Assessment Platform Business Requirements and Product Features

Prashant Kumar Choudhary, Sr. Product Manager
PROCAPITA MANAGEMENT CONULTING / ZENITHR

Index and Contents

Business Requirement

To Build Assessment Platform with ability to create customized question and /or Standardized Test.

Project Brief Overview

Why Talent Assessment is Important

The decisions you make investing in people will define the future of your business. Now you can make those decisions with confidence knowing they are backed by science, solid data and unique insights. The competencies can be measured. The Talent assessment platform infused with AI and unique proctoring capability will be enabling the Talent Acquisition Team to

Product Name: Survey X / Talent Assessment Platform

Business Target Segment

Procapita a leading HR advisory and consulting firm will be building survey x and assessment platform to measure the talent competencies for companies. Talent assessment platform will be introduced as a product separate from the survey with a different name in order to have a differentiation in the marketplace and will be infused with Multitenancy architecture like all our standard Products.

Small /Midsize and Large Enterprise using Platform for following use cases

a. **Hiring for Job Specific Role** -Entry/Mid / Senior Management Role
b. **Training Need Analysis** – Pre and Post Assessment to check the effectiveness of Training Program Conducted. Here a Diagnostic Assessment is required to check the future readiness for t
c. **L & D:** Here the organization development goal are intervened and devise new strategies for getting the employees ready on a chosen competency necessary for the the organization
d. **Certification:** Assessment platform also serve as a pethod of releasing or credentialing a user deemed proficient in a particular skill by releasing branded certificate with the organizational name / skill competency gained by passing the certification examination and assessment.

Higher Education

In Higher education markets assessment are typically used for conducting following type of assessment

a. **Admission / Entrance examination**: These are high level secured assessment essentially proctored to check the integrity of the examination.
b. **Term End / Mid Term Examination:** Assessment conducted at the end of the examination.
c. **Competitive Examination**: Olympiad and Hiring for collage graduates for campus recruitment by companies.

K -12 Markets

K-12 is another segment wherein formative assessment / summative assessment are typically ised to check the student learning about a particular topic /subtopic

1. **Summative assessment**: Assessment are conducted at the end of the term or classroom to check the learning objective achieved by the candidates . Generally, these type of assessment are proctored and support mcq and subjective assessment for student to express their responses
2. **Formative assessment:** The assessment is conducted in between the classroom to check the learning objective achieved for a particular program . These type of assessment check the learner attention and gives a real time feedback to c=change the teaching strategy is majority of student have not achieved a passing score in the formative assessment.

Type of Assessment:

Based on the Content Segregation

- **Customized content** from client (Herein Client will be able to upload and build their own content) - Platform as a Service
- **Standard assessment** (Standard library for the specific job roles will be created)- Standard Product or Using Standard test and templates using our existing Partnership with Thomas Assessment using API / Assignment

Type of Test and Assessment based on Use Case : Assessment can also be categorized based on use case that it is going to be used for measuring the competency / skill based assessment and futher defined module wherein these assessment are used based on use case, competency measurement and end goal for assessment.

Following type of assessment generally based on use case

- Diagnostic assessments

- Formative assessments

- Summative assessments

- Ipsative assessments

- Norm-referenced assessments

- Criterion-referenced assessments

Description for Type of Assessment and Use Cases based Segregation

Diagnostic Assessment

Sets of written questions (multiple choice or short answer) that assess a learner's current knowledge base or current views on a topic/issue to be studied in the course. Generally, MCQ /Descriptive or subjective question are presented to the user for checking the competency gained in a particular Topic /subtopic / skill.

Formative Assessment

Formative assessments help teachers understand student learning while they teach, and provide them with information to adjust their teaching strategies accordingly. This type of assessment is generally classroom assessment in form of **Quiz / MCQ / Subjective / Competency** check after a teaching lesson or a training program is delivered to the set of students/learners / internal employees.

Summative assessments

Summative assessments measure student progress as an assessment of learning. Standardized tests are a type of summative assessment. These types of assessment are conducted at the end of the curriculum to pass the candidate to the next level.

Ipsative assessments

Ipsative Assessment are one of the types of assessment *as* learning that compares previous results with a second try, motivating students to set goals and improve their skills. A two-stage assessment framework helps students learn from their mistakes and motivates them to do better. Plus, it removes the instant gratification of goals and teaches students learning is a process.

Norm Referenced Assessment

Norm-referenced assessments are tests designed to compare an individual to a group of their peers, usually based on national standards and occasionally adjusted for age, ethnicity or other demographics. This type of assessment are generally used to test skill and competency for individual or group and can be used for skill testing and competency evaluation for enterprise , k-12 and higher education markets. Unlike ipsative assessments, where the student is only competing against themselves, norm-referenced assessments **draw from a wide range of data points to make conclusions about candidate achievement.**

Criterion Referenced Assessment

Criterion-referenced assessments compare the score of an individual student to a learning standard and performance level, independent of other students around them. In the classroom or enterprise , this means measuring student performance against grade-level standards and can include end-of-unit or final tests to assess student understanding for a particular subject and they are deemed pass and fail in a particular subject. This type of assessment is also used in enterprise and higher education markets to deem a candidate pass and fail.

Features and Priority in Our RoadMap

User Role : Admin, Test Taker, Proctor , Approver , Result Module for view the Candidate Report

Following Epics and Futures RoadMap Decided for Full Assessment Suite

1. **Login and Authentication**

Registration for the User/ Bulk Registration for User

- Registration – User Should be able to register and assign the take. Both the Individual and bulk registration for the user will be given to onboard a user on a particular company. The registration field will include basic mandatory filed like name, email id and Mobile number and other filed like Job Roles, Identity card number, Skill and Education level, Resume, Sex , Country and Location to check and run analytics on the backend for detailed performance level.
- Login – User be able to login into the platform with the username and password, Single sing on, OTP Based login, Reset Password for login into the module.
- Email Service Integration – On Successful Registration, Test Reminder, Notification of upcoming test, post submission of test result trigger on email.

2. **Admin Module / Multitenancy**

C. Question Authoring and Tagging to the question.

1. Question Authoring Module – MCQ, Subjective and Psychometric Assessment to measure the competency and question flag which will be supported in the first phase for releasing.
2. Each question will be having a Topic / subtopic and Competency tagging. Also, for each question there will a question id which will be automatically generated and stored in the company common pool for questions.
3. Search and Review the question: Admin must be able to check and view the question from the global pool for company level question build on a particular subdomain or a company page created in the multitenancy architecture selected.
4. Review the question Pool/ Preview the question made in the following format / build a PDF for the question authored to be shared with the client / share the assessment link to preview for client consent.

3. **Type of Question to be build for Competency Measurement**
1. **MCQ Question Type Support:** Single Option Correct and Multiple Option correct as option for authoring the test content
2. **Subjective Question Type Support:** Have a open field wherein user can upload the answer using dynamic QR / upload using camera
3. **Psychometric Assessment Question Type Support:** Relative like art based weighted score for the competency measured for measuring the High , Medium , Low o each test based on relative score to each option

D. Test Building /Create Test

Type of Test and Configuration for Test Level Setting: Each test can be configured individually with set of rules applicable to the test. The content for the test will be selected form search topic / subtopic and competency level created while building the test.

E. Setting the rules for the Test

Test Level configuration for Rule specific to the test

Pretest rule, Test level setting like start and end date, Test Duration, Security features -Proctoring with Auto and Manual Proctoring, Test Frequency for the registered user, Resume Functionality on client side / server side sync for the resume, Configuration for the test instruction page which will have test taking in multi-language, Feedback and Score display at the end of test, Hybrid test could be made by configuring and measuring two question, Randomization for the question to be coming from a common pool and display unique question for the test can shall be configured on each test level.

Test ID Each test will be having a Test ID specific to the test created on successful creation of the test.

Test Active Status Test Active / Deactive : Post the test is made, it can be activated / deactivated so the user can

Assignment and Allocation for the test : Assignment and allocation for the test from the Question Authoring module -Set Frequency for each test test

Frequency and Roster check on test : Ability to check and configure the roaster management for the user for configuring the attempt the user can take in the assessment.

F. Approver Module

Use Case: Appr9over is a invigilator who authenticates the candidate identity and grant them access to the test. This will be configurable on the test level we want the approver process to be Manual / Auto or with the AI approval which automatically matches the face and liveness Approver Module for Authentication for the user identity by a manual approver or Auto Approval for candidate faces

AI Approval to check the face match score which will have integration with any standard KYC Platform

G. Test Taking Module (Candidate Test Taking Module)

Test Taking Module: User will be able to take the assigned test. The platform will be having the following flow.

User Flow for the Candidate to take the Assessment

LOGIN > Authentication Successful > Test Taking and initiation page > Start Test > Configured test will be loaded > Hardware Permission like phone, microphone, internet speed and browser is checked > Test Instruction page with all the test level rules / test Name /Number of question / Consent from the user Here a custom timer for 30 seconds can be introduced default for user to read the standard instruction > Test Screen load with parameterized screen mentioned in button level

User Flow for Test Taking Experience by Candidate
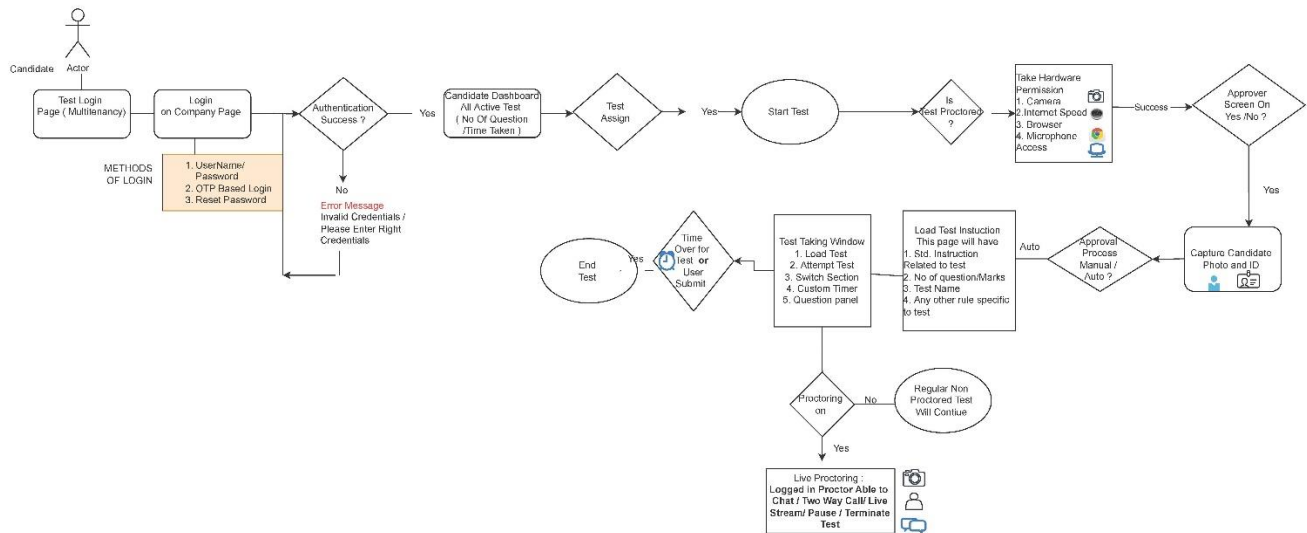
Link to View Candiate User Flow Journey

Button Level on the Test Taking Page

Auto Next, Next and previous Button,

Ability to go full screen on the test,

View Instruction,

Change the section,

Load the timer (Custom Timer)

Camera and chat window on the test screen,

 Question Panel for switching the question.

Provision of Navigation and candidate side warning

Flag and review the test question,

Clear response to remove the answered response by candidate.

H. Analytics Module: (Result Module)

Compare the performance of the test, download test level report for individual and group report in the form of excel.

Calculate the test level average and competency level average for each test.

Compare up to 4 application and showcase them side by side for evaluation.

Configure the proctoring report and showing all the report in the pdf report, option of having logo and brand name on the client.

Download all the report based on Filter selected for the test name, Date range, candidate id and compare the applicants

I. Proctoring Module (Live Proctoring Module)

Selective assigning for the candidate by Round Robin Method or Hard Mapping candidate to the Proctor.

Proctor is able to **Live Stream Candidate** and two-**way video call** which starts a room with the chosen candidates.

Chat one to one with template message or direct message to the candidate.

Group Announcement to the candidates for any message required to be flashed to the candidate.

Pause and Terminate the Candidate screen.

See all the Navigation, Alerts on Candidate like No Face Found, Multi face found, Object detection in the candidate.

Timelines and Development Resources Aligned

Excel sheet attached for the plan

We have to decide the Resource Aligned . Either we can outsource or develop with internal people that is us to decide for a possible MVP release with basic assessment features like and a end to end flow for candidate to take the assessment using the custom competency build.

Tech Stack to be Used

Partnership for Integration and services Library to be used in Development for the Platform

ABP.IO Multitenancy : Application has to integrate in abp.io to manage it along with other product

Backend : Java Spring boot or .net Core for Backend

Front End: Angular or HTML /CSS / J Query/ Bootstrap

AI Services : OpenCV on server side Model / TensorFlow JS for Client side Authentication

Aws Recognition Services : Bonafide Candidate present in the test window.

Video Conferencing: Webrtc for Video Conferencing / Two Way Communication between proctor and candidates

Cache Servers Redis for Cache Server /

Storage or Virtual Machine AWS or Azure for Hosting services and storage account in S3 Buckets.

Enclosure.

Detailed Features and Link to Services Integrated in the Excel Sheet.

Tech Stack and Features Priority

User Flow for Candidate (Test Experience)