



**How did a global leader  
in security products gain  
marketshare through high  
performance, user-centric  
software and legions of  
satisfied customers?**

**Thanks to Technosoft's multi pronged,  
best practice led quality assurance  
program and a ready to go test  
environment.**

**Technosoft Case Study**

**Nov 2012**

## the client

Our client is a global leader in malware detection and anti-crimeware solutions and their products are used by over 50,000 businesses and four million consumers worldwide.

## situation and impact

Our client was engaged with a services provider for providing quality assurance services (QA) to several of their flagship products - integrated suite as well as standalone components. However due to reasons of cost, employee productivity and above all a lack of domain knowledge about security products QA, our client was looking at transitioning to another engineering partner who would be able to overcome these issues. Time was of essence as their growth was stalling and consumer dissatisfaction rising.

## proposed solution

Technosoft proposed setting up a dedicated quality assurance team to support our client's product portfolio and ensure their usability, functionality and compatibility with a vast range of operating systems & multiple applications as well as superior performance - factors integral to winning customers over.

## technosoft approach

Maintaining a full-fledged QA process is vital for a product based environment and ensures well-defined, user centric quality products. An effective QA process helps overcome risks and improves the quality during the product development lifecycle and at the time of final delivery leading to marketplace success.

We were uniquely qualified to help our client address these

issues by virtue of our extensive domain knowledge in the realm of security products which was complemented by our Operating System internals know-how and robust QA processes. This meant we were able to optimize the team size resulting in an immediate and significant cost advantage to our client.

QA services were provided for both consumer and enterprise editions of security suites as well as standalone products and included antivirus, anti-spyware, anti-phishing, anti-spam, firewall, IDS/IPS, identity protection, online backup, mobile security and end point cloud products. This involved studying the product requirements document (PRD) to understand the features and functionalities, create the test strategies and test plans, identify automation possibilities, and create the regression test suites & test scripts. Significant time was spent in understanding the customer issues (such as virus non-detection, compatibility, performance, policy enforcement, licensing, installation and lack of product awareness).

The overarching goal was to inform and assist our client by providing unbiased and independent test results of the security products.

Based on this understanding, the team developed several hundred test cases in addition to the 1500 use cases already developed by our client. This supplemented the comprehensive test bank of nearly 4000 security product specific test cases that Technosoft had created over the years for testing functionality, compatibility, installation and usability.

Following were the services offered by Technosoft

- Quality Assurance
  - Core product testing: Ensures detection of injected samples



**Quality Assurance**



**Localization Testing**



**SDK Engine Testing**

- Licensing testing: For different types of licenses and validations (Trial, 1 year, Perpetual), ensure the license code entered is validated without any errors
  - Alert mechanism and notification: This is for new threat alert or notification of trial period expiry
  - GUI testing: Due to past acquisitions, various products needed to be rebranded. This involves checking the GUI and internal functionality
  - Functionality testing
    - » Scan: Real-time scan, scheduled scan, on-demand scan, threat protection settings, Cloud defense technology for advanced protection, program access setting, global program rules, alert settings, proxy settings, update settings etc
    - » Firewall: Network zones & access, inbound and outbound rules, browser protection, identity protection, web protection, reports etc
    - » Parental Control: Time limits, site filters, application filters, alerts and mail settings, reports etc
    - » Anti-spam: Email checking
    - » Online backup and local backup testing
  - Detection and protection tests
  - False positive test
  - Polymorphic virus testing
  - Retrospective testing
  - Installation and uninstallation: Ensure users are able to install the products as expected on multiple operating systems without error messages (such as low disk space or conflict with another product)
  - Compatibility testing: Ensures the product is compatible with multiple operating systems (49 variants of Microsoft Windows), third-party applications such as Microsoft Office, Adobe Acrobat, multiple browsers such as Internet Explorer, Firefox and Chrome
  - Performance testing: Scope is system integrity, performance benchmarking, performance enhancement and performance problem diagnosis. Metrics include boot up time, installation time, CPU utilization, memory usage, scan speed (KB/sec and files/sec)
  - Content update testing: Check the content update mechanism for feature patches, content updates and signature updates
  - Upgradation testing: Upgrade the product from earlier versions
  - Update testing: Ensure the latest signature definition packages get downloaded and updated
  - Penetration and Vulnerability testing: Identify opened ports and leakage testing
  - Backup and restore testing: Online backup and restore, local backup and restore, scheduled backup, incremental backup
  - Managed and unmanaged remote desktops, remote installation, redistribution and centralized management console
- Localization Testing
    - String translation testing
    - Truncation
    - Navigation
    - Document testing
    - Web link checking
  - SDK Engine Testing
    - Windows Hardware Certification testing: Provide support to

- our client to obtain this certification which certifies that the software product is not an unknown application
- Windows Application Certification testing: Provide support in getting this certification that allows the application to be installed
  - Finetuning for performance enhancement of SDK engine
  - Check plugins, browser handles and file handles



#### People

Domain expertise on the entire ecosystem of security products

#### Tools

- Over 4000 test cases with test data
- Over 40 OS VM images
- Ready repository of third-party applications along with competitive products for compatibility testing
- Expertise on testing tools like System Mechanic, Installwatch, Plug-in editor
- Open source test management, bug tracking and penetration/vulnerability testing tools

- Access to open source tools for security product testing like ProcMon, RegMon, Driver Verifier, Application Verifier, Dump check, Wireshark, PC tools, Windbg tools

#### Test Environment

A good test environment setup is essential for testing product functionalities and performance. Technosoft setup a specialized test environment specific to security products using virtual environments and simulators. Metrics captured include test coverage, performance, requirement, compatibility, bugs and competitor comparison.

#### outcomes realized

- Reduced quality assurance costs by upto 50% - achieved by optimizing the team size due to domain knowledge and robust processes
- 20% reduction in customer support calls
- 50% improvement in productivity
- Revenues increased by 20% in part due to high quality products backed by robust QA processes
- Continuous improvements and enhancements in QA processes - customer issues form the basis of newer test cases

#### we can help

- Ensure compatibility of security products across multiple operating systems, applications and browsers
- Competitive benchmarking of products to identify gaps and suggest feature enhancements
- Certification testing support for Windows Hardware Certification and Windows Application Certification

beyond  
possible

The team established 8 auto regression test environments in a short period of 3 weeks. They also identified several critical issues during Mobile Security and Online Backup products testing despite the absence of a formal knowledge transfer or documentation resulting in 20% reduction in customer support calls. But our greatest contribution is that we support their products across 49 versions of Windows

Quality  
Assurance!!!

## About Technosoft

Technosoft Corporation is an IT and BPO services provider with headquarters in Southfield, MI, USA and delivery centers in India. We provide information technology, business process outsourcing and consulting services to companies in North America, Australia and New Zealand and Asia-Pacific Regions. As a privately owned company we answer to only two constituencies - our customers and our employees. Our customers rely on us to provide services and solutions that leverage our industry and domain expertise combined with our technology prowess, delivery focus and quality. Our collaborative culture and work environment helps attract and retain exceptional talent which is a key ingredient of our sustained growth. To see how Technosoft can go 'Beyond Possible' for your organizational needs, email us at [wecanhelp@technosoftcorp.com](mailto:wecanhelp@technosoftcorp.com) or visit us at [www.technosoftcorp.com](http://www.technosoftcorp.com).

### Corporate Headquarters

28411 Northwestern Hwy,  
Suite 640  
Southfield, MI 48034  
Tel: (248) 603-2600  
Fax: (248) 603-2599

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[wecanhelp@technosoftcorp.com](mailto:wecanhelp@technosoftcorp.com)

[www.technosoftcorp.com](http://www.technosoftcorp.com)

