iON Digital Marking

Redefine the future of answer books marking

Today, educational institutions are taking consistent and progressive steps to maintain and further enhance their reputation. In the field of educational assessment, the immense nature of subjective markings has always been a significant obstacle to efficiency and marking accuracy – both of which are critical for an institution's reputation. Institutions also face numerous concerns such as a massive scale of assessments, accuracy in computation, re-marking queries, and the sheer time taken to complete the process. Educational institutions are now increasingly advocating a shift from traditional paper-pencil marking to digitized, flawless marking systems that assist markers, as well as maintain computational accuracy and allow institutions to reach out to a wider network of markers and resources. An efficient solution that helps markers better mark large scale examinations, particularly subjective examinations, by transforming the existing complex process into an accurate, user-friendly and transparent one, is the need of the hour.
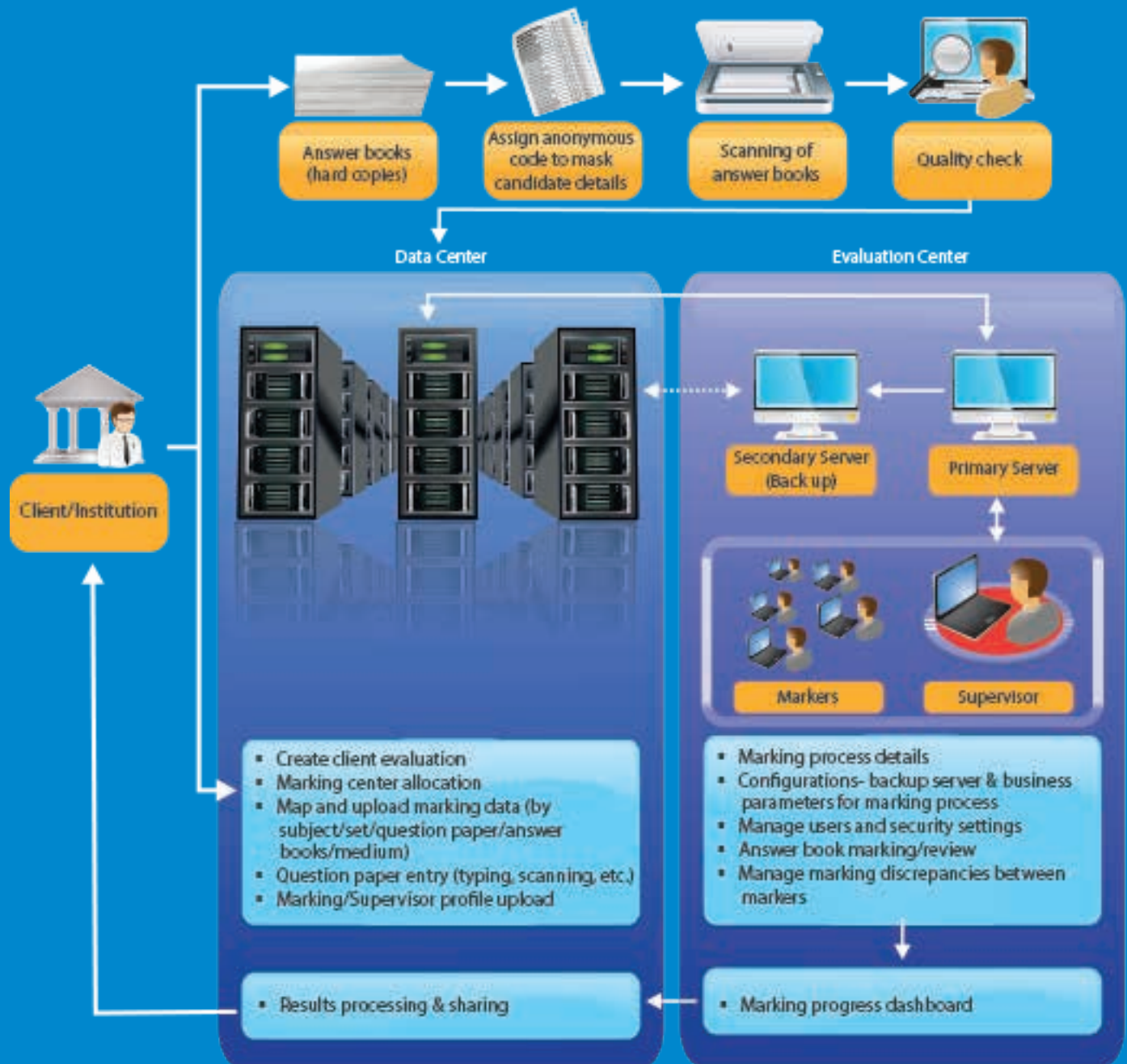
Towards this, we at Tata Consultancy Services (TCS) offer the iON Digital Marking for educational institutions to aid the accurate marking of subjective answers. With iON Digital Marking, markers can insert comments by typing them out against the scanned images of candidates' answers, as well as assign marks. By minimizing the possibility of human error while maintaining computational accuracy, iON Digital Marking significantly reduces the overall marking cycle time. iON Digital Marking also helps make better use of available resources to further improve the process. The solution delivers the flexibility, accuracy, and efficacy of a digital marking system, while ensuring that the human touch of personally examining the paper is also maintained in the process. Most importantly, iON Digital Marking enables smooth and transparent communication between the key stakeholders in the process – educational institutions, candidates, and their parents.

Overview

Educational institutions face certain prominent challenges in marking that hinder productivity and accuracy in assessment. One of the primary challenges is the sheer logistical difficulty of transporting and handling so many papers for evaluation, which invariably causes delays – particularly in publishing results. When dealing with such numbers, factors such as mishandling, physical damage, and misplacement impede the process. Such situations create unwarranted anxiety and frustration amongst candidates and parents, and could affect the reputation of the institution. One of the oldest challenges in marking is the inevitability of human error – the odds of which increase with an increase in the number of papers. On a smaller scale, with traditional marking methods, sometimes there is also the problem of alleged bias and favoritism, as candidates identities are known to markers.

iON Digital Marking

Answer books (hard copies) → Assign anonymous code to mask candidate details → Scanning of answer books → Quality check

Data Center

Evaluation Center

Client/Institution

Secondary Server (Back up)

Primary Server

Markers

Supervisor

- Create client evaluation
- Marking center allocation
- Map and upload marking data (by subject/set/question paper/answer books/medium)
- Question paper entry (typing, scanning, etc.)
- Marking/Supervisor profile upload

- Marking process details
- Configurations- backup server & business parameters for marking process
- Manage users and security settings
- Answer book marking/review
- Manage marking discrepancies between markers

- Results processing & sharing

- Marking progress dashboard

A New Age Digital Marking Process

iON Digital Marking solution addresses the needs of educational institutions comprehensively, by facilitating conditions which make markers' and supervisors' job easier.

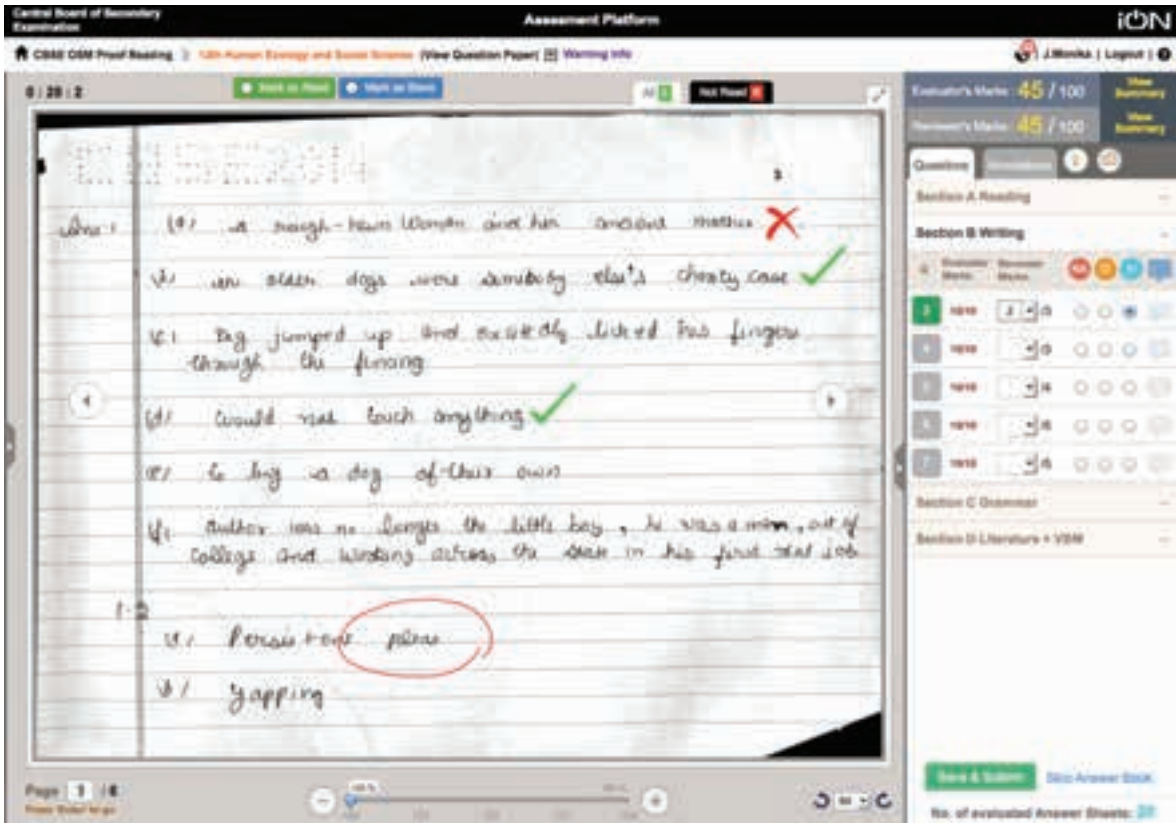The key capabilities of our iON Digital Marking solution are summarized as:

- **Candidate anonymity:** Personal details are detached from answer books and then coded. The coding can either adopt existing coding terminology used by the institution or develop a new coding system depending on required levels of confidentiality

- **Digitized review:** The marking process begins with the scanning and coding of all the submitted answer books, which are then digitized for review

- **Assistive intelligence:** The solution is fed with indicative answers to all the questions and the marking scheme to aid the marking process

- **Thorough and complete marking:** iON Digital Marking ensures that markings cannot be submitted unless markers take into consideration the un-attempted questions and assess all the answered questions

- **Ability to revisit marking:** For each paper, iON Digital Marking solution allows multiple markings and one review. Easy retrieval of answer books enables effective addressal of RTI queries enhancing your institution's reputation as a fair marker
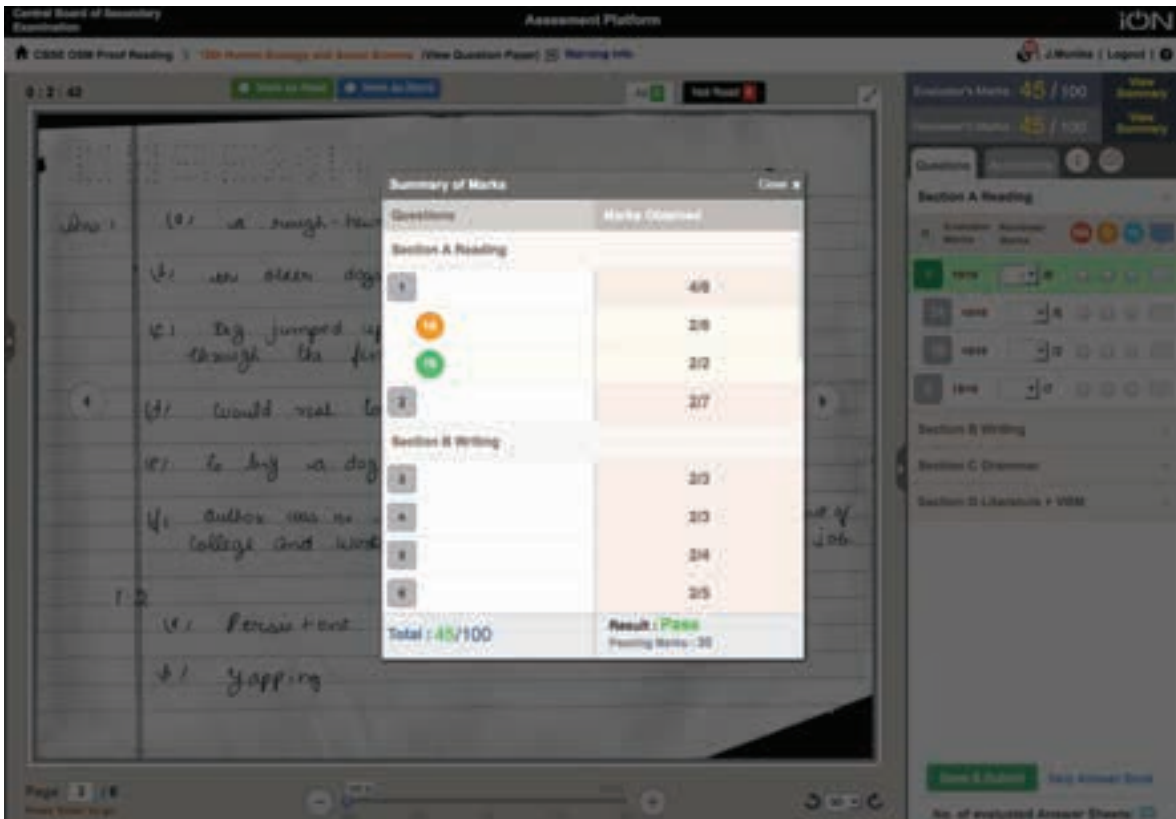
iON Digital Marking includes the scanning of answer books and uploading them in the system, registering markers, assigning answer books to them, ensuring completion of marking in the system, and sharing results. The solution comprises the following key components:

Process	Steps	Benefits
Digitization of answer book hard copies	- Candidates' personal identities from each answer book are eliminated and a coded number is assigned to each answer book or answer book - Answer books are scanned and a quality check is carried out. Then they are uploaded to the data center and downloaded to the local servers at the marking centers - Marking is carried out on the local server using the digitized versions of the answer books	A secure, digitized and standardized process is created by masking candidate details. This ensures a transparent marking while scanning of answer books aids in easy retrieval as well as eliminates the administrative costs related to paper storage and safe maintenance
Preparation for marking	- The solution is updated with the complete set of questions (text as well as images) that appeared in the examination - The solution is then fed with the relevant set of indicative answers (the marking scheme)	Markers are equipped with a comprehensive guide of the relevant answers, ensuring greater accuracy in marking as well as infusing standard practices in marking

Process	Steps	Benefits
Allocation of markers and supervisors	▪ A list of valid markers and supervisors is created ▪ Each marker or supervisor is provided with a unique user ID and password ▪ Supervisors are tagged to marking centers and are allocated a set of markers ▪ Supervisors have the ability to allocate answer books themselves to markers or the allocation can be done dynamically through the system as well. iON Digital Marking also has a feature which enables the mapping of a subject or medium to an marker	Such a system ensures maximum transparency in the random allocation of answer books to markers, and also ensures that markers are allotted answer books relevant to their expertise

The marking process	▪ The solution is ready with the question paper, the answer key (if uploaded), maximum marks for each question, and the digitized answer book, all on the marker's screen. A few ways in which markers are assisted are:
	  - The solution makes it necessary to identify and acknowledge un-attempted questions and does not allow marking of additional questions – over and above the actual number to be answered
	  - Self-checks are built into the system, such as when the marks awarded exceed the maximum marks
	  - Unless markers check all the pages and mark all the answers they are not allowed to submit the answer book
	  - During the marking process, markers are allowed to skip the marking of an unclear, scanned answer book and send it back to the supervisor's work list
		A uniform ideology is applied to the marking process, as there are multiple checks and balances in the system, and the process is adhered to at all times

The supervisory process	▪ Supervisor can review any of the answer books marked by markers under their supervision ▪ The authority to re-assign a complete or incomplete, marked answer book to another marker also rests with the supervisors ▪ Here, the second marking is totally independent of the first unlike in the paper pencil mode where the previous marker comments/marks are visible ▪ In case of any discrepancies, when the marks allotted by markers are not within the approved limit, the supervisors will mark the answer books and such marks are taken as final	The system minimizes errors in marking or computation of marks. Such a system also reassures candidates and parents in terms of re-marking queries
Report generation	▪ Supervisors can retrieve the full details of answer books marked by all markers at the click of a button ▪ Supervisors will be given the overall status – the number of sheets marked, reviewed, skipped, or pending, by subject and by marker	Following up becomes easier, as supervisors as well as markers have access to the digitized answer books at any point

The user interface of iON Digital Marking that showcases marker-friendly features

Depicts the summary of marks to the marker to remove any ambiguity in the marking

iON Digital Marking – at a glance:

iON Digital Marking is an effective solution that aims at enabling educational institutions to better assess large scale and subjective answer examinations, by converting the existing complex process into an easy, precise and transparent one. Our solution aids in easy retrieval of answer books and minimizes the possibility of human error, the risk of security breaches, and reduces the cost of maintaining answer books significantly.

iON Digital Marking solution ensures that the answer books are void of personal details before allocating them randomly, eliminating the problem of alleged bias and favoritism. The solution aids markers by providing them soft copies of answer books, so they can type in marks and comments on screen. The digitized nature of marking ensures minimal mathematical and marking errors. In addition to ensuring accurate and fair marking, the solution also streamlines logistics management, decreases the cycle time between marking and result publication, and consequently, helps educational institutions maintain and enhance their reputation. In effect, our solution brings about a synergy between the key stakeholders in the process – educational institutions, candidates and their parents.

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.

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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

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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.

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