Implementing Web-Based Version of Computer Based Tests for Large Scale Administration

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Selection, Evaluation and Recognition
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Computer Based Tests - Background

- Combined Effort across several HR groups within USPS: SER, EDD and NTAC

- Current Exams Administered on Computer
  - Selection Tests - 700 Numbered Tests
    - 712/713 Typing Test - Commercial off the shelf measure
    - 714 Data Entry Test
    - 715 - Automated Mark Up Clerk Test
    - All Speeded
  - End of Training Tests - 400 Numbered Tests
    - 421 Sales and Services Associate End of Training Test
    - 425 Bulk Mail Entry Unit Prerequisite Exam
    - 427C Bulk Mail Entry Unit End of Training Exam
    - All Power tests
Technology Challenges

- DOS Based System
- Dedicated LPT Printers Required
- Passwords Based on System Date with two-year Date Field
  - Unreliable
  - Inaccurate
Testing Related Challenges

Field and HQ IT Concerns
- Difficult to Support in ACE
- Older equipment
- Applicant Impressions of an Antiquated System

Difficult to Modify Test Content
Requires Paper Print Out and Manual Data Entry at NTAC

Test Security Concerns
What is the Change?

- Web-Based Administration Process
- Administration of the Exams over the Web
  - Any network enabled computer
  - Maintain a Proctored Environment
- Multiple Series requires supporting material
  - Clear communication on need for user action
Benefits

- Additional Test Security and Control
- Updates to Test Content Faster and Easier
- IT Support Simplified
- Eliminates Paper Data Entry of Exam Results
- Applicant First Impressions
Data Security Challenges

- Maintain data security for "sensitive" and "confidential" data
- Information Security Oversight
- Database organized by sensitive information
- Need to maintain test results for 30 years
- Large applicant pools tested annually

Options
- Vendor physically separates data in separate server with unique "pipeline"
- Vendor holds data for short period of time and then delete
- Vendor holds data detached from sensitive information
  - Internal registration process to assign applicant id
  - Data transfer to external site stripped of sensitive information
Web-Based Exam - Process Flow

TAPS Registration Process

Data Transfer for Registration & Results

Third Party Provider (PAN) Test Administration

TAPS Internal Data Repository
User Access Challenges

Logging into the USPS Network

- Applicants do not have USPS login
- IT Security bans use of the administrator login

Options

- IP address specific channel to external vendor
  - Unpredictable administration timing
  - 38000 potential locations
  - 3000 potential computer names
- Login created with permission ONLY to access vendor site
Interface Challenges

Options for Interface Connections
- Virtual Private Networking (VPN)
- File Transfer Protocol (FTP) with Electronic Data Interchange (EDI)

Issues
- FTP process requires timed data processing
- File transfer failures difficult to recover from
Challenges in Scoring Performance Tests

- Combined Registers
  - Qualification on current performance test CBT must be combined with new web-based exam
    - Equating of performance results
    - Ensure equity and fairness
  - Performance test scoring more complex than straight multiple choice
    - Speeded
    - Different rules for correct/incorrect must be recoded in web-based process
- Accommodated Testing versions
  - Define the different time lengths for non-speeded tests
  - Speeded tests test score interpretation
- Alternate Series Complexity
- Long transition period to allow access to computer resources
Implementation Activity

Implementation Instructions

- Vendor supplied communications modified for postal audience
- Live Meeting Train the Trainer Sessions
  - Approximately 500 persons trained to administer exams
  - Train approximately 1500 administrators nationwide
- Vendor user registration for certified (trained) Examiners
- Administration of ongoing administration
Implementation Challenges

- Field Examiner Network Not Directly Informed
  - Information from Net Meeting and User Guide not provided/rolled down to field examiners
  - N >1600
  - Many questions generated

- Continuing Data Interface Challenges

- Alternate Forms Administration
  - Stimulus materials not computerized
  - How to select alternate forms of each exam
Implementation Successes

- Smart Choices on which Exams to Start with
  - Already computer based
  - Facilities for administration available
  - Familiarity with computerized administration

- Coordinated Messaging from Multiple Sources

- Unexpected benefit
  - Proof of Concept for an Applicant ID number approach

- Reduced Paperwork Realized

- Numerous Requests to Extend Process to Other Exams
Comparability ï 700 Series

Á Preliminary Results Suggest Comparability for 700 Series Exams - Speeded
Á Volume Small for Statistical Comparison

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Lessons Learned

- Flexibility needed in working with IT resources
  - Often requires creative thinking to resolve IT issues
  - Persistence

- Communication Challenges
  - Short hand language, testing terminology versus IT terminology versus field speak
  - Face-to-face meetings needed to ensure everyone on the same page

- Learn a Little IT Speak
  - CAT testing
  - Interface design

- Expect the Unexpected

- Debrief to Plan for Next Effort
  - What did we do well?
  - What could be better next time?