



Application Management: Optimizing Your Contact Center Technology Investments

White Paper

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We help our clients, 5000 of the world's leading companies, to address complex strategic issues.

Through our proprietary databases and wealth of expertise, we provide clients with unbiased expert analysis and in-depth forecasts for six industry sectors: Automotive, Consumer Markets, Energy, Financial Services, Healthcare, Technology.

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Page 2

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TABLE OF CONTENTS

ABOUT DATAMONITOR	2
INTRODUCTION	4
WHAT IS APPLICATION MANAGEMENT?	4
WHY CONTACT CENTER (CC) MANAGERS NEED TO CARE ABOUT APPLICATION MANAGEMENT	5
THE COSTS ASSOCIATED WITH NEGELECTED APPLICATION MANAGEMENT	7
The probability of occurrence	9
...and its sudden impact	10
THE BUSINESS BENEFITS OF APPLICATION MANAGEMENT	11
Easily quantifiable benefits	12
Less quantifiable but equally important benefits	13
BEST PRACTICES: KEY ATTRIBUTES TECHNOLOGY-DECISION MAKERS NEED TO CONSIDER WHEN EVALUATING APPLICATION MANAGEMENT VENDORS	15
THE EMPIRIX APPROACH	17
APPENDIX	19

INTRODUCTION

In the aftermath of the heavy technology spending in the 1990s, contact center (CC) managers are no longer looking to expand their portfolio of technology investments but rather are exploring methods for exploiting those in which they have already invested. Today, CCs find that the use of technology can be a double-edged sword: its proper application will reduce costs and help retain customers while, poorly executed, it can lead to customer dissatisfaction, higher costs and ultimately customer churn. The need to analyze, determine and optimize CC technologies has led to the advent of Application Management.

WHAT IS APPLICATION MANAGEMENT?

In CCs, Application Management is fundamentally a business strategy that aligns applied CC technologies and functions with customer needs to improve profitability and customer satisfaction. Traditionally, Application Management has been regarded as the provisioning and maintenance of basic infrastructure elements to enable a business application. While still addressing that function, Application Management has evolved into a strategy that also encompasses testing, monitoring and optimization of technology. Today, due to the ever-growing importance of customer service and service-level agreements (SLAs), managing the performance and availability of business applications in the CC is becoming more of a critical strategy for CC management.

Successful usage of CC technology (e.g. ACD, CTI, IVR, WFM, call recording and quality monitoring) requires insight into the behavior, structure, availability and performance of the technology from the CC operations perspective and – even more importantly – from the caller's perspective. In addition, CCs must seamlessly integrate and utilize the entirety of their applications infrastructure to have the desired effect in improving customer service and extracting measurable ROI. In a recent Datamonitor study of large CCs, 90% of CC managers indicated that although advanced applications, such as CTI, IVR, WFM and call recording, have become prevalent in their CCs in the past few years, they have yet to identify best practices in the use and function of these applications and their integration with other applications and infrastructure components. To this end, Datamonitor believes that inadequate Application Management is undermining the \$12.4 billion value that enterprises have

invested into CC technologies in the past three years. (Source: Contact Center Component Technologies to 2007, Datamonitor)

WHY CONTACT CENTER (CC) MANAGERS NEED TO CARE ABOUT APPLICATION MANAGEMENT

Most high-volume CCs have an Application Management strategy already in place; however, many of these strategies have not yielded the desired outcomes that CC managers strive for. A poorly implemented Application Management strategy can impede the broader business goals that a company may be trying to achieve. Having invested in the “latest and greatest” technologies such as VoIP, CTI-enabled CRM applications, speech-enabled IVRs, call recording and quality monitoring systems; many CC managers are left scratching their heads when confronted with persistent reports that exhibit low customer satisfaction and continued agent productivity obstacles.

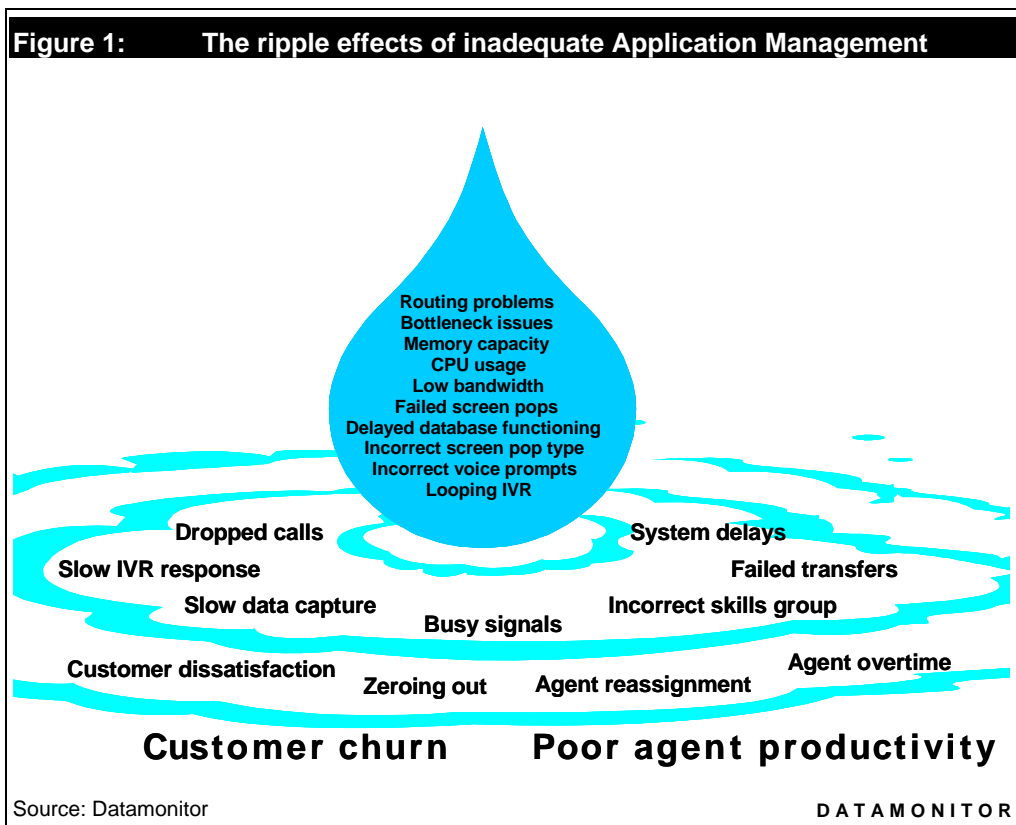
As the main conduit of communication between a company and its customers, the CC is used to enhance the customer experience. Currently, CC center managers emphasize spending on agent performance rather than employing a more holistic approach for investments in optimizing customer Quality of Experience (QoE). The advent of new self-service technologies, growing complexities in CC infrastructure, competitive pressures and shrinking margins demand that CC managers concentrate more of their effort on driving revenue beyond just agent performance but also from self-service applications. In order to optimize customer QoE, CC managers need to address all of the variables in the following QoE equation through an effective Application Management strategy:

$$\text{Agent performance} + \text{Performance of self-service applications} + \text{Infrastructure integrity} = \text{QoE}$$

While agent performance optimization has been the focus of recent investments for CCs, optimization of the other two variables has been relatively neglected. This oversight can jeopardize the integrity of a CC's existing Application Management strategy, and ironically, it can even wipe out all of the benefits of a well-managed agent optimization effort. CC managers, in addition to addressing agent performance, need to define and measure proper performance metrics for self-service applications and infrastructure to have an effective Application Management strategy that will increase customer QoE. Today's self-service technologies come packaged with powerful testing, debugging and monitoring tools; however, these tools provide

performance monitoring only within the boundaries of their respective applications. These tools cannot, for example, map out and measure latency response times for an incoming call serviced through the IVR to the CC's network, servers, databases and middleware components. In this case, CC managers are able to discern if the IVR is up and running but are not able to monitor and measure dependencies outside of the IVR with just the IVR vendor's tools. This presents a gap in a CC's Application Management strategy, as the CC is not able to gain greater visibility into the caller experience and fully evaluate customer QoE from the caller's perspective. In addition the CC is unable to manage the impact of technology issues on agent productivity.

The following figure illustrates the ripple effects of inadequate Application Management that stem from insufficient testing and monitoring of self-service applications and infrastructure. The water drop highlights common pain points found in CCs that result from inadequate performance testing and monitoring, while the outward ripples highlight the potential reflex actions.



As the figure illustrates, the repercussions of ineffective Application Management will negatively impact the integrity of customer service in the CC causing customer dissatisfaction, poor agent productivity and potentially customer churn.

If desired levels of customer satisfaction and call-handling costs are ever to be achieved, approaches to Application Management need to change. The most progressive CC optimization strategies are shifting from the accumulation of new technologies to the optimization of existing ones, forming the critical bedrock needed for driving margins higher in the CC while ensuring high QoE for customers. Thus, CC managers need to implement an effective Application Management strategy to simplify management complexities, further reduce capital outlay, mitigate the risks of customer dissatisfaction and improve bottom line growth.

THE COSTS ASSOCIATED WITH NEGELECTED APPLICATION MANAGEMENT

Total costs associated with neglected Application Management can run rampant during the periods of technology malfunction and also during relatively trouble-free performance of CC applications. During malfunctions, CCs may have to increase IT staffing to troubleshoot, while increasing agent staffing to handle overflow and “zero out” calls. Added expenses may include extra lines required due to repeated customer calls during outages and extra toll expenses due to increased wait times. In addition, CC managers have to react to problems, distracting them from managing the business. While malfunctions typically reflect neglected Application Management, functional performance does not always reflect effective Application Management. On the surface a CC can extract robust performance from their CC technologies, however, further dissection of performance levels through effective Application Management will uncover high risk for customer churn and unseen opportunities to reduce costs.

For example, a CC may have a functional speech-enabled IVR, but calls handled through this self-service application may take twice as long as that of a DTMF IVR due to poor first utterance recognition rates and invisible delays. This will lead to customer dissatisfaction, additional telephony system capacity requirements and higher toll costs for the CC. Due to neglected Application Management the CC manager will not be able to identify those detrimental factors. The ultimate cost burdens on CCs are realized losses from customer dissatisfaction and churn that

result in lost revenue for the CC. The following two scenarios highlight the potential compounding costs associated with neglected Application Management:

Scenario A: Outage or slowdown

A CC's typical call volume is 2,333 calls per hour, average call duration is 180 seconds, desired levels for automation are set at 70% and time between calls is assumed to be 25 seconds.

- **Increased agent costs** - During an outage or slowdown of an application or applications in the CC, more agents must be allocated to service incoming calls. The unplanned burden on agents typically earning \$8/hr will cost up to an unbudgeted **\$13,000 per hour**, an increase of 133% in staffing costs alone. (Source: figures based on Erlang C modeling);
- **Increased toll costs** - With the slowdown or outage comes increased queue times, which translates to increased toll expenses. Extended queue times in the range of three to five seconds can result in additional expenditure on toll charges of up to **\$10,000 a day** for the CC;
- **Potential revenue loss** – The opportunity cost associated with not servicing calls agents were meant to be taking can be enormously high. If “zeroing out” leads to 200 high-value customer calls abandoned and 30% of them are intending to pursue transactions worth \$1,000, the possible lost revenue in those calls could exceed **\$60,000**. This can also be seen when collections and/or outbound sales agents are forced to be temporarily reassigned to handle inbound calls, leaving a void in revenue generating CC sales activity;
- **Lost business opportunities** – Of those 30%, half may opt to call a competitor. If they perceive that they've had a better call experience with the competitor, the call associated with that churn could exceed **\$30,000**;
- **Total costs** – The total of these potential costs from an outage or slowdown can translate into losses of up to **\$412,000** for the CC in a single day.

Scenario B: Unrealized costs

A CC has recently migrated from a DTMF to speech-enabled IVR solution. Similar to Scenario A, the CC's typical call volume is 2,333 calls per hour, average call duration when DTMF IVR was used was 180 seconds, desired levels for automation are set at

70% and time between calls is assumed to be 25 seconds. The CC does not encounter any major outages or slowdown; from their viewpoint, operations are running relatively smoothly in the CC.

- **Initial investment** – A CC has invested **\$400,000** into a new speech-enabled IVR system in efforts to improve customer QoE by reducing call times and improving first call resolution rates, while further reducing overhead CC costs and increasing automation levels (i.e. IVR capture rates);
- **Increased toll costs** – Due to poor first utterance recognition rates and invisible delays the average call time has increased from 180 seconds to 192 seconds with the newly implemented speech-enabled IVR, an increase of twelve seconds. This results in additional toll charges of **\$22,000 per day** for the CC and can also require additional system capacity such as IVR or speech ports;
- **Further increased toll costs** – Customer dissatisfaction with the speech-enabled IVR leads to an increase of “zeroing out” by callers, which increases queue times in the range of three to five seconds. This further increases toll charges in the excess of **\$10,000 per day** for a CC;
- **Total costs** – The CC has invested \$400,000 into a speech-enabled IVR system, followed by additional costs of up to \$32,000 per day. Within only a month’s time, upon investing into a speech-enabled IVR, the CC stands to **lose nearly \$1 million** – more than twice the initial cost of their investment into the speech-enabled IVR. Where is the ROI?

Neglected Application Management can indeed ramp up costs rapidly for CCs on many fronts. The infusion of newer technologies in the CC has increased infrastructure complexity and has thus introduced more potential points for failure. But, how often do CCs run into technology-related problems? How long do the problems have to last to before they have a significant negative impact? And what does this mean for both the CC and customer?

The probability of occurrence

Large CCs experience IVR problems (such as slowdowns) on an hourly basis that result in some degree of lost customer calls or unintended agent interactions. On a grander scale, a study by Empirix, a provider of testing and monitoring solutions for

CCs, showed that 44% of CC managers experienced what they considered a “serious outage” in their CCs over the course of 12 months. Given that approximately 70% of customer inquiries are handled by an IVR system, with almost one half of CCs experiencing yearly outages in addition to daily IVR problems, the probability for customer dissatisfaction runs dangerously high.

...and its sudden impact

Due to the high volume of calls in CCs, just a 20-minute outage or slowdown of the IVR can impact thousands of calls at a potential loss of tens of thousands of dollars for the CC. In another study by Empirix at a major US bank, a 20-minute outage of the IVR resulted in nearly four hours of CC overload where queue times spiked leaving the CC, agents and callers overwhelmed and frustrated. It was estimated that \$7.25 in additional expense was incurred for each call handled by an agent that would previously have been handled by an IVR system. This increased agent costs by over 350% in the four-hour period following the 20-minute IVR outage. If the CC housed 200 agents, the total expenditure on agent-based transactions for the four-hour period would exceed \$44,000.

Given the added costs, high risk for customer dissatisfaction and lost revenue potential, during a routine outage or slowdown in self-service applications, why are CCs still investing into risky self-service applications? It is the sheer cost savings of self-service applications that easily overcome any apprehension associated with the risks of faulty self-service application performance. Datamonitor estimates that an IVR/CTI-handled call costs 3% to 5% the cost of an agent-assisted call in a North American-based CC. Cost savings from an IVR are tremendous as routine transactions are efficiently handled without the intervention of a costly live agent. In addition, IVRs hold the promise of elevating the perceived QoE, as callers are able to access information and make simple transactions quickly and efficiently without having to wait through queue time to speak to an agent.

A recent Datamonitor survey of over 200 global CC managers has found that the desire to implement self-service technology is often driven by several factors that include customer satisfaction, profitability, first-call resolutions rates and operational costs. The following table highlights the most important factors that drive investments in self-service technologies.

Table 1: Perceived value of self-service technology	
Reasons for implementing self-service	Average priority*
Increase customer satisfaction levels	3.7
Increase profitability	3.6
Decrease operational costs	3.6
Increase first-call resolution rates	3.4
*Low priority to high priority is indicated by 1 to 4, respectively	
Source: Datamonitor	DATAMONITOR

As indicated by the table, CC managers identified increasing customer satisfaction as their top priority for implementing a self-service technology. This is followed closely by more revenue- and cost-based factors, such as profitability, operational costs and first-call resolution rates. It is interesting to point out that, given the high probability for problems to occur in self-service applications and CC infrastructure – the top four factors, customer satisfaction, profitability, costs and first-call resolution rates would be the top four factors most affected in the case of an IVR outage or slowdown. Indeed, the use of technology can be a double-edged sword for many CCs. Ideally, a CC will be able increase customer service levels, profitability, and first-call resolution rates, while decreasing operational costs through the implementation of a self-service technology. However, without an effective Application Management strategy, these gains are difficult to achieve.

The risk/reward tradeoff for self-service technology usage may not be as transparent for many CC managers that experience the headaches of outages, slowdowns and other technical problems that lead to higher run-time costs and lost revenue. However, with a carefully architected Application Management strategy, CC managers will finally be able to reap the intended benefits of customer service automation in the CC.

THE BUSINESS BENEFITS OF APPLICATION MANAGEMENT

Implementing a carefully architected Application Management strategy will enable optimal performance of self-service and infrastructure components. This ensures that all customer-facing technologies are working fluidly and at expected performance

levels. In addition, effective Application Management will enable the CC to identify areas where call lengths can be shortened, resulting in defined and quantifiable cost benefits for the CC. The following section highlights more detailed benefits that result from an effective Application Management strategy.

Easily quantifiable benefits include:

- **Agent allocation for calls / inquiries with greater associated value** – Properly configured and performing self-service applications and infrastructure deter “zeroing out” by callers and enables call deflection away from expensive live agents. This not only frees up the agents for complex, higher value calls but also reduces the number of required agents, which translates to savings in staffing costs. Additionally outbound agents are not forced to be re-assigned, adversely impacting revenue streams;
- **Increased availability and lower queue times** – Application Management increases the availability of CC system resources resulting in improved performance of application and infrastructure components. This increased availability of resources facilitates lower queue times as self-service and agent-handled calls are handled more accurately and in a timelier manner;
- **Reduced toll costs** – Testing and monitoring IVR system performance has resulted in significant savings for various companies, as it ensures reliable IVR performance to handle customers and increases first call resolution rates. This leads to reduced toll costs as customers can complete their transactions quicker, without queuing for an agent, in just one call. The Connecticut-based People’s Bank indicated that they are saving \$750,000 per year in toll charges alone, due to automated testing and monitoring of their IVR systems;
- **Reduced equipment costs** – As calls are optimized within the IVR, fewer ports are required to handle the same amount of calls, based on shorter call lengths. System utilization increases while capacity requirements decrease. CCs do not have to invest heavily into additional server systems or bandwidth to increase scale unless it is absolutely necessary. This leads to greater network efficiency in CC infrastructure and enables CC managers to extract greater ROI;

- **Reduced number of dropped calls** – There is a causal relationship between IVR performance and dropped calls. Poor IVR performance can result in the CC actually dropping calls, which is immediately followed by customer dissatisfaction and potentially customer churn. IVR performance is dependent on several factors both internal and external to the IVR application; these include problems in areas such as trunk groups, networks, applications and servers. Application Management will enable the CC to monitor, gauge, test and optimize IVR performance in each of those problem areas; and
- **Reduced number of hang-ups** – The causal relationship continues with the link between poor IVR performance and customer frustration, which can lead to the customer hanging up. For example, a typical CC pain point occurs when the connections between the server database and the IVR lag or fail completely. When the customer dials in to the CC, he/she may experience difficulty in inputting and accessing their account information; as a result they may opt to “zero out” to a live agent. This can spike queue times, as many frustrated customers decide to “zero out” as well. Now, with a lengthened queue time leaving customers on hold for extended time periods, many customers may simply hang up. Effective Application Management can detect and prevent periods of underperformance and outages to ensure reliable performance, and in doing so, reduce the number of hang-ups.

Less quantifiable but equally important benefits include:

- **Improved ROI on existing technologies** – Application Management yields greater ROI as it enables the optimization of existing technology performance. From a purchasing power perspective it makes future investment arguments more compelling for CC managers;
- **Improved levels of customer satisfaction** – The widespread adoption of self-service technologies has provided for higher first call resolution rates, shortened calls and quicker information access for callers, which has raised the QoE for customers. However, to achieve these goals, the underlying CC infrastructure and associated technologies, such as IVR, CTI and ACD, must be working jointly and properly. Application Management provides for smoother more reliable operation of these technologies, leading to improved levels of customer service;

- **Improved service level compliance** – Application Management provides CC managers with the level of data granularity needed to create accurate gap analyses to serve both internal and external SLAs. Moreover, it enables CC managers to gauge and improve call requirement times in order to meet SLAs while aligning business objectives;
- **Enhanced workforce management** – Effective Application Management enables CC managers to staff their workforce more accurately and thus more cost effectively. Monitoring and testing self-service technologies and infrastructure performance provides for reduced IT staffing required for troubleshooting and maintenance support for CC operations. In addition, Application Management enables the CC managers to analyze the calculus for agents vs. inbound call spikes against self-service deflection and infrastructure reliability. This results in more predictable staffing and workforce management in the CC, as CC managers are able to determine the number of agents and support staff needed in multiple scenario situations;
- **Reduced mean-time-to-recovery (MTTR)** – Employing an effective Application Management strategy facilitates early detection of bottlenecks and other performance problems within a CC's self-service applications, network, servers, databases and middleware components. CC managers are able to vastly reduce MTTR and pre-empt any detrimental outages; and
- **Increased interoperability among technology silos** – Although interoperability has vastly improved between different CC technologies such as IVR, CTI and ACD, many of these components still exist within their respective silos, making it difficult for CCs to monitor each component individually and then determine the overall customer QoE. CC managers are, however, able to monitor performance of these components individually through tools provided by component vendors, but monitoring performance typically does not go beyond this level for CCs that do not have an adequate Application Management strategy intact. Determining application- and business-level metrics through understanding technology dependencies enable the CC manager to manage the performance of CC solutions accurately. An effective Application Management strategy familiarizes CC managers with these

dependencies and empowers them to correlate technology events with caller experience.

Both the quantifiable benefits and the less tangible benefits from implementing a well-designed Application Management strategy help reduce costs and the complexity level of CC managers' tasks while assuaging fears of business continuity concerns in a CRM strategy. A successful CRM strategy is constantly analyzing the effects of its marketing on sales and profits and identifying areas where improvements in performance can lead to improved quantitative results. Application Management is a critical component of any broader CRM initiative as it optimizes specific components of CC technology to increase bottom-line results for a company. Immediate gains can be realized within months of engaging in a well-designed, custom-tailored Application Management strategy that fits the scale and vertical market needs of a CC. However, due to limited resources and heavy focus on core competencies, CC managers often look to third party vendors to supply the necessary testing and monitoring tools and professional services to implement a best-of-breed Application Management solution.

BEST PRACTICES: KEY ATTRIBUTES TECHNOLOGY-DECISION MAKERS NEED TO CONSIDER WHEN EVALUATING APPLICATION MANAGEMENT VENDORS

Best practices in Application Management sets the stage in the CC industry for improving self-service and infrastructure technologies to increase customer satisfaction, maintain business continuity and reduce costs. Multiple vendors have developed testing and monitoring tools to set performance metrics necessary to optimize the performance of technology in the CC. In order to guarantee the thorough monitoring of these systems, CC managers need to find an Application Management solution that address each of the following:

- Call handling errors;
- Call / screen pop timings;
- Database response times;
- Prompt errors;
- Time in queue;

- IVR response times;
- Rings before answer;
- Number of busy signals; and
- Time to answer at increasing load levels

In addition to tracking these standard measurements, Datamonitor believes leading Application Management vendors are those that reflect a methodology and approach to pre-deployment testing, post-deployment monitoring and optimizing, constructed from the caller's perspective extending into the CC. To this end, truly effective Application Management solutions must include:

- **Feature testing from the caller's point of view** – is the pre-production testing of application functions during the development and beta-testing phase. This includes call design testing from the caller's perspective taking into account the variable actions of real callers to ensure all IVR call paths are active, working and sequencing properly;
- **Stress testing** – tests the limits of integrated CC components by introducing actual yet alterable real world call patterns. The simulation of realistic patterns of actual call loads, not just on the IVR but also on the range of systems that depend on the IVR (e.g. backend databases, help desk knowledge repositories) provides a more in-depth and realistic perspective which traditional synthetic simulations could not;
- **Regression testing** – ensures new software upgrades and releases do not adversely affect the integrity of existing application and system performance. In the dynamic CRM space, this tool is invaluable for testing new products against existing CC infrastructure in order to cut deployment time significantly;
- **Automated testing** – exponentially increases the frequency and scale of test calls into a CC. This enables the CC to measure performance more accurately and determine if and where problems occur in the caller's experience. Manual testing, which also exists, is limited to Quality Assurance individuals dialing in separately to test prompts and response times. Where manual testing, on average can have hundreds of test calls completed in a day, automated testing will complete thousands, and is fully repeatable; and

- **Monitoring** – provides the necessary visibility into the customer experience within the automated systems as well as the health and performance of each system and application. Monitoring production systems ensures that issues are identified early, before they affect customer service, run up toll charges, impact agents and violate service level agreements. Monitoring is at the heart of maintaining optimal CC technology performance in the post deployment phases.

A comprehensive testing procedure in the CC goes beyond testing and analyzing “average wait times”. It should discover other likely sources of customer dissatisfaction from the caller’s perspective before he/she hits a data network from a real-world behavior standpoint. Only by evaluating the caller experience the way a caller would – from call set-up to tear down and everything that happens in between – can a testing system reveal the full breadth of incidents that might be undermining customer satisfaction. To this end, it is prudent for CCs to employ pre-deployment tests and constant monitoring of CC technology performance to ensure delivery of consistent levels of high customer QoE.

In addition to typical decision-making criteria such as vendor experience, benchmarked performance, financial stability and long-term viability, CC managers must determine if vendors have an offering that incorporates these best practices. Only with each of these attributes in place can an Application Management strategy be truly effective.

THE EMPIRIX APPROACH

Empirix is an Application Management solutions vendor, providing testing and monitoring applications that manage and enhance the performance of CC self-service and infrastructure technologies. The company has a proven track record of financial stability complemented by key industry acquisitions, strong brand equity in its Hammer product line and a large market share in the CC testing and monitoring sector. Together, these qualities ensure investment protection for CC customers.

Empirix has a comprehensive, multi-layer approach to Application Management covering the spectrum of pre-deployment testing and post-deployment monitoring needed to validate, maintain and optimize self-service and infrastructure performance in the CC.

These include the following pre-deployment testing and post-deployment monitoring features:

- CC baseline;
- Standard performance testing;
- Feature / function testing;
- Load & stress testing;
- Regression testing;
- Automated testing;
- Industry performance benchmarking;
- Voice system management;
- Real-time customer experience monitoring;
- Service-level reporting; and
- CC service health monitoring.

The Empirix approach is unique in that their comprehensive cradle-to-the-grave Application Management solutions extend beyond standard testing and monitoring metrics and provides actionable intelligence for CCs. The main component of Empirix's approach to Application Management is its caller focus. Empirix has built testing and monitoring solutions from the caller's perspective extending into the CC. This has enabled Empirix to build a suite of tools and services that can accurately assess caller perspective and QoE.

In the niche CC Application Management solutions market, Datamonitor sees Empirix as an established leader of best practices in the testing, monitoring and optimization of CC self-service and infrastructure technologies. Empirix's large footprint and heritage in Application Management provides for a compelling reason for companies to choose Empirix as their Application Management vendor and partner.

APPENDIX

Definitions

ACD (automatic call distributor)

This is technology that routes incoming calls directly to the agent or group most suited to respond. It can be programmed to reflect certain criteria or business rules. Technologies such as soft ACDs and IP-ACDs are also included in this definition. An ACD was traditionally a hardware-based telephone switching system that automatically and intelligently queued and routed incoming calls to agents without the need for human intervention. Now, however, software is capable of replacing the hardware and routing calls. An ACD, whether hardware or software, can be programmed to do this based on a number of criteria such as the area code of a caller or the type of service requested.

Agent analytics

Agent analytics is an application that enables contact center managers to improve contact center performance by analyzing the behavior of agents.

Call recording

Call Recording includes two converging segments of technology: quality monitoring / quality assurance and call logging. Quality monitoring (QM) or quality assurance (QA) is the term applied to applications that improve agent performance by recording customer contacts. QM systems may include the recording of voice and/or data and encompass the functionalities of standard call logging, recording, listening and screen capture.

CRM (customer relationship management)

Despite CRM being a widely used acronym few people are able to provide a clear definition of what exactly CRM is. For the purposes of this white paper Datamonitor defines CRM as:

“A strategy to win, know and keep a company's most profitable customers.”

Therefore, it involves both a business and a technology strategy. From a technical perspective, however, this includes both operational and analytical application components.

Contact center (CC)

Datamonitor defines a contact center by the following features:

- An Automatic Call Distributor (ACD) or Private Branch Exchange (PBX) with equivalent functionality overlaid (or soft ACD);
- 10 or more agent positions (workstations); and
- Having at least two channels of communication, including voice, which are routed to the agent using the same set of business rules. The contacts do not need to be routed to a blended agent; it is not uncommon for agents in contact centers to be given roles based on media type, as long as the contacts are routed centrally based on the same set of business rules.

Specifically excluded from these figures are:

- Public safety centers, i.e. those centers that receive calls to the emergency services, which are counted separately and not included as contact centers;
- Air traffic control;
- Financial trading floors; and
- Legal interception centers, i.e. centers engaged in legal interception, where there is a law enforcement officer or other security worker listening in on a conversation in which they do not take part.

CTI (computer telephony integration)

CTI technology involves a mix of hardware and software that links telephone and computer systems together to increase the functionality and efficiency of both. CTI is a technology that enables agents to have access to customer information as a call gets routed to their desk.

IVR (interactive voice response)

Callers press buttons on a touch-tone phone to choose between options presented by an electronic voice.

IVR serves two purposes:

1. It allows customers to service their own inquiries by accessing a company's database through the use of a touch-tone key pad on a telephone;

It also allows a contact center to obtain information about the caller in order to route the call to the appropriate agent.

WFM (workforce management)

Workforce management (WFM) is the term applied to software that enhances agent performance by enabling the contact center to plan its staffing requirements to meet demand.

Relevant links

www.empirix.com

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