Knowledge produced by individuals reaches its full potential to create economic value when it becomes embedded in organizational routines" [1]

The American Productivity & Quality Center (APQC) conducted a study of companies known to have a corporate culture that supports sharing knowledge. Key findings included:
- There is a visible link between sharing knowledge and solving practical business problems
- The approach, tools and structures to support knowledge sharing match the overall style of the organization [2]

What is an SDP?
SDP stands for Successfully Demonstrated Practice, and they are the best manufacturing practices that have been developed at specific plants. Many are applicable to a variety of locations and industries within TE.

Estimated Cost Savings Opportunity
The estimated cost savings opportunity is directly proportional to the number of SDPs uploaded into the system, the cost savings of each SDP, and the number of deployments of the SDP at additional sites. We estimate the opportunity value to be **several millions of dollars**.

Current State

| Current State	Opportunity
TE facilities do not have a system to identify or contact subject matter experts within TE's network.	Developing a facilities database enables TE plants to find subject matter experts within the company.
The existing SDP folder database (screenshot shown below) went unused because it was unnavigable and each file had to be opened to determine whether it was relevant.	Creating a filterable SDP database in SharePoint with processes, product groups, and contact information will enable employees to quickly determine whether the project is relevant to their needs without having to open up a file.
Manufacturing engineers and employees within TE fail to upload SDP's due to the long process and the amount of additional work required.	By standardizing the uploading process and changing the SDP template, we have optimized the process for submitting SDP's.
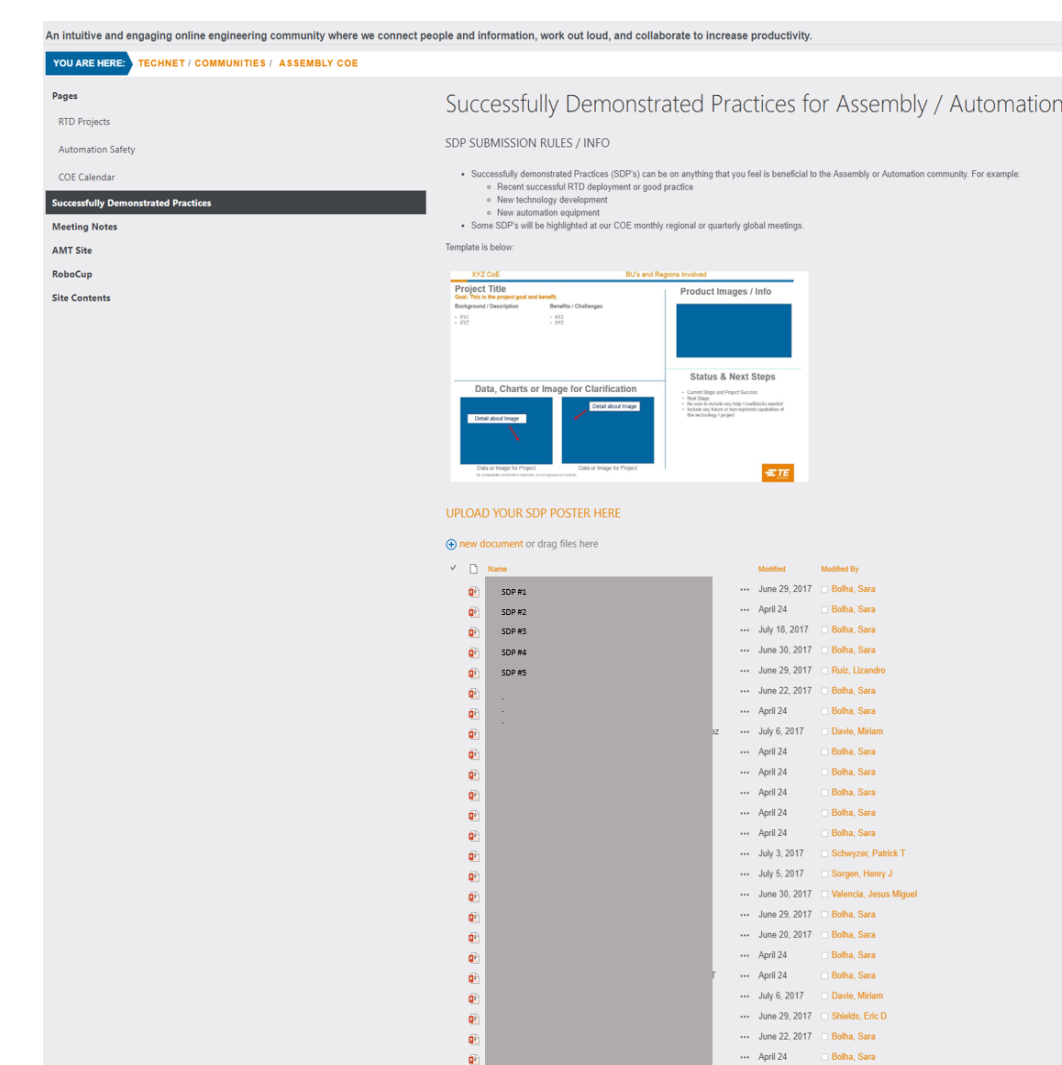
Voice of Customer

Interviews
Through phone interviews with TE engineers, we were able to hear the voice of the customers that will be using our tool. We obtained feedback on how they used the current tool, what features they would like to have in our database, and what information was relevant and needed to be included in the database and SDP template before they were built.

Surveys
Once we determined what type of information needed to be included in the database, we designed a survey to send to a group of pilot plants. The goal of this survey was to have an initial set of data to put into our database, and simultaneously determine whether the data we were collecting was indeed necessary for the usability of our tool. The survey was also utilized to determine the list of keywords that are required for an SDP to be searchable.

Goals and Objectives
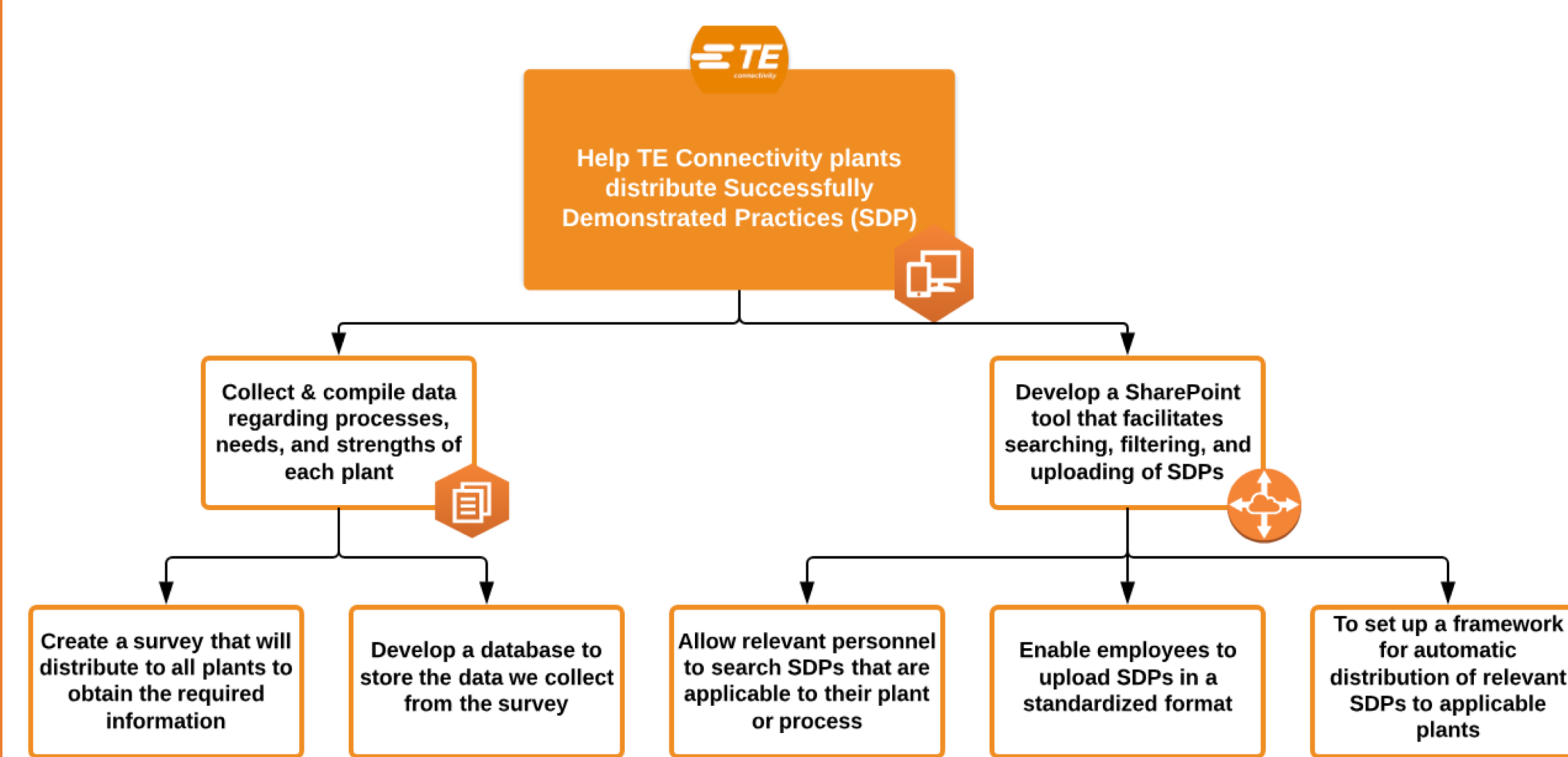
Functional Diagram

TE IdeaPropagation Tool: **Functional Diagram - V3**

PHASE 2.0: Initial Data Analysis

PHASE 3.0: Conceptual Development
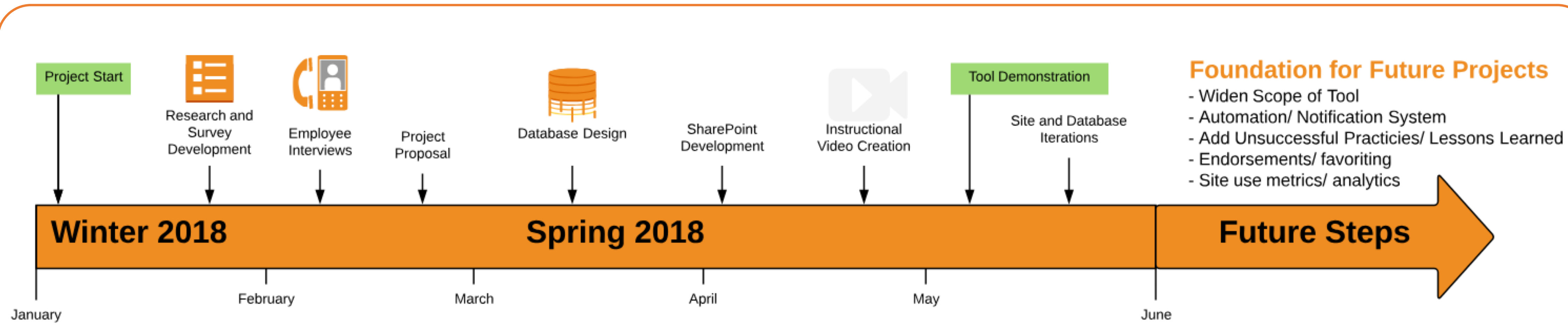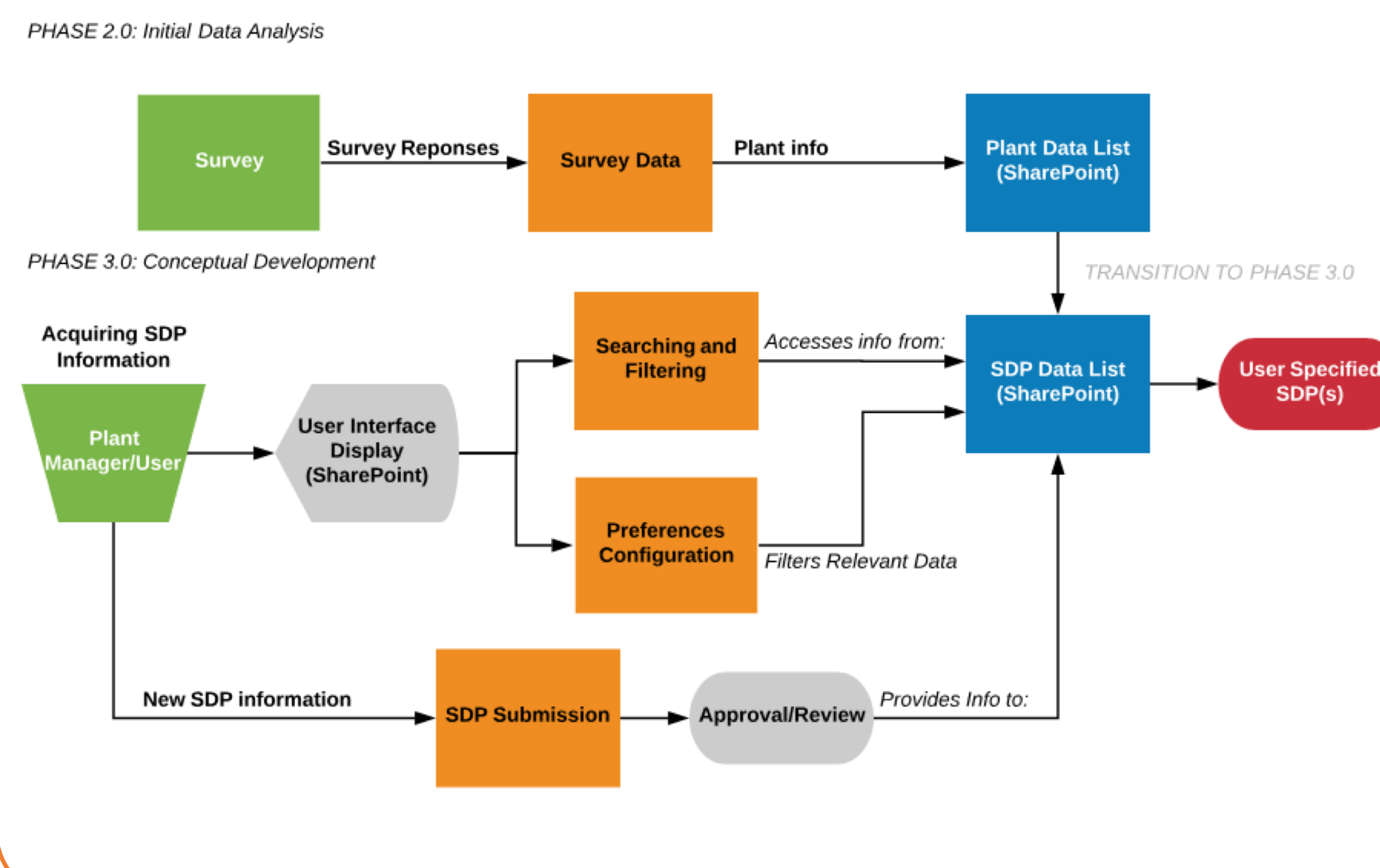
Database

Development
- The first iteration of the database was created using a Microsoft Access database linked to SharePoint. After experimenting with the functionality of Access, it was decided that a SharePoint list would instead provide the best tools to accomplish our objectives
- Improvements from the current state database include a separate plants page, multiple relevant columns, filtering and searching for navigation, a user friendly uploading feature, and a custom views feature
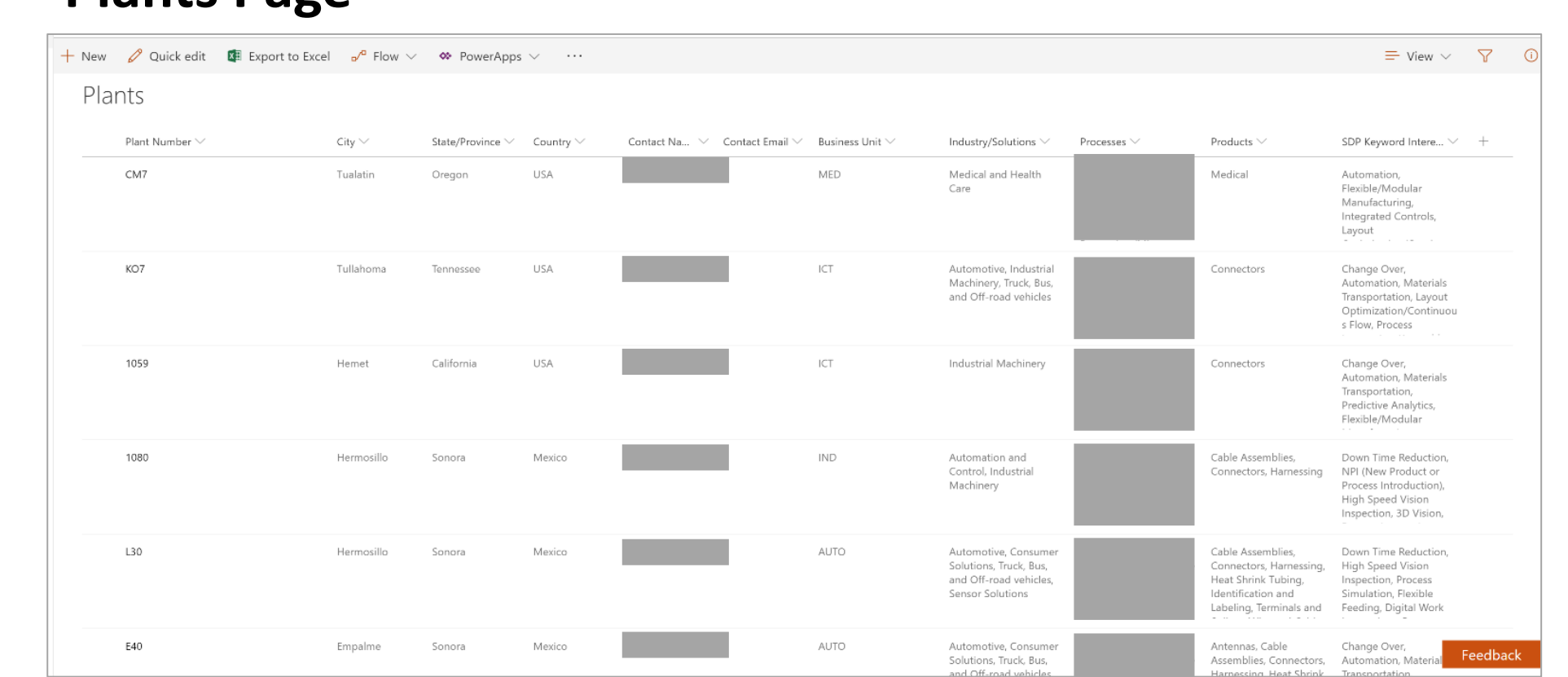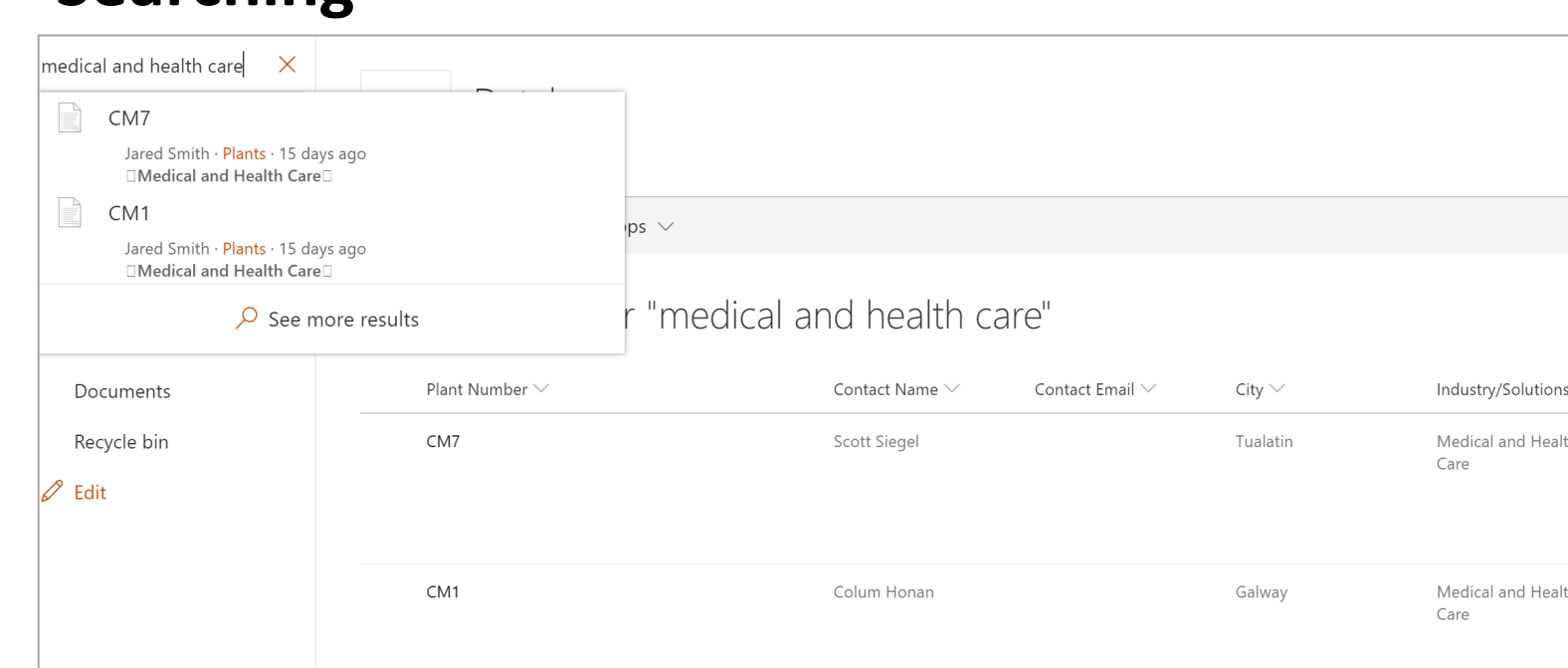- Data shown in the figures was populated using the survey data
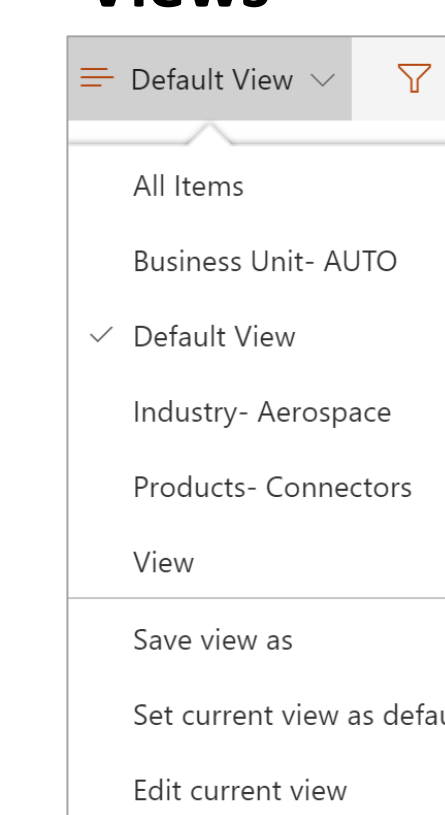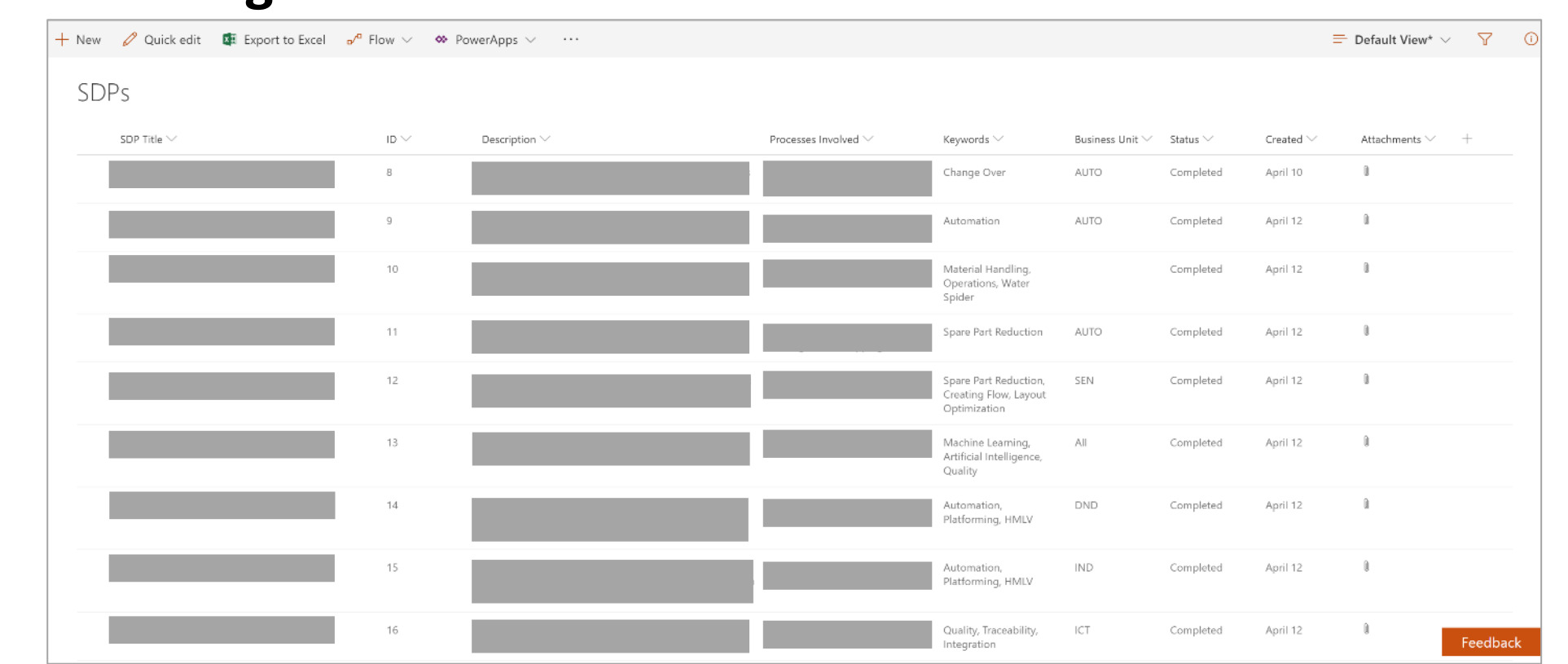
Filtering
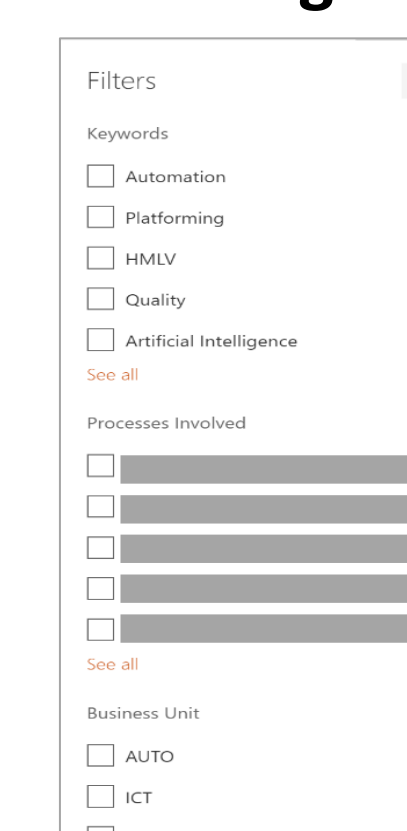
Uploading
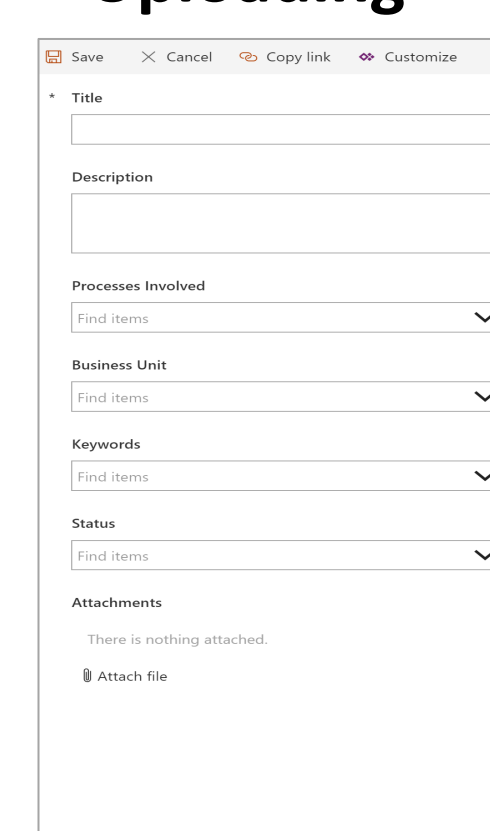
Plants Page

Searching

Views

SDP Page

Tool Demonstration

Our database prototype was presented to engineers at the Tualatin and Wilsonville plants. Below are the most valuable suggestions that were included either in the current system or future plans.

Tualatin:
- Include a one sentence synopsis of the SDP so users can determine the relevancy of the SDP without having to download and open the file
- Subject matter expertise, processes, and contact information for each plant should be listed in database
- Images are unclear and should be removed from the SDP file template
- Include a section in the SDP template that lists additional resources that are available such as image links, CAD files, or Excel workbooks
- List the CoE representatives at each plant who were appointed by Sara as "gatekeepers"
- Add an option to endorse an SDP which allows other users to see which SDPs are the most used, implemented, and beneficial according to other users
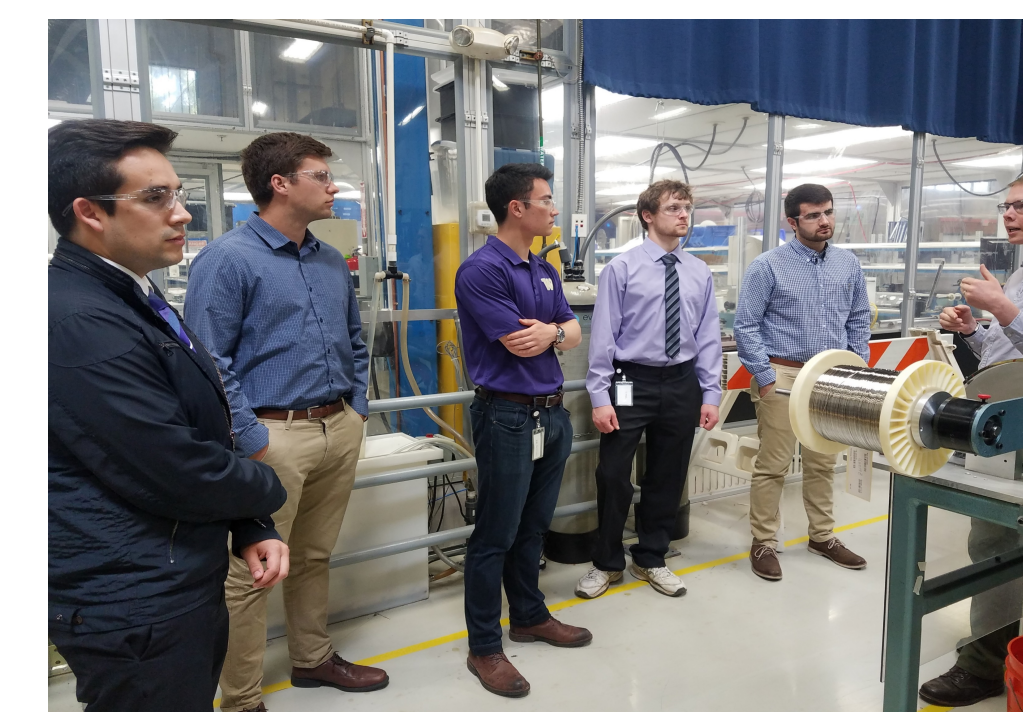
Wilsonville:
- Include a standardized numbering system for ease of reference
- Display the number of downloads or favoriting capabilities for implemented SDPs to provide additional credibility
- Add a favorites/in progress feature to offer easy access for plants to track which SDPs they have implemented
- Require the use of a standard SDP template, the old system's template was confusing
- Attach success and failure stories to SDPs to aid other plants in implementing them

Standardized SDP Template
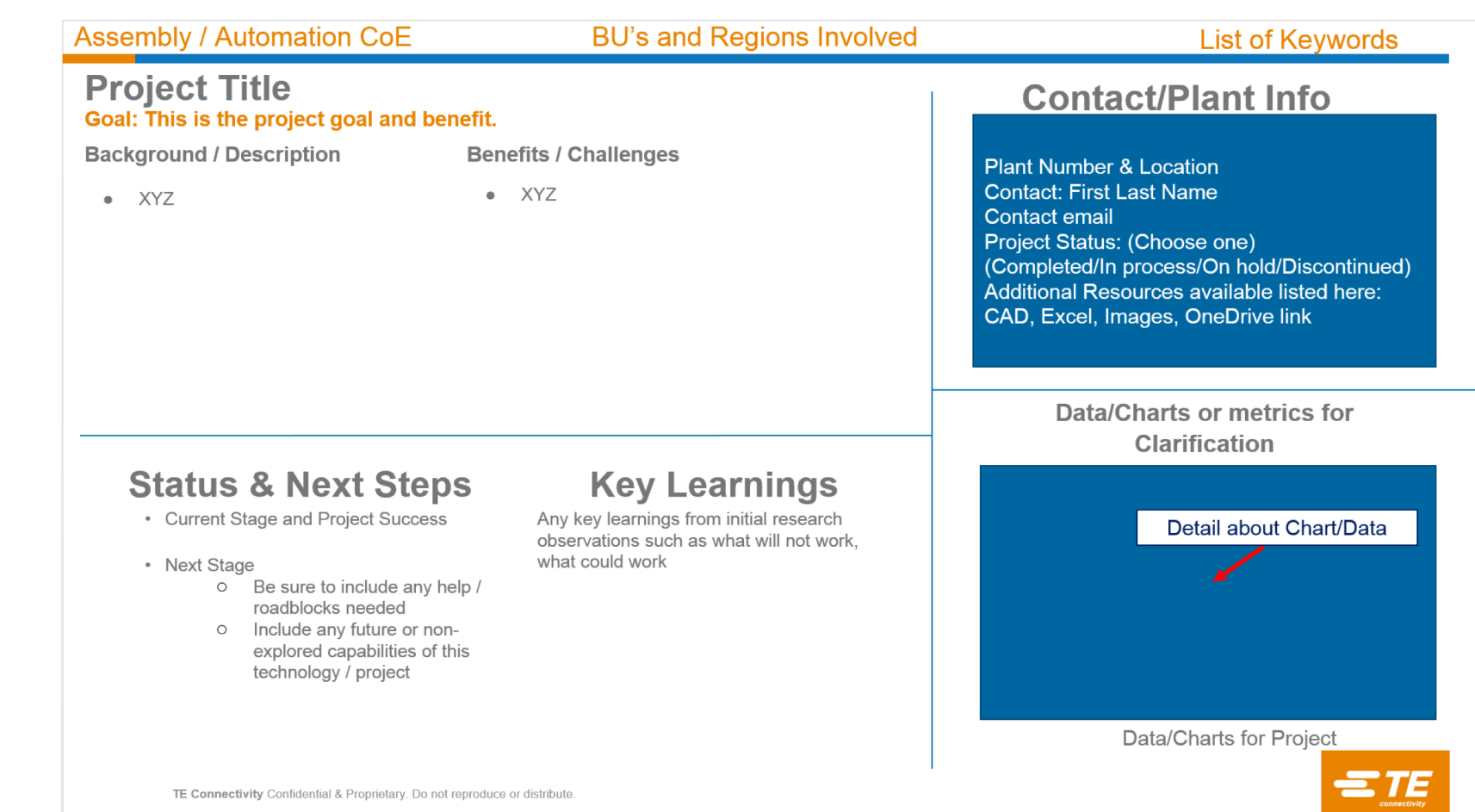
Through the feedback we received during our plant presentations, we standardized the SDP template to ensure that all required information is being uploaded and is in a format that users are able to quickly navigate. If the uploader has additional files that are to be included with the SDP that exceed the system's upload size limit, they can be linked in the upper-right box.

Future Steps and Recommendations

- Implement a system to automatically email the CoE leaders any newly uploaded SDPs fitting their plant-specified categories at user-specified intervals
- Widen the scope to include more than just manufacturing, so other departments like R&D can have their own section of the database
- Add the ability to endorse SDPs that are particularly beneficial, this highlights the best available SDPs for other plants to see
- Add the ability to favorite an SDP to look back on later or as it is developed further by the uploader if unfinished
- Add a new branch with unsuccessful practices: attempts that failed that other plants can avoid repeating or fix when trying to innovate
- SharePoint site use metrics and analytics tools to track usage

Timeline

Winter 2018 — **Spring 2018** — **Future Steps**

- Project Start
- Research and Survey Development
- Employee Interviews
- Project Proposal
- Database Design
- SharePoint Development
- Instructional Video Creation
- Tool Demonstration
- Site and Database Iterations

Foundation for Future Projects
- Widen Scope of Tool
- Automation/ Notification System
- Add Unsuccessful Practicies/ Lessons Learned
- Endorsements/ favoriting
- Site use metrics/ analytics

January — February — March — April — May — June