

It's Not About the Clicks: Understanding the *Other* 90% of ePayments Testing Activity

*When organizations think about how to improve their testing, all too often they focus on the “clicks”—or how to programmatically accomplish what is perceived as the push-button process of ePayments testing. However, for those for whom testing is a primary responsibility, it is apparent that testing payments systems involves a wide range of activities—and that the time and effort required to **conduct** the tests likely represents only 10% of the entire testing process. This article examines the tasks associated with electronic payments system testing and helps you understand the tasks that actually make up the bulk of ePayments testing activities.*

If you asked your coworkers “What is ePayments testing?”, they would typically respond with generalizations about using a test plan, setting up test terminals or ATMs, gathering test cards, setting up test data (such as test accounts), setting up your host test environment, and so forth. Perhaps they would focus on QA, regression, or stress testing requirements. In fact, ePayments testing activity begins long before the first test card is inserted into the first test terminal. Actually, if one considers all the preparation and research that occurs *before* the first test is executed, and the reporting and analysis that comes *after* test execution is completed, it quickly becomes apparent that test execution is a small percentage—perhaps 10%—of the activity required for successful ePayments testing.

If the goal of payment systems testing is more reliable systems, faster adaptation to change (such as network mandates, regulatory changes, new payment instruments, etc.), and faster time to market, then the activity that takes place before and after testing is just as critical to reaching that goal as test execution—perhaps even more critical! This article will explore an ePayments testing timeline that includes the following activities: discovery, research, preparation, test execution, reporting, and analysis. Here we will focus on the 90% of testing activities that are often undervalued in ePayments testing.

Discovery • Research • Preparation • Test Execution • Reporting • Analysis

The Initial Phases of ePayments Testing: Discovery, Research, and Preparation

What activities are crucial in the planning stages of ePayments testing? What happens before the test execution starts?

- **Discovery** – Gaining knowledge of an upcoming event that will require ePayments testing

While discovery *may* occur during conversations in meetings (or with colleagues at the water cooler), more often discoveries are triggered by the release or pending implementation of one the following.

The key to successful discovery is to secure information on these occurrences soon enough to adequately test and minimize the risks to your organization.

- Network mandates
 - Software updates
 - Regulatory change
 - Mergers and acquisitions
 - New payment instrument or new transaction
 - Database changes
 - Disaster recovery changes
- **Research**—Finding resources for more information about the event and the testing requirements

Research should not be limited to printed resources, but should also involve contacting knowledgeable personnel from which to gain insight and expertise. Be sure to identify areas that will experience the greatest impact from the event and involve those personnel during this phase. Note that the people you draw on as resources may be inside your organization (database administrators, systems engineers, network administrators, key settlement personnel, etc.) or outside your organization (vendors, networked peers, etc.).

- Personnel resources
 - Resources from Development, Operations, Accounting, Card Management, QA, and Production (oftentimes accessing resources such as developers, QA specialists, system analysts, and others across departmental boundaries)
 - Vendor contacts
 - Contacts at card associations, financial networks, etc. (as determined by the upcoming event)
 - Networked peers (former co-workers, members of professional associations or societies)
 - Printed resources
 - Specifications, technical notices, network publications
 - Product documentation
 - Product support sites (knowledge bases, FAQs, etc.)
 - Internet searches
- **Preparation**—Getting ready for the required testing

Chief among the preparation tasks for payments system testing is creating a test plan. You must identify the threats and weaknesses to your processing environment that you want your testing to address. Prioritize your test needs based on various risk factors, identify events that would have the most impact on your organization, and evaluate the probability of those events occurring. Identify a high-risk or high-loss situation in which improved testing can substantially reduce risks or losses. You may need test plans for development, support, QA, regression or stress testing—depending on the event that precipitates the testing. Test plans should address all areas involved in developing, supporting, verifying and implementing the change or event. After identifying what you need to test, your plan must also specifically include how this tests will be executed (including equipment and personnel required).

During preparation you will address such items as:

- Test plan
- Resource plan (assigning test personnel, scheduling any required test tool training, etc.)
- Test data (accounts with required balances and velocity limits, transaction sets, etc.)
- Equipment (test cards, terminals, ATMs, etc.)
- Testing software
- Monitoring tools (such as database profilers, hardware monitoring utilities, network sniffers, etc.)
- Systems (setting up PCs with testing software, applying updates/patches, etc.)
- Host test environment

The Concluding Phases: Reporting and Analysis of ePayments Testing

Now you've run your tests—the hard part is over, right? Maybe... and maybe not. Reporting and analysis are the final two phases in the ePayments testing timeline.

- **Reporting**—Collecting, producing, and archiving empirical data from ePayments testing

After your payment system testing is executed, you are tasked with making sense of all the results data you have gathered. Although most reports include basic information about whether or not a test passed or failed, often additional reporting is needed. Typically, organizations need to associate the results of their ePayments testing with the issue (or bug) that originated the change that is being tested; that is, a “fix” is tested to make certain it actually fixed the original problem with the code. You must also ensure that your testing is well documented and the results are available for any users (or government agencies) that may require them. You may need to provide audits, traces, and log files that can be used for verification or certification of the testing you have performed.

- **Analysis**—Evaluating the effectiveness of the testing as well as determining the meaning of the test results

The initial task in analyzing ePayments testing is evaluating whether or not the executed tests were valid (that is, did they actually test the aspects of your system that they were intended to test?), or if additional testing is required. The secondary task (for verified tests) is determining what the results indicate about your system. Some organizations use an enterprise-wide test management system (such as HP Quality Center) to store and categorize results, for example, to enable managers to quickly see the number of tests that have passed or failed for a specific module. Similarly, networks might gauge their members' progress using reports on the number of certification tests successfully completed by each member.

Need Help with the Other 90% of ePayments Testing?

While automating the manual labor of payment systems testing will help most organizations realize some cost savings, it is clear that much of the ePayments testing process is not about the "clicks." The bulk of the tasks in the ePayments testing timeline require specialized knowledge in electronic processing of financial transactions—knowledge that your organization may find more accessible through collaboration with vendors and experienced professionals from other organizations. Contact sales@paragonedge.com for more information on how we can assist you as you address the "other 90%" of ePayments testing.

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About the Author

Cathy Gardner, with over 20 years of experience in the financial services industry, joined Paragon initially as Product Support Manager and currently serves as VP, Professional Services. During her career, she has worked with a variety of network platforms and served in support roles for both internal and external customers in operations, back-office, conversion project management, communications, mainframe and server environments. Before coming to Paragon, Gardner worked as a consultant for implementation and upgrades of EFT/ATM software at financial institutions within the U.S. She is a graduate of Chowan University in Murfreesboro NC.