



*A fairer, smarter,  
more efficient*  
on-screen marking system



When a candidate completes an exam, whether written, on-line, spoken or by a musical performance, his or her work may represent many months, if not years, of study. High-stakes examination candidates deserve to be treated fairly. Their future career options may well depend on the outcome. On the other side of the same coin, the value of a credential is determined by the reputation of its awarding body, including its reputation for integrity in awarding marks and grades.

MarkManager is a comprehensive solution designed to support on-screen marking of high-stakes examinations. It was born from the conviction that reliable and accurate marking is critical to excellence in assessment. Additionally, it automates associated workflow, providing an efficient end-to-end assessment solution with capabilities and benefits simply not available in a manual environment.

Advantages over manual marking are not limited to cost reduction and time saving, but also include increased security, fairness, reliability and accuracy of marking.

MarkManager is the result of collaboration between passionate educators and leading technologists. It was originally developed by the Board of Studies, Teaching and Educational Standards (BOSTES) in NSW Australia for its own use as a certifying authority. Yet it was designed from the ground up to be generic in scope, highly configurable and flexible. Through customer feedback and a continuous enhancement program MarkManager has proven to meet a wide range of requirements.

## > *Fairer*

Root causes of unfairness are difficult or impossible to control in a manual marking environment. They include marker bias, whether conscious or unconscious, shortfalls in marker skills, inconsistency in a marker's performance and the lag in determining a marker's failure to adhere to standards. All these issues and more are directly addressed by MarkManager to help deliver genuinely fairer assessments.

By randomising the delivery of examination booklets ("scripts") to each marker with the candidate's and test centre's identities masked, bias based on gender, ethnicity and social background is eliminated. The "halo effect" is also eliminated because scripts from a single school or test centre are not presented in a cluster.

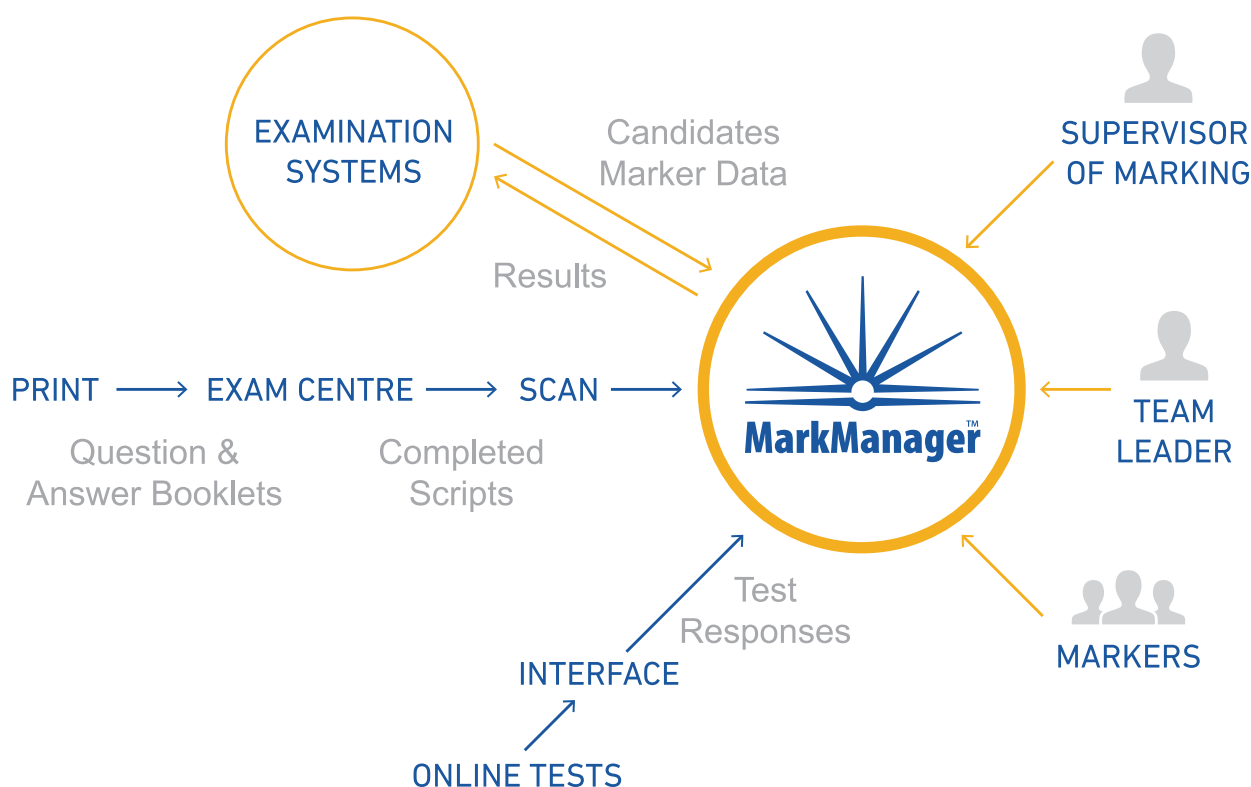
Double and check marking in a manual environment may also result in bias, as the annotations made by the first marker can influence the perception of a second marker. Concealing earlier marks in a manual environment requires separate mark-sheets which add cost and delays. With MarkManager, the marks and annotations of earlier markers can be hidden, subsequent markers instead being presented with a fresh digital copy of the candidate's work.

Fairness of marking is only as good as the skills of the lowest performing marker. With MarkManager, supervisors can monitor each marker's performance in real-time, detect any pattern or skew in marks awarded and take corrective action before a backlog of incorrectly awarded marks has built up. For example, any marker consistently "soft" or "harsh" compared to colleagues is easily identified and can then be reviewed.

Pre-marked control scripts, which in the on-line world cannot be recognised as such, allow marker performance to be assessed in real-time and corrective action initiated. Warm-up or logon scripts help markers get ready as well as allowing supervisors to ensure each marker is adequately skilled and prepared for that day.

No matter how dedicated a marker, everyone can get tired or be distracted. MarkManager detects a drop in consistency by presenting pre-marked quality assurance scripts at regular intervals. So as not to needlessly reduce productivity, both logon and quality assurance script frequency can be varied by marker profile.

MarkManager further supports markers by providing a facility to refer queries to a supervisor, by automating routine steps and by detecting errors and oversights, such as failing to mark a response within a script. In summary, MarkManager has a range of powerful and automated measures to promote fairness in marking.



## > Smarter

Once an examining body has been unshackled from the need to distribute physical scripts to markers and can take advantage of technical innovation, the whole marking process can be approached differently.

MarkManager allows markers to access scripts remotely over the Internet. Markers from outside main metropolitan areas are no longer disadvantaged since they can “mark from anywhere”, including from home, rather than having to travel in to marking centres. This increases the pool of marking resources. Moreover, in environments where markers are drawn from the teaching community, more teachers get the opportunity to improve their professional skills by participating in the marking process.

Once scripts have been scanned, there is no need for any further physical distribution. Script confidentiality is enhanced and the risk of misplaced scripts reduced. Industry-standard encryption is applied to all browser traffic to enforce security throughout the entire marking operation.

MarkManager’s architecture supports web-based access to reliable and highly scalable application servers. Markers need nothing else than a supported web browser and Adobe Reader installed on their Windows or Mac PC. This “zero deployment” model simplifies implementation, reduces technical support calls and extends application reach. Most commonly, MarkManager is accessed as a hosted service under the “Software as a Service” (SaaS) model, freeing the examining body from technical administration concerns and application management overheads.

MarkManager has the ability to manipulate script captures with complete flexibility. Pages can be re-sequenced with only the required areas of each page selected. This allows administrators to allocate an examination to multiple teams, each assigned to mark a specific question or set of questions. This feature is commonly known as script segmentation in support of specialised marking. Accuracy is also increased because markers don’t have to hold such a large marking key in mind. Furthermore, cost efficiencies can be achieved by separating questions requiring advanced marking skills from those that can be handled at a more clerical level. The administrator has full flexibility as to which responses from which pages comprise a segment.

MarkManager’s real-time dashboard provides supervisors with better visibility to the marking process, including progress to completion. This promotes improved timeliness, and together with MarkManager’s rigorous quality control measures allows the quality of marking to be significantly improved and overall risk reduced.





## > More Efficient

Managing the logistics of manual exam marking is a time-consuming process fraught with hazards. Handling a multitude of boxes of scripts, not to mention bringing together teams of markers and providing the appropriate facilities, involves an astonishing amount of organisation and expense.

MarkManager allows examining bodies to simplify logistics, reduce turnaround times and improve efficiency. Significant cost reductions are available to help build a sound business case for investment, even before placing a value on reduced risk and improved quality of marking.

A key component of marking cost in a large-scale examination environment is labour, given the number of markers and supervisors involved.

MarkManager produces savings (in the raw per script effort) in paper-handling and manual processes on either side of response reading

and assessment. In other words, there is less time between questions marked. These benefits multiply when double marking, check marking and re-marking come in to play, since access to the previously marked script is instantaneous. Specialised marking is another factor for improved efficiency.

A further cost saving is available to examining bodies who use mark-sheets to facilitate blind double marking. With MarkManager there is no need to print, distribute, fill in and manually add mark-sheets to achieve this objective.

MarkManager offers a number of other efficiencies, for example time savings because of the speed of on-line interaction between markers and supervisors to resolve queries, and lower re-marking costs because marking anomalies are detected earlier. In total, labour costs associated with marking can be expected to be reduced by ten to twenty percent, in addition to other savings such as marking centre hire and set-up costs.

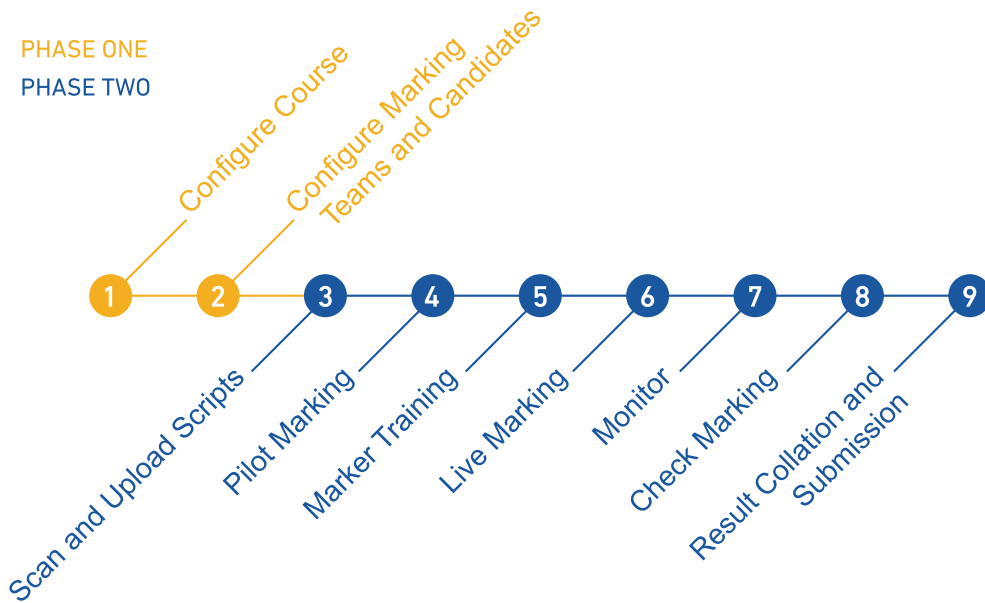




# > How MarkManager Works

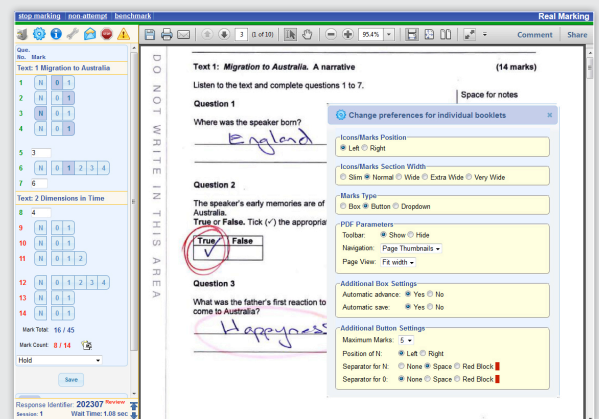
By supporting the examination life-cycle from marking guidelines definition through to release of marks, MarkManager streamlines the entire process. It supports standards-based interfaces for integration with administration systems (for example to automate the loading of candidate data and the return of assigned marks), with on-line testing systems and with enterprise scanning systems to automate script import.

PHASE ONE  
PHASE TWO



*Thanks to MarkManager's automated controls, educators and candidates alike can be confident of the integrity of the marking process.*

- 1 Each "course" is configured, with its script segmented as needed and allowable mark ranges determined, for independent processing through the system. A wide range of responses can be marked on-screen including long-form (such as essays), short-form text, diagrams, schematics and also audio capture of spoken responses and video capture of performances. Responses can be entered on-line or hand-written on Q&A or answer booklets.
- 2 Marker and candidate data is uploaded and segments assigned to each marking panel as appropriate.
- 3 For paper-based exams, scripts are scanned, uploaded and assigned a unique identifier.
- 4 Benchmarks and guidelines are developed for each course and relevant controls configured.
- 5 Markers review the marking scheme and guidelines before conducting wide reading and practice marking. Only once they consistently mark with sufficient accuracy are markers able to proceed to live marking.
- 6 Live marking commences and progress to completion is monitored by the system. Control scripts are served up between live scripts to monitor marker accuracy and consistency. Markers can access benchmark scripts and other guidance as required. Double marking is conducted to the configured ratio and variations within tolerance are automatically resolved without supervisor intervention. Markers can electronically refer scripts to supervisors for review.



- 7 Supervisors monitor marking via a real-time dashboard. Variances between markers are automatically flagged allowing for prompt action. Supervisors can also view aspects like speed of marking at any time. This helps them to provide instant feedback and support markers to optimise marking performance.
- 8 Supervisors can check mark selected scripts as part of their quality control process.
- 9 After marking is complete, marks for every question of every segment of an examination are available. Each candidate's raw mark for the total script is automatically calculated. After thorough checks, the overall results are collated and submitted to the relevant examining body application electronically.

# > Who Should Use MarkManager?

MarkManager is purpose built for organisations that set high-stakes examinations, such as professional certification, school leaving and university entrance examinations. It most suits scenarios with a high candidate count. Additionally, exams should contain a significant number of responses which are not based on multiple choice questions.

For examining bodies that fit this profile, MarkManager provides a fairer, smarter and more efficient way to carry out marking.

MarkManager is highly scalable, supporting examinations from a few thousand to millions of scripts, whether conducted at an institutional, regional, national or global level.

There are few examples in any industry where the service provider runs its own business on the same code that it licenses to its customers. In doing so, MarkManager offers an inherent guarantee of quality and future-proofing beyond that offered by a standard software vendor. BOSTES made the decision to share its MarkManager technology with other educators around the world for whom fair and efficient marking is a high priority. BOSTES invites you to consider whether the fit is right for your organisation.



Do you want to know more about a ***fairer, smarter*** and ***more efficient*** way to mark exams?  
Visit **markmanager.edu.au**

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