



iON Digital Assessment

Redefining the future of assessment process



Assessment lies at the heart of every evaluation system – academic, corporate, or government. With an increase in the number of examinations conducted each year, establishments seek ways to manage the scale, volume, and cost of assessments. This includes reducing the time taken to invite applicants, organize, conduct and evaluate assessments, and publish results. Leveraging technology for a practical, efficient, secure, and cost-effective approach to assessments is a critical requirement today. Technology helps reduce the effort of manual administrative processes, enables better reach, and offers a reliable way to administer examinations.

Towards this objective, Tata Consultancy Services (TCS) offers the iON Digital Assessment solution. The comprehensive, integrated solution enhances operations by enabling reliable infrastructure with intelligent content for the assessment, delivered through scalable technology. The digital marking process helps reduce the effort, time and cost involved in traditional paper-based tests, ensuring reliable delivery and an easy to access audit trail. In addition, it delivers a secure, wider reach, while ensuring that the assessments are objective, unbiased, and comprehensive. The solution effectively leverages technology to reduce cycle time in all phases of an end to end assessment.

Overview

The increasing number of assessments being conducted today presents various challenges in using the traditional paper-and-pen methods for end to end assessments. The need of the hour is an integrated solution that:

- Offers a reliable and effortless way to conduct assessments
- Automates exam form/ application management
- Eliminates security risks arising out of printing and distributing test content
- In built capabilities to control candidate impersonation
- Avoids manipulation of scores
- Prevents delays in evaluation and publication of results

iON Digital Assessment solution simplifies the assessment process, starting from applicant registration to publishing of results. It provides near-instantaneous installation of the assessment software, requiring only a browser and minimal desktop infrastructure capabilities.

The solution allows large number of candidates to take the test across locations at a given time in a single shift, or across multiple shifts, while ensuring complete traceability of any assessment.

iON Digital Assessment solution is a scalable, secure, and light-weight system, designed to operate over a distributed architecture. The uniqueness of the assessment is maintained, and the analysis of the assessment results is supported at near real-time by a powerful analytics engine.

You can configure the solution as per your requirement:

- Select the entire bundle of solutions and services offered by iON Digital Assessment solution for a secure, digitized testing and hiring solutions

OR

- Select one or more modules in part

The solution architecture comprises a knowledge kernel, a question bank rendering engine, a hosted iON Digital Assessment data center, and multiple iON Digital Assessment test center servers. Candidates take the test on a Local Area Network (LAN) simultaneously by connecting to the iON Digital Assessment test center server from multiple locations.



Features

iON Digital Assessment solution comprises the following modules:

Module	What it Does...
Application Management- To configure quickly	<ul style="list-style-type: none"> ▪ Streamlines the candidate registration and enrolment process with online application forms that are tailored to your requirement ▪ Provides an offline mode to collect registrations through paper-based forms ▪ Provides multiple payment options ▪ Tracks applications and generates reports easily
Allocation Management- To allocate test centers for registered candidates	<ul style="list-style-type: none"> ▪ Enables audits of test centers to realize the actual infrastructure capacities (such as, number of PCs, nodes) ▪ Offers flexibility to define test centers ▪ Allows candidates to select a test center, date, and time ▪ Generates an e-admit card which supports candidate authentication using mechanisms such as bar coding, finger printing, and photograph verification
Item Management- To create and secure question papers	<ul style="list-style-type: none"> ▪ The iON Assessment Knowledge Center offers Question Creation Wizards and Question Paper Wizards to create unique questions based on parameters, such as difficulty level, number of sections, timeout for sections, negative marking, and question shuffling options to provide unique papers to every candidate in the room ▪ Provides first of a kind, patent pending, rule-based engine that allows question papers of identical levels of difficulty to be generated. This ensures question paper equivalence in assessments, which span multiple days and shifts ▪ Offers a simple user interface to help creation of questions in the solution ▪ Offers robust review mechanisms and sealing processes to prevent errors or question paper leaks
Assessment Management- To manage conducting of the digital assessment	<ul style="list-style-type: none"> ▪ Verifies the test center infrastructure before the assessment commences ▪ Includes backup and buffer machines to ensure smooth conduct of assessments ▪ Conducts the assessment over Local Area Networks for the registered candidates simultaneously across test centers ▪ Simplifies the assessment process: <ul style="list-style-type: none"> - Candidates can avail the online mock assessment - Enables candidates to view the total number of questions and the number of questions answered at any given time during the assessment - Provides user-friendly consoles with a multi-lingual interface

Module	What it Does...
<p>Evaluation Management- To evaluate assessments</p>	<ul style="list-style-type: none"> ▪ Provides various types of evaluation methods based on the type of assessment, thus enabling high levels of standardization ▪ Offers three types of evaluation: <ul style="list-style-type: none"> - Instant evaluation: Answers are provided in the solution. While creating questions, you can choose to provide instant results to the candidate or declare it later - Offline evaluation: Answers to a paper pencil assessment are entered in the system later, following which the responses are evaluated - Digital marking: Includes scanning and uploading answer sheets into the system, registering and assigning assessments to evaluators, completing the evaluation in the system, and sharing results ▪ Offers: <ul style="list-style-type: none"> - Key-based evaluation for objective questions - Workflow-based evaluation - Digital marking-based evaluation enables online evaluation of offline responses to a paper pencil assessment
<p>Results Management- To consolidate and publish results</p>	<ul style="list-style-type: none"> ▪ Publishes downloadable results in multiple formats based on the test center, candidate, or question ▪ Publishes results based on marks and ranks ▪ Provides information that can be used to analyse and provide feedback to Content Managers on the quality of questions ▪ Helps easy retrieval of data in case of re-evaluation or Right to Information (RTI) purposes
<p>Certification Management- To provide certifications</p>	<ul style="list-style-type: none"> ▪ Creates secure, tamper proof, authenticated, digitized certificates ▪ Provides a unique mechanism to identify university-issued certificates that may be verified by agencies using key infrastructure and biometric information

Benefits

The iON Digital Assessment solution is the best in the industry and brings with it the following benefits:

- **Minimal Activation Time.** The iON solution and its associated processes can activate the processes within a short span of time. Solution delivery - an extensive process encompassing provisioning, configuring, and training - takes approximately one to two weeks to deploy and go-live for any assessment cycle.
- **True Assessment of Learning.** The iON Assessment Knowledge Center (patent filed) enables you to create multiple unique questions from the base (meta) questions. You can also create questions based on parameters. The iON Assessment Knowledge Center enables you to manage the assessment content using scientific constructions, curriculum-based modeling of options and distractors (incorrect answers in a multiple choice question) that help gauge the true potential of the candidate. Distractors help in determining whether a candidate knows a subject well enough to answer the question.
- **Unique Question Paper for Each Candidate.** The iON Assessment Knowledge Center offers Question Creation Wizard and Question Paper Wizard that help you to frame question papers that are unique to each candidate with the same level of difficulty. Thus, you can generate multiple unique questions from a single meta/base question, ensuring equivalence in the difficulty levels. The Question Paper Wizard enables you to configure additional parameters to enhance the quality of the assessment, such as time out for each section, negative marking, shuffling options, and so on.
- **Reduced Cost.** Compared to a paper/pencil test, iON Digital Assessment offers far greater effective and efficient evaluation of students at 30-40% lower in total cost incurred. With fewer and higher quality experts being involved in question creation, it leads to lesser effort and lower cost. Further the operation expenditure-based model ensures minimum upfront investment for solution implementation, usage and the perpetual beta model effectively mitigates IT obsolescence keeping the whole implementation up-to-date.
- **Service Efficiency.** Extensive integration among different modules of the solution provides seamless access and mobility across the solution, which drives unparalleled efficiency across the assessment cycle. With effective leverage of technology, iON Digital Assessment ensures one of the fastest and most efficient test center enablement and test delivery.
- **Rapid Scaling = Reduced Time and Effort.** Rapid scaling enables at least one million candidates to take the test simultaneously. Meta questions entail a one-time effort, which leads to reduced effort. The meta questions constantly validate and deliver questions with identical difficulty levels to all test-takers. This is because the solution is based on distributed architecture to ensure scalability and easy implementation. The lightweight software rapidly scales up to fit your needs in the shortest duration. Since a small question set can be expanded, it saves effort and time in setting questions, enabling fair assessment and negating malpractice possibilities.
- **Security.** The solution ensures global standards of security through the 128-bit encryption for information sharing. The solution includes system-enforced process compliance, role-based access, user-level authentication, secure and traceable installations, and unique questions for each candidate to restrict unauthorized access to sensitive data and processes.
- **Reliable Delivery.** Each testing machine is validated before the assessment for a standard operating environment to ensure that the assessment on a machine is conducted without any node failure. In addition, buffer machines are available at every center, so that a candidate can resume the assessment from the question and time they stopped on the previous machine.
- **Flexibility.** The solution supports multiple formats (multi-choice/ multi-select/ multi-lingual), and different types (question shuffling/ option shuffling/parameterized questions) of question papers. Additionally, it allows you to opt for a comprehensive or semi-digital assessment.

- **Comprehensive Analytics.** The solution offers sophisticated, multi-dimensional, real-time analytics and visualization for pre-, mid-, and post-assessment analyses, and enables performance views of candidates across geographies, colleges, and age. The elaborate analytics enable you to understand the assessment process so that you can use the information to enhance the quality of questions. The solution also provides analytics on the question paper, questions, concepts, and domains as well as feedback on the question paper standards.
- **Traceability and Feedback.** The solution enables you to trace a candidate's performance using automated audit trails at multiple levels.
- **User-Friendly Online Assessment Software.** The in-built intelligence in the solution allows you to expose a sample set of questions to candidates by making available mock tests through the learning center prior to the assessment. This may be beneficial for candidates from rural back grounds. Further, features such as multilingual capability allow candidates to change the language of the questions, a timer that indicates the exam time available to a candidate and a dashboard presents the set of questions answered, thus enhancing the user experience while attempting a digital assessment.
- **Streamlined Assessments.** The extensive network of iON Digital Assessment test centers are leveraged for timely and smooth conduct of assessments. The test centers are thoroughly audited and verified before the assessment through a test center server check, hardware/software/ browser/ network checks, test candidate machine check, and so on, to ensure that the assessments are error-free.
- **Service Support.** A Help Desk is available daily to clarify and answers candidate queries. Data entry and scanning facilities are available to support and facilitate the assessment process.

Why iON Digital Assessment

The iON Digital Assessment solution is an exclusive global solution with the ability to conduct one million assessments concurrently, in different environments.

- **Comprehensive, Superior Solution:** iON Digital Assessment solution offers integrated IT solutions for comprehensive test administration and support, from application to results and certification. The iON solution is devoid of vendor bias and effectively leverages partner institutions to boost infrastructure for nationwide scale and reach.
- **Widespread Network of Test Centers:** An extensive network of test centers across the country provides an unparalleled market reach advantage. It also ensures long-term, localized commitment to serve you better.
- **Robust Delivery Model:** The dedicated delivery model ensures timely and efficient delivery of the solutions, through a network of trained work force across all test centers, centralized support and managed Service Level Agreements (SLA).
- **Unmatched Assessment Experience:** iON's extensive experience in the digital assessment space, with exposure to benchmarked practices ensures a superior solution. The solution has been successfully deployed for key educational and government institutions.



TATA CONSULTANCY SERVICES

About TCS iON

TCS iON is a strategic business unit of Tata Consultancy Services focused on enabling institutions, government departments and organisations from multiple industry sectors to be efficient in their recruitment/admissions process, learning and skilling and overall business operations with the use of Phygital platforms. These are platforms that overlay digital technologies over physical assets.

We deliver this with a unique IT-as-a-Service model that provides easy-to-use, secured, integrated, and hosted solutions in a build-as-you-grow and pay-as-you-use business model. We serve our clients with the help of best practices gained through TCS' global experience, deep domestic market exposure along with industry leading technology expertise.

For more information, visit us at www.tcsion.com

Contact

To know more about the iON Digital Assessment

Toll Free Number 1800 209 6030

Email ion.salessupport@tcs.com

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT, BPS, infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata group, India's largest industrial conglomerate, TCS has over 387,000 of the world's best-trained consultants in 45 countries. The company generated consolidated revenues of US \$17.6 billion for year ended March 31, 2017 and is listed on the BSE (formerly Bombay Stock Exchange) and the NSE (National Stock Exchange) in India.

For more information, visit us at www.tcs.com

Follow us on:      | www.tcsion.com

All content / information present here is the exclusive property of Tata Consultancy Services Limited (TCS). The content / information contained here is correct at the time of publishing. No material from here may be copied, modified, reproduced, republished, uploaded, transmitted, posted or distributed in any form without prior written permission from TCS. Unauthorized use of the content / information appearing here may violate copyright, trademark and other applicable laws, and could result in criminal or civil penalties.
Copyright © 2017 Tata Consultancy Services Limited