



Technology Focus with Pieter Boelhouwer

How to Identify IVR/CTI Performance Problems

Expand monitoring processes beyond agent interactions. Voice systems have a great impact on caller satisfaction.

The growing sophistication of today's IVR and CTI applications has created new opportunities to increase efficiency and quality in contact center operations. Unfortunately, it has also created more opportunities for things to go wrong.

In this new, often distributed technological environment, contact center managers are discovering that their agents can't perform efficiently unless the entire system is performing efficiently. For example, a major U.S. bank that processes about 70 percent of its customer calls in its IVR discovered that a single 20-minute slowdown creates about four hours of agent overload. Faced with invalid prompts, delays and dead air, frustrated customers give up on the IVR and "zero out," thereby raising queue times and toll charges while swamping agents with transactions that should be fully automated. The bank in question estimated that this recurring problem was costing them more than \$2 million a year — until they started monitoring the per-

formance of their voice system and IVR self-service applications.

Caller Satisfaction with IVR Self-Service Remains Low

Across industries, managers are working to achieve greater efficiency and lower operating costs by increasing the number of self-service applications handled by their voice systems.

A recent study by Purdue Research found that IVR self-service applications now account for a majority of a company's contact with its customers. But even with IVR self-service transactions accounting for up to 80 percent of customer contacts in some sectors (such as the travel industry), customer satisfaction with call center transactions remains much lower. Even the highest-ranked sector (financial services) manages only a 57 percent average satisfaction rate for IVR self-service transactions. For the telecommunications industry, the satisfaction rate is a shocking 20 percent. With most consumers required to interact with self-service service applications on a frequent basis, frustration with IVR/CTI technology has become a cliché of modern life: Nearly everyone has a personal horror story of getting stuck in endless IVR loop, having a call dropped for no apparent reason, being asked multiple

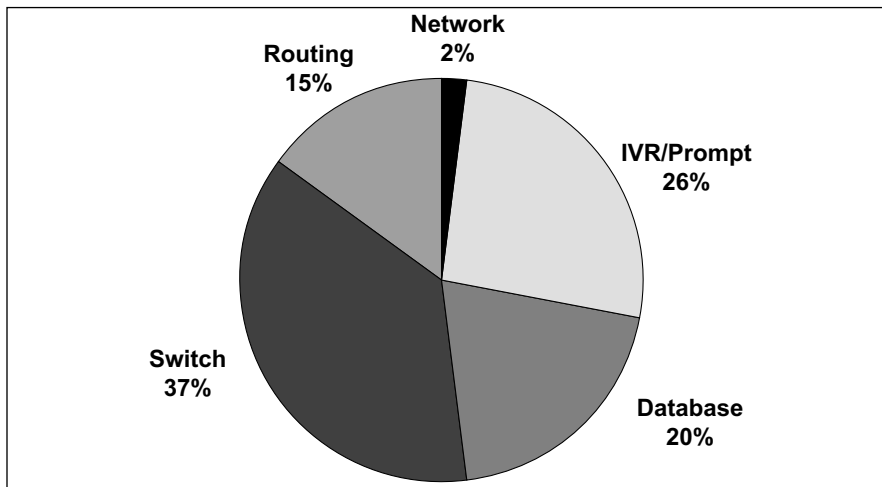
times for the same information or being forwarded to the wrong agent.

Call Centers Not Monitoring IVR Transactions

So why is it that, despite their high cost, these performance problems so often go unnoticed and unrepaired until angry customers report them? Prompt errors, database slowdowns, incorrect routing and other similar problems are only caught by monitoring voice system performance from the customer's perspective — all the way from the public switched telephone network to the back-end databases and out to the agent. Yet, until recently, the primary focus in call center monitoring has been on agent interactions rather than on the applications and infrastructure that play such a crucial role in improving agent productivity and maintaining the overall quality of experience (QoE) for call center users.

However, the biggest impediments to efficiency and quality in contact center operations are as likely to be found in the automated systems as with human agents. Empirix recently conducted a benchmark study of the credit card industry. The study showed that slow or unavailable databases were a common problem across all companies accounting for 20 percent of failures (see box, left). In addition, more than 37 percent of all transaction failures were due to switch problems — primarily at one company. Poor quality or wrong prompts accounted for roughly 26 percent of failures. The remaining 15 percent of failures were caused by routing errors, in which calls were accepted by the ACD, but were never connected to the voice application.

Types of Transaction Failures



Finding All the Problems All the Time

Many call centers still rely on manual monitoring (having agents dial in to an application) or on network management tools that monitor individual system com-

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ponents. Yet manual monitoring is fraught with liabilities — it is subjective, expensive and rarely performed with adequate frequency or intensity. As a result it yields little in the way of detailed, consistent data about system performance. By contrast, network management tools can miss a majority of potential performance problems because they report only on individual components, not on whether these components are interacting seamlessly in order to provide the customer with a high QoE.

For example, the IVRs at a large wireless contact center were flooding agents with self-service calls even though the IVR was still reporting as active and below capacity. The company implemented a performance monitoring solution and quickly found out that when customers called in, they were greeted by a sound clip of an opera singer rather than the expected opening prompt. A quick analysis revealed that the load balancer was configured to think that each IVR only had a

The Rise of Automated Performance Monitoring

The use of manual monitoring or network management tools alone simply cannot identify or correct expensive and aggravating problems in many of today's highly advanced voice systems.

The test and monitoring industry has been responding to this challenge with a new generation of monitoring solutions designed to offer detailed performance assessment at every step in a contact center transaction. These automated solutions measure carrier, host and database response times, verify that the right prompt is playing at a sufficient quality level and that the call has been routed to the appropriate agent. If a problem is detected, it will immediately issue an alert to the appropriate technical resource. The alert identifies both the type of problem and its location, and allows technical personnel to take corrective action before the problem begins to adversely affect the caller's QoE — and before a performance problem in the IVR, CTI or network escalates into an expensive degradation of overall contact center efficiency.

Measuring Up to Customer Service Expectations

In addition to monitoring voice systems performance within one or more linked contact centers, managers can use benchmarking to track performance relative to industrywide performance levels, thereby ensuring that they meet or exceed customer service level expectations. Empirix's Voice Performance Index rates performance by collecting benchmark data of three simple customer QoE metrics that measure the end-to-end performance of voice applications. These metrics and their importance are:

- **Transaction failure rate** measures how often a customer encounters a problem when trying to complete an automated transaction. Failures in the automated system greatly increase the risk that a \$.35 automated call will turn into a \$5+ agent call. Additionally, frustrated customers may choose to conduct their business elsewhere, resulting in lost business revenue for that particular transaction or loss of the customer entirely.
- **Transaction length** measures how quickly an experienced customer can complete an automated transaction. Speed is an essential element of customer satisfaction and this measurement provides insight into whether a call flow is optimized for a particular transaction. Additionally, variation in call length can reveal underlying performance issues within the voice system infrastructure or application.
- **Customer delays** offer an aggregate measure of how long a customer is kept waiting over the course of a transaction. Long silences or an inability to bypass promotional prompts often frustrates customers and may train them to avoid the IVR. Additionally, long delays add unnecessary toll charges to every call.

Using these three simple metrics, contact center managers can quickly assess the performance of their voice systems. Companies with high failure rates are running the risk that customers may choose to take their business elsewhere.

single T1 in each trunk group when in reality it had 2 T1s per trunk group. The result was that, at only 50 percent capacity, the load balancer would think the IVR was full and route calls directly to agent queues — yet the components all appeared to be acting normally.

The incorrect prompt in this example is a case of a “discrete” failure, which might have been detected with frequent and intensive manual testing. The load-balancing error, on the other hand, is a classic example of a systemic bottleneck that would have remained invisible to manual testing.

Rapid Detection Reduces Downtime and Slowdowns

Finding out about failures is important, but making sure that the time, cause and symptom of the failure are all relayed to the appropriate technical support person or system in real time is critical to increasing service uptime and customer QoE. Immediate, intelligent alerting allows contact centers to quickly detect, diagnose and resolve issues — saving toll charges, agent costs and technical resources.

While immediate access to performance data helps contact center managers

detect and respond to performance issues, the identification and correction of systemic performance bottlenecks requires consistent historical archiving and data analysis.

The Bottom Line

The increasing complexity of contact center voice systems — network, switch, IVR, CTI, middleware and databases — has created a growing potential for performance bottlenecks, outages, failures and errors that can frustrate customers while generating unnecessary toll charges, overinvestment in capital equipment and bandwidth, and inefficient use of agent and technical resources.

In an increasingly competitive business environment, companies should therefore adopt a more stringent monitoring process to find and fix IVR/CTI performance issues in order to reduce costs, improve agent productivity and enhance the caller's quality of experience. CCMReview

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