Integrating Customer Interactions into your
Billing Strategy 2.0

GenOmega Digital White Paper

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Executive Summary

When considering technology for call centers it is becoming increasingly difficult to determine where the call center domain begins and ends. A few years back when considering this question, the only consideration was telephony based access into a call center and evenly distributing those calls across the organization, with some thinking beginning to occur on opening e-mail and web based channels. Today corporations are faced with access from a variety of customer access channels (e-mail, fax, and web via a variety of channels) and utilizing multiple channels in reaching the customer (e-mail, SMS, Instant Messaging and telephony).

This paper originally presented as “Integrating Call Center Technology into your Billing Strategy” at Billing Systems 99 in Sydney, has now been substantially updated to reflect today’s emerging landscape. At that time there were signs of channel convergence beginning to be required and occur, where the customer access strategy developed within Australia’s Telstra Corporation was considered to be relevant to addressing and presenting in the context of an overall Billing Systems Strategy. Today there are business-business process integration systems available, sophisticated customer process and interaction systems and customer relationship management and its e-commerce counterparts that are now evolving to address the business challenges of how to present billing information and manage customers via multiple channels.

The facts are, despite the .com meltdown that occurred in 2000, the world is still undergoing a broad-based communications and technology evolution that will enable still more and easier forms of customer access into call centers and enable businesses to save money. Further the method of interactions will become more cross channel orientated, where the channel the request initiated on may or is more likely to not be the channel which the response or subsequent responses are performed on.

This will have a profound effect on call centers providing support for billing inquires, forcing an evolution which appears to be taking place on a three - five yearly cycle, to the point where call centers today are being forced to evolve to become customer interaction centers. These centers will then provide automated and human resources to respond, manage and resolve customer requests from all implemented electronic self-service channels. In many instances, this will eventually encompasses all forms of customer access including those for business-business interactions on both the supply and (customer) value chain sides of the business.

Therefore the answer to the question of “Integrating customer interaction technology into your billing strategy” has become complex and taken on an end-end perspective that begins with the customer accessing the corporation through any channel, involves an interaction in a business application system and ends for the customer when their request has been resolved. The need to consider this as part of your Billing System strategy is not diminished, as access to pre, post and affiliate / partner billing becomes more relevant and charges for electronic services becomes more prevalent.

Created for the Business or IT manager, this white paper in its revised 2.0 form represents the conceptual framework presented in 1999 with updated information and a perspective of where billing systems; call and customer interaction centers are evolving and headed over the remainder of 2001 and through 2002.

Whether considering on-line billing and payment, call / customer interaction centers and / or customer relationship management and your online strategy, GenOmega Partners can provide assistance to your business and technology needs to achieve success.
Completing Successful Back-end Integration

Batched Real-Time

Billing System  Ordering System  Billing System

Methods of Integration

There are a variety of methods and considerations when considering integration with other systems. These range from manual to automated process, queued to real-time processes and media transport to protocol integration mechanisms.

The diagram above the line considers both batched and real-time integration between two specific systems, while the diagram below the line considers use of integration products to perform integration and state management across a number of back-end systems.

Batched integration will more than likely involve some sort of data/file copying between systems on a scheduled basis, along with also processes on each host to derive, format and process the content. The major disadvantage to this form of integration is lack of real-time views to business data, media considerations for manual processes and development, maintenance and support of non-business specific functionality to enable integration.

Application or Data access

Consideration of real-time integration leads to support of automated business processes and decisions around application or data integration using a standards based protocol (see Key criteria for selecting call center agent tools). The simplest method of implementation is to ship data from one point to another that is derived from one business application and processed by another on a second system. This approach however leads to a high dependency between applications and future high cost of maintenance and evolution.

Putting it all together

Regardless of customer type, there should be high consideration of implementation of a services based architecture that uses Enterprise Application Integration/Workflow management products for state management and integration of application and business processes for servicing customers through call centers or electronic customer access channels.
Making your legacy systems work in a call center strategy

Green Screen, GUI or Browser

When integrating back-end or legacy systems into the call center environment there is a strong requirement to consider presentation mechanisms. Although the green screen (associated with terminal emulation) has been around for a long time and may suit a single system strategy, it is not well suited to delivering today’s business functionality.

In addition, although Graphical User Interfaces (GUI) have also been around for quite some time and are better suited to presentation involving more than a single system and delivering a higher capability of business functionality. They carry other considerations of desktop, system integration considerations and are themselves approaching the end of their life.

As part of the communications and technology evolution occurring today, browsers are fast becoming the common delivery presentation. They offer the benefit of a thin client, positioning the architecture away from two tier fat client / server and enable take-up of the new computing paradigm.

Presentation Considerations

Therefore although GUI can be used to perform integration at the desktop, if business applications are important enough to integrate into the call center environment. Then integration should be performed at a server level and presentation should be delivered using either a thin client or browser application communicating to a business application server / web server.

The larger picture

The landscape is continuing to evolve to include Customer Relationship Management, Workflow Management and Computer Telephony Integration all competing for integration and placement on the desktop. Corporations should seek to define a strategy around all these for integration to the call center and delivering measurable business benefit in reduction in Information Technology costs and increases in customer service capabilities.
Key criteria for selecting call center agent tools

Requirements Identification
There are a plethora of tools available for agent support, application delivery and business functionality which can be identified by determining internal requirements to support business processes and by action of a Request For Information / Request For Tender publication and / or engaging a partner such as GenOmega, with domain experience.

Once business processes, requirements and commercial requirements are documented comes the difficult task of determining technical requirements for presentation, architecture and application delivery. The latter becoming the platform for delivery of business applications such as billing, ordering…faults.

The diagram above attempts to depict some of these considerations and the dependencies or relationships between the technical requirements and the architecture tiers.

Business Functionality
This will be delivered using one or more of the application delivery technologies, in conjunction with considerations of integrating to other business application and data systems used today. The functionality that is required to be delivered, will more than likely drive architecture decisions with choice’s regarding presentation mechanisms and electronic customer self-service channels to be supported.

Technical Considerations
These should be driven by current corporate standards and desire to achieve operations efficiency and enable support of both the required agent business functionality and supporting the customer in and out-side of the self-service channel. Some corporations themselves publish on a regular basis a set of Technology Strategy and Technology Architecture Guidelines which assist in the selection, use, architecture and development of new business systems.
Internet bill presentation, considerations and tools

Outsourcing
This was an initial popular method of achieving electronic bill presentment via the Internet and collecting payments on-line. Corporations could choose to outsource either the summary or full bill details and allow the bill presenter to act as collector for on-line payments. Although this form of one stop shop for viewing and paying bills has become accepted for consumers and businesses alike in the US marketplace, through portals such as Yahoo!. The evidence to date is that although a great convenience to consumers, corporations have become concerned over losing close contact with their customers and having to then manage increased customer churn and potentially lose out on cross and up selling opportunities.

In the last year, Australian Banks and other financial institutions have moved to close the gap between them and their US counterparts by offering their own bill pay services that enable customers to pay their monthly bills or transfer monies online instead of writing checks. However, this direct method will face stiff competition in the 2002 timeframe from the likes of Australia Post, organizations offering account wrap services and / or other large retail organizations now moving to contain a retail banking arm as part of their capabilities and services. Therefore, future development of an on-line consumer marketplace solution using XML is likely to emerge to provide the electronic bill payment service, while at the same time allowing the billing corporation to be involved in the interaction for new opportunities.

Custom Development
There are several considerations here, corporations can elect to implement a billing platform for convergent business that also exposes interfaces for access from the Internet or decide between static and dynamic methods of presentation provided by technology companies such as Documentum, eDocs, iPlanet, Tibco and others. Static presentment enables bill details collected and published at a point-in-time to be stored in an archiving / document management system, while dynamic presentment is used to enable real-time access to billing details (eg. pre-billing) and collection.

Tools for success
Corporations seeking to tightly integrate customer interactions and provide their own bill presentment services should investigate content / document management systems and solutions built upon industry standard web application servers supporting Java 2 Enterprise Edition (J2EE) for delivery and integration.
Opening the access channels (migration to CIC’s)

Call Center Evolution

Call Centers are quickly evolving to Customer Interaction Centers (CIC’s) to enable emerging access channels into organizations. This is creating opportunities to provide more advanced tools for agents, enhanced services for customers and efficiency in staff required to support customers. This will translate into higher skilled agents and increased pay for those agents that can manage the evolution.

Customer Interaction Center’s

CIC’s will extend out of the traditional call center environment into the self-service channels for customer support and management. In addition, they will become a place where customer requests can be resolved using any access medium with consistent information presentation and management.

The drawing above indicates the current and emerging access channels that are and will be available to both business and consumer customers such as Telephony (fixed and wireless), Multimedia On-Line (eg. requirement for real-time interaction and customer queuing) and Multimedia Offline (eg. messaging, where interactions can be queued and handled in an appropriate time frame such as 24-hours).

Managing the customer in the self-service channel

As customer interactions become increasingly automated and able to be performed electronically without human involvement, it will become critical to manage customers appropriately within the self-service channel. This may involve simply identifying the customer before sending an automated response to an e-mail, to implementing different routing strategies for customer groups and / or providing appropriate facilities for customer call-back or on-line assistance.

Today the technology solutions available consist of CPE (customer premise equipment) and IP / Telephony network based solutions largely based on CRM, CTI and Multimedia Switch products offering physical or virtual ACD queuing and routing capabilities. In the future, these will converge to become more intelligent and incorporate business processes for Collaborative Customer Interactions (request the GenOmega white paper that describes this concept and framework in complete detail).
Automating the call center using advanced tools

Multimedia support tools
Consideration should be undertaken to evolve web servers to portals for delivery of more application rich functionality. Although not a required first step it should take a place in the future strategy of corporations. However, the tools that should be considered to facilitate customer service are those of e-mail management and response, unified messaging (tying together multiple forms of messages e-mail, fax…etc), web collaboration and enabling IP Telephony into the customer interaction center.

Customer support tools
Capability should be put into place to enable the customer to place an offline enquiry or request a future call back using e-mail or web forms. In addition, use of chat functionality must be carefully implemented along with the human issues of multiple customers to a single agent and could be supplemented with use of Knowledge Management, Case Based Reasoning and Business Process Management tools.

Use of Document Management and Workflow Management can be used to deliver content (marketing literature, brochures, product information) automatically and other automated tasks that would otherwise be performed by a human agent. This has the effect of improving staff morale and at the same time appearing to be more responsive to customer requests. Secondary customer requests for the same or similar information can also be considered for routing to a human agent for a more intimate interaction with the customer.

Agent support tools
Customer Relationship Management can be used for integration of the customer access and business functionality and delivery of combined presentation using a browser interface. This reduces the number of interfaces required for the customer interaction and at the same time enables other tools to be readily accessed by the agent.

The CRM system can be used to present more complex customer relationships, implement multiple sales campaigns and other customer related data that can be used for identifying opportunities. Agent scripting and document management for distribution of plans, policies, processes…etc, can also be beneficial.
Using analysis of customer spending and history

Customer Relationship Management
When used as part of an overall systems integration plan, customer relationship management can be used to deliver quicker application development cycles. Organisations should also consider integration with Computer Telephony Integration, as the hub of all contacts and routing of customers to agents. Today current CPE and network based CTI platforms can be used to perform intelligent routing of telephony, e-mail, IP Telephony and other forms of contacts often with integration to leading CRM platforms.

Combined with EAI, Data Warehousing and Predictive Dialling, corporations can use customer spending, payment and ordering history to their advantage in developing campaigns (phone or e-mail) or cross and up selling opportunities.

Data Warehousing and Mining
More recent customer relationship management platform’s, include information (data) management through implementation of data mining tools for storage into infomarts and data warehouses for use as part of the customer interaction. These information stores can be segmented into a number of specific storage areas for later retrieval via EAI and other brokering technologies as part of the customer interaction processes to achieve successful campaigns and results out of initially unrelated opportunities.

Campaign Management
These tools, sometimes found in the customer relationship management solutions and other times stand-alone interfacing to data warehouses, can be used to derive more successful and directed campaigns via phone and e-mail than those based on generally grouped customer bases.