

Pipeline

Knowledge Is Power

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Collaboration and Customer Service

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Convergence & crossover

Once upon a time, Telecom was iconoclastic – keeping to itself and inventing everything it needed to perform its mission. Huge labs like Bellcore and Ipswitch Labs advanced human ingenuity. Telecom developed distinct standards and unique tools.

The rise and pervasive reach of the internet and of business-specific media broadcasting is making business and technical information readily available to interested parties in any industry. This leads to a transfer of knowledge across vertical industrial lines of how different companies use tools to solve problems. Also the prevalence of mergers and acquisitions and the emergence of the successful executive as a sought after “free agent,” means that executives are crossing vertical market lines with some degree of regularity. When a tool or process worked for an executive before, they try to replicate their success by bringing the same solution to their new environment. A surprising number of these “experiments” work.

It is natural that some of the first “omni” tools were those that supported general business activities. The ERP (Enterprise Resource Planning) and CRM (Customer Relationship management) product revolutions are prime examples. They were developed outside of the traditional telecom ecosystem. However, there is nothing industry-specific about these product types and they have developed strong user groups inside telecom.

On the technical convergence side, the generalization of services and tools is a strong trend which will continue throughout the next decade. It is supporting the extension of general business services into more specialized business activities unique to each industry. Customer Relationship Management had to do with maintaining a constant and centralized data record of customers. The emergence of Service Oriented Architecture (SOA) in programming has made the modern CRM data record easily accessible by all service programs that need to know about customer vitals and history. The more information on customer interactions that makes it into the common CRM repository, the better the decisions reached using CRM systems can be. So it is reasonable to extend the “reach” of CRM into the corporate systems which actually interact with the customer. A principal avenue of interaction is still the Call Center. First contact provides the greatest insight into what customers think and do. But to learn from this knowledge, we need to advance the model of services and the supporting technology to bring the Call Center into the 21st century. Let’s look at the two models most prevalent today: The Call Center as the single point of contact, and the Help Desk, direct contact between the customer and the problem solver.

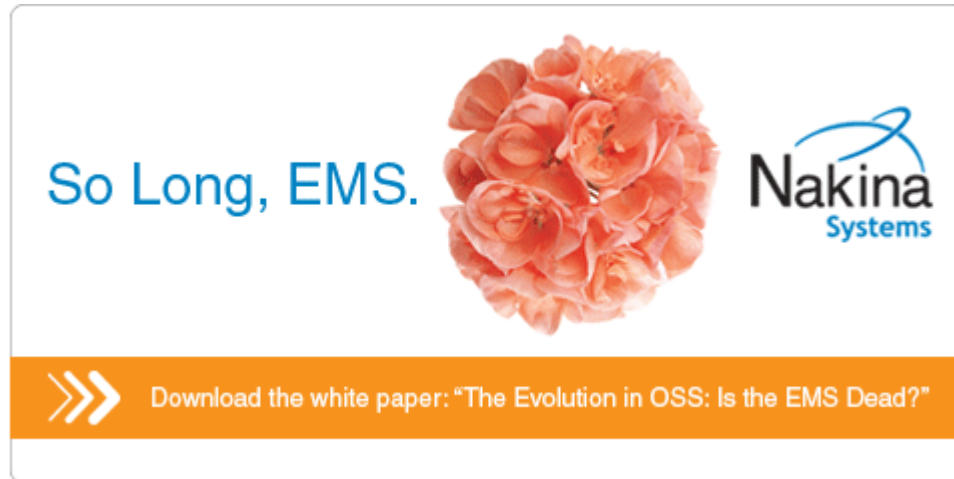
The Call Center: traditional separation

The call center was developed in the telecom ecosystem but has found application in all industry groups. The call center arose in telecommunications in the 1920's and was used internally for customer service until the late 1960's. The call center was originally designed to intercept/accept incoming calls and handle all customer questions, requests for service, and complaints.

Call centers were so efficient that very soon after the introduction of schedule D "800" call services, call centers became a primary telecom service for other industry groups. The service models also transited with the technology.

Processes and systems deliberately separated the roles of interacting with customers (the external world), from acting on customer requests (the internal world). Specifically, call centers were built and staffed highly trained customer service representatives who could handle a wide range of requests and complaints, creating a real "single point of contact." This meant that customers didn't need to search for the right department and right phone number to call. It also meant that operations people were insulated from customer "interruptions." The model was clear: call centers were staffed with people-skilled personnel and operations groups, like NOCs, were staffed with technicians and engineers. Call centers used different tools than Operations.

Call centers exploded into other industries and developed sophisticated call queuing systems (the first ACD was invented for call centers by an aviation supplier) to hold calls until an operator was available. When coupled to bad policies, this led to a practice of the long wait in queue which in turn led to extremely bad press for the airline industry – and just about every industry for a while. Policies changed to staff call centers with a multitude of responsive agents, often with specialized skills. Eventually this evolved to skills-based targeted routing to efficiently select and pass a call to the appropriate call center agent. Customers could expect shorter queue times and an expert response to their question.



The advertisement features a white background with a large, vibrant orange rose in the center. To the left of the rose, the text "So Long, EMS." is written in a blue, sans-serif font. To the right of the rose is the Nakina Systems logo, which consists of a blue stylized wave above the word "Nakina" in a bold, black, sans-serif font, with "Systems" in a smaller, blue, sans-serif font below it. At the bottom of the advertisement is an orange horizontal bar containing a white double arrow icon pointing to the right, followed by the text "Download the white paper: 'The Evolution in OSS: Is the EMS Dead?'" in a white, sans-serif font.

However, in the case of technical service issues, the "middle man" approach kept the customer away from the NOC technician working on solving the problem. Time to repair was heavily dependent on the accuracy of the information captured by the agent on the trouble ticket sent to the NOC. Information and data were often confused. Many efforts were applied in the 1980s and 1990s to correct this information gap. Also, many corporate customers had their own telecommunications departments, and their own internal single point of contact for their employees. This added another degree of separation between the user experiencing the problem and the NOC technician attempting to fix it. Customer service representatives however remained the single point of contact, which led eventually to the huge outsourcing industry we have today. Born from the telecommunications industry, the only link today with telecommunications

is the need for connectivity.

Thus, technology, policy, and processes transited from telecom to the general business world as a unit. The acceptance of customer calls was so efficient in the call center (coupled with the generation of outbound call campaigns which this article does not cover) that call centers became every industry's primary contact approach with their customers. The separation of "external world" from "internal world" transited too. Many criticisms have been laid on the call center because of this model:

"Call centres have their critics. Some critics argue that the work atmosphere in such an environment is de-humanising. Others point to the low rates of pay and restrictive working practices of some employers. ... Furthermore, call centres have been the subject of complaints by callers who find the staff often do not have enough skill or authority to resolve problems, while the dehumanized workers very often exhibit an attitude of apathy to even the most abusive customer." [http://en.wikipedia.org/wiki/Call_centers]

But there is no inherent business reason for this structure of call centers. Customer service representatives were originally highly trained, and highly valued. They were a far cry from the notion of low priced, low skilled workers described in Wikipedia.

Bad, Bad, Bad

We all have real life examples of where the separation of responsibilities and use of low wage agents has adversely affected customer service. We (the authors) will draw an example from our personal life. This incident started when two identical, unlocked, GSM wireless phones were purchased and used in Europe and then transported to the USA. Each was taken into the U.S. carrier's phone store for its new SIM card – no problem. In fact great service was provided by the phone store agents in transferring address books and such. Then it was time to use the phones...One worked just fine. The other however rarely had enough "bars" to initiate a call. Incoming calls were dropped frequently. Recognizing the symptoms of a handset failure, the customer contacted the handset manufacturer:

- The website offered a "talk with an agent" option that didn't connect with anyone.
- A contact email generated the expected auto response thanking us for the contact and promising a response within 48 hours, which was not received.
- A second email, and then a third, finally prompted an email response, "explaining" that the handset would never work on the U.S. network since it lacked the proprietary software of the U.S. carrier.
- That prompted a few rounds of discussion with the Technical Support team about the meaning of "Global" and "Tri-band". And each time, the phone manufacturer ignored the fundamental question.
- Finally losing patience the author asked them just to answer the question, "We bought two identical handsets, at the same time, from the same shop. When standing in the same locations and using the same carrier, one of them works fine and one of them does not. Why is that?"
- Finally, more than four weeks after the initial inquiry, came the (unfortunately correct) answer of "We don't know."

Many failures are represented in this example. The web portal is not properly integrated into the human call center; there is insufficient enforcement of the 48-hour SLA response time; and there appears to be no customer satisfaction follow-up contact or survey. Very fine tools exist from reputable vendors to address these failures, but they need to be used with proper processes and management oversight. The third issue was insufficient agent training in the technology, and in

listening skills. This links directly back to the now cultural issue of attempting to use the lowest priced help in the essential roles. If companies choose the single point of contact call center approach, they must once again make the investment in hiring and developing agents who can successfully be the company's face to the market. Or embrace a new trend of direct collaboration with the customer.

The Help Desk: Direct Connect

A separate evolutionary path occurred with the development of help desks. Originally developed for IT groups to serve corporate IT users, help desks used a variety of media to connect with their users. Sometimes this was a call, but just as likely it could be an email or a request generated via entering information in an online form. Help desks did use trouble tickets, but coupled with well-trained first responders, the ticket became a *record of interaction* and not just a transfer of information from one group to another. Officially, the first level responder's role was much like the single point of contact in the traditional call center – simply limited to the universe of IT problems. They were to classify the problem, determine its cause and select the solution profile. First level responders were often very skilled, sometimes more so that 2nd level specialists tasked with applying specific fix actions, so that many problems were resolved without hand off at all.

The queuing solution was also applied to help desks, but often just to help sort problems into hardware, operating system, or application and route the actions into groups. So the ticket system in help desks contained its own queue - not of pending calls, but a queue of work actions to be taken to resolve the problem situation. Often each worker in the action cycle had direct contact with the user in solving their problem. This technical process evolution was not accidental, but designed to better service internal customers. Service to internal groups can increase corporate efficiency and cohesion.

The IT help desk evolved separately from the call center. Starting as a computing initiative in the UK government in the 1980s, it evolved and spread rapidly throughout the 1990s into wide spread industry practices. It developed its own set of best practices, the ITIL conventions which are now embedded in the ISO/IEC 20000 standard. However, as telecommunications networks and IT networks began to converge, personnel transfers from NOCs to help desks and vice versa began cross fertilizing these areas. Engineers in telecom noticed the similarities between IT Service Management and Telecommunications OSS.

Information Technology Service Management (or IT SM) was designed as a single integrated application tool to take requests, classify them, and orchestrate the actions that corrected the problem. It also became a way of orchestrating the actions to deliver a new service. Provisioning a new user was simply another choice in the service request screen and initiated the actions required to get hardware, install applications, and coordinate training of a new user. The similarities between IT SM and telecommunications provisioning and network management became increasingly obvious.

The accelerating convergence of voice and data networks, telecommunications and IT, brought many heated discussions about best practices, tools and processes. It pitted the enhanced Telecommunications Operations Map (eTOM) of the TeleManagement Forum (tmforum.org) against the ITIL model embraced by the internal IT groups. Recognizing the similar nature of many of the processes, but the different terms, structure and basic intent of ITIL and eTOM, the two forums began working together – first to map the two structures, and then to align them to service both domains. One result is that NOCs and the call centers interfacing with them could see the utility of the ITIL help desk model to increase internal corporate cohesion. It is only a short step to begin applying these models directly to call centers and developing stronger customer cohesion.

Another tool developed in the help desk was the Knowledge System, a way for agents to add to

the accumulated set of information and solutions. Originally an internal tool, it was developed to provide guidelines on responses and techniques that agents could leverage. Text search algorithms allowed sophisticated auto fetch and grading of likely matches to problems - much like web search engines. In seeking automated responses, Knowledge Systems were opened up for search by users and in the best systems wizard like interfaces guide a query which produces solutions by expected probability of being applicable. Knowledge Systems are very similar to IVR self help systems and such crossover is beginning to occur.

The 21st Century: Multi-channel, blended Contact Center

Today call centers have become integrated Contact Centers. They accept calls, emails, and web forms as valid triggers for doing work. The next expansion is being created by the advent of VoIP, and particularly SIP VoIP. These are essentially software applications, just as are email and web forms. The same software programs can route one media as easily as any other, so it is logical to apply the same infrastructure and business rules for all media types.

"The availability of allowing the customer to choose their type of media for the interaction is in itself a real advantage. The reporting of the data for all interactions is the benefit to the center manager. By pairing the calls to the interactions a clearer picture of call handling and after call work will be seen, to improve staffing and forecasting." (Melody Aires, Call Center Specialist)

The proliferation of SIP is aiding the market acceptance of the "soft ACD" and multi-channel Contact Centers. As call centers upgrade from older switch-based ACDs to SIP, this will allow expanded introduction of multimedia contact methods. Because the application is software, the business routing and the staff management applications become consistent across all channels and media. In the best applications, the process and policy are externalized from the infrastructure logic. Today each vendor uses a proprietary way of describing call flow and routing policy; tomorrow these systems could utilize external process logic enforced by business process logic systems and similar standards that are emerging such as Business Process Modeling Language (BPML.) [BPML.org]

However, just because the system is all software does not mean should do its job stand alone, instead applications can leverage what existing infrastructure does well. The Contact Center can use an existing email server as the repository of mail and the soft ACD will just switch it among internal mail boxes. So to, the soft ACD will need to leverage existing VoIP control systems and voice paths to route calls. LDAP systems or Active Directory can be used as authentication agents and for calls via IVR systems. In short, the soft ACD is a coordination system leveraging the flow of media and work among a large population of infrastructure systems and workers. Structurally this is very similar to Trouble Management and Workflow systems. Look for co-evolution of software between these solution sets.

Integration of Incident and Problem handling

The final essential ingredient of Contact Center management is measurement and reporting. Here is where many Contact Centers get it very wrong. We all know that old cliché of "you get what you measure," so deciding what to measure is critical to achieving the results you want to achieve. It's important to define "efficiency" in light of "customer satisfaction." Good customer service cannot be provided if the agent has a target of getting off the call within thirty seconds. It's noteworthy that when managers used to take on the agent role (during strikes or work stoppages as they were more euphemistically termed), customer satisfaction with the fill-in operators went up. Even though the managers were undoubtedly slower and less adept at handling calls, customers appreciated the longer call times which allowed real human conversation.

Similarly, tightly regimented staff can only chafe under excessive restrictions, causing a dissatisfaction that customers can clearly hear in voices, and feel in poor service. The vicious cycle of regimentation, dissatisfaction, poor customer service can be broken by ensuring that performance is aligned with corporate service objectives and supported by efficient measures made possible by the new generation of tools.

A tight unification of Contact Control (CC) and Customer Interaction Management (CIM) can result in the generation of end-to-end reporting on customer interaction. What results is an audible system well in line with SOX initiatives. This represents a fundamental change in the "hand off" model which is prevalent in today's Contact Centers and in telecommunications Contact Center to NOC interactions. CIM systems are a bridge between Contact Control and CRM systems. CIM systems are built from a fusion of the best features of telecom Trouble Management systems and help desk systems. Either can be used as a starting point in generating a CIM solution. However, the most important piece is the tight integration of CC and CIM. Instead of a simple screen pop of the call to a ticket screen, there need to be many hand offs from the efficient routing of the soft ACD queue to the action and data capture of the CIM and back again. The CC controls how the customer is contacted and the CIM orchestrates the contact and data.

When Contact Center supervisors have much more information available, they need not resort to extreme regimentation. They now know not just who is on a call and for how long, but also who the customer is, what type of question or complaint caused the customer to call. They know which applications the agent is using to solve the problem. They have reams of statistics that show the agent's track record in solving these types of calls. In short, they can help ensure good customer service, not just that agents keep taking lots of calls. Aligning rewards with the customer service objectives is also made easier with the knowledge the metrics can supply. Used with thought, very positive feedback loops can be created – happy agents, happy customers!

It is important to note that as the routine requests are further automated by web portal self serve, the remaining queries that will come to the Contact Center will be those that are complex, troublesome or otherwise beyond the customer's ability to complete on their own. This makes it critical to have the right people, with the right skills, tools and incentives to meet the higher bar demanded by this subset of customers.

We interviewed Melody Ayres, a contact center specialist who has put in contact centers all over the world. Her advice? "By better management of the agents, the overall interaction with the customer will be improved, as they can be coached and become more accurate and more efficient in contact handling. That is, the better the center is managed the more efficiently the customer contacts can be handled, better quality of interaction. Any time you can improve the agent performance the customer will benefit." (Melody Aires, Call Center Specialist)

Close integration of Contact Centers and Incident Management systems as we've described earlier is one example of better tools. This enables real knowledge of the interior interaction cycle without intrusive methods. It also enables the proposed fusion of IT SM help desk procedural models inside the technology of the Contact Center. This fusion is represented in the figure of the proposed modern Contact Center. One direct result of the fusion is the creation of absolutely consistent and automated enterprise level reports. This links each contact, regardless of channel and medium, to an accounting of the first responder, intermediate and final responses taken.

The availability of end to end transaction reports will eliminate the need for trying to match inbound contacts with CRM documentation, this means the call center manager/supervisor can easily now associate the total level of effort for each transaction. This will enable:

- Better staff planning.
- Better understanding of each type of transaction i.e. the length of call paired with

the issue description and better feedback to the agents. It is a significant improvement over guessing which contact matches which issue in your CRM system.

- In-depth analysis, leading to better benchmarks for each type of issue handled by the center.
- Objective evaluation of the strengths of each agent based on the call time versus the documentation time and accuracy of the documentation to the call. "Quality systems do this today when both the voice and the system screens are captured but for a limited volume of calls. A fully integrated IVR/CRM solution ensures that all calls are now captured to allow trending or in depth analysis." (Melody Aires, Call Center Specialist)

Melody provides this example of how this issue directly affects Contact Center performance:

"In reviewing call stats at the agent level, there is a need to investigate long duration calls to determine why the call was over the target talk time and handle time. To determine why a call took longer than expected the call needs to be associated to a CRM or some type of ticketing system documentation. To find the right ticket you must search by inbound ANI to find the account and then search the account records to find the incident report. This process is very time consuming for a supervisor or manager, and may not yield a match.

For example, in the deregulated electric power industry there are times when power outages cause huge spikes in call volume, during these high call volume periods agents are instructed not to quote a repair time to the customer or create trouble tickets as the outage is a known issue. During a routine review of an agent's call handling statistics we found one agent that consistently had a 20 second longer handle time the comparative agents. Unfortunately no recordings were available of the calls nor could we find any data to indicate why the calls were so long. After an exhaustive search we found the agent was opening a trouble report for each call and telling the customer the repair time. This took days to find and pair with the calls. It resulted in feedback to the agent to cease documenting and quoting repair times for known outages. If we had better reporting we could have found these quickly and stopped the agent from making the same mistake over and over."

This example unfortunately also shows how call centers concentrate still on delivering a unified message and not on solving the caller's real concern. Currently electrical company call centers use IVR announcements to advise callers of major service interruptions as early in the customer's call as possible. This type of "self help" announcement eliminates much of the call volume that continues to an agent, eliminating the need for restrictive customer responses - but only when IVR self help systems are integrated to real time reports from the fast reaction responder teams working the power infrastructure. Adding an IVR update thread to the service management alarm/alert function would close that loop quickly. Building on the fusion of Contact Center and Incident/Problem Management systems, collaborative SOA systems can make this solution work efficiently. We predict tools will move in this direction.

Self service is important, but does not substitute for the perception of belonging provided by personal contact. Collaboration of call center technology and OSS systems can enable a great balance of self service and personal touch, but only if the correct customer policies are chosen.

Great Leap

When Collaborative SOA technology is added to the CC and CIM systems and these are linked to similar SOA enabled corporate support infrastructures, a new level of customer attention becomes possible. In the late nineties, Grove delivered the first general, commercial implementation of the collaborative workspace. Inside the TMF a Javaspaces-based, collaborative workspace was demonstrated as part of the Fine Grained NGOSS Catalyst. Javaspaces tools are now available as open source licenses. These systems allow a direct conferencing of the customer centric contact agent, the repair team, the customer account executive and, of course, the customer. Direct interaction will increase cohesion when everyone is polite and informed. There will be no hand off delays or worse, lost interactions. Everyone sees the same data, communicates via conference chat or conference call, and shares in the solution – buy-in is complete and absolutely auditable.

Because collaboration workspaces are just entering the market in wide acceptance, we expect that these will first be used with “captive” client populations such as independent sales agents, globally dispersed workforces, and membership organizations. This will provide the real life laboratory in which to work out the best policies and procedures around this budding technology.

We are bullish about the impact of real integration and the synergies to be derived from the new tools. Our enthusiasm is somewhat tempered however by our bet that Contact Center management and rewards will lag too far behind to reap all of the possible benefits. We will keep you posted on our results as the first truly integrated Contact Centers come on line – stay tuned!

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