

Gain an edge with Robotic Quality Testing (RQT)

May 2016

Automating your testing offers the potential to improve your quality management process, make better business decisions, reduce costs, and ultimately gain a competitive advantage.

Business organizations face uncertainty and a rapidly evolving control environment. Market pressure, financial conditions, and regulatory changes have left businesses short on the time and resources needed to assess overall quality in a way that takes advantage of the technological advances available. In recent years businesses have created new quality, compliance and other control processes, hired additional staff, and installed multiple manual control overlays. In doing this many organizations have taken a reactive short-term focus of firefighting controls that fails to consider a strategic approach that makes their control environment effective, efficient, and sustainable. All of this has increased costs and taken a bite out of margins.

Today, quality and control testing across the three lines of defense is still often largely manual and labor intensive. Performed manually, testing is also expensive and inefficient. Testers spend a majority of their time extracting, transcribing, and reviewing information from scanned documents and systems of record.

Testing approaches vary significantly by business area and organization, but manual testing processes tend to review only a limited sample. Manual testing is typically performed long after an event has occurred, turn times are slow, and scalability is limited. It is also one dimensional: manual testing identifies and tracks errors, but it lacks the ability to render a comprehensive analysis that can provide input for management to make better business decisions.

Now, envision a robotic testing process where defects are monitored continuously, the quality function is fortified, standardized procedures produce consistent quality in even your most judgmental areas, increasing efficiencies

and saving time and money. In this process all documents requiring review are converted electronically from images of typed, handwritten, printed text, or voice recordings into machine-encoded text where they are read, processed, and analyzed against control conditions by a machine, and the relevant data and results are indexed in a data warehouse for additional analysis and reporting.

With robotics testing, all of the above is possible. In addition, all key stakeholders and decision makers are able to get a more granular quality review, providing the opportunity to move ahead of the curve through a more comprehensive quality process that provides analytical insight into businesses behavior and predicting future trends.

KPMG LLP (KPMG) sees robotic quality testing beginning to make its mark on the industry as testing is moving from control sampling to a monitoring process that is data-driven, comprehensive, proactive, and cost-effective.

With robotic testing, management is provided with a comprehensive analysis of the business and operational processes, offering valuable insight to the business as a whole and thus the ability to make more informed decisions.

If that sounds appealing, now is the time to take the first step. Subject matter professionals from the Risk Data Aggregation and Reporting practice at KPMG bring decades of industry and consulting experience to the marketplace. We can assess whether robotic testing, in whole or in part, is right for your organization. And, we will support you on the path to getting there.

Moving from manual to robotic testing

As shown below, a four-phased approach is employed to progress from a manual to a robotic test environment. Regardless of what phase your business is in, KPMG can guide you past the finish line. We help you take a



Program evaluation

Before robotic testing can be implemented, an organization should begin with a thorough review of its current testing procedures in order to confirm the testing processes are adequately designed and documented. This review typically includes:

- An evaluation of the program scope, design, and effectiveness to determine whether they are sufficient to identify errors in terms of regulatory, investor, and other quality needs.
- A review of existing test scripts and documentation to confirm a sound foundation exists for building a repeatable and automated process.

Where gaps exist, enhancements should be considered before proceeding.

Robotic planning and assessment

A robotic planning and assessment is performed to determine and prioritize the initiative, collect business requirements, and understand the level of effort and value that robotics can bring to your testing function. This includes a three-step process as shown here:



Capture as-is process:

Before proceeding with implementing robotics testing, it is vital that organizations have a detailed understanding of the current business requirements and operational processes.

deeper dive into the timing and position of quality issues and source systems to determine whether or not robotic testing is appropriate for your business.

That usually involves identifying prioritized use cases, evaluating the operational landscape of the testing processes, and determining early control improvement and/or cost take-out potential. This often involves activities such as reviewing existing documentation, interviewing or shadowing quality assurance testers to gather and document information on source systems, data used, test scripts, historical defects, and testing issues.

Assess automation and continuous improvement plan:

Once the current process is captured it is used to inform a future-state plan that includes robotic testing improvement opportunities. This analysis typically includes the following steps:

- A comprehensive review of source systems and data used in the testing process—as well as other information gathered—to understand, evaluate, recommend, and prioritize the appropriate steps to automation.
- An evaluation of the technology enablers that should be used for each test and the holistic testing environment. This step includes an evaluation and ongoing assessment of the appropriate data extraction techniques for each data source, a review of automation challenges, and an assessment of the level of effort to automate each test.
- The results of the complete assessment are brought together to provide a balanced view of the testing effort, business requirements, cost savings analysis, and recommendations related to the appropriate Business Process Management (BPM) or Governance Risk and Compliance (GRC) tool.

Automation road mapping:

An automation road map includes time lines, key milestones, and the estimated level of effort needed to automate each step:

- A step-by-step plan on how robotics can be implemented in the short term and over the long term
- Cost- and time-savings estimates
- Future state and implementation recommendations

Robotics implementation

The automation of the testing process involves integration of data from multiple sources and formats. It further requires the ability to configure and define the test case with business rules for calculations and conditional logic processing. Our approach is to define a target operating model (TOM) for the testing environment that is holistic and involves integration of the process automation with the existing IT infrastructure and security standards as depicted in Figure A.

The critical components of the TOM will consist of the following:

- **Data pipeline:** Develop and implement a data integration framework.

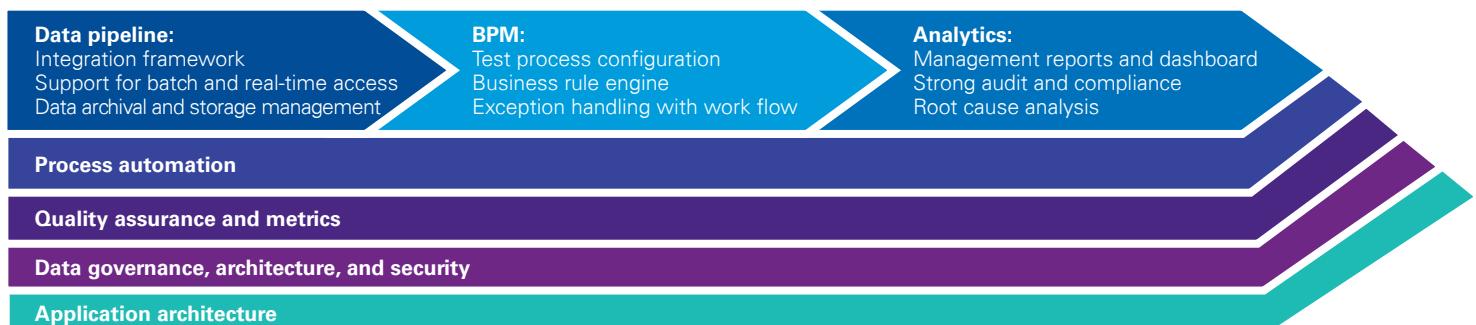
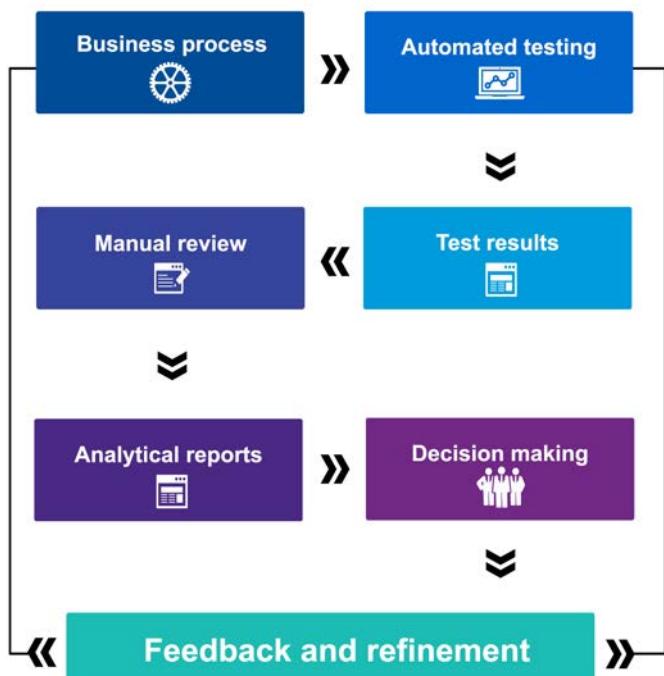


Figure. A

Analysis, reporting, and refinement



Once implemented, the test results evaluated by the system are provided for review. The testing of any transactions that are flagged for further review or exception processing should be performed manually. The accuracy of the system should be continuously monitored using a limited test sample to make the technology more accurate over time. Feedback is provided to the business unit when test results are finalized.

Root cause analysis, identification of high-risk accounts, business performance metrics, and predictive analytics provide management with better insight into operations. They also facilitate decisions that could improve operational efficiency, increase revenue, and help an organization gain a competitive advantage over business rivals.

Whether manual or automated, tests will need to be updated with any change to industry, investor, and regulatory requirements.



KPMG can help

Robotics quality testing is just one component of a thorough quality solution that does not stop at quality control or quality assurance. Remove the restraints of manual quality testing and rethink your strategy through a sound robotics test plan with KPMG. With our highly specialized professionals, you get access to deep consumer regulatory and operational experience, as well as proprietary tools and technologies that help your business grow and prosper.

The fact is, greater accuracy and efficiency in the quality process are no longer a luxury, or even an option. Both are essential, particularly in an environment where businesses are looking to get the most from every dollar spent and to avoid the costly implications of compliance violations.

Align with an established firm that can help you turn business risks into competitive opportunities. Do not get left behind. Work with KPMG today. It is your next high-performance move.

KPMG offers a wide-ranging suite of consulting services within their Risk Data Aggregation and Reporting Advisory practices. For a complete list of services, please contact one of the KPMG professionals listed below:



Michael Soistman
Robotics Testing Lead
T: 704-654-2690
E: msoistman@kpmg.com



Brian Murrow
Big Data & Analytics
T: 703-962-5925
E: bmurrow@kpmg.com

Visit our website:
<http://www.kpmg.com/US/rise-of-the-robots>

kpmg.com/socialmedia



The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation.

Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates.

© 2016 KPMG LLP a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in the U.S.A. The KPMG name and logo are registered trademarks or trademarks of KPMG International. NDPPS 531127