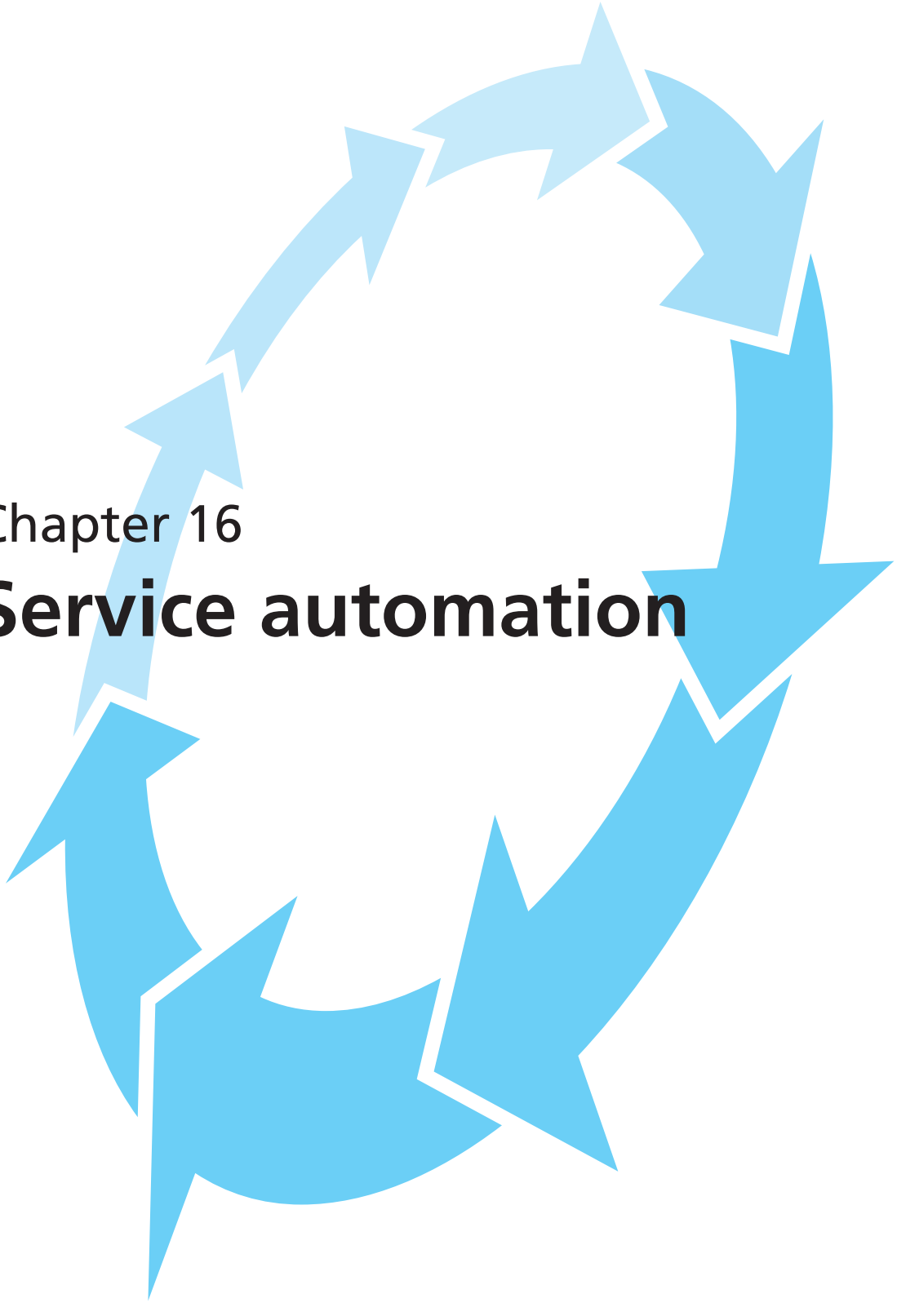

Chapter 16

Service automation

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Chapter objectives

By the end of this chapter you will understand:

1. **what is meant by customer service**
2. **what is meant by service automation (SA)**
3. **the benefits that SA can deliver to organizations**
4. **the functionality available within SA software.**

Introduction

This is the last of three chapters that look at CRM technologies. This chapter is about the technologies used in customer service departments or by service staff. The preceding two chapters reviewed sales-force automation and marketing automation. This chapter starts by defining customer service and service automation (SA) before describing some of the functionality that is available in SA software.

What is customer service?

As customers we all understand and appreciate when we have experienced excellent customer service. The people who serve us are friendly, responsive, empathetic and do the right things well, whether it is answering a question, offering advice or accepting the return of faulty merchandise. Equally we can all recognize poor customer service, delivered by surly, unapproachable, dogmatic, inflexible staff working with poor information and hampered by outdated technology.

Customer service has been a necessary preoccupation of service organizations because they have understood that customers are responsive to the quality of the service they experience. However, the quality of customer service is just as important for agriculturalists, miners and goods manufacturers. This is particularly so when there is product parity and customers are unable to discern meaningful differences between alternative suppliers or brands. For most customers one brand of carpet is much like another. Carpet manufacturers and retailers find it hard to differentiate in terms of meaningful product-related variables; they therefore use service-related variables such as prepurchase advice, measurement, delivery, removal of old floor coverings and fitting of new carpet, to win business from customers.

Customer service standards can be assessed by customers when a service is being performed, as well as after the service has been delivered. The service experience, as perceived from the dentist's chair during

service delivery, might be very different from the assessment a few days later.

Customer service can be experienced at any stage of the customer activity cycle: before, during or after purchase.[1] In a B2C context the purchaser of a laptop computer might call a number of retailers for advice prior to selecting a store to visit; while in the store he or she might ask the store clerk to demonstrate a number of shortlisted machines; after the purchase has been made he or she might need to call the manufacturer's helpdesk for advice on how to obtain service under warranty. In a B2B context a company purchasing new manufacturing equipment might need prepurchase engineering advice, assistance during purchase with removal of existing equipment and postpurchase assistance with operator training.

In Chapter 7 you read about two important models of service quality that are used by companies to understand and satisfy customers' service expectations. The Nordic model, originated by Christian Grönroos and developed by others, identifies three components of service quality: technical, functional and reputational.[2] Technical quality can be thought of as the 'what' of service quality. Was the dishwasher water leak fixed by the technician? Functional quality can be thought of as the 'how' of service quality. Did the technician turn up on time and act courteously? Reputational quality is not only a product of technical and functional quality, in that reputation derives from performance. Reputation can also predispose customers towards forming particular perceptions of quality, for better or worse. The SERVQUAL model, developed by A. 'Parsu' Parasuraman and colleagues in North America, claims there are five core components of service quality: reliability, assurance, tangibles, empathy and responsiveness.[3]

Customers who receive service from technology-enabled manufacturers or service providers, such as those with CRM systems in place, experience a further form of quality that can be thought of as integrative quality. Integrative quality is determined by the way the various elements of the product and service delivery system work together. High integrative quality means that the processes, people and technology complement each other, working efficiently and effectively to deliver excellent customer service. Good people either working with ill-defined processes or supported by dated technologies find it very difficult to deliver excellent customer service.

Fred Wiersema has researched the attributes that companies renowned for excellent customer service have in common. He identifies six common attributes, all of which are important from a CRM perspective.[4]

1. Customer service is pervasive. It is everyone's responsibility; it is neither delegated nor relegated to a single department or function.
2. Their operations run smoothly with minimal product and service defect rates, allowing them to focus on pleasing customers.
3. They are always looking for ways to improve.
4. Customer service lies at the heart of the value proposition. Customer service is the main selling point.
5. They build personal relationships with customers.

6. They employ the latest IT to allow their customers to interact with them more conveniently; to develop a profound understanding of what customers need and want; to track activities and processes that influence customer experience.

From a CRM perspective these are all important, but the last three in particular. Customer service is the key element of these companies' value propositions and is an important component of strategic CRM. They understand that customers are responsive to excellent customer service, whatever the basic product or service they create. They also build personal relationships with customers. They understand the needs and requirements of customers at an individual level, and they recognize and respond to events in the customer's life using analytical CRM. Finally, they employ the latest information technology, which allows customers to interact with them whenever they want through multiple channels, an important component of operational CRM. IT also enables them to learn about and respond to customer requirements and to track interactions and processes that connect them to their customers.

What is service automation?

The term service automation (SA) can be defined as follows:

Service automation is the application of computerized technologies to support service staff and management in the achievement of their work-related objectives.

According to the International Customer Service Association, customer service departments are responsible for managing inbound call centre operations, complaint handling and resolution, order entry and processing, providing field sales support, managing outbound call centre operations, and acting as liaison to other departments.[5] It is in these and related activities that SA is deployed.

Service automation is used in five major contexts:

- contact centres
- call centres
- helpdesks
- field service
- web self-service.

Contact centres are configured to communicate with customers across multiple channels, including voice telephony, mail, e-mail, SMS, instant messaging, web collaboration and fax. Service agents need to be able to access an entire communication history, regardless of channel, when communicating with customers about service issues. Channel integration is, therefore, an important feature of contact centre technologies. Technologies for inbound and outbound customer communication, including e-mail response management systems, are widely deployed in contact centre contexts. Contact centre staff may be called on to

handle inbound service-related calls, participate in outbound marketing campaigns, respond to e-mail and engage in web chat.

Call centres are generally dedicated to voice telephony communications, whether through a public switched telephone network, cell phone network or VoIP. Agents operating in call centres require a different skill-set from those operating in multichannel contact centres. There is a less compelling need for excellent literacy skills such as reading and writing; they do, however, need excellent listening and responding skills.

Helpdesks are usually associated with IT environments where assistance is offered to IT users. SA applications, such as case management, job management and service level management, are used in this setting. Helpdesk solutions often comply with, and support, third-party standards such as information technology infrastructure library (ITIL) and the information technology service management (ITSM) reference model.

Field service is widespread in both B2C and B2B environments. Service engineers for white goods, such as dishwashers and washing machines, or brown goods, such as televisions and hi-fi installations, visit consumers' homes to install, maintain or repair products. In the B2B context, technicians and engineers visit factories, depots, warehouses, workshops, offices and other workplaces before, during and after purchase to help customers specify, select, procure, install, service and decommission a wide range of machines and systems, ranging from photocopiers, to forklifts, to IT infrastructure. Service automation applied to field service operations involves technologies such as job management, scheduling, mapping and spare parts management. Unlike their office-bound colleagues, field service staff needs access to SA applications and data on their laptops, handheld devices, smart phones and cell phones. Technology firms such as Oracle, SAP, Corrigo, ServicePower, Ventyx, Astea, TOA and @Road all provide specific software applications for field service technicians.

Many companies now offer web-based self-service to customers. Customers can place orders, pay, track service issues, or perform service diagnostics online at any time of day or night.

In addition to engineers and technicians, others may also be involved in providing customer service aided by service automation: customer service agents, sales representatives, sales administration and marketers, for example. Customer-centric organizations may take the view that all employees should be able to deliver excellent customer service, including the ability to handle an enquiry, create a trouble-ticket, or resolve a complaint.

Infrastructure, data, devices and software are the key technological elements of service automation. Infrastructure plays an important role in enabling service to be delivered. When service is delivered through a central call centre or contact centre, in a multichannel environment, there needs to be close integration between various communication systems including telephony, e-mail and web. A customer may browse the web to find out how to obtain service and then communicate the service request by voice telephony into a call centre. However, the customer may expect to receive the initial notification of service appointment time by e-mail and any change to that time by text message. Call centres need integration between the software on the customer service agent's

desktop and the automated call distributor (ACD) or switch hardware, so that calls are prioritized and routed appropriately.

Access to the right customer-related data, to enable the service agent to identify and fix the issue promptly, is critical to the delivery of responsive customer service. Customer-related data includes both structured data, such as contact history, account balances and agreed service levels, and unstructured data, such as e-mails and agent notes on telephone conversations. Being able to draw on a searchable database of service issues and fixes allows the agent to resolve problems quickly and completely.

Where service is delivered by a distributed workforce, smaller, lighter, devices such as laptops, Windows-enabled handheld devices and smart phones or cell phones such as Blackberries, tend to be employed; these are typically not found in call and contact centres. Synchronization is also an issue for a distributed service team. Periodic synchronization with the central CRM database enables service engineers and others to ensure that they are fully apprised of their daily scheduled appointments. In addition it is important for service engineers to have the most current service manuals in their laptops.

Benefits from service automation

Service automation has an important role to play in allowing companies to deliver excellent customer service. SA can deliver several benefits, including the following:

- **Enhanced service effectiveness**: service requests can be completed more quickly to the customer's satisfaction by ensuring that requests are handled at the first point of contact, or routed to the right service engineer or customer service agent, who is able to draw on an up to date knowledge base to resolve the issue.
- **Greater service productivity**: call and contact centre management systems ensure that the optimal numbers of agents are scheduled and that their time is used productively. Field service applications ensure that workload is equitably and optimally distributed.
- **Improved customer experience**: agents have full visibility into the customer history and service request and can ensure that service delivery is appropriate to customer status or agreed service levels.

Case 16.1

Service automation at ICEE

The ICEE Company is a division of J&J Snack Foods and is located in Ontario, California. Its flagship product is the ICEE, a flavoured frozen ice beverage that is carbonated and comes in

various flavours. ICEE also produces other slushies, beverages and ice pops under both the ICEE and Slush Puppie brands. The company serves over 300 million Icees per year.

ICEE employs 800 people with 400 field technicians who service 30 000 ICEE machines across the US. In the year 2000 ICEE began to scrutinize the inefficiencies they found in the ICEE machine repair process. The company's existing process was very inefficient and error-prone. The challenges were to transform the inefficient paper-based machine repair processes, shorten billing cycles, capture accurate inventory and customer data electronically and transmit in real-time, respond to customer requests more quickly, eliminate an ineffective paper-based parts inventory system and reallocate despatchers time.

After researching several alternatives, ICEE concluded that a real-time wireless data solution would provide them with many more benefits than a batch system, which would require technicians to connect to a landline and synchronize data at the beginning and end of each day. The final solution comprised a wireless handheld device from Symbol Technologies, coupled with Countermind's Mobile Intelligence Field Service Automation Solution, which was tailored to reflect ICEE's business process. This application runs on AT&T's GSM/GPRS network.

Now, all repair data is captured electronically on handheld devices. Billing cycles are reduced because manual data entry is eliminated. Complete job information is available to field technicians in real-time. Field technicians can complete more work orders in a day, improving productivity and customer satisfaction. Parts inventory is managed more effectively and accurately.

Source: AT&T[6]

Software applications for service

Service automation applications offer a range of functionality, as listed in Table 16.1. Note that different SA vendors use the terms issue, case,

Activity management	Mapping and driving directions
Agent management	Outbound communications management
Case assignment	Queuing and routing
Case management	Scheduling
Contract management	Scripting
Customer self-service	Service analytics
E-mail response management	Service level management
Escalation	Spare parts management
Inbound communications management	Web collaboration
Invoicing	Workflow engineering
Job management	

Table 16.1 Functionality offered by service automation software

incident, trouble ticket and service request synonymously to describe the different customer problems that service agents are called on to fix. The table lists both macro-software application solutions that offer a wide range of functionality and micro-software application solutions that offer a narrow range of functionality. The macro solutions, such as case management, deliver much of the functionality present in the micro solutions. In the next few paragraphs, we'll describe this functionality in more detail.

Activity management

This enables service staff to review their workload, to-do list and priorities as directed by their manager or scheduler, and to report back on progress and issue resolution. Some applications allow activities to be updated in real-time by despatchers and routed to the technician, so that work can be reprioritized. Alerts can be set so that appointments are not missed or to notify agents and their managers that issues are unresolved or service levels are about to be, or have been, violated. The despatch process typically uses wireless messaging, requiring the technician to carry an 'always-on' PDA or cell-phone, and a laptop with service manuals and diagnostic tools.

Agent management

Agent management is a high priority for call and contact centre managers. Managers want to employ the lowest number of staff compatible with the desired level of customer service. Too few agents and customers will be dissatisfied with wait-times; too many agents and payroll costs will be unnecessarily high. Customers and managers both want issues to be resolved quickly by agents. Technologies that contribute to this outcome include queuing, scripting and knowledge management, which are discussed elsewhere. Agent managers are faced with the challenge of managing globally dispersed service agents, employed both inhouse and outsourced, operating in different times zones, languages and currencies. Dashboards provide managers with visibility into the performance of both contact centres and individual agents. Performance data include volumes received (e.g. calls, e-mails), average queuing time, percentage handled, average speed of answer (measured in seconds and/or rings), average handle time and abandon rates.

Case assignment

Case assignment applications ensure that each enquiry or issue gets routed to the right agent or technician for resolution. Customer service agents might, for example, be organized according to language skills. When an e-mail enquiry is received in Urdu it is assigned to the agent competent in that language. Field technicians might be organized according to product category. When a service request is received to fix a printer, it is assigned to a technician who is knowledgeable about that product class, not to a more expensive photocopier expert.

Case management

Case management covers the full cycle of activities involved, from receiving initial notification of a matter of concern to a customer to its final resolution and the case file being closed. Case management is also known as incident management and issue management. Case management processes are typically designed using workflow applications within SA software. Workflow depicts the activities that must be performed, the sequence in which they occur and sometimes includes the standards to which the activities must comply. Cases, incidents or issues are initiated by the creation of a trouble ticket. Customers may be allowed to do this by web form or by e-mailing or calling a service or contact centre. The ticket is assigned to a service engineer. The software automatically communicates with the customer at different trigger events, such as scheduling of appointments, or follow-up after the case is closed. Case management software is often associated with a service knowledge base that enables technicians to diagnose and fix problems quickly.

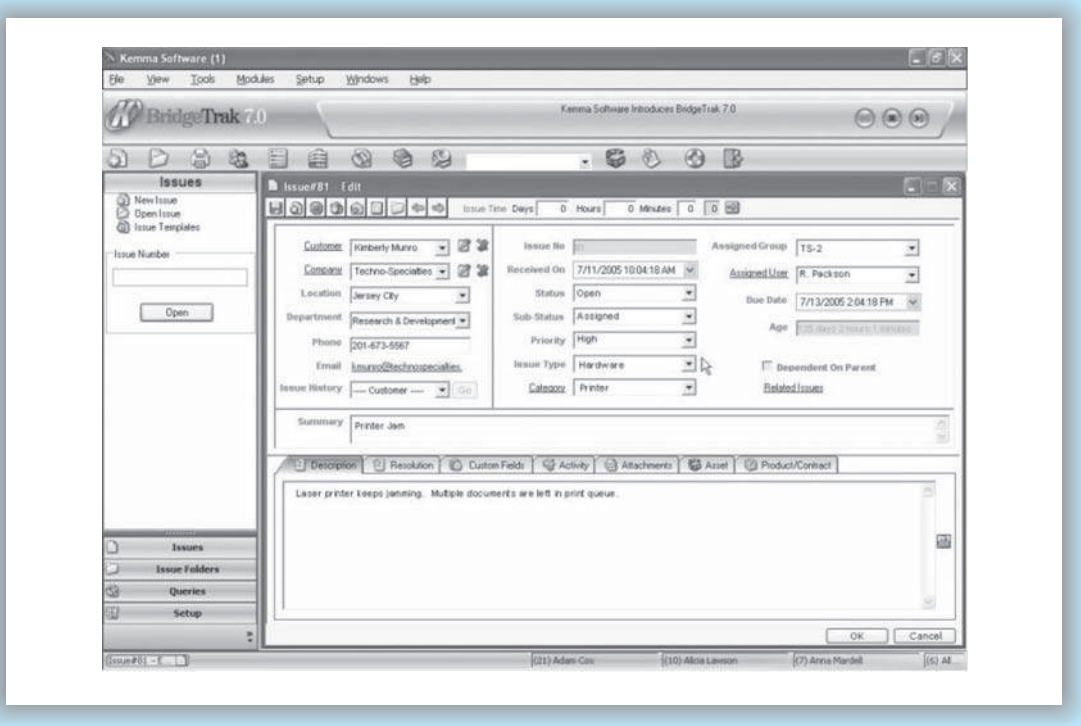

Figure 16.1 Trouble-ticket screenshot[7]

Contract management

Contract management functionality enables service engineers and managers to create, track, progress, accelerate, monitor and control service contracts with customers. Many companies now sell extended

service contracts to customers when warranty periods have expired. Some industries, such as office photocopier suppliers, rely on extended service contracts as the primary profit stream, selling machines at a loss and recouping the cost over several years of service.

Customer self-service

Customer self-service is an attractive option for companies because it transfers the responsibility and cost of service to the customer. Customers who self-serve are much less likely to place demands on contact centre, call centre, helpdesk or field service staff. Customers are typically more competent at self-serving when transactions are involved (e.g. online banking or music downloads). However, they are less competent when problem resolution is concerned. In some sectors, it is commonplace to be able to place orders online and track the progress of the order. For example, customers can track and trace the location of packages they have sent or are expecting to receive. The website, www.track-trace.com, serves as a central track and trace clearing house for couriers DHL, UPS, TNT, FedEx and dozens of other market participants. Extranet-enabled portals are the technology of choice for companies wanting to enable customers to self-serve. Customers can transact online, place orders, pay accounts and check order and shipment progress on any day and at any time. Companies that place their knowledge base, or parts thereof, online also facilitate problem resolution by customers. Customers can browse for answers to their queries or solutions to their problems. In the event that this is unsuccessful, companies can allow customers to use an online web form to create a case or an issue for the company to follow-up and resolve or offer web collaboration (see below).

E-mail response management

E-mail response management systems (ERMS) are an increasingly important part of the service automation landscape. E-mail is widely used for both interpersonal and intercompany communications. IDC, the technology analyst, reported that nearly 100 billion e-mail messages were sent daily in 2007. E-mail volumes have been growing for many years but it is expected that growth rates will slow as instant messaging and low cost or free VoIP calls become more common, particularly among young adults.[8] ERMS are not only useful for handling inbound e-mails, but also for delivering outbound e-mails and SMS messages. Company collateral, packaging and websites often list e-mail addresses for individuals and departments. As many as 90 per cent of companies' websites list e-mail contacts for customer support.[9] In addition, many companies have generic e-mail addresses such as info@, sales@ and support@. Customers increasingly expect companies to offer an e-mail communication channel, not just for general communications but specifically for service-related issues. They also expect companies to respond promptly to incoming e-mails. One survey indicates room for improvement in this regard, with 37 per cent of Fortune 100 companies failing completely to respond to e-mails.[10] As individuals, many of us use Outlook or Notes for

e-mail. While these may be suitable for small volumes of e-mail, they lack functionality that is useful for higher volume, business-related purposes, such as queuing, routing, intelligent autoresponders, personalization, knowledge-based integration, productivity tools such as templates and multi-language spell checkers, and e-mail analytics. These are typically part of commercial ERMS.

Effective deployment of an ERMS is often accompanied by the publication of service levels. Published service levels such as 'We respond to all e-mails within 24 hours' help to manage customers' service expectations and motivate employees to act accordingly. Service levels can vary between customer segments and product categories. For example, service issues raised by more valued customers, or related to newly launched products, might receive a faster response.

ERMS are designed up to manage the reception, interpretation, routing, response and storage of incoming e-mail securely and effectively. Rather than using generic e-mail boxes, many companies have opted to receive customer service requests using preconfigured web forms. These require customers to select responses to a number of predetermined questions using dropdown menus, check boxes and radio buttons. Space may also be provided for customers to key in free text. Log-in data or cookies allow companies to respond to web form service requests according to customer-related metrics, such as customer value and purchase history. Where companies choose to receive customer e-mails into generic e-mail boxes, there needs to be a manual or automated system for reading and responding to them, routing them to responsible individuals where necessary. First generation automated readers typically are trained to recognize keywords and respond accordingly. Second generation readers recognize patterns across the entire e-mail text rather than simply recognizing keywords. Pattern recognition has the added advantage of being able to detect the emotional tone of an e-mail, so that a particularly angry customer might be identified and receive an immediate response. ERMS also have specialized spam recognition and filtering features and antivirus tools. It is estimated that about 40 per cent of e-mails are spam.[11]

Routing rules in ERMS allow incoming e-mails to be routed into queues for particular agents or departments. Most ERMS allow clients to configure routing rules using an administrative user interface that can only be accessed by authorized administrators. Routing rules can push e-mails to particular queues based on agent workload, agent language skills, agent product knowledge, subject matter expertise, customer value or other variables. This speeds up resolution times and helps meet service levels. Routing also allows more important service requests, perhaps from more valued customers, to be escalated for resolution by higher authorities.

The response time and response content are two important issues that customers consider in assessing service quality. ERMS can be set up to issue an immediate, personalized acknowledgment and case (tracking) number on receipt of a service-related e-mail. These autoresponses can also be used to set out the service promise, for example, that you will resolve the issue within seven days. ERMS can also be used to

keep the customer informed of progress in the resolution of the service request.

From the company's point of view, a number of service metrics shed light on the effectiveness of their e-mail management processes: numbers of e-mails in queues, average response time, service level compliance and agent productivity. From a service delivery perspective the most important measure is customer satisfaction with response time and content.

Escalation

Escalation ensures that issues get escalated according to internally determined rules. Higher levels of authority typically have greater discretion to resolve issues. For example, a frontline customer service agent might be required to escalate issues that have a potentially high cost or reputational consequence to higher levels of management. Workflow rules can be applied to determine escalation levels and actions appropriate to any given circumstances. A health insurance specialist escalates issues based on their cost implications as follows:

Level	Limit
Customer service agent	<$50
Team leader	<$100
Business unit manager	>$500
Executive manager	>$2000

Agents in the frontline are trained to recognize issues that fall outside of the normal rules for health insurance provision and to escalate those issues accordingly.

Inbound communications management (ICM)

Inbound communications management (ICM) applications are widely deployed in contact centre contexts. The technology allows companies to receive, route, queue and distribute incoming communications from any channel (voice telephony, e-mail, fax, instant message, SMS, fax or web form) to agents in any location including a contact centre, in the field or at home. A unified queue, issue/content recognition, intelligent routing and knowledge-base integration allow agents to deliver a consistent customer experience and to respond effectively to service requests, whatever the communication channel. Additional technologies that support service delivery in this multichannel environment include computer telephony integration (CTI), interactive voice response (IVR), scripting, call recording, problem diagnostics and service analytics. As with other CRM applications, ICM is available on demand (hosted) or on premise (installed on the user's hardware). According to Gartner Inc.'s analysis of 16 vendors' solutions, Oracle is the leader in providing contact centre management solutions, with Microsoft and salesforce.com challenging. Other technology firms such as Amdocs, SAP, Chordiant, RightNow and Pegasystems also operate in this space.[12]

Case 16.2

Service centre automation at Coca Cola

Coca Cola Bottling Unit (CCBU), a soft drinks manufacturer and distributor, is based in Lambeg, Northern Ireland. The company employs over 400 people and has 14 000 customers. The service support team deals with a range of incoming calls that include complaints, orders, enquiries, delivery and pricing.

The decision to install a single customer service touchpoint dates back to 1996 when a customer satisfaction survey indicated that although customers generally felt they were receiving good service, they wanted a single contact point for customer service.

CCBUs lack of a single contact point meant that inbound calls were not logged in a uniform way. This in turn hindered analysis of call content and frequency and lead to variance in the quality and consistency of responses to service queries. In addition, the company had no way of tracking if the advice given had resolved the problem.

The company resolved these problems by introducing a single touchpoint for all service issues and implementing the service automation product, HEAT. The support centre is split between customer services and customer complaints. HEAT is used to monitor product codes found on packaging and products; when the support team finds three or more complaints that refer to any of these items then an alert message is sent direct to the incident team who investigate the situation.

CCBU installed service level agreements (SLAs), scripted responses and screen customization to ensure high levels of customer service. CCBUs implementation of SLAs means that if a call has not been resolved within a specified period of time it is automatically escalated. The system ensures all calls are logged and are therefore measurable. The customer service team underwent intensive training. Every new employee is trained in first level response across the board, which enables everyone within the company to close standard queries and improve the service customers receive.

Source: FrontRange Solutions UK[13]

Invoicing

Invoicing is a useful application for service technicians who are called to site to provide out of warranty service. Having completed the job to the customer's satisfaction and captured the customer's signature electronically, the invoice can be raised on the spot covering fixed charges, labour and parts, improving cashflow and reducing customer service issues relating to invoicing errors.

Job management

Job management applications offer a range of functionality that is useful to service managers and technicians when planning and performing field service repairs, preventive maintenance, meter readings, inspections,

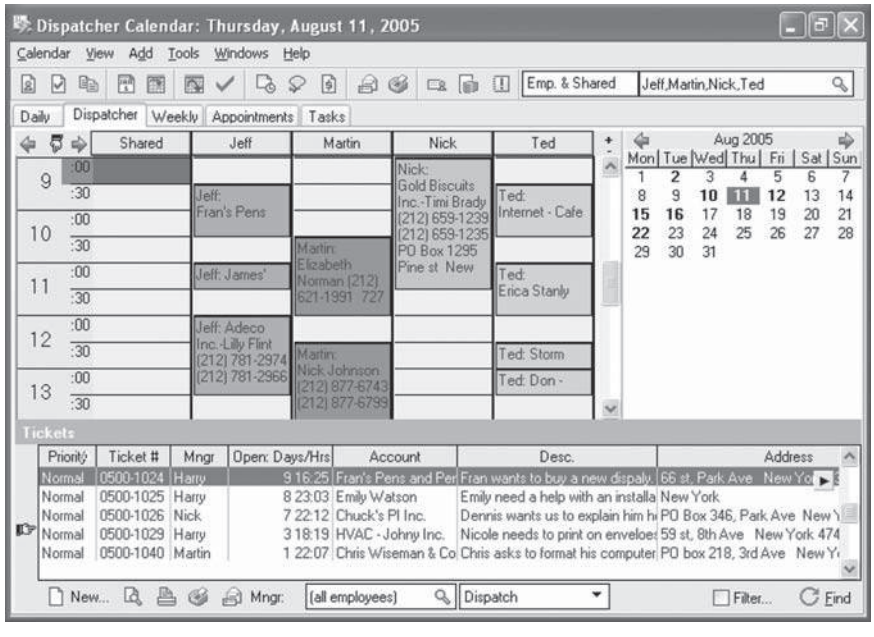

Figure 16.2 Job management screenshot

installations, upgrades and other service tasks. Functionality ranges over cost estimation, quotation generation, creation of trouble tickets, job planning, travel time and distance calculation, job clustering (to reduce travel time), calendaring, scheduling, spare parts management, job progress tracking, invoicing, service level management, technician despatch, time management and product configuration (see Figure 16.2).

Solutions that provide mapping and driving directions are very useful for service engineers who need to visit customers' homes or business premises. Taking into account the engineer's point of origin, service locations, job priorities, service level agreements and other variables, mapping solutions can minimize travel times and distances to ensure that service tasks are performed optimally.

Outbound communications management

Outbound communications management software applications are used in a service environment to acknowledge service requests, make and confirm service appointments, advise on the progress of a service task, invoice for out of warranty service and follow-up after service to ensure that the customer is satisfied. Customer preferences can be considered when selecting the communication medium, whether

telephone, e-mail or SMS. The technology firm, KANA, provides outbound communications management applications, and comments that it is possible to convert successful service interactions into up-sell and cross-sell opportunities with follow-up outbound e-mails and SMS messages.[14]

Queuing and routing

Queuing and routing applications allow issues to be routed to agents with particular expertise and positioned in that agent's queue according to some criterion. Routing is usually determined by case assignment rules (see above) and position in the queue is determined by customer value or some other metric. The objective of queuing and routing is to ensure that every service issue is presented to the most appropriate agent for handling and resolution.

Scheduling

This involves planning and organizing a service technician's activity plan for a day, a week or any other period. A technician's schedule contains details on the customer, location, time, product and issue. Some scheduling applications take into account a range of considerations to ensure that the right technician is sent to service the customer. These include travel time and distance, technician availability, technician skills, customer access hours, service level agreement, availability of spare parts and the technician's hourly rates of pay. Optimization engines allow schedules to be changed as new service tickets are created, priorities change and technicians or parts become (un)available. Optimization reduces service costs while maintaining service performance levels. Scheduled tasks can be released in batches for days or weeks or drip-fed to technicians for the coming few hours (see Figure 16.3).

Scripting

Scripting enables customer service agents to converse intelligently with customers to diagnose and resolve problems, even though they may be untrained as technicians. Scripts can be designed so that they flex dynamically according to customer response. Scripts also reduce agent training time.

Service analytics

Service analytics provide managers with information on how effectively and efficiently customer service generally, and individual agents or technicians specifically, are operating. Important metrics for managers of field service operations include, for example, technician utilization, parts inventory, travel time, first time fix rate (FTFR), mean time to resolve (MMTR) and job backlog. FTFR tells managers how many cases were resolved at the technician's first call. MMTR measures time elapsed between notification of the service request to the company and

Figure 16.3 Task schedule delivered to a Pocket PC[15]

its final resolution. With this information managers can obtain new resources, reassign staff, offer training, or recalibrate key performance indicators to enhance service delivery. Many SA applications incorporate embedded analytics that produce standard reports and enable OLAP to be performed.

Service level management

Service level management applications allow managers to control the level of service that is offered to customers, and technicians to deliver the agreed level of service. As introduced in Chapter 7, a service level agreement is a contractual commitment between a service provider and a customer that specifies the mutual responsibilities of both parties with respect to the services that will be provided and the standards at which they will be performed. Service levels can be agreed for a number of variables including availability (the percentage of time that the service is available over an agreed time period), usage (the number of service users that can be served simultaneously) and responsiveness (the speed with which a demand for service is fulfilled). Service levels, however, are not always subject to negotiation with customers. Many companies simply offered tiered levels of service to customers based on some metric of their own choice, typically customer value as measured by customer profitability or sales. Technicians that understand the entitlements of customers can service to the specified limit and even up-sell the customer to a higher level of service. Establishing service levels can also

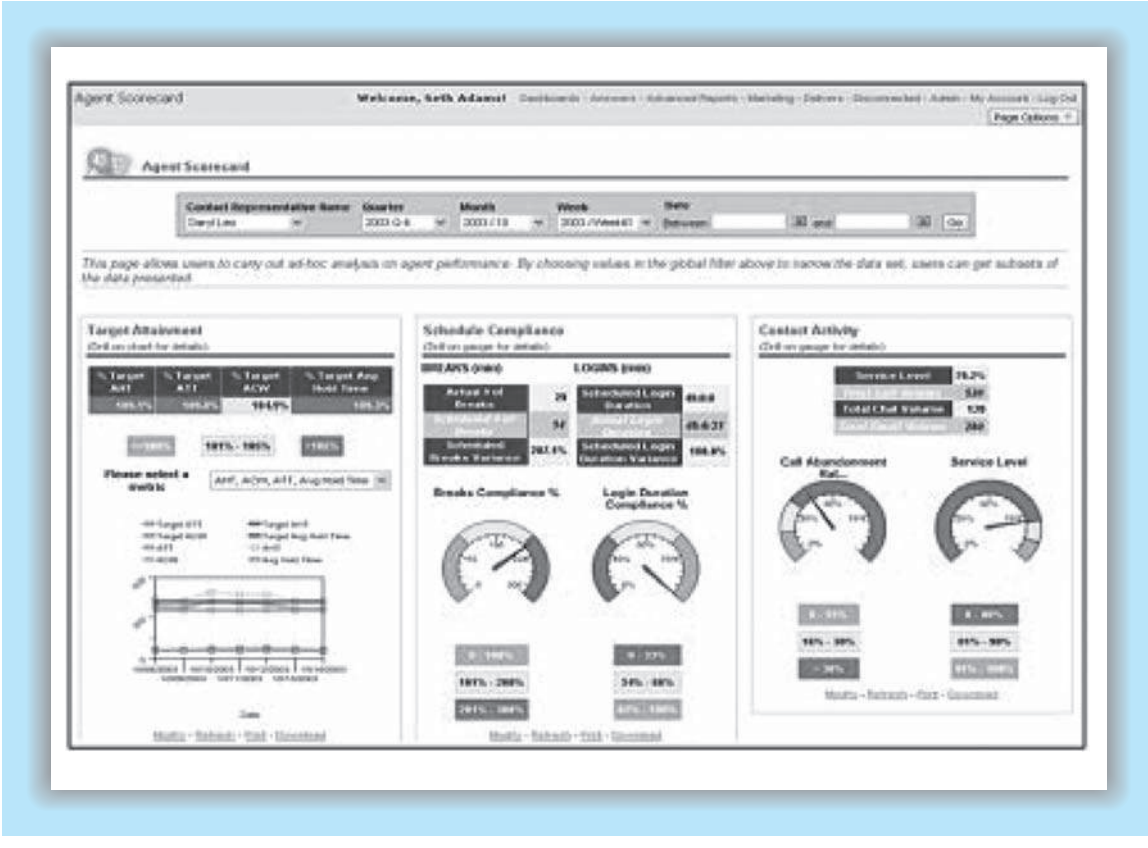

Figure 16.4
Contact centre telephony dashboard with meters showing key information[16]

help human resource management measure people's performance and compute incentives for meeting service level goals.

Spare parts management

Spare parts management is an important application for field technicians. They can see what parts they have with them on the road, check the inventory levels held by other technicians and at regional and central warehouses, order new parts, transfer parts from colleagues, manage excess and defective parts, and check on the progress of orders, thereby ensuring that when they turn up at a job they are properly equipped. Managers can use this application to ensure that appropriate levels of parts inventory are maintained. Too few parts and jobs cannot be completed; too many and inventory costs are unnecessarily high.

Web collaboration

Web collaboration between customer and service agent is enabled by technologies that use instant messaging (web chat 'request call back'

or 'click to talk') or allow both parties to co-browse web pages. This allows the agent to help the customer to resolve the issue in real-time. Customer service agents can collaborate with a number of customers simultaneously or can prioritize based on customer value or some other metric. Transcripts of the chat can be retained and attached to the customer file. Web collaboration is often used as an escalation option for customers who cannot find a solution to their issue through a self-service portal. Web collaboration may reduce online abandonment rates, increase problem resolution and customer satisfaction, and provide up-sell and cross-sell opportunities. In countries with excellent broadband services (e.g. South Korea) web chat with text, voice and even web-cam is being used for problem-resolution, up-sell and cross-sell.

Workflow engineering

Workflow engineering software is useful for designing service-related processes, such as problem diagnosis and issue escalation. Workflow for field service operations will define how service requests are validated, how service tickets are issued, how tickets are allocated, how problems will be diagnosed, how parts will be ordered, how problems will be fixed, how customers will be invoiced and so on.

Summary

Service automation is the application of computerized technologies to support service managers and customer service agents in contact and call centres, and helpdesk staff and mobile service staff operating in the field, to achieve their work-related objectives. Companies and their customers can experience three main benefits from service automation: enhanced service effectiveness, greater service productivity and improved customer experience. Service automation applications offer a range of functionality to service managers and technicians: activity management, agent management, case assignment, case management, contract management, customer self-service, e-mail response management, escalation, inbound communications management, invoicing, job management, mapping and driving directions, outbound communications management, queuing and routing, scripting, scheduling, service analytics, service level management, spare parts management, web collaboration and workflow engineering.

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