Customer Service and Support Technologies

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Contact Center as a Service

Definition:

Contact center as a service (CCaaS) is a cloud-based application service platform that enables customer service organizations to manage multichannel customer interactions holistically with prepackaged applications that support the customer and employee experience. CCaaS solutions are used by organizations that need to manage front-office operations such as customer service, telemarketing, employee service and support centers.

مرکز تماس به‌عنوان سرویس (CCaaS) یک پلت‌فرم خدمات کاربردی مبتنی بر ابر است که سازمان‌های خدمات مشتری را قادر می‌سازد تا تعاملات چند کاناله مشتری را به طور کلی با برنامه‌های از پیش بسته‌بندی شده‌ای که از تجربه مشتری و کارمند پشتیبانی می‌کنند، مدیریت کنند. راه‌حل‌های CCaaSتوسط سازمان‌هایی استفاده می‌شود که نیاز به مدیریت عملیات‌های دفتری مانند خدمات مشتری، بازاریابی تلفنی، خدمات کارکنان و مراکز پشتیبانی دارند.

Why This Is Important

CCaaS is a growth market, fueling investment in innovation and customer service applications, and surpassing the offers of legacy premises-based or server-based technology. Now that CCaaS is a foundation of multichannel customer service, application leaders can explore the advantages of the suite offer. Leaders can add workforce engagement management and analytics in place of stand-alone applications, offering a more integrated set of services for a lower total cost of ownership.

Business Impact

The business impact of CCaaS is broad and deep:

- CCaaS offers an agile business model for investing in technology for engaging with customers through self- and assisted-service channels.
- A range of packaged applications and marketplace add-ons enables organizations to extend the services offered to customers and employees for improved experiences and lower operational costs.
- Cloud enables organizations to focus on transforming the customer experience, rather than managing the day-to-day technology.

Drivers

- Greater software agility with a lower cost of ownership has always been a key driver for investing in CCaaS. Agility has accelerated in recent years as IT organizations

decommission premises-based communications infrastructure and, in its place, invest in specialized cloud services to meet specific organizational use cases for customer and employee experience.

- For most organizations, contact center investment is a cloud-first approach. Customer service leaders are working with IT leaders to consolidate multiple instances of premises-based contact centers and first-generation CCaaS into a common organizationwide platform. This is leading to a greater scale of contract (more than 5,000 user licenses is becoming typical) and broader geographical reach across multiple continents.
- CCaaS platforms are well-placed to manage both voice and digital channels, and are becoming the preferred option when a single skills engine is required to support CSRs trained in multiple modalities.
- Flexible working has become a core work style for customer service organizations and CCaaS platforms provide a superior experience to employees working remotely as well as in the office.

Obstacles

- Organizations with very large numbers of users (10,000+) are still challenged with justifying the costs of migrating users, the shift in operating mode from capital expenditure (capex) to operating expenditure (opex) and demonstrability for CCaaS parity with complex customization needs of premises-based platforms.
- As organizations grow CCaaS to thousands of users, there needs to be a stronger focus on resilience and uptime. While 99.99% uptime rate as a standard service-level agreement (SLA) is acceptable for most organizations, a more mature approach to service credits for nonperformance and service meeting structure is necessary.
- Most CCaaS providers have been focused on replacing legacy PBX-based contact center infrastructure with a core focus on the telephone channel. As organizations adopt a digital-first, self-service strategy, telephony-centric licensing may not look as attractive as offers from digital customer service technology and customer engagement center software providers.

User Recommendations

- Reduce the impacts of transitioning off legacy systems by focusing on providers with referenceable transition frameworks and methodologies for migrating from relevant on-premises systems to their CCaaS offerings.
- Focus on CCaaS solutions that leverage native functionality or are accessed through provider marketplaces that span all four capability areas of the reference model for the customer technology platform — contact routing and interactions, process orchestration, knowledge and insight, and resource management.
- Place increased evaluation weighting on flexible pricing models that can accommodate plans for shifting customer engagement away from live assistance and toward digital self-service, especially as development in generative AI improves the speed to value of self-service.
- Incentivize service uptime by defining tight SLAs and service terms, and agreeing on responsibilities between the CCaaS provider and the business unit for the duration of the contract.

Sample Vendors: 8x8; Amazon Web Services; Cisco; Content Guru; Five9; Genesys; NICE; Talkdesk; Vonage

Customer Engagement Center

Definition:

The CRM customer engagement center (CRM-CEC) is a cohesive set of software built around core case management tools, used to provide customer service and support by engaging with customers while intelligently orchestrating the processes, data, systems and resources of an organization. CRM-CEC applications offer workflow management capabilities and may be used as a system of record for customer interactions.

مرکز تعامل مشتری CRM (CRM-CEC) مجموعه‌ای منسجم از نرم‌افزار است که حول ابزارهای مدیریت پرونده اصلی ساخته شده است و برای ارائه خدمات و پشتیبانی به مشتریان از طریق تعامل با مشتریان و در عین حال هماهنگ‌سازی هوشمندانه فرآیندها، داده‌ها، سیستم‌ها و منابع یک سازمان استفاده می‌شود. برنامه های کاربردی CRM-CEC قابلیت های مدیریت گردش کار را ارائه می دهند و ممکن است به عنوان یک سیستم ثبت برای تعامل با مشتری استفاده شوند.

Why This Is Important

Customer engagement centers play a critical role in enabling organizations to engage with their customers while supporting a variety of customer service functions and strategies. CEC-CRMs are often seen as a key component of a broader customer technology platform framework, assisting in providing consistent and intelligent experiences across all customer-facing channels. Core functions of the CEC-CRM application are case management, workflow management and knowledge management. They can serve as the official system of record.

Business Impact

Superior customer service is expected to be low-effort, personalized and seamless. The ability to orchestrate the processing of customer engagements for the best outcomes is key to improving customer satisfaction, resolution times and operational efficiency. Intelligent workflows and automations enable customer service organizations to reduce burdens of customer service representatives (CSRs) and also enable a robust self-serve experience for customers. CEC technologies are applicable for organizations of all sizes and industries.

Drivers

- Over recent years, Gartner has observed important changes in how organizations handle customer service. Whereas formerly a single department would respond to customers' needs, increasingly customer service is becoming a cross-departmental function that requires coordination and visibility.
- To support these changes, most customer engagement center vendors increased research and investment in AI, conversational chatbots, dynamic knowledge management programs, and agent assist tools.
- In many cases, functional innovation has moved toward deploying first to cloud-based CEC offerings and then retrofitting toward other deployment models.

Obstacles

- The customer service technology landscape includes myriad vendors and offerings in areas such as the CEC, contact center applications, workforce engagement management (WEM) and field service management. Although a unified customer service suite spanning these domains does not yet exist, the market is increasingly shifting in that direction.
- Customer service organizations are largely set up to wait for customers to engage. This reactive approach prevents organizations from identifying key requirements helping them make sense of the overlapping application landscape that continues to grow in complexity.
- This reactive approach also results in experiences involving a high degree of effort from customers and limited self-service effectiveness and profitability, especially as customers often switch channels or use multiple channels concurrently.

User Recommendations

- Expand CEC focus beyond customer service and support use cases by prioritizing vendors offering low-code development capabilities for application user experience development, additional workflows and composability support across their SaaS and other APIs.
- Shift away from reactive channel-focused capabilities toward supporting proactive customer journeys with an appropriate mix of digital touchpoints and interaction modalities (or multiexperience) by prioritizing vendors with digital engagement, automation of engagement and knowledge management capabilities.
- Invest in AI technologies that have virtual agent and/or agent assist functionality and usability. Prioritize vendors with advanced automation of engagement paired with real-time continuous intelligence capabilities.

Sample Vendors

Microsoft; Oracle; Pegasystems; Salesforce; SAP; ServiceNow; Zendesk

Mobile Field Service Management

Definition:

Mobile field service management digitalizes technician enablement, collaboration, work order debrief, site evidence capture and follow-up initiation via mobile apps. Technicians receive briefing and guidance for completing work orders at a customer site. They capture tasks completed, issues identified, time spent, parts used, new knowledge and equipment collected for depot repair — even while offline. This facilitates management of customer equipment, invoicing and agreements and experience.

مدیریت خدمات میدانی تلفن همراه، فعالسازی تکنسین، همکاری، شرح سفارش کار، ضبط شواهد سایت و شروع پیگیری از طریق برنامه های تلفن همراه را دیجیتالی می کند. تکنسین ها برای تکمیل سفارشات کاری در سایت مشتری توضیحات و راهنمایی دریافت می کنند. آنها کارهای تکمیل شده، مشکلات شناسایی شده، زمان صرف شده، قطعات مورد استفاده، دانش جدید و تجهیزات جمع آوری شده برای تعمیر انبار را حتی در حالت آفلاین ثبت می کنند. این امر مدیریت تجهیزات مشتری، صورتحساب و توافقات و تجربه را تسهیل می کند.

Why This Is Important

Field service providers face pressure to provide detailed and timely debriefs about work completed, parts used, time spent, etc., to improve invoice collectability. At the same time, the average technician’s skill level has eroded due to increased use of subcontractors and junior technicians. This increases the need for enablement and support capabilities. Dispatch organizations also seek to improve two-way technician communication efficiency and awareness of progress and location.

Business Impact

Mobile field service management improves invoice collectability with better data accuracy and timeliness — collecting data as work is completed. It also improves customer experience through improved communication between technicians and customers, first-time fix rates and delivery consistency through guided repair. Tracking SLAs met and detailed “before and after” site evidence helps justify premium pricing and low-effort quote initiation for technicians improves upsell success rates.

Drivers

- No-touch services and an influx of inexperienced technicians require more remote collaboration between technicians and customers and remote experts, which is enabled by mobile FSM apps and augmented reality vendor partners.
- Regulatory and customer requirements to capture before-and-after pictures and customer approval signatures are driving the need to capture data for review while on-site and in a format that can be shared electronically when technicians are remote.
- Field service workforce optimization tools have improved, but are most efficient when the location of the technician is available in real time. Mobile apps typically transmit this data, which is useful if the location of their vehicle is not known or not relevant.
- Enhancements to platforms upon which FSM vendors build apps have improved in recent years. This has lowered the effort needed for them to offer the ability to deep

link and pass data to and from their app and one built by the customer or another vendor (for example, enabling single-sign-on or embedding features that connect with a knowledge management vendor).
- Mobile apps enable visualization of digital twin and geographical information system (GIS) data.
- Technicians can debrief work orders (capturing time and parts used, inspection data, recommendations and site evidence used in invoicing).They can also initiate downstream workflows through quoting, parts requisition and equipment surveying functions.
- Most mobile FSM apps help technicians communicate location and progress with the back office, other technicians and customers. Some are more robust in handling complexities, such as task management, crews and parts sourcing.
- The ability to operate while disconnected from the internet and to synchronize only relevant data automatically, securely and quickly, has improved.

Obstacles

- Some organizations have chosen to develop apps in-house, which has slowed the pace of development of off-the-shelf solutions to improve user experience, offline function and integration.
- Back-end software is needed to organize work requirements and details as well as to consume and organize information collected in the field. This can be price prohibitive in organizations with low digital maturity.
- An expense for mobile devices (usually a phone, but occasionally a tablet or head-mounted display) is required, along with an active cellular service plan or continuous Wi-Fi access.
- Bring-your-own-device has become unpopular among technicians due to challenges with support, device-specific issues, security and privacy.

User Recommendations

- Evaluate options for mobile field service apps or risk losing competitive advantage. Some complex operations, such as quoting, parts sourcing, returns and crew time entry, are not present in most mobile apps out of the box.
- Pace deployment by prioritizing use cases and measuring the impact on productivity, customer satisfaction and costs.
- Evaluate apps that integrate with the ERP and CRM systems, and other existing apps.
- Check each vendor’s live references to evaluate the strength of low-code and no-code development tools for integration, extensibility and configuration — and the technical expertise needed to use them, especially where forms require calculations or other programmability. The ability to support custom capabilities that vary based on attributes (such as work order type and contract entitlements) will help reduce the number of apps and paper processes that each technician must endure.

Sample Vendors

IFS; Microsoft; Oracle; OverIT; Salesforce; SAP; ServiceMax

Field Service Workforce Optimization

Definition:

Field service workforce optimization automates the planning of work and dispatch of teams of technicians through software algorithms and AI that improve field productivity. They use inputs like technicians' skills, location and previous results; customer SLAs and preferences; and predictions for required travel time or needed parts. This research focuses on services performed on customer-owned equipment on site, rather than on company-owned equipment at its physical plant.

بهینه‌سازی نیروی کار خدمات میدانی، برنامه‌ریزی کار و اعزام تیم‌های تکنسین را از طریق الگوریتم‌های نرم‌افزاری و هوش مصنوعی که بهره‌وری میدان را بهبود می‌بخشد، خودکار می‌کند. آنها از ورودی هایی مانند مهارت های تکنسین ها، مکان و نتایج قبلی استفاده می کنند SLA .ها و ترجیحات مشتری؛ و پیش بینی زمان مورد نیاز سفر یا قطعات مورد نیاز. این تحقیق بر روی خدمات انجام شده بر روی تجهیزات تحت مالکیت مشتری در محل، به جای تجهیزات متعلق به شرکت در کارخانه فیزیکی آن، تمرکز دارد.

Why This Is Important

Successful field service providers are able to respond quickly, resolve issues on the first visit and even provide service proactively. In order to do this, humans need to focus on triaging the most difficult problems, leaving rules-driven tasks — even complex, pattern-driven ones — to machines. Machines can also identify patterns in scheduling inputs that humans cannot, like technician-specific estimated work durations and correlations between historical problem descriptions and parts needs.

Business Impact

The main business impacts are:

- Improved first-visit fix rate (which drives profitability and customer satisfaction [CSAT]).
- Reduced travel time (which drives utilization and, ultimately, profitability).
- Improved carbon footprint due to reduced fuel consumption.
- Reduced administrative effort (which drives the ability to repurpose talented dispatchers to more value-added activities).
- Narrower appointment windows and improved on-time arrivals (which drives CSAT).
- Lower spare part inventory levels.

Drivers

- There is a need to improve equipment uptime and optimize personnel utilization, carbon footprint, triage decision support, overtime, shift coverage and travel time.
- Emerging channels generate demand, such as enterprise asset management (EAM), asset performance management (APM), geographic information systems (GIS), chatbots, Internet of Things (IoT) connected devices and machine customers that are empowered to make service requisition decisions. Service providers need to respond to these digitally using automation.
- Customers and their digital peers are able to provide more useful detail about the problem, such as meter reading trends and usage patterns. These are useful for making repair-or-replace decisions and aligning the appropriate skills, parts, available

time and priorities and other inputs for scheduling. However, providers need to triage, assign and respond to these requests using rule engines where possible.
- Competitors have successfully leveraged historical data and artificial intelligence/machine learning (AI/ML) to make more informed scheduling decisions based on, for example, automated predictions of work duration, parts requirements and sources, and likelihood of cancelation.
- Pressure to reduce the carbon footprint is growing, as is the use of field service workforce management to drive down misaligned technician assignments (who might tend to use or waste more) and fuel consumption from unnecessary travel.
- Complex scheduling requirements such as long-cycle and crew work are difficult to accomplish manually at scale.
- Field service teams can have tighter integration with other teams (such as project, maintenance, installation and customer service).

Obstacles

- Opportunities to make predictions only exist if historical data is available and "clean" — i.e., organized so that it can be analyzed automatically. Many organizations do not yet have a standard lexicon of jargon that is consistent across all types of work. In many niche industries, even advanced natural language processing cannot overcome this.
- Similar capabilities are often part of larger field service management (FSM) suites and are not always sold separately, so some customers may need to negotiate to avoid paying for functionality they do not need.

User Recommendations

- Document high-volume, in-day scheduling volatility or high-complexity scheduling requirements. For example, consider whether the organization has technician schedules that change a lot due to job duration overruns, cancellations and urgent requests. Calculate how the volume of work orders per day increases the impact of reducing travel time between jobs.
- Advances in capabilities and vendor consolidations have begun to democratize functionality, but only at a basic level. Organizations must consider whether they need capabilities like support for multiple technicians per job, task dependencies, links to GIS, long-cycle (such as multiday) work and integrations with project and ticketing systems.
- Compare functionality with the capabilities built into FSM applications, new FSM add-ons for CRM applications, and partnership applications that may exist elsewhere in the organization — and that may already be integrated into other systems of record.

Sample Vendors

Fast Lean Smart; GMS Development; IFS; Oracle; Salesforce, ServicePower

Knowledge Management Systems for CS

Definition:

Knowledge management (KM) systems for customer service include three categories of essential capabilities: user engagement, curation and contextualization, and content life cycle management. Created and discovered knowledge assets are reused in assisted-service and self-service use cases. Artificial intelligence (AI) and semantic technologies have enabled advances in this field, while those offering generative AI and knowledge graph-powered innovations show differentiation.

سیستم‌های مدیریت دانش (KM) برای خدمات مشتری شامل سه دسته از قابلیت‌های ضروری است: تعامل کاربر، مدیریت و زمینه‌سازی، و مدیریت چرخه حیات محتوا. دارایی های دانش ایجاد شده و کشف شده در موارد استفاده از خدمات کمکی و سلف سرویس استفاده مجدد می شود. هوش مصنوعی (AI) و فناوری‌های معنایی پیشرفت‌ها را در این زمینه ممکن کرده‌اند، در حالی که فناوری‌هایی که هوش مصنوعی و نوآوری‌های مبتنی بر نمودار دانش را ارائه می‌دهند، تمایز نشان می‌دهند.

Why This Is Important

KM systems and programs have been in place in many organizations for years — often underutilized or left abandoned from a lack of dedicated effort to keep content updated. However, the often underwhelming performance of chatbots and virtual customer assistants (VCAs) can frequently be traced to reliance on basic FAQ answers, and the lack of an integrated KM system capable of delivering contextually relevant and personalized responses. KM is rapidly becoming critical for driving customer and employee self-service efforts.

Business Impact

New uses of ML, combined with communication via chatbots and devices, have created new opportunities and challenges for knowledge delivery. An emerging trend is the rapid expansion of contextual content into chatbots, VCAs and virtual agent assist tools, and its integration with all customer service channels (such as mobile, web chat, messaging, email, voice and VCAs for self-service).

Drivers

- Increasing demand for contextually relevant responses for customer self-service — whether through chatbots, VCA or web searches.
- Requirements to improve agent performance, especially for newer agents working from home.
- Increasing awareness of knowledge-centered service best practices for designing and maintaining KM programs and technologies.
- Gradual maturation of insight engines, natural language understanding (NLU) and generative AI based innovations for automation of knowledge content creation and curation.

Obstacles

- Resource requirements for a successful KM program are often underfunded due to cost considerations, resulting in systems that are poorly indexed and don't deliver direct answers to users' questions.
- Lack of long-term resource commitments to the ongoing development and curation of KM systems cause users to lose faith in the system when returned responses are out of date or otherwise incorrect.
- Technologies designed to automatically find, create and update KM content are still in the early phases of development and may be under the control of other organizational departments.

User Recommendations

- Appoint a dedicated team of knowledge subject matter experts to keep abreast of emerging technologies and their impact on KM, as well as to continuously enhance the knowledge engine and provide feedback.
- Collaborate with your peers in data and analytics to position knowledge management automation as a business value driver within larger, enterprisewide artificial intelligence (AI) programs.
- Develop programs to ensure that knowledge repositories will be created and kept up to date voluntarily by employees who are not motivated or compelled to do so.
- Establish an "unresolved" process on a self-service website, so that a user can notify the knowledge team if his or her query has not been resolved.
- Implement an SLA of 24 hours for the knowledge team to capture a resolution of all unresolved items.
- Ensure that all channels and agents in the customer engagement center use the same knowledge repository to provide consistent and accurate responses.

Sample Vendors

eGain; Heretto; KMS Lighthouse; NICE (MindTouch); Oracle; Salesforce; ServiceNow; Upland Software; USU; Verint

Customer Service and Support Suites

Definition:

Customer service and support (CSS) suites are systems that align capabilities across all four pillars of customer service technology to create an integrated customer service architecture. Many of these systems are built around the customer engagement center (CEC) or contact center as a service (CCaaS) at the core, and offer extensions of capabilities into knowledge, insights and resource management.

مجموعه‌های خدمات و پشتیبانی مشتری (CSS) سیستم‌هایی هستند که قابلیت‌ها را در هر چهار ستون فناوری خدمات مشتری برای ایجاد یک معماری خدمات مشتری یکپارچه تراز می‌کنند. بسیاری از این سیستم‌ها حول مرکز تعامل مشتری (CEC) یا مرکز تماس به عنوان یک سرویس (CCaaS) در هسته ساخته شده‌اند و قابلیت‌های توسعه‌ای را در دانش، بینش و مدیریت منابع ارائه می‌دهند.

Why This Is Important

A unified CSS suite from a single vendor can simplify procurement and vendor management for the organization. More importantly, it can improve customer experience (CX) and employee experience (EX) by streamlining the orchestration of internal processes to serve external touchpoints.

Business Impact

As organizations increasingly focus on creating seamlessly personalized customer experiences, application leaders have many options for automating various aspects of the customer service function. These include virtual customer assistants, agent enablement, knowledge and insights orchestration, context preservation throughout the customer journey, and channel-agnostic engagement experiences. Such innovative capabilities are increasingly being offered as native features or add-ons to core CSS solutions.

Drivers

- The cost and complexity of overlapping CSS technology capabilities continue to escalate, when multiple adjacent vendor solutions are deployed instead of a single unified solution for customer service. That is driving heightened customer demand for unified solutions, which in turn drives innovations.
- Increasing customer demand for low-effort, personalized experiences throughout the service journey requires streamlined orchestration of processes at a level that is difficult to achieve via integrated systems.
- Innovations such as AI-powered customer service use-case automation make it feasible for vendors to incorporate previously disparate capabilities into their core solution.
- Leading technology providers continue to expand their CSS portfolios through the acquisition of smaller, innovative companies that have proven their best-of-breed niche solutions in the marketplace.
- Orchestrating more efficient and effective customer journeys is lowering service costs, and encourages the use of lower-cost engagement channels.

Obstacles

- Technology providers continue to expand their product portfolios to offer capabilities that span the four pillars of customer service. However, as of yet, none of them can offer a complete seamless solution that spans all four pillars as a unified CSS suite.
- CSS suites are built either around a core of a CCaaS application, or around a CEC application. This makes it challenging for customer service organizations to choose from among overlapping capabilities when multiple vendors' solutions are needed to meet their customer service ambitions.
- The monolithic nature of many solutions makes it difficult to avoid the duplication of capabilities when taking a pillar-by-pillar technology approach.
- Discrete pillar-solution procurement decisions were traditionally made by separate functional departments or teams. Organizations will find it challenging to align these teams to decide on a unified CSS suite solution.
- Current-state CSS suite solutions tend to have difficulty integrating point solutions from other vendors.

User Recommendations

- Start by creating a vendor-agnostic technology reference model for customer service that can form a customer technology platform (CTP) for your organization.
- Issue an RFI or RFP to representative CSS suite vendors, detailing both mandatory and optional business requirements that must be met without any third-party integrations. Evaluate the bidder responses to determine if, at a minimum, all mandatory business requirements can be met by the unified suites offered by the vendors.
- Plan to implement a CSS suite if at least 80% of the mandatory requirements can be met by a suite solution.
- Opt for CSS suites that favor solution architectures modeled on a unified data layer foundation, and a use-case-specific application layer built with microservices.

Sample Vendors

eGain; Genesys; Glia; Microsoft; NICE; Oracle; Pega; Salesforce; Verint

Video Contact Center

Definition:

Video contact center functionality typically includes live video streaming between customers and agents — either one-way or two-way — as well as prerecorded video training for customers. Requirements for contact center queuing, routing and reporting on video chat sessions necessitate the use of purpose-built systems that go beyond the capabilities of general enterprise video collaboration tools.

عملکرد مرکز تماس ویدیویی معمولاً شامل پخش زنده ویدیو بین مشتریان و نمایندگان – یک طرفه یا دو طرفه – و همچنین آموزش ویدیویی از قبل ضبط شده برای مشتریان است. الزامات برای نوبت دهی مرکز تماس، مسیریابی و گزارش در جلسات چت ویدیویی، استفاده از سیستم های هدفمند را ضروری می کند که فراتر از قابلیت های ابزارهای کلی همکاری ویدیویی سازمانی است.

Why This Is Important

When implemented with an appropriately targeted audience such as sales, or concierge-level service for a select segment of customers, customer service video chat solutions can deliver a highly engaged customer experience.

Prerecorded videos can be used to explain complex activities to customers. They offer the ability to not only experience an audio and video explanation, but also enable customers to pause, rewind and replay the explanation to implement the instructions in a step-by-step manner.

Business Impact

Customer service video chat:

- Provides a differentiated customer experience
- Leverages deeply ingrained human communication patterns
- Conveys empathy and trust and recognizes moments of confusion or disconnectedness better than voice-only interactions can

Prerecorded video explanations:

- Leverage voice and image-based communication
- Allow pause, rewind and replay for more effective processing of complex concepts
- Can save money by significantly shortening call durations for agents

Drivers

Drivers of customer service video chat usage include:

- Increasingly easy-to-use video chat capabilities
- Proliferation of smartphones and tablet devices for accessing video communications
- Lowering of costs for video kiosk access points
- Pandemic-inspired use of video communications as a common communications tool for consumers
- Possibility of use in place of face-to-face communication in stores

- Improved ability to use smartphone video to verify faceprint biometrics for customer authentication

Drivers of prerecorded video snippets include:

- Increased access to low-cost, high-quality video recording and editing software
- Proliferation of smartphones and tablet devices for receiving and viewing recorded videos
- Increased customer preference for self-service interactions and tools
- Increased propensity for customers to use smartphones in the buying and customer service processes

Obstacles

For more than two decades, contact centers have struggled to rationalize, implement or maintain customer service video chat initiatives. Obstacles to customer service video chat usage include:

- Lack of established best-practices for customer service video chat operations, including norms for hiring, compensation and agent appearance, among others
- Track record of not meeting organizational expectations regarding customer experience and loyalty
- Risk of an ill-timed agent eye-roll destroying years of customer loyalty in an instant
- Risk of agents' lawsuits if exposed to highly improper behavior on the part of the customer
- Challenges of adding another customer service channel rather than optimizing existing ones

Obstacles to prerecorded video snippets are few, but can include:

- Expense of developing highly professional recordings
- Not all customers may have access to a device capable of viewing videos at the time they're needed
- Current low maturity of web-based self-service

User Recommendations

For customer video chat:

- Scrutinize the business case carefully.
- Ask vendors for reference customers to gauge experience and glean best practices.
- Deploy limited pilot programs with limited financial commitment and grow usage gradually.
- Determine whether video use cases can be better served with prescheduled interactions using lower-cost enterprise collaboration tools rather than being queued and routed on-demand.

For prerecorded video customer service:

- Mine agent activities to determine long and complex explanations provided repeatedly.
- Leverage explanation videos that may already be available to customers on the corporate website or in other training venues.

- Leverage new videos across other customer touchpoints such as the corporate website or accessibility via search engine.
- Provide instructions for customer-submitted videos on what to show, in order to effectively convey their support situation.

Sample Vendors

24sessions; auvious; Enghouse (Vidyo); Glance; Kaleyra; REVE Chat; SmartVideo; Sprinklr; Streem; Vyntelligence

Customer Data Platform

Definition:

A customer data platform (CDP) is a software application that supports marketing and customer experience use cases by unifying a company's customer data from marketing and other channels. CDPs optimize the timing and targeting of messages, offers and customer engagement activities, and enable the analysis of individual-level customer behavior over time.

پلتفرم داده‌های مشتری (CDP) یک برنامه نرم‌افزاری است که از موارد استفاده از بازاریابی و تجربه مشتری با یکپارچه‌سازی داده‌های مشتری شرکت از بازاریابی و کانال‌های دیگر پشتیبانی می‌کند CDP .
ها زمان بندی و هدف گذاری پیام ها، پیشنهادات و فعالیت های تعامل با مشتری را بهینه می کنند و تجزیه و تحلیل رفتار مشتری در سطح فردی را در طول زمان امکان پذیر می کنند.

Why This Is Important

Making use of customer data is hard — respondents to the 2023 Gartner CMO Spend and Strategy Survey identified customer experience (CX) management and customer analytics as their top two capability gaps in meeting 2023 business goals. However, getting it right results in improved customer experiences, marketing performance, scale and efficiency. Marketers turn to CDPs to gain control of data management and orchestration as multichannel journey orchestration, data privacy and first-party data grow more complex.

Business Impact

CDPs address marketing use cases like segmentation, profile unification and predictive modeling. Use cases have grown into other functions like CX and enterprise data and analytics (D&A). CDPs first served retail, travel and hospitality industries, but have expanded into regulated industries like healthcare and financial services. Interest from B2B organizations grows, though features specific to B2B (for example, proprietary intent or firmographic data and predictive lead scoring) remain on the back burner for vendors.

Drivers

- More roles in marketing and adjacent functions need unified, real-time data to operate efficiently and deliver value. Since CDPs developed as a "hub," routing data through the martech stack, they enable marketers to coordinate a growing number of data-driven use cases, from identity resolution to messaging. CDPs' utility makes them a strategic purchase for many brands, anchoring initiatives from 360-degree customer views to personalization.
- Hype related to first-party data fuels interest in CDPs as organizations face impacts from ID deprecation and privacy regulations. CDPs are often positioned as a transition option to evolve marketing's data strategy away from third-party cookies and toward first-party data. However, this is only a piece of the martech puzzle. Organizations expecting a fluid connection between first-party identifiers and the adtech world will find CDPs an incomplete solution to prospecting use cases.
- High demand for CDPs to support personalization and orchestration pushed vendors to introduce workflows beyond integration and segmentation. Popular use cases beyond data collection and integration vary, including prediction, activation and identity resolution.

- The past year saw continued market diversification. The 2022 Gartner Marketing and Communications Technology Survey saw a slight increase in the use of marketing cloud CDPs and a decline in smart hub CDPs. As such, market focus has shifted away from the smart hub style of building orchestration capabilities within the CDP, and toward managing profiles that can be leveraged by other technology in a marketing cloud suite.
- The emerging trend of building a “composable” CDP architecture is inspiring new vendors to compete. They bring a vision of activating an organization’s existing enterprise data warehouse (EDW) as a CDP instead of buying an out-of-the-box CDP. This allows prospective buyers to purchase components of CDP functionality from different vendors (for example, a vendor for data collection vs. storage vs. activation).

Obstacles

- Complex process to select a CDP: Prospective buyers’ lack of detailed use cases and clarity on technology dependencies exacerbate the problem. Use cases positioned by vendors can be far-reaching, such as compensating for the loss of third-party cookies through IDR and clean rooms.
- Overlapping martech: CDP capabilities remain variable due to an expanding feature set and overlap with other technology. For example, it’s hard to differentiate between a smart hub CDP vs. an MMH offering CDP features. There’s also confusion around CDP vs. MDM.
- Technical skills: Successful CDP utilization is correlated with having the technical skills to operate and integrate the technology. IT is increasingly involved, and upskilling marketers is paramount.
- Concerns of CDP bloat: Common data overages sneak up to increase CDP cost. Further, the potential for CDPs to become another data silo has complicated the CDP business case and conversations between marketing and IT regarding deployment strategy.

User Recommendations

- Collaborate with stakeholders to develop use cases for unified customer data in the context of your marketing, sales, service and digital commerce outcomes. Identify points of friction and opportunities in first-party data collection, customer analytics, personalization and CX.
- Clarify points of integration and potential redundancy in your technology stack. Audit your technology landscape to identify adjacencies where capabilities overlap (for example, personalization engines, multichannel marketing hubs and marketing automation platforms).
- Use proof-of-concept pilots to validate delivery on promised capabilities, as well as the usability and effectiveness of the offering.
- Scrutinize your existing multichannel marketing hub and personalization vendors’ roadmaps to see if any existing features achieve the capabilities of a CDP, or if they plan to introduce such features.
- Work across business and IT functions in selecting and deploying a new CDP, or maximizing the use of existing technology.

Sample Vendors: ActionIQ; Adobe; BlueConic; Dun & Bradstreet; Redpoint Global; Salesforce; Tealium; Zeotap

Conversational User Interfaces

Definition:

Conversational user interfaces (CUIs) are human-computer interfaces that enable natural language interactions for the purpose of fulfilling a request, such as answering a question or completing a task. The sophistication of a CUI can vary from understanding basic queries to handling complex multiturn dialogs, so CUIs range from Q&A bots to more advanced virtual assistants (VAs). CUIs fundamentally shift the interaction medium from traditional point-and-click to natural-language-driven.

رابطهای کاربر مکالمه (CUI) رابطهای انسان و رایانه هستند که تعاملات زبان طبیعی را به منظور انجام یک درخواست، مانند پاسخ به یک سؤال یا تکمیل یک کار، فعال می‌کنند. پیچیدگی یک CUI می تواند از درک پرس و جوهای اولیه تا مدیریت گفتگوهای پیچیده چند نوبتی متفاوت باشد، بنابراین CUIها از ربات های پرسش و پاسخ تا دستیارهای مجازی پیشرفته تر (VAs) را شامل می شود . CUIها اساساً رسانه تعامل را از نقطه و کلیک سنتی به زبان طبیعی تغییر می دهند.

Why This Is Important

UIs provide direct control between the user and the applications they are operating. In a CUI, this responsibility shifts from application-specific controls to conversational controls, and the CUI is determining the intent and acting upon it. This makes CUIs more widespread as agent (acting) UIs for software, devices and the Internet of Things. AI-enabled CUIs can provide a single, intuitive, common interface to multiple application functions across the entire organization.

Business Impact

Training, onboarding, escalations, productivity, empowerment and responsibility all change with CUIs and need to be embraced as part of CUI projects. AI-enabled CUIs can dramatically standardize and improve the usability of a variety of applications across all business functions, such as CRM, the digital workplace and ERP, hence improving efficiency. They can also benefit customer experience when used to automate support in the form of self-service chatbots or VAs.

Drivers

- Users' expectations and generative AI: Users increasingly expect to be able to hold conversations with and ask natural language questions of the applications they use. CUIs are beginning to complement or even replace traditional interfaces in a variety of applications, such as search and insight engines, business intelligence platforms and productivity software, such as document and spreadsheet applications. The trend toward the enablement of interactions in natural language between users (customers and employees) and software has been significantly accelerated by the hype around generative AI and ChatGPT.
- Conversational AI platforms: The underlying technology supporting custom-developed CUIs (like chatbots and VAs) built on top of conversational AI platforms (CAIPs) has matured significantly in the last few years. Vendors are investing in core AI technologies, such as large language models (LLMs), to improve components such as natural language understanding. They are also expanding their capabilities to support

broader use cases beyond self-service chatbots and toward broader B2C and B2E automation.

- Search: CUIs will be increasingly used for knowledge search and retrieval based on document ingestion. Some technologies driving this include LLM-enabled enterprise applications, such as Microsoft 365 Copilot, as well as ChatGPT-like Q&A chatbots and LLM-powered VAs. This is also causing the market to be flooded with dedicated add-ons and even new vendors.
- Multimodal interactions: Generative AI methods are increasing the availability of multimodal interactions, such as those based on images, videos, audio and other sensory data. As a matter of fact, beyond text, voice is emerging as a primary modality of interaction between users and CUIs. This can add a powerful enhancement to the communications. Multimodality can solve some of the problems of the current generation of LLMs. Multimodal language models will also unlock new applications that were impossible with text-only models.

Obstacles

- Developing CUIs is intrinsically complex and requires more effort than graphical UIs. More sophistication has to be built into VAs' conversational capabilities to deal with a range of users and edge cases. CUIs' predictions about users' intents can be wrong, so the CUI designer has to keep ambiguity in mind.
- Lack of CUI personality, poor accuracy and conversational design, as well as unreliability of answers generated by LLMs, can affect user sentiments negatively and, as a consequence, adoption and ROI.
- CUIs are available from many sources, whether offered by applications, CAIPs or through separate augmentation. For example, transactional conversational AI use cases require capabilities that only platforms can provide. Q&A scenarios may also be supported by architectures primarily leveraging search and LLMs. Understanding the sophistication and the limitations of these and other approaches is not trivial. This may lead buyers to choose the wrong tooling and many CUIs to fail.

User Recommendations

- Treat CUIs as transformative, and plan on them becoming the dominant interaction model between users and applications.
- Prioritize the requirements of your custom CUIs in terms of sophistication, integration and control. Do not underestimate the risks of building CUIs that do not meet enterprise-grade performance, accuracy and security standards.
- Develop your strategy for consolidation upon one or few conversational AI platforms or approaches, avoiding challenges that derive from the proliferation of CUIs deployed by different business units in different regions.
- Educate stakeholders around benefits and limitations of generative-AI-enabled CUIs, and encourage well-informed employees to experiment with such CUIs.
- Prepare for new roles and skills in the enterprise. Dialogue designers and AI trainers, for example, are needed to enable custom CUI initiatives. Citizen developers will acquire prompt engineering and model management skills to leverage generative-AI-enabled CUIs effectively.

Sample Vendors

Amelia; Avaamo; Cognigy; Google; IBM; Kore.ai; Omilia; OneReach.ai; OpenAI

Multiexperience

Definition:

Multiexperience (MX) describes interactions that take place across a variety of digital touchpoints (i.e., web, mobile apps, conversational apps, AR, VR and wearables), using a combination of interaction modalities in support of a seamless and consistent digital user journey. Modalities include text, voice, vision and gesture. Multiexperience is part of a long-term shift from the individual computers that we use today to a multidevice, multisensory and multilocation ambient computing experience.

Multiexperience (MX) تعاملاتی را توصیف می‌کند که در انواع نقاط لمسی دیجیتال) به عنوان مثال، وب، برنامه‌های تلفن همراه، برنامه‌های مکالمه، AR، VR و ابزارهای پوشیدنی(، با استفاده از ترکیبی از روش‌های تعامل برای پشتیبانی از یک سفر دیجیتالی یکپارچه و ثابت انجام می‌شود. مدالیته ها شامل متن، صدا، دید و اشاره است. تجربه چندگانه بخشی از تغییر درازمدت از رایانه‌های فردی است که امروزه از آنها به یک تجربه محاسباتی محیطی چنددستگاهی، چندحسی و چندمکانی استفاده می‌کنیم.

Why This Is Important

Through 2030, the digital user experience (UX) will undergo a significant shift in terms of how consumers, partners, citizens and employees experience their environments. MX represents a shift in both UX perception and interaction models — creating a multisensory, multidevice, multilocation and multitouchpoint digital journey for the user.

Business Impact

To achieve digital business transformation, it is essential to understand and exploit multiexperience. Applying multiexperience design to digital experiences removes friction and effort for the users — both customers and employees. MX delivers positive business outcomes by serving customers and employees in ways that best suit their needs and expectations. Adopting MX enables optimization and reuse of business capabilities, implementation components and data.

Drivers

- Organizations are shifting their delivery models from projects to products, but beyond products is the experience — the collection of feelings, emotions and memories. Web and mobile apps are already commonplace, but they are undergoing UX changes driven by new capabilities like progressive web apps, WebXR and artificial intelligence (AI) services. Conversational platforms, powered by Generative AI such as ChatGPT, allow people to interact more naturally and effortlessly with the digital world. Reinforced by hardware innovations and AI, immersive technologies such as virtual reality (VR), augmented reality (AR), mixed reality (MR) and the metaverse are changing the way people interact with and perceive the physical-digital world.
- As organizations continue to invest in customer experience (CX) and employee experience (EX), they will need to apply MX front-end architecture and technology strategies to be more agile at serving business needs and user expectations. When MX discipline is applied with great UX in support of CX and EX strategies, total

experience (TX) transformation is achieved. TX requires MX to be executed with CX, EX and UX in harmony and synchronicity.

- The long-term manifestation of MX is a composable digital experience that is adaptive, seamless, collaborative, consistent, personalized and ambient. Design and architecture patterns, such as micro-front-ends, backends for frontends and superapps are important enablers.
- Greater availability of development technologies to build for multiexperience more easily, including multiexperience development platforms, digital experience platforms and cross-platform frameworks (i.e., Flutter, .NET MAUI, React Native, Vue Native).

Obstacles

- Privacy and security concerns may dampen the enthusiasm and impact of MX adoption. Multiple devices or digital touchpoints with different levels of security capabilities will increase risk of security breaches.
- On the technical front, the fragmentation of many consumer devices and the inconsistency of interoperability standards are enormous barriers to seamless MX integration of front-end technologies. Legacy noncomposable and non-API-ready service architecture makes those barriers even higher.
- The cost and effort, required for implementing MX, often do not justify the benefits of the resulting output.
- The skills needed for MX development, such as immersive interaction design, are still lacking in most enterprise software engineering teams.
- Currently, automatic plug and play of off-the-shelf devices, applications and services is not feasible for MX. Instead, proprietary hardware and software ecosystems of MX solutions will exist in the near term.

User Recommendations

- Identify three to five high-value pilot projects in which MX design can lead to more effortless, compelling and transformative experiences, such as e-commerce, healthcare, frontline workers and edge computing.
- Evaluate business applications, frameworks and platforms, such as field service management and digital experience platforms, for their native MX capabilities and support for custom MX development.
- Collaborate with UX design teams to create a design system that spans desired MX touchpoints and modes of interaction.
- Establish a multidisciplinary fusion (product) team including (but not limited to) IT, product managers, UX designers and business stakeholders.
- Invest in modern service architecture and technologies to ensure a seamless integration between MX applications with back-end services through APIs.
- Focus on understanding how unified digital experiences impact the business, and use evolving MX technologies to create targeted solutions for customers, partners and staff.

Customer Journey Analytics

Definition:

Customer journey analytics (CJA) tracks and analyzes customers' and prospects' interactions with an organization across multiple channels. It aims to provide a holistic view of customer experience by covering all the channels used by customers. CJA includes channels with human interaction (e.g., a call center) and those that are fully automated (a website). It also includes physical channels (a retail store), and those that provide customer assistance (live chat and co-browsing).

تجزیه و تحلیل سفر مشتری (CJA) تعاملات مشتریان و مشتریان بالقوه با یک سازمان را در چندین کانال ردیابی و تجزیه و تحلیل می کند. هدف آن ارائه دیدگاهی جامع از تجربه مشتری با پوشش تمام کانال های مورد استفاده مشتریان است CJA .شامل کانال هایی با تعامل انسانی (به عنوان مثال، یک مرکز تماس) و آنهایی است که کاملاً خودکار هستند (یک وب سایت). همچنین شامل کانال‌های فیزیکی (یک فروشگاه خرده‌فروشی) و آنهایی است که به مشتری کمک می‌کنند (چت زنده و مرور مشترک).

Why This Is Important

Consumers expect personalized, customer-centric engagement and marketers need to deliver it — challenging marketing strategies that take a business-centric approach to the customer experience. Moreover, customer activity across channels is increasing, so tools that integrate cross-channel customer behavior using CJA enable companies to identify opportunities to improve customer experience.

Business Impact

CJA is a strategic priority for a variety of internal roles in several different industries, as leaders strive to gain a better understanding of the customer journey across all phases — buying, ownership and advocacy. In many cases, marketers will be able to leverage CJA features in their existing martech stack rather than add a stand-alone vendor.

Drivers

- CJA is a strategic priority for multiple roles, as marketing, sales and service leaders strive to gain a better understanding of customers' complete journeys and touchpoints across channels and functions.
- CJA can improve marketers' personalization tactics by measuring each phase of a journey to optimize the entire journey for the customer (or customer segment) context and intent.
- CJA access is accelerating as more applications begin to add elements of journey analysis into existing tools, such as customer data platforms, personalization engines, customer analytics applications and multichannel marketing hubs.

Obstacles

- Marketers are challenged to access, analyze and activate their companies' customer data — from web activity to call center engagement. Gartner surveys show that on average, companies use nine channels for marketing, 2.9 for digital commerce and

5.4 for customer service. The greater the number of siloed customer channels or data sources, the more challenging to deliver comprehensive CJA.

- Digital data deprecation has accelerated, with changes to platforms (Apple) and regulations (across North America and Western Europe). While marketers must address regulatory and consumer concerns, this trend creates a journey analytics gap for anonymous audiences, due to the increasing challenge of linking anonymous digital activity across sessions and devices. Those challenges are larger for certain go-to-market models (primarily indirect sales models, e.g., B2B2C).

User Recommendations

- Acknowledge that valuable insights come from understanding the combination of channels used by customers, not by understanding customer (or segment) behavior within a single channel.
- Evaluate your existing technology stack to see if you're already paying for an application with journey analysis capabilities — because journey analysis functionality is often embedded into other systems.
- Avoid measuring outcomes with channel-specific key performance indicators (KPIs) (that ignore customer activities in other channels, such as single-channel conversion rates or cost per acquisition. Channel-specific KPIs can be useful diagnostic indicators for prioritizing optimizations.
- Start with customer identification and journey mapping across only two to three channels, where the journey benefits the customer and organization (high impact) and the data are both available and valuable (high feasibility).

Sample Vendors

Adobe; Cerebri AI; Splunk; Teradata

Digital Customer Service

Definition:

Digital customer service offerings focus on seamless conversation orchestration across digital channels. This area was once dominated by specialist vendors with a focus on end-to-end customer engagement — using digital channels and intelligent automation to sustain continuous conversations across functions. However, providers from several, more mature, market spaces are making plays for a share of what is rapidly becoming the dominant modality in customer service provision.

ارائه خدمات دیجیتال به مشتریان بر هماهنگی یکپارچه مکالمه در کانال های دیجیتال متمرکز است. این منطقه زمانی تحت تسلط فروشندگان متخصص با تمرکز بر تعامل مشتری سرتاسر – با استفاده از کانال‌های دیجیتال و اتوماسیون هوشمند برای حفظ مکالمات مداوم در بین عملکردها بود. با این حال، ارائه‌دهندگان چندین بازار، بالغ‌تر، سهمی از آنچه که به سرعت در حال تبدیل شدن به روش غالب در ارائه خدمات به مشتریان است، بازی می‌کنند.

Why This Is Important

The proliferation of digital engagement channels has reinforced customers' expectations around instantaneous, seamless and effortless service experiences. The desire for self-service, combined with the emergence of conversational artificial intelligence (AI), has led to an evolution of most engagement models. As such, Gartner sees the emergence of a new area of customer care referred to as "digital customer service."

Business Impact

Customer-centric organizations embrace digital customer service to empower and support employees beyond the customer service function to help customers. At one extreme, customer service becomes a competency of the entire workforce. This approach is taken with the intent of reaping the benefits of customer satisfaction, loyalty and advocacy. It also helps mitigate the risk of disconnected conversations with less procedural structures, leading to distrust and churn.

Drivers

- Vendors delivering digital customer service have various technology heritage — each offers its own perspective on the emerging market of digital customer service solutions. Now, advanced digital capabilities can be situated across many parts of the tech stack, not just in digital-first solutions. Contact-center as a Service (CcaaS) and customer engagement center (CEC) solutions are acquiring or developing features that are starting to rival digital specialists.
- Established suite providers have made a concerted effort to migrate legacy, on-premises deployments to the cloud. Without this, the value of acquisitions and in-house development would be inhibited.
- Vendors across all markets are investing more time and effort early in engagements to help end users tailor roadmaps and prioritize use cases (previously the preserve of big consultancies managing digital transformation projects in general). Maximizing ROI is in the interests of both parties.

- Digital-first solutions are bringing more traditional, enterprise-scale telephone voice capabilities to ease organizational change roadmaps and target larger customer service operations (either by building the features natively or partnering with proven communications platform as a service vendors).

Obstacles

- Processes often conflict with delivering top-tier digital customer service. For example, forecasts by channel make little sense when reps are empowered to use a mix of modalities that they think will suit an interaction. Asynchronous exchanges allow customers to set the cadence of interactions, which can break KPIs on which service organizations rely.
- Customers don't think about the channel they are in. They want great customer service on whatever digital touchpoint is most convenient and whatever modality is most effortless. Increasingly, customer service will become a cross-departmental function that requires coordination and opportunities to move from cases to conversations.
- This transformation can't happen without significant collaboration across functions. KPIs need to be created, referencing voice of the customer and customer journey programs.
- Digital customer service capabilities are composable. The additional degree of freedom to configure service experiences is often entrusted to operations teams in customer service organizations without much expertise in experience design.

User Recommendations

- Build customer service design around continuous orchestration and activities. Invest in technology supporting a blend of digital engagement channels, including digital voice. These technologies will form part of a next-generation customer engagement strategy.
- Sustain continuous conversations at scale by establishing an AI-supported robust self-service and automation approach. Include machine learning, continuous intelligence (real-time data and advanced analytics) and knowledge management.
- Be realistic about how much your organization may have to change to realize the full benefits on offer when assessing digital customer service solutions. Account for this inertia in any roadmap activities with vendors or implementation partners.
- Leverage the modular approach of digital customer service vendor offerings to implement the highest priority use cases and applications with best-of-breed, digital-first providers. This will allow you to maximize ROI, minimize technical debt and reduce upheaval in large organizations with significant operational lag.

Sample Vendors

Dixa; eGain; Genesys; Glance; Glia; LivePerson; Sprinklr; Zendesk

VoC Applications

Definition:

Voice-of-the-customer (VoC) applications combine multiple traditionally siloed technologies associated with the capture and analysis of direct, indirect and inferred customer feedback. For example, surveys, social media monitoring and speech/customer journey analytics are integrated to provide a holistic view of the customer's voice. The resultant customer insights can be acted on automatically or disseminated to relevant employees and managed as part of inner- and outer-loop interventions.

برنامه‌های صدای مشتری (VoC) چندین فناوری سنتی را که با جمع‌آوری و تجزیه و تحلیل بازخورد مستقیم، غیرمستقیم و استنباط‌شده مشتری مرتبط است، ترکیب می‌کنند. برای مثال، نظرسنجی‌ها، نظارت بر رسانه‌های اجتماعی و تجزیه و تحلیل گفتار/سفر مشتری برای ارائه دیدگاهی جامع از صدای مشتری یکپارچه شده‌اند. بینش مشتری حاصل را می توان به صورت خودکار عمل کرد یا به کارکنان مربوطه منتشر کرد و به عنوان بخشی از مداخلات حلقه درونی و بیرونی مدیریت کرد.

Why This Is Important

Most organizations have multiple siloed customer feedback mechanisms at a departmental level, usually based on surveying complemented by other domain-specific information sources. Few organizations have aligned these various sources to create an integrated VoC solution and, as such, are failing to fully realize the potential positive impact that feedback can have on improving the customer experience.

Business Impact

A centralized VoC solution will:

- Instill more confidence in actions taken at both individual customer level (such as a retention call) and at overarching strategic level (such as a process or product change).
- Ensure that the right insight and action gets assigned to the right employee across the enterprise at the right time, regardless of where the feedback originated from.
- Help manage brand perceptions, understand and improve the customer experience and develop future customer engagement strategies.

Drivers

Several factors are accelerating the adoption and maturity of VoC, including the following:

- The emergence of large, big-name VoC vendors with revenue approaching $1 billion causing increased visibility and awareness of VoC applications.
- Adoption by B2B and B2B2C enterprises, not just B2C.
- Entrance into the market by mainstream CRM vendors such as Salesforce and Microsoft.
- Elevated commitment to the customer experience as the primary means of market differentiation by corporate executives.

- Alignment with complementary employee experience initiatives currently fashionable with HCM leaders.
- Elevated focus on value measurement of VoC.
- Better alignment of VoC with research (user and product).
- Advancements in both prescriptive (i.e., a recommended list of prioritized actions per employee) and automated (i.e., resolving the action from within the VoC solution and associated operational integrations without human intervention) actions.
- Customer wants/needs, which are changing much faster (due to several factors) than in the past. Organizations need to be more responsive to these changing needs, and require a robust VoC application.

Obstacles

VoC as part of the customer service technology suite is far from mainstream. Organizational maturity is low and the vendor landscape is still emerging, resulting in various obstacles:

- There are over 30 vendors that have expertise spanning the diversity of feedback techniques that a holistic VoC solution encompasses. New CRM vendor entrants with currently immature but potentially long-term viable offerings further complete procurement.
- Organizations will likely continue to collect feedback through multiple applications for many more years because individual departments will be reluctant to relinquish their tools and standardize on one central application. At best, an integrated multivendor ecosystem will be achieved.
- As the number of data sources ingested continues to expand, how VoC aligns with existing single-view-of-the-customer initiatives (for example, a customer data platform/lake) is an increasingly contentious discussion topic. The upside of time to value proposed to business by VoC vendors is countered by the cost, complexity and inherent duplication perceived by IT.

User Recommendations

Ideally, VoC should fall under the remit of a central customer experience function, but if not, then a cross-department VoC committee. Once set up, do the following:

- Conduct an internal audit to assess current customer feedback capabilities and reduce duplicate technologies.
- Prioritize future initiatives that collect VoC data by balancing quality (insightfulness) with the quantity of feedback available. Strive to obtain a single, holistic view of the VoC.
- Determine the most appropriate data architecture and analytical models/techniques to extract key customer insights at both individual respondents and aggregated across the customer base levels.
- Distribute relevant insights/actions across the organization (front line and management) in a timely manner using workflow and operational integration.
- Leverage VoC in core business processes, ideally in real time — for example, using a low survey score to open a customer service case within the customer service and support application.

Sample Vendors

Forsta; InMoment; Medallia; Qualtrics; SMG

Communications PaaS

Definition:

Communications platform as a service (CPaaS) is a cloud-based middleware on which organizations can develop, run and distribute communications software. The platform offers APIs that simplify the integration of communication modules — including SMS, voice, messaging apps, email, social and video — into applications, services and business processes, complemented with development tools and documentation. A CPaaS vendor may assemble multiple CPaaS modules into richer solutions, such as e-commerce.

پلت فرم ارتباطات به عنوان یک سرویس (CPaaS) یک میان افزار مبتنی بر ابر است که سازمان ها می توانند بر روی آن نرم افزارهای ارتباطی را توسعه، اجرا و توزیع کنند. این پلتفرمAPI هایی را ارائه می‌کند که ادغام ماژول‌های ارتباطی – از جملهSMS ، صدا، برنامه‌های پیام‌رسان، ایمیل، شبکه‌های اجتماعی و ویدئو را در برنامه‌ها، خدمات و فرآیندهای تجاری، به همراه ابزارهای توسعه و اسناد تکمیل می‌کنند. یک فروشنده CPaaS ممکن است چندین ماژول CPaaS را در راه حل های غنی تر، مانند تجارت الکترونیک، جمع آوری کند.

Why This Is Important

CPaaS is important because it easily enables organizations to integrate communications into workflows via developer-friendly software APIs. Even organizations with modest IT skills have developers that can deploy SMS, voice and two-factor authentication (2FA) for basic workflows like notifications and appointment reminders. Digital natives and large enterprises have robust developer teams that can build more complex workflows with features such as email, video, payments, web chat and WhatsApp.

Business Impact

CPaaS plays a prominent role in enterprise IT with the influx of developers joining the IT workforce. A developer ecosystem of APIs, software development kits (SDKs) and documentation provides a low-cost toolset for improving operational efficiency and customer experience. CPaaS vendors now offer visual builders so noncoding business analysts can build simple workflows. Most organizations start by deploying CPaaS for a single business unit (BU) use case, from which it is quickly adopted across other BUs.

Drivers

- CPaaS is highly correlated with the 2023 API economy. Many organizations now have a bigger developer workforce compared to 2018. Megavendors like Amazon, Cisco and Microsoft now have a CPaaS play. The companies' entrance certifies the importance of CPaaS, placing CPaaS on the radar screen of IT leadership.
- CPaaS vendors continue to build out their platforms with an expanded set of modules such as video, WhatsApp, security, authentication, email and payments. This, in turn, enables organizations to build more complex workflows, yielding higher CPaaS revenue for vendors, such as e-commerce, telehealth and insurance claims processing.

- A few CPaaS vendors are building out advanced capabilities in bots, AI, customer data platforms (CDPs) and campaign management. Many of these implementations focus on customer experience.

- CPaaS vendors are building systems integrator (SI) partnerships focused on complex vertical use cases. This provides a scaling opportunity as the SIs have strong CIO relationships for building advanced IT workflows.
- Visual builders continue to be rolled out in the market to allow the participation of noncoding business analysts. This expands the total available market (TAM) to users building simple workflows or making modifications to existing workflows.

Obstacles

- The CPaaS market struggles with brand awareness. Many IT decision makers are not sure which CPaaS providers are best-suited to align with.
- Developer talent constrains CPaaS growth. While organizations add developers to their workforce, their schedules may be booked for other projects.
- The CPaaS landscape is complicated as new vendors enter the market and with others repositioning their product offerings. In addition, CPaaS vendors are expanding their capabilities into CDP, contact center as a service (CCaaS) and campaign management.
- 2022 through 2023 economic uncertainty has forced vendors to focus on profitability rather than growth. This has led to industry layoffs, reduced risk taking and a focus on core competencies further hindering CPaaS adoption.
- CPaaS market adoption is strong with mature offerings like SMS, 2FA, and number anonymization. But they are commodities and have poor margins. CPaaS vendors need greater adoption into the newer capabilities — WhatsApp, video, and conversations — in order to restore their financial health.

User Recommendations

- Proceed first with simple solutions centered on SMS, application-to-person (A2P), 2FA, phone number anonymization and voice if you have modest IT skills.
- Explore the advanced communications modalities such as the messaging apps (e.g., WhatsApp), video, email, payments and e-commerce if you have stronger IT skills. CPaaS is now viable for organizations of all shapes and sizes.
- Adopt CPaaS across the entire business. CPaaS often starts in a single BU, before expanding to others — such as HR, operations and supply chain — to achieve maximum benefits.

- Expand the organization’s developer workforce to fully leverage CPaaS for competitive edge. IT core competency is not a luxury, but a necessity for survival.
- Hire SIs or boutique CPaaS development firms for initial projects. Have your IT team learn from the third-party CPaaS firm so you can build your own core competency.

Sample Vendors

Bandwidth; CM.com; Infobip; MessageBird; Route Mobile; Sinch; Twilio; Vonage

Customer Service Analytics

Definition:

Customer service analytics is the combination of interaction analytics (desktop, speech and text), customer journey analytics and next-best-action analytics. Collectively, they surface real-time and historical insight into performance, and offer recommendations to elevate the customer experience and deliver against operational goals.

تجزیه و تحلیل خدمات مشتری ترکیبی از تجزیه و تحلیل تعامل (رومیزی، گفتار و متن)، تجزیه و تحلیل سفر مشتری و تجزیه و تحلیل عملکرد بعدی است. در مجموع، آنها بینش زمان واقعی و تاریخی را در مورد عملکرد ارائه می دهند و توصیه هایی را برای ارتقای تجربه مشتری و ارائه در برابر اهداف عملیاتی ارائه می دهند.

Why This Is Important

Deep analysis of customer and operational data enables customer service organizations to be more agile and effective, uncover hidden trends and insights to improve customer experience, improve operational efficiencies, allow insight into interaction dynamics, and increase revenue and/or savings. Analysis can operate on large stored datasets, or on real-time information flows.

Business Impact

Analyzing customer interactions and journeys gives organizations deeper insights into:

- Customer experience of interactions through multiple channels, validation of journey mapping and customer sentiment indications
- Employee experience in terms of quality of engagements, employee skills and next-best-action guidance
- Operational performance improvements in terms of opportunities for automation, deflection and process improvement

Drivers

- Customer data and analytics is the most important priority for customer service leaders to achieve their goals in 2023 (see Top Goals and Priorities for Customer Service and Support Leaders in 2023).
- The customer service environment has an overwhelming quantity of unstructured data — a combination of telephone recordings, emails and digital messages, all of which can be analyzed to drive deeper insights into customer experience, employee experience and operational performance.
- Employee performance, development and quality assurance is the third most important priority for 2023. Analysis of current customer engagements in assisted service channels of voice, email and chat is a key initiative to improving employee performance and customer experience.
- Taking advantage of the opportunity to recruit talent from outside the service center commuter belt and offering flexible working to existing advisers places new demands on onboarding, training and agent guidance. These learning initiatives can be bolstered by customer analytics capabilities — surfacing insights in near real time —

to provide customer service managers with greater visibility of performance in the virtual working environment.

Obstacles

- The market for customer analytics is populated by best-of-breed providers focused on offering narrow but effective use cases for operational leaders.
- Customer service analytics decisions are mostly made in isolation of a larger data analytics strategy; hence organizations fail to see the true value of their analysis and investments remain fragmented.
- Organizations do not invest sufficient ongoing resources and effort to manage analysis sources (products, vocabularies); hence the usefulness of insights degrades over time.

User Recommendations

- Articulate the use cases relevant to your analytics project clearly.
- Calculate the potential added value of an integrated analytical technology suite above and beyond siloed technologies, such as speech analytics or performance management.
- Pay particular attention to the technical architecture and ensure alignment with the organization's overall customer analytics strategy.
- Broaden the value proposition by identifying lines of business (LOBs) outside of customer service and support, such as sales, marketing, operations and HR, which can also benefit from insights from mining customer conversations.

Sample Vendors

Amazon Web Services (AWS); Calabrio; CallMiner; Cogito; Genesys; Medallia; NICE; Qualtrics (Clarabridge); Verint

Generative AI

Definition:

Generative AI technologies can generate new derived versions of content, strategies, designs and methods by learning from large repositories of original source content. Generative AI has profound business impacts, including on content discovery, creation, authenticity and regulations; automation of human work; and customer and employee experiences.

فناوری‌های هوش مصنوعی مولد می‌توانند نسخه‌های مشتق‌شده جدیدی از محتوا، استراتژی‌ها، طرح‌ها و روش‌ها را با یادگیری از مخازن بزرگ محتوای منبع اصلی تولید کنند. هوش مصنوعی مولد تأثیرات تجاری عمیقی دارد، از جمله در کشف محتوا، ایجاد، اصالت و مقررات. اتوماسیون کار انسان؛ و تجربیات مشتری و کارمند

Why This Is Important

Generative AI exploration is accelerating, thanks to the popularity of Stable Diffusion, Midjourney, ChatGPT and large language models. End-user organizations in most industries aggressively experiment with generative AI. Technology vendors form generative AI groups to prioritize delivery of generative-AI-enabled applications and tools. Numerous startups have emerged in 2023 to innovate with generative AI, and we expect this to grow. Some governments are evaluating the impacts of generative AI and preparing to introduce regulations.

Business Impact

Most technology products and services will incorporate generative AI capabilities in the next 12 months, introducing conversational ways of creating and communicating with technologies, leading to their democratization. Generative AI will progress rapidly in industry verticals, scientific discovery and technology commercialization. Sadly, it will also become a security and societal threat when used for nefarious purposes. Responsible AI, trust and security will be necessary for safe exploitation of generative AI.

Drivers

- The hype around generative AI is accelerating. Currently, ChatGPT is the most hyped technology. It relies on generative foundation models, also called “transformers.”
- New foundation models and their new versions, sizes and capabilities are rapidly coming to market. Transformers keep making an impact on language, images, molecular design and computer code generation. They can combine concepts, attributes and styles, creating original images, video and art from a text description or translating audio to different voices and languages.
- Generative adversarial networks, variational autoencoders, autoregressive models and zero-/one-/few-shot learning have been rapidly improving generative modeling while reducing the need for training data.

- Machine learning (ML) and natural language processing platforms are adding generative AI capabilities for reusability of generative models, making them accessible to AI teams.
- Industry applications of generative AI are growing. In healthcare, generative AI creates medical images that depict disease development. In consumer goods, it generates catalogs. In e-commerce, it helps customers “try on” makeup and outfits. In manufacturing, quality inspection uses synthetic data. In semiconductors, generative AI accelerates chip design. Life sciences companies apply generative AI to speed up drug development. Generative AI helps innovate product development through digital twins. It helps create new materials targeting specific properties to optimize catalysts, agrochemicals, fragrances and flavors.
- Generative AI reaches creative work in marketing, design, music, architecture and content. Content creation and improvement in text, images, video and sound enable personalized copywriting, noise cancellation and visual effects in videoconferencing.
- Synthetic data draws enterprises’ attention by helping to augment scarce data, mitigate bias or preserve data privacy. It boosts the accuracy of brain tumor surgery.
- Generative AI will disrupt software coding. Combined with development automation techniques, it can automate up to 30% of the programmers’ work.

Obstacles

- Democratization of generative AI uncovers new ethical and societal concerns. Government regulations may hinder generative AI research. Governments are currently soliciting input on AI safety measures.
- Hallucinations, factual errors, bias, a black-box nature and inexperience with a full AI life cycle preclude the use of generative AI for critical use cases.
- Reproducing generative AI results and finding references for information produced by general-purpose LLMs will be challenging in the near term.
- Low awareness of generative AI among security professionals causes incidents that could undermine generative AI adoption.
- Some vendors will use generative AI terminology to sell subpar “generative AI” solutions.
- Generative AI can be used for many nefarious purposes. Full and accurate detection of generated content, such as deepfakes, will remain challenging or impossible.
- The compute resources for training large, general-purpose foundation models are heavy and not affordable to most enterprises.
- Sustainability concerns about high energy consumption for training generative models are rising.

User Recommendations

- Identify initial use cases where you can improve your solutions with generative AI by relying on purchased capabilities or partnering with specialists. Consult vendor roadmaps to avoid developing similar solutions in-house.
- Pilot ML-powered coding assistants, with an eye toward fast rollouts, to maximize developer productivity.
- Use synthetic data to accelerate the development cycle and lessen regulatory concerns.
- Quantify the advantages and limitations of generative AI. Supply generative AI guidelines, as it requires skills, funds and caution. Weigh technical capabilities with ethical factors. Beware of subpar offerings that exploit the current hype.

- Mitigate generative AI risks by working with legal, security and fraud experts. Technical, institutional and political interventions will be necessary to fight AI's adversarial impacts. Start with data security guidelines.
- Optimize the cost and efficiency of AI solutions by employing composite AI approaches to combine generative AI with other AI techniques.

Sample Vendors

Adobe; Amazon; Anthropic; Google; Grammarly; Hugging Face; Huma.AI; Microsoft; OpenAI; Schrödinger

WEM Applications

Definition:

Workforce engagement management (WEM) applications expand on the already mature workforce optimization (WFO) market by accommodating complementary technologies — interaction assistance and voice of the employee (VoE) — that help drive employee engagement. The underpinning WFO component is the result of the unification of quality monitoring, workforce management, e-learning, performance management and speech analytics tools, which have helped drive operational performance over the past decade.

برنامه های کاربردی مدیریت تعامل نیروی کار (WEM) در بازار بهینه سازی نیروی کار بالغ (WFO)با تطبیق فناوری های تکمیلی – کمک تعامل و صدای کارمند - (VoE) که به افزایش مشارکت کارکنان کمک می کند، گسترش می یابد. مؤلفه زیربنایی WFO نتیجه یکسان سازی ابزارهای نظارت بر کیفیت، مدیریت نیروی کار، یادگیری الکترونیکی، مدیریت عملکرد و ابزارهای تجزیه و تحلیل گفتار است که به افزایش عملکرد عملیاتی در دهه گذشته کمک کرده است.

Why This Is Important

WEM brings a much-needed additional dimension to the management of contact center employees:

- Employee needs and expectations are evolving rapidly. Incumbent management philosophies and technologies focused on operational performance enhancement fail to address these ambitions.
- Increases in work-from-anywhere, gig and freelance workers is putting pressure on customer service departments to ensure a high perception of employee experience, which helps secure their commitment to the organization.

Business Impact

As societal shifts begin to force a change in how contact center managers handle their workforce, traditional operational management techniques will increasingly fail over the next few years. Incumbent workforce optimization (WFO) applications focus on delivering employee efficiency and effectiveness gains. The extension of this to WEM helps improve operational performance and elevate employee well-being and engagement.

Drivers

- The shift to hybrid contact centers (mix of WFH and physical contact center) created a need to refine onboarding, scheduling, evaluation and coaching capabilities, previously optimized for a contact center environment with live side-by-side peers being critical to training “in the moment.”
- As AI and automation continue to remove the more mundane interactions, agents will increasingly deal with the remaining more complex and often emotional interactions. This will necessitate the need for a positive working environment in order to attract the right caliber of employee.

- The ability for advisors to apply for jobs and work remotely, from outside the traditional office commuter zone, combined with ability to assess an employer through review sites such as Glassdoor, will place a greater emphasis on employee experience.
- Contact center as a service (CCaaS) and customer engagement center (CEC) vendors are turning to WEM as a must-have complementary function. However, many are still at least a year away from having a viable solution, complicating procurement of a WEM suite.
- Technologies that help drive engagement (and performance) through interaction assistance (such as those associated with next-best-action recommendations, unified desktops, and process guidance and automation) have become an essential dimension of WEM, beyond traditional agent management functions.
- Adoption of SaaS-based solutions has accelerated. These solutions account for the majority of new deployments.
- Mobile application support for agents has increased; however, adoption remains modest. Most solutions lack capabilities beyond the obvious WEM-focused ones, such as the ability to view schedules and make shift change requests.
- VoE is an important mechanism for understanding both the drivers and barriers to the agent experience that impact frontline engagement and performance. Some vendors have diverse offerings; however, many remain rudimentary in their capabilities.

Obstacles

- Many CCaaS and CEC vendors lack maturity. These vendors are the preferred procurement route for the most sophisticated organizations.
- Many contact centers still prioritize operational performance over employee well-being, resulting in a WFO versus WEM mindset to application procurement.
- The frontline environment has fundamentally changed, and possesses its own unique set of challenges to engagement and productivity (e.g., work-life balance, right fit for WFH, feelings of lack of support, recognition and networking, and perception that reps in the physical contact center are viewed by management as higher performers). As such, the software market needs additional time to further refine their applications according to the future likely status quo.

User Recommendations

- Determine the likely change to the expectations of future workforce in your specific industry and geography.
- Prove the correlation between how engaged an employee is and the experience they subsequently provide to customers through targeted metrics.
- Map out how to embrace a WEM strategy that leverages current WFO functions.
- Invest in appropriate desktop tools that complement CRM and assist the agent.
- Develop more agile ways to onboard and coach employees.
- Add a robust VoE program to the contact center operations.

Augmented Reality for Customer Support

Definition:

Augmented reality for customer support lays a combination of 3D graphics, video feeds, annotations and sound over the user's direct or indirect view of the physical world. It projects these onto an optically transparent surface — such as a windshield, glasses or other head-mounted display (HMD) — or it superimposes them onto the feed from a tablet, phone or other camera. Customers and technicians can receive visual information or assistance without glancing away from the physical environment.

واقعیت افزوده برای پشتیبانی مشتری ترکیبی از گرافیک سه بعدی، فیدهای ویدیویی، حاشیه نویسی و صدا را بر روی دید مستقیم یا غیرمستقیم کاربر از دنیای فیزیکی قرار می دهد. آنها را روی یک سطح شفاف نوری – مانند شیشه جلو، عینک یا سایر نمایشگرهای نصب شده روی سر (HMD) پخش می کند – یا آنها را بر روی خوراک تبلت، تلفن یا دوربین دیگر قرار می دهد. مشتریان و تکنسین ها می توانند اطلاعات بصری یا کمکی را بدون نگاه کردن به محیط فیزیکی دریافت کنند.

Why This Is Important

Customer service and field service organizations face pressure to improve average call-completion times and first-visit fix rates to keep pace with competitors. Workforces are increasingly composed of work-from-home agents, less experienced technicians and subcontractors that need visual guidance — even when remote. Also, customers are more sophisticated and want to extend previous investments in devices and communications to achieve faster results through efficient collaborations.

Business Impact

Augmented reality used in customer support use cases will:

- Optimize agents' diagnostic efforts during interactions with customers who are unable to articulate events and conditions due to barriers like language and expertise.
- Provide field technicians with "self-serve" guidance that reduces "glance away" by overlaying the work target with animated instructions.
- Reduce cost-to-serve by reducing on-site visits and using locally manufactured parts.
- Enable training that rivals a side-by-side mentor.

Drivers

Factors increasing the adoption of augmented reality (AR) for customer support include:

- Increased safety awareness has driven an increase in the priority of nontouch collaboration.
- Organizations that use AR to annotate customers' field of view with circles, icons, arrows and gestures see increases in interaction efficiency, which, from client inquiries, we estimate to be above 15% on average.
- Remote employees and customers are more likely to have a mobile digital presence now due to investments around work from home, mobile field service management apps and customer demands.
- It is difficult to provide over-the-phone guidance to B2B or B2C customers for complex and disparate equipment, with video alone.With equipment increasingly connected to

the internet, remote operators can more confidently issue commands and manipulate components. This is because AR enables near instant, in-context feedback in the form of digital twin visualizations and 3D views of hidden components.

- Tight labor markets, margin pressure and senior staff retirements are forcing organizations to replace expert employees with subcontractors and more junior staff. These people are often more tech-savvy, but require more assistance while learning “on the job” in remote locations.
- Technical limitations — such as lack of support for multiple phone operating systems, unreliable cellular coverage and battery life — are diminishing.
- AR enables organizations to simulate equipment when training on dangerous tasks.
- AR can lower support costs while raising client satisfaction. For example, customers can self-serve instructions or understand how to use a device or machine by manipulating it virtually, while receiving instructions via text, video and voice. They are also aided by the support person annotating a remote person’s field of view by drawing arrows, circles and text boxes that dock to components of a live or still image.
- Reduced travel costs.

Obstacles

As organizations were forced to adopt digital solutions like AR in customer support to minimize physical contact for safety reasons, several key obstacles have persisted, such as:

- Developing reusable AR-enabled content can be difficult and/or expensive, despite some tools being democratized to some degree in midsize organizations of late.
- Adoption has been hindered by issues such as HMD battery life, capacity, internet coverage/access, lack of durability for field work, safety uncertainty (such as impact on field of view and eye strain), software cost and a lack of integration. Many early adopters have chosen instead to use tablets or phones, which provide better durability and connectivity, but degrade the AR experience.
- Use cases that require hands-free operation require better, more comfortable HMDs.
- IT departments find current applications somewhat difficult to extend, modify and integrate. / Pricing structure is per-user, not per use.

User Recommendations

- Examine AR software and associated hardware for customer support — in particular, if you sell, install or maintain capital equipment, or support customers that do so.
- Develop a proof of concept for a use case that requires hands-free interaction, such as in-task training or diagnosis that requires collaboration between an on-site resource and a remote expert.
- Review each vendor’s AI-driven capabilities, such as natural language processing and computer vision, and use their impact on user experience as evaluation criteria. Also, compare their level of integration with other apps that your target users already use, and their potential to evolve toward a UX that has the feel of a single app.
- Determine which vendor(s) will be needed to source, curate and produce content, such as recorded video, animated overlays, etc. Consider where the repository for AR-enhanced video content will be (e.g., in the AR tool, in a knowledge management system, in other cloud infrastructure).

Sample Vendors: Deepomatic; Help Lightning; Librestream; Microsoft; OverIT; PTC; SightCall; Taqtile; TeamViewer; TechSee

Process Mining

Definition:

Process mining tools are designed to discover, monitor and improve business operations and processes by extracting knowledge from events captured from systems, applications and devices, in order to deliver visibility, understanding and insights. Process mining includes automated process discovery, conformance checking, social network/organizational mining; automated construction of simulation models, model extension, model repair, case prediction, and history-based recommendations.

ابزارهای فرآیند کاوی برای کشف، نظارت و بهبود عملیات و فرآیندهای تجاری با استخراج دانش از رویدادهای گرفته شده از سیستم‌ها، برنامه‌ها و دستگاه‌ها، به منظور ارائه دید، درک و بینش طراحی شده‌اند. فرآیند کاوی شامل کشف فرآیند خودکار، بررسی انطباق، شبکه اجتماعی/کاوی سازمانی است. ساخت خودکار مدل‌های شبیه‌سازی، توسعه مدل، تعمیر مدل، پیش‌بینی موارد، و توصیه‌های مبتنی بر تاریخ.

Why This Is Important

Process mining provides visibility, analysis and understanding about business operations by providing near-real-time information to all end users about how they are currently performing, whether their processes are compliant, and what could be improved. If process mining tracks clients and their interactions, and their touchpoints with the organization as the main object rather than an order, invoice or request, then this can be seen as customer journey mining. These customer interactions are subsequently connected to internal operations.

Business Impact

Process mining provides a deeper understanding of previous customer contacts and underlying processes in order to enhance current and future interactions by understanding and aligning the customer's intent and the objective of the business. Showing which process improvements are necessary to meet and exceed customer expectations, process mining helps organizations in addressing how they can actively impact customer experience and customer retention through internal operational improvements.

Drivers

- Digital business: In this era of digital business, business and sales leaders need a way to reflect on how new technological capabilities can provide value to the business and, ultimately, to the customer. Process mining can show how and where to activate these capabilities to create business value. Aligning and adapting these processes with client interactions is imperative to achieve targeted business outcomes.
- Artificial intelligence (AI): With the use of AI and advanced machine learning algorithms, data acquires meaning, and new and powerful insights can be derived from it. A powerful example of this data science in action, process mining shows how algorithms can be used as a mechanism to capture knowledge and insight in a packaged form that can be simply reused in a consistent fashion.
- Task automation (RPA): Process mining can complement RPA perfectly by assessing the processes to which tasks belong, and identifying "hot areas" in the organization,

where a lot of effort is wasted in repetitive tasks. This results in long-term sustainable business value and averts the shortcomings of a short-term perspective focused on large, one-off cost savings.

- Hyperautomation: Not only is process mining a fundamental part in creating visibility and understanding before you automate. It also visualizes how different islands of automation are connected, and how continuously implemented and connected automation can be improved through its monitoring capabilities.
- Business operations resilience: Business operations resilience is the ability to alter operations in the face of changing business conditions based on a seek-model-adapt model. The techniques underlying process mining provide a new and enhanced way to encompass the sense and model capabilities. Based on available day-to-day operational data, the advanced process mining algorithms provide an accurate model of the ways of work in a format that can be understood by anyone in the organization.

Obstacles

Obstacles that have kept process mining from a faster adoption can be classified into two main categories: Lack of awareness and misunderstandings.

Lack of awareness:

- After being considered for years as a purely academic technique, the collaboration of emerging process mining vendors with well-known enterprise applications, such as SAP, have heavily promoted process mining and shaped the process mining market.
- Recently process mining has moved into areas other than process discovery, such as customer interactions and social networks. It has even spread into areas such as Internet of Things (IoT), manufacturing and logistics distribution networks, supply chains, which have demonstrated sustainable value-creating capabilities of process mining.

Misunderstandings:

- Process mining needs application log files.
- Our organization is not mature enough.
- It is all about IT.
- Process mining itself improves processes
- Employees are monitored.
- Our organization has many manual activities.
- Our organization doesn’t have the data.
- Our organization already has process maps.
- It is hard to justify the investment.

User Recommendations

- Improve visibility and understanding of the actual performance of business operations, by investing in process mining. Actual quantitative data is delivered in a context that not only reveals information about a process, but connects this data to other constituents in a value chain, such as data about clients.
- Create awareness and inspire business and operational colleagues by introducing small, short-term pilots. Start a pilot on activities where the data is easily available. This starter project will already deliver value and will provide insights in where the next iteration needs more detailed data.

- Explore use cases that go beyond traditional mining use cases by targeting business operations and interactions with external parties such as customers. This can be seen as customer journey mining.

Sample Vendors

ABBYY; Appian; Apromore; BusinessOptix; Celonis; IBM; Microsoft; QPR Software; SAP Signavio; Software AG

Metaverse

Definition:

Gartner defines a metaverse as a collective virtual 3D shared space, created by the convergence of virtually enhanced physical and digital reality. A metaverse is persistent, providing enhanced immersive experiences. Gartner expects that a complete metaverse will be device-independent, and will not be owned by a single vendor: It will have a virtual economy of itself, possibly enabled by digital currencies and non-fungible tokens (NFTs).

گارتنر متاورس را به عنوان یک فضای مشترک سه بعدی مجازی تعریف می کند که توسط همگرایی واقعیت فیزیکی و دیجیتالی تقریباً افزایش یافته ایجاد شده است. متاورس پایدار است و تجارب غوطه‌وری پیشرفته‌تری را ارائه می‌کند. گارتنر انتظار دارد که یک متاورس کامل مستقل از دستگاه باشد و متعلق به یک فروشنده واحد نباشد: اقتصاد مجازی خودش را خواهد داشت که احتمالاً توسط ارزهای دیجیتال و توکن‌های غیرقابل تعویض (NFT) فعال می‌شود.

Why This Is Important

A metaverse is the next level of interaction in the virtual and physical worlds. It will allow people to replicate or enhance their physical activities. This could happen either by transporting or extending physical activities to a virtual world or by transforming the physical one. Although the goal of a metaverse is to combine many of these activities, there are currently many emerging metaverses with limited functionality.

Business Impact

Enterprises can expand and enhance their current businesses in unprecedented ways, opening up innovative opportunities. The following are examples of opportunities that metaverse offers to enterprises:

- Spatial computing (e.g., real-time shopping recommendations)
- Gaming (e.g., collaborative “serious games” for training)
- Digital humans (e.g., customer service representatives)
- Virtual spaces (e.g., live virtual events)
- Shared experiences (e.g., immersive meetings)
- Tokenized assets (e.g., NFTs)

Drivers

There are three drivers for the metaverse:

- Transport: The ability to “go and immerse oneself” in a virtual world. That world may be a 3D simulation and/or in virtual reality.
- Transform: Bringing digital to the physical world. This allows the user to have access to real-time information, collaboration and experiences in the physical world.
- Transact: The economic foundation of the metaverse through the use of cryptocurrency, NFTs and blockchain.

Some of the main activities for the metaverse that will require one or more of these drivers are:

- Collaboration: Encouraging collaboration and participation from a diverse group of stakeholders, wherever they may be located.
- Engagement: Employees and customers are often disengaged. The metaverse facilitates a feeling of presence (“being there”) as if the participants were in-person, turning their focus to the task at hand with less distraction.
- Connectedness: Metaverse enables us to connect in a more immersive way with shops, work environments, schools and communities of interest — regardless of where or if they exist in the physical world.

Ultimately, people desire to enhance and/or augment their lives in digital and physical realities.

Obstacles

- The adoption of metaverse technologies is nascent and fragmented. Furthermore, this is a time of learning, exploring and preparing for a metaverse with limited implementation. The financial and reputational risks of early investments are not fully known, and caution is advised.
- Current manifestations of metaverses are siloed, app-based, noninteroperable experiences that do not satisfy the decentralized and interoperable vision of the metaverse. This current, walled-garden approach also strongly limits users’ control of experiences.
- While technology plays a key role in achieving a mature metaverse, another challenge involves establishing user-centric guidelines for ethics and governance covering different aspects of the metaverse. This must include topics like privacy, data sovereignty, acceptable terms of use, accountability, identity and legal protections.

User Recommendations

- Task a specialized innovation team and/or vendors to look for opportunities where metaverse technologies could optimize digital business, or create new products and services.

- Identify metaverse-inspired opportunities by evaluating current high-value use cases vis-a-vis your product or service (internally and externally). Focus on ways the metaverse can enhance an experience and can accomplish engagements the physical world may find impossible.
- Be careful when investing in a specific metaverse, as it is still too early to determine which investments will be viable in the long term.
- Remember that the metaverse is an evolutionary stage. Similar to the shift from the original web to Web 2.0 and to Web3, it does not indicate a formal change in the nature of the web, or in this case, digital interactions and digitization in general, but describes a general change that will happen over time.

Sample Vendors

Animoca Brands (The Sandbox); Decentraland; Linden Lab; Meta; Microsoft; NVIDIA; Roblox

Connected Rep

Definition:

The “connected rep” is a strategy that bridges technology and talent to support customer service representatives’ performance in a more scalable way. The “rep” experience, through assisted service engagements, is dependent on surfacing relevant contextual customer insights with dynamic guidance to support rep judgment. It is delivered in a modular design to support different working environments.

«نماینده متصل» استراتژی است که فناوری و استعداد را برای حمایت از عملکرد نمایندگان خدمات مشتری به روشی مقیاس‌پذیرتر پیوند می‌دهد. تجربه «نماینده»، از طریق مشارکت‌های خدمات کمکی، به آشکارسازی بینش‌های مشتری مرتبط با راهنمایی پویا برای پشتیبانی از قضاوت نماینده وابسته است. این استراتژی در طراحی ماژولار برای پشتیبانی از محیط های کاری مختلف ارائه می شود.

Why This Is Important

Optimizing customer self-service experiences is a key initiative for most customer service organizations. But when interactions need human intervention, customer service leaders should develop a strategy that combines talent and technology to better support customer service representatives, who are increasingly dealing with more complex engagements.

Business Impact

Improving employee development, performance and quality assurance is a top priority for customer service leaders. Economic forces are increasing costs and reps are struggling to manage complex engagements. A strategy to combine technology with talent creates a superior working experience, which is more likely to lead to stronger rep retention. Stronger employee experiences then lead to stronger customer experiences.

Drivers

The drivers for investing in connected rep can be segmented into hard savings focused on efficiency gains and soft savings focused on experience improvements:

Hard savings (efficiency):

- Handle time reduction: Contextual customer insights reduce talk time and hold time, while after-call work is made easier with autosummarization and analytics.
- Interaction volume reduction: Predicted intent and guided resolution support first-contact resolution, negating the need for follow ups, transfers to other employees and escalations.
- Speed to competency: Guidance and context support reduces onboarding of new employees and creates greater scale for consistency across all reps, when focusing on modular design of desktop.

Soft savings (experience):

- Customer experience: Low-effort experiences are supported by authentication, journey history and intent of interaction. Faster and improved support is achieved with issue diagnosis and guidance for timely resolution.
- Rep experience: Empowering the rep with customer context and guidance to support their judgment is reducing frustration, while enabling autonomy within the guided frame is helping to combat attrition.

Obstacles

- Instead of providing a sufficient focus on agent needs and a unified desktop, new capabilities and skills are added by training reps on new and extended desktop applications.
- A lack of a strategy around sourcing and integration of contextual customer information limits the extent to which the rep can efficiently provide customer support.
- Self-service journeys and assisted-service journeys are insufficiently interlinked, limiting the ability for reps to support seamless customer journeys when interactions require human support.
- Emerging guidance tools are too focused on prompting reps with responses, rather than guiding their judgment on how to engage with the customer.
- Agent desktops are insufficiently flexible to enable autonomous sections and objects from third-party tools to be embedded in the unified agent desktop.

User Recommendations

- Secure approval of rep enablement investments by developing a business case that prioritizes helping inexperienced reps perform in highly complex environments.
- Capture contextual insights by engaging with customer service representatives (CSRs) and supervisors, who are familiar with current and missing capabilities.
- Select the most appropriate guidance solution by mapping the workflow requirements for assisted customer journeys, to capabilities of both new and existing software providers.
- Create a superior user experience by designing the desktop as a composable application experience to fulfill deliberate and modular design.

Customer Technology Platform

Definition:

The customer technology platform (CTP) is the integration of all customer-facing technology and applications into a platform. This platform aligns the customer's "outside in" view of the organization's customer experience with the "inside out" delivery of the organization's CX vision, strategy and technology. This platform enables an organization to support a holistic and complete view of the customer experience that benefits both the customer and the organization.

پلتفرم فناوری مشتری، ادغام تمام فناوری‌ها و برنامه‌های کاربردی مشتری در یک پلتفرم است. این پلتفرم دیدگاه «بیرونی» مشتری از تجربه مشتری سازمان را با ارائه «درون به بیرون» چشم انداز، استراتژی و فناوری تجربه مشتری هماهنگ می‌کند. این پلتفرم سازمان را قادر می‌سازد تا از یک دیدگاه جامع و کامل از تجربه مشتری پشتیبانی کند که هم برای مشتری و هم برای سازمان سودمند است.

Why This Is Important

The customer technology platform is created by using business capabilities and technology reference models. These models will enable organizations to:

- Build a bridge from their CX CORE objectives to the delivery of their CRM strategy.
- Determine which systems need to work with each other to support the delivery of the organization's CX and CRM strategy in order to create positive customer sentiment.
- Determine how to make improvements to their CRM systems in order to move the organization toward a CTP platform.

Business Impact

Digitalization of the customer experience has exposed process gaps and disconnected customer-facing processes to customers. This is due to CRM applications that were implemented solely to automate individual processes. Application leaders need to address these gaps by viewing CRM applications in the context of CX-centric application strategy that goes beyond CRM. Using a CTP approach to CRM applications can resolve these customer-facing gaps and lead to improved customer experiences.

Drivers

- Delivery of positive customer experience as a part of digital transformation is a key differentiator for any organization.
- Digital transformation of customer-facing processes has exposed disconnected CRM applications, leaving the customer to be the coordinator of their experience across an organization's points of interaction (POIs). Examples of POIs are call centers, chatbots, websites, mobile applications, stores and branches.
- Organizations seeking to scale their customer experience capabilities are using more customer-facing technologies and applications. These organizations want to provide a relevant and integrated customer experience that is intelligently coordinated across all POIs.
- Organizations seeking to provide integrated experiences such as "campaign to contract" know they need to integrate applications (such as campaign management,

lead management, salesforce automation and configure, price and quote) to enable intelligent coordinated experiences across all POIs.

Obstacles

- Major investments in CRM applications that are already live and operational in organizations are making it hard to integrate CRM applications into great customer experiences.
- It can be difficult to determine how to integrate CRM applications with the organization's entire IT portfolio.
- Investment in strategic vendor relationships has made the integration of many CRM applications a requirement that vendors must support. However, organizations may not be able to wait until then, due to a need to improve their customer experiences today.
- Customer dissatisfaction or frustration can come from organizational inertia. Customers are exposed to new ways of doing things from competitors or organizations in other industries, and they view the organization as behind in helping customers with their "job to be done." This organizational inertia can come from a variety of sources, such as a mindset that change is a risk rather than a tool that can be used to improve the customer's experience.

User Recommendations

- Use Gartner's CX CORE approach to first build the organization's business capability model. This model will determine what business capabilities are needed to support the integration of an organization's business model and its operating model.
- Avoid misalignment of CRM applications and technology and the organization's business model (for example, using self-check-out in a luxury store environment). This approach will ensure that the organization's CRM applications and technology are properly aligned with its CX objectives.
- Use an architecture that includes business capability and technical reference models to identify which key CRM applications and other technology needs to be intelligently coordinated within the CTP to deliver the right customer experience.
- Use an architecture that includes business capability and technical reference models to determine what needs to be changed when the organization faces a customer experience disruption in its market from competitors.
- Use a CX-CORE-driven approach to design customer experiences. Couple this with using a CTP architectural approach to ensure that all CRM applications and technology are aligned to the organization's CX objectives