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Solution Architecture

Workforce Readiness Application

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This document is a work in progress and is subject to change without notice. In the event of discrepancy with prior versions, the information contained within this version of the document takes precedence.

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**Revision History**

|  |  |  |
| --- | --- | --- |
| Date | Person | Description of Change |
| November 30, 2021 | Richard McLeod | First working draft |
| December 9, 2021 | Eric Veenendaal | Reviewed |
| January 21, 2022 | Lem Edillon | Revised from “Checklist Application” to “Workforce Readiness Application” with updated requirements |
| January 24, 2022 | Richard McLeod | Added columns and workflow information for enhancements |

# Introduction

This document outlines the solution architecture and effort estimate required for Convverge to build a Workforce Readiness application for Sanjel based on discussed requirements.

# Application Overview

Sanjel requires an application to understand the readiness of its employees for service in the field. “Workforce Readiness” is determined by the status of a Sanjel employee in Sanjel’s talent lifecycle.

Sanjel’s talent lifecycle is defined at a high level as follows:

1. Recruit
2. Onboard
3. Develop
4. Offboard

The application will define if an employee has a status of “Recruit”, “Onboard”, “Develop” or “Offboard”. In order to transition from one status to the next, the employee must complete a series of checklist requirements within each of the statuses. The application developed will facilitate the population, delegation, and completion of these checklist requirements. The application will focus specifically on the “Onboard” and “Develop” checklist requirements.

The overall solution will be delivered using a canvas Power App and Power BI reports. Security will be controlled using Azure Active Directory. The data storage platform will be SQL Database.

The application users can be broken down into four roles: Admin Users, District Managers, Mentors, and employees.

## Roles

### Training Admin Users

These users will be responsible for the following:

* Creating Plan (lets use Plan going forward please)
* Assign Duration to Complete for the list (N Days)

Creating list items

* + Assigning document links to list item
  + Creating descriptive references for each list item
  + Assign Duration to Complete for each list item (N hours)
* Maintaining mentor member list
* Editing list items
* Removing mentor or manager approvals from list items (If required)
* Removing manager approval from list (If required)
* Create/Edit new districts if reliable third-party source not available
  + Delegate new district managers for vacations, furloughs etc.

Example:

1. An Admin User would create a Short Service Employee Competency Assessment list (SSECA). A short description of the purpose of the list would need to be provided for easy reference by Managers and Mentors.
2. The Admin User would then create list items for the SSECA that would contain the following details:
   1. List Item Details
      1. Ex. Has SSE completed a district orientation, including review of ERP?
   2. Short Description
      1. Ex. This competency can only be completed once the SSE can discuss and recall the details of an ERP and is ready to act on this ERP in the event of an emergency. If the SSE has not completed a district orientation contact the SSE’s manager as soon as possible.
   3. Document Link
      1. Ex. LMS Document link to District Pamphlet

### District Admin Users

These users will be responsible for the following:

* Select a Plan
* Enroll an employee in a Plan
* Assigning a District Manager to be the final approval on the Plan
* Assigning Mentors to the Plan
* Mark selected plan items as completed or not applicable
* Adding comments to lists.
* Attached files to a selected plan item

### District Managers

One Sanjel employee per district will be designated as a Manager. These assignments will be controlled outside the system or by the Admin users if a reliable third party source is not available. The Manager’s main responsibility in this system is monitoring and assigning lists to the Sanjel employees who report to them.

Managers will be responsible for the following:

* Reviewing Sanjel employee’s progress.
* Notifying employees and Mentors for progress on list items.
* Signing off on list items once employees have demonstrated competence.
* Mark selected plan items as completed or not applicable
* Attached files to a selected plan item
* Final approval of list once all list items have been completed.
* Adding comments to lists.

Example:

1. A new employee has started at Sanjel and is designated as a Short Service Employee. This employee has been hired in the Red Deer district and reports to the District Manager of Red Deer.
2. The Manager is responsible for assigning the Short Service Employee Competency Assessment (SSECA) list to this employee. The Manager reviews the list and determines that four out of the ten list items do not apply to the new employee. These list items are “cleared” from the list.
3. The Manager assigns three Mentors to coach the new employee through the remaining list items. The new employee demonstrates competency for two of the remaining six list items directly to the Manager. The Manager then signs off on these list items.
4. The employee then works with the Mentors to develop competency in three of the four remaining list items and receives sign off from the Mentors.
5. The Manager reviews the list for the new employee and sees that there is one list item outstanding. The Manager then sends a notification to the employee and all three mentors to remind them of the outstanding competency.
6. The new employee works with the Mentors to complete the last remaining item.
7. Once the final list item is complete the list is automatically routed to the Manager for final approval. The Manager receives the approval and reviews the list for the new employee. Satisfied with the new employee’s competency, the Manager approves the list, and the new employee is credited with completing the SSECA list.

### Mentors

After a list has been assigned to a Sanjel employee, a District Manager (“Manager”) will select one or multiple Mentors to assist the employee. The Mentor will be responsible for signing off on each list item contained within the list until the list is completed.

These users will be responsible for the following:

* Reviewing each list item with the employee.
* Ensuring competency is demonstrated by the employee for each list item.
* Adding comments to lists to provide more details on the employee’s progress.
* Notify Manager or employee on list progress.
* Signing off on list items once competency has been demonstrated.

Example:

1. An employee has been designated as a Mentor for a new employee to complete the SSECA list.
2. The Mentor reviews the list and determines that the following list item needs to be completed:
   1. Has SSE completed a district orientation, including review of ERP?
3. The Mentor ensures that the employee has received the district orientation and has reviewed the emergency response plan. The Mentor will also have the option of launching the District Pamphlet from the application and reviewing it directly with the employee.
4. Once the Mentor feels the employee has demonstrated competency for this list item, the Mentor can sign off on the item.
5. The Mentor can also add comments to the list to include more detail on the employee’s progress.

### Employees

An employee will be able to review any lists that have been assigned to them and send notifications to Mentors and Managers. These users will be responsible for the following:

* Review list and list items that have been assigned to them.
* Notify Mentors and Managers about list items.
* Mark list items as complete

Example:

1. A new Sanjel employee has been hired and is assigned the SSECA list.
2. Two Mentors have been assigned but the Employee has not heard anything from them.
3. The employee can send a notification from the application to the Mentors or Manager to ensure that action is taken on this list item.
4. The employee builds competency in all the list items assigned and receives sign off by the Mentors.
5. The list is routed for approval by the Manager and once approved, the employee is notified.

## Process Flow for Checklist Lifecycle

Diagram

Description automatically generated

## Integration to LMS

Sanjel has a Learning Management System (LMS) that is used to train employees. For employees to complete the “Onboard” stage of the talent lifecycle, they must complete a series of LMS courses assigned by Managers. Sanjel currently has an API connection to their LMS that populates a SQL database on whether an employee has completed a specific LMS course.

To display if an employee has completed a required LMS course, Convverge will create a stored procedure that will run daily to confirm which courses employees have completed in the LMS system through the analysis of the Sanjel’s SQL database. If an employee has completed an LMS course required for onboarding, the application will list that course as completed once the stored procedure has returned a course completed status.

# Reporting Overview

The reporting platform for the solution will be Power BI, which includes both an analytics dataset and reports. The following details were identified as part of the initial discovery session and can be adjusted or expanded as required.

Identified Information and Measures:

* Checklist summary level: items completed, items outstanding, days outstanding, progress percentage, completion details, assigned Mentor(s).
* Checklist detail level: checklist items, item status

Viewing Permissions:

* Managers can view all checklists, with the ability to filter to employees in their district.
* Row Level Security (RLS) will integrate with Active Directory to ensure that Mentors and Employees see only checklists attached to them.

Identified Data Filters and Slicers:

* Checklist, District/Manager, Mentor, Employee, days outstanding, percent completion.

# Workflows Required

* New List Created
  + To: Managers
  + From: Admin Users
  + Content: A description of the list and its purpose. A reminder for the Managers to assign this list to any relevant employees.
* New Sanjel Employee
  + To: Managers
  + From: System or Admin Users
  + Content: The new employee’s name, title, email, and phone number.
* List Assigned
  + To: Mentors and employees
  + From: Managers
  + Content: Description of the list assigned
* Manual trigger from list
  + To: Mentor, Manager and/or employee
  + From: Mentor, Manager and/or employee
  + Content: Internal communication on the progress of developing competency for list items
* Automatic trigger from list based on time
  + To: Mentor, Manager and/or Professional
  + From: System
  + Content: Reminder of outstanding list items that still require attention.
* Approval Workflow after all list items are signed off
  + To: District Manager
  + From: System on behalf of professional
  + Content: Approval request when all items from a list are complete
* Approval Results
  + To: Mentors and Professionals
  + From: Manager
  + Content: Result of approval flow to Manager. If rejected, additional competency must be developed. If approved the Professional receives credit for completing the list.
* LMS Integrations
  + This workflow will execute daily or whatever timeframe is deemed necessary. A procedure will loop through existing list items that have not been marked as complete and are linked to and LMS item. These items will be cross referenced against the LMS data and any checklist items that have been completed since the last workflow was ran will be marked as complete.

# Effort Estimate

|  |  |  |
| --- | --- | --- |
|  | **PowerApps, Power BI and SQL Database** | |
| **Deliverable** | **Est. effort (h)** | **Est. price ($)** |
|  |  |  |
| *Business Requirements* |  |  |
| \*Confirm Phase 1 Requirements | 13 | 1,950.00 |
|  |  |  |
| *Development* |  |  |
| Implement database architecture | 10 | 1,500.00 |
| Application Development | 52 | 7,800.00 |
| User information integration | 6 | 900.00 |
| Notification Workflows | 16 | 2,400.00 |
| Approval Workflows | 8 | 1,200.00 |
| Security Roles and Set Up | 8 | 1,200.00 |
| Data Model & Measures (Power BI) | 6 | 900.00 |
| Report Development | 25 | 3,750.00 |
|  |  |  |
| *Delivery* |  |  |
| Project Management and Team Coordination (~17% of project cost) | 24 | 3,600.00 |
| QA and UAT (~8% of project cost) | 12 | 1,800.00 |
| **Total** | **180** | **$27,000.00** |

*\*Effort has been completed to this point*

# Outstanding Questions

|  |  |
| --- | --- |
| **ID** | **Question** |
| 1 | No out standing questions at this time. |

# Contacts and Notices

Please do not hesitate to contact us with any questions or concerns you may have. We are always here to help.

Sincerely,

**Richard McLeod**

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# Appendix: Database Architecture

This section defines the architecture used to deliver the Checklist application

## Employees Table

Note: the following fields are for reference. The solution would leverage an existing Employees table, extended with an additional linked table or Active Directory lists if required.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Column Display Name** | **Column Type** | **Required?** | **Comments** |
| userIDPK | User ID | GUID | Yes | System generated |
| userName | User Name | Varchar | Yes |  |
| userEmail | Email | Varchar | Yes |  |
| userPhone | Phone | Nvarchar | No |  |
| userTitle | Title | Varchar | No |  |
| isManager | Manager? | Boolean | Yes | A true false column that allows for easy filtering for Sanjel district managers |
| isMentor | Mentor? | Boolean | Yes | A true false column that allows for easy filtering for Sanjel professionals who are capable of mentoring professionals. |
| isActive | Active | Boolean | Yes | A column to determine if the users are active members of Sanjel. |
| created | Created On | Datetime | Yes | System generated date the record was created |
| createdBy | Created By | Varchar | Yes | System generated |
| Modified | Modified On | Datetime | Yes | System generated date the record was modified |
| modifiedBy | Modified By | Varchar | Yes | System generated |

* Primary Owners: Admin Users

## Checklist Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Column Display Name** | **Column Type** | **Required** | **Comments** |
| checklistIDPK | Checklist ID | GUID | Yes | System generated |
| checklistTitle | Title | Varchar | Yes |  |
| shortDescription | Description | Varchar | No |  |
| isActive | Active | Boolean | Yes |  |
| checlistType | Type | Choice | Yes | A choice field indicating at what stage the list is required. Recruit, Onboard, Develop and Offboard |
| created | Created On | Datetime | Yes | System generated date the record was created |
| createdBy | Created By | Varchar | Yes | System generated |
| Modified | Modified On | Datetime | Yes | System generated date the record was modified |
| modifiedBy | Modified By | Varchar | Yes | System generated |

* Primary Owners: Admin Users

## Checklist Items Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Column Display Name** | **Column Type** | **Required** | **Comments** |
| checklistItemsIDPK | Checklist Item ID | GUID | Yes | System Generated |
| checklistIDFK | Checklist ID | GUID | Yes | Foreign key that links record to Checklist table |
| listItemDetails | Details | Varchar | Yes |  |
| shortDescription | Description | Varchar | No |  |
| isLMSItem | LMS? | Boolean | Yes | True/false to indicate if this list item is an LMS requirement |
| LMSCourseID | Course ID | Nvarchar | No | If the above column is marked as true this is a required column and is a course ID that allows for the integration to LMS |
| linkToDocument | Document Link | Varchar | No | Link to required document for list item (may require a sub table if more than one document) |
| isActive | Active | Boolean | Yes |  |
| created | Created On | Datetime | Yes | System generated date the record was created |
| createdBy | Created By | Varchar | Yes | System generated |
| Modified | Modified On | Datetime | Yes | System generated date the record was modified |
| modifiedBy | Modified By | Varchar | Yes | System generated |

* Primary Owners: Admin Users

## Assigned Checklist Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Column Display Name** | **Column Type** | **Required** | **Comments** |
| assignedChecklistIDPK | Assigned Checklist ID | GUID | Yes | System Generated primary key |
| checklistIDFK | Checklist ID | GUID | Yes | Foreign key that links record to Checklist table |
| userIDFK | Assigned User ID | GUID | Yes | Foreign key that links record to user table |
| assignedByIDFK | Assigned By | GUID | Yes | Foreign key that links record to user table for whoever assigned the list to the user |
| assignedDate | Date Assigned | Datetime | Yes | The date the list was first assigned to the Sanjel user |
| managerIDFK | Manager ID | GUID | Yes | District manager |
| completedDate | Completed Date | Datetime | No | System generated date time when all list items are completed |
| approvalDate | Approval Date | Datetime | No | System generated date time when district manager has approved all list items |
| approverIDFK | Approver ID | GUID | No | System generated foreign key that links approver to User Table |
| approvalStatus | Approval Status | Choice | No | A status column that indicates what stage the approval is in. Ex. Sent for Approval, Approved, Rejected |
| approvalSentDate | Approval Sent Date | Datetime | No | System generated date when the approval was initiated |
| isActive | Active | Boolean | Yes | A tag that can be adjusted is this checklist is no longer required |
| created | Created On | Datetime | Yes | System generated date the record was created |
| createdBy | Created By | Varchar | Yes | System generated |
| Modified | Modified On | Datetime | Yes | System generated date the record was modified |
| modifiedBy | Modified By | Varchar | Yes | System generated |

* Primary Owners: Admin Users or Managers

## Assigned Checklist Items

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Column Display Name** | **Column Type** | **Required** | **Comments** |
| assignedChecklistItemsIDPK | Assigned Checklist Items ID | GUID | Yes | System Generated primary key |
| assignedChecklistIDFK | Assigned Checklist ID | GUID | Yes | Foreign key that links record to Assigned Checklist table |
| checklistItemsIDPK | Checklist Item ID | GUID | Yes | Foreign key that links record to Checklist Items table |
| isRequired | Required for Professional | Boolean | Yes | Column that allows district manager to remove list item if not required for professional |
| LMSCertificateLink | Certificate | Nvarchar | No | A link to the completed LMS certificate if the list item is an LMS Item |
| signedOffBy | Signed Off By ID | GUID | No | Foreign key that links to the assigned mentor table |
| signedOffOn | Date Signed Off | Datetime | No | Date that the list item was signed off |
| created | Created On | Datetime | Yes | System generated date the record was created |
| createdBy | Created By | Varchar | Yes | System generated |
| Modified | Modified On | Datetime | Yes | System generated date the record was modified |
| modifiedBy | Modified By | Varchar | Yes | System generated |

* Primary Owners: Managers and Mentors

## Assigned Checklist Comments Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Column Display Name** | **Column Type** | **Required** | **Comments** |
| AssignedChecklistCommentsIDPK | Comments ID | GUID | Yes | System Generated primary key |
| AssignedChecklistIDFK | Assigned Checklist ID | GUID | Yes | Foreign key that links record to Assigned Checklist table |
| commentorIDFK | Comments By | GUID | Yes | Foreign key that links the commentor to the user table |
| comments | Comments | Varchar | Yes |  |
| created | Created On | Datetime | Yes | System generated date the record was created |
| createdBy | Created By | Varchar | Yes | System generated |
| Modified | Modified On | Datetime | Yes | System generated date the record was modified |
| modifiedBy | Modified By | Varchar | Yes | System generated |

* Primary Owners: Managers, Mentors and Professionals

## Assigned Checklist Notifications

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Column Display Name** | **Column Type** | **Required** | **Comments** |
| AssignedChecklistNotificationsIDPK | Notification ID | GUID | Yes | System Generated primary key |
| AssignedChecklistIDFK | Assigned Checklist ID | GUID | Yes | Foreign key that links record to Assigned Checklist table |
| SentByIDFK | Sent By ID | GUID | Yes | Foreign key that links to the user table |
| notification | Notification | Varchar | Yes |  |
| sentToIDFK | Sent To ID | GUID | Yes | Foreign key that links to the user table |
| created | Created On | Datetime | Yes | System generated date the record was created |
| createdBy | Created By | Varchar | Yes | System generated |
| Modified | Modified On | Datetime | Yes | System generated date the record was modified |
| modifiedBy | Modified By | Varchar | Yes | System generated |

* Primary Owners: Managers, Mentors and Professionals

## Assigned Checklist Mentors

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Column Display Name** | **Column Type** | **Required** | **Comments** |
| assignedChecklistMentorsIDPK | Checklist Mentor ID | GUID | Yes | System Generated primary key |
| assignedChecklistIDFK | Assigned Checklist ID | GUID | Yes | Foreign key that links record to Assigned Checklist table |
| MentorIDFK | Mentor ID | GUID | Yes | Foreign key that links to the user table |
| created | Created On | Datetime | Yes | System generated date the record was created |
| createdBy | Created By | Varchar | Yes | System generated |
| Modified | Modified On | Datetime | Yes | System generated date the record was modified |
| modifiedBy | Modified By | Varchar | Yes | System generated |

* Primary Owners: Managers