STRATEGIC CONTACT

Best Practice Considerations for Contact Center Technology Monitoring and Testing

Contact centers use data center resident voice systems that leverage off-the-shelf hardware, standard operating systems, and corporate networks (WAN and LAN) for voice transport. These technologies offer greater agility and flexibility in solution delivery at a more attractive price than legacy systems. The keys to reaping those rewards include comprehensive testing to ensure proper system functioning and monitoring and health checks to keep a finger on the pulse of the technology's performance. Use this list to stir your thinking on how to improve your contact center technology's stability.

Monitoring and Health Checks: The organization has the right tools and processes to detect issues early and optimize performance

- The organization maintains a complete inventory of the network (voice and data), systems infrastructure, and applications
- Monitoring protocols include:
  - Commonly agreed-upon system and network monitoring terms
  - Elements that will and will not be monitored and their associated priorities
  - Business rules to define who receives what information via which channel from monitoring results (triggered by defined thresholds)
  - Procedures on how to respond to monitoring notifications
  - Training on tools for all responsible parties
- The organization identifies and procures appropriate monitoring tools and/or services to meet the defined monitoring requirements and objectives
- Baseline performance metrics for the network, systems, and applications provide a foundation against which thresholds for alarming/issue reporting are established
  - Thresholds consider service and performance impact
- Monitoring resources and tools perform health checks proactively and include:
  - PSTN voice traffic using system-generated traffic
  - Network, CPU, and disc space usage and capacity
  - Application response times
  - Network end-to-end performance from the application's point of view
  - Routine (e.g., daily, hourly) checks on all technologies that impact customers or CSRs
  - SLA metrics in real time
- Health check and monitoring information from various systems and resources (including vendors) funnels into a single information repository for routine reporting, tracking, trending, and correlation
- Monitoring protocols and health checks evolve as changes and updates are made to the network or systems infrastructure and applications
  - The auto-discover capabilities of monitoring tools assist with documenting the overall network
- Monitoring history and the associated analysis (including event correlation) provides valuable input to technology planning and optimization

Testing: Testing ensures technology meets requirements during normal and peak conditions and aids problem resolution

- The organization establishes terminology for its testing protocols and environment to which all affected parties agree
- Each stage of a technology projects has its own testing requirements and objectives. Stages include but are not limited to:
  - Implementation

- Cutover to production
- Production (routine, business as usual) including periodic (e.g., biannual) Business Continuity/ Disaster recovery tests
- Post-production change
- Testing requirements and objectives span the appropriate spectrum of test types considering:
  - Component – operates properly
  - Feature/Function (a.k.a. User Acceptance Testing or UAT) – meets requirements, specifications
  - Performance – delivers appropriate speed and responsiveness as defined by baseline metrics for each network, system, and application
  - Usability – facilitates end user success through well-designed user interface; passes functional tests with representative end users
  - End-to-End (a.k.a. System Integration Testing or SIT) – demonstrates seamless integration and interoperability for call flow and work flow across systems; includes regression testing for applications as an integral part of processing changes/upgrades
  - Peak Load Processing for applications/systems, network nodes/elements, and LAN/WAN connectivity – meets performance standards in simulations and live use
  - Failure/recovery – provides appropriate failover and/or restoration on a component level and/or system level
- Formal test plans delineate steps, capture outcomes, resolve issues, and call for re-testing as needed
  - Call flows cover all locations, including outsourcers
- The group that owns testing educates all impacted personnel about how and why testing is conducted

Test Environment: The test environment has appropriate tools and services to fulfill testing requirements and objectives

- The test environment matches the production environment to the extent possible with a small number of licenses (e.g., 100) and includes:
  - Redundant/high availability with appropriate survivability architecture
  - Integration/links to key adjuncts
  - Key adjuncts – IVR, CTI, and call recording/ monitoring – where possible
  - An array of IP endpoints (including endpoints over the WAN in multi-site environments)
  - A traffic generator capable of producing various traffic scenarios
- The test environment can generate failures in hardware and network connectivity and emulate network impairments (e.g., dropped packets, packet delays)
- The ideal environment supports the full lifecycle of technology changes – Development, Testing, QA, and Production; training may be a separate configuration on the Production or other system
- The organization explores options to lease services/capacity for infrequent tests (e.g., load)

Testing Progression: The testing progression fully exercises the technology while minimizing risk to the production environment

- **Lab tests** show proof of concept and facilitate system integration testing (SIT) and User Acceptance Testing (UAT)
- Production tests during **low volume, *off-hour*s** periods verify the technology's general fitness level (feature/function) without straining its performance capabilities
- Production tests at **capacity and/or peak load, *off-hours*** ensure that the technology meets performance criteria; production tests at **capacity and/or peak load *during business hours*** confirm the technology's ability to address the worst case scenarios
- A controlled environment (a.k.a. "**pilot**") *in production* confirms readiness prior to full rollout where feature/function, user interface, or other customer- or user-impacting changes occur
  - Typically a limited number of staff (e.g., 10-20 agents) for 2-4 weeks