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Case Study on Call Centres Requirement Analysis

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BT

Identifier	Deliverable 24
Class	Deliverable
Version	1.0
Version date	August 10, 2001
Status	Final
Distribution	Consortium
Responsible Partner	BT

On-To-Knowledge Consortium

This document is part of a research project funded by the IST Programme of the Commission of the European Communities as project number IST-1999-10132. The partners in this project are: Vrije Universiteit Amsterdam (VU) (co-ordinator), NL; the University of Karlsruhe, Germany; Schweizerische Lebensversicherungs- und Rentenanstalt / Swiss Life, Switzerland; British Telecommunications plc, UK; CognIT a.s, Norway; EnerSearch AB, Sweden; Administrator Nederland BV, NL.

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1 Introduction

Call centres are increasingly offering a platform for companies to communicate with their customers. The call centre market is growing 20% a year, with millions being spent on improving customer relationships. The investment in call centre technology can offer great rewards, including better customer service, lower overheads, lower operational costs, and increased staff profitability.

Current call centre technology concentrates on the management of high volume calls and monitoring call levels rather than supporting the operator once the call has been answered. With statistics indicating that 2% of Europe's population will be employed in a call centre by 2003, technology supporting the operator in solving incoming requests must be implemented.

There are many opportunities to apply knowledge management in call centres, but inevitably they vary in terms of their feasibility and profitability. The first part of this report seeks to explore and investigate possible opportunities for applying effective knowledge management in the call centre domain in general.

Since profitability depends on maximising customer satisfaction, the review focuses on what people want rather than what technology can supply. We address both customer satisfaction and employee satisfaction. The one is likely to be reinforced by the other, in a healthy customer service organisation.

The review then proceeds to look at the specific call centre that the case study will use as a test environment: the Global Front Office (GFO). The following section gives an account of the knowledge management opportunities GFO managers judged to be the most attractive paths to follow. The report finishes with an account of the requirements resulting from several discussions with the GFO management.

1.1 Note on Sources

This review springs from various sources. They include field studies of Customer Service call centresⁱ, an appreciation of the problems and examples of best practice discovered in many non-BT call centres, an awareness of existing software tools' weaknesses, and BT's years of experience in job and systems design. Future knowledge management opportunities are anticipated on the basis of an understanding of business management trends, in the context of a pressing commercial need for BT to excel in terms of customer satisfactionⁱⁱ.

1.2 Job Titles

Job titles can change, so to denote the basic customer contact jobs, this report will use:

- "Customer Service Adviser"
 - where the jobholder's main role is to respond to incoming requests for service and also engage in some outgoing non-sales work;

- “Telesales Representative”
 - where the jobholder’s main role is to make outgoing sales calls;
 - “Field Engineer”
 - where the jobholder’s main role is attend to install or repair a product or service;
- and most generally
- “Agent”
 - where no distinction between customer-facing roles needs be made.

1.3 Agents’ Contractual Status

At the time of writing, some agents are BT employees, others are agency-supplied contractors. The future scale and manner of BT’s use of contract labour in call centres and in the field force is largely a matter of conjecture that only Human Resources may resolve. Meanwhile it must be acknowledged that group differences and variations in contractual status may affect agents’ needs, attitudes, expectations and behaviour. This possibility may have an impact on Customer Service related Knowledge Management opportunities. However, it is difficult to estimate the size of this impact.

2 Knowledge Management Opportunities

2.1 Knowledge Management Strategies

Software tools badged “Knowledge Management” for Customer Service applications abound. As the trade magazine CS Director recently headlined:

The sheer variety of available software packages can befuddle even the most knowledgeable call centre manager.ⁱⁱⁱ

Furthermore, knowledge management tools and techniques can be applied in different combinations according to the requirements of the situation. As with any IT development, therefore, for both technical and work systems to be properly aligned it is essential that the business context and strategic objectives are sufficiently well understood:

A company’s knowledge management strategy should reflect its competitive strategy: how it creates value for customers, how that value supports an economic model, and how the company’s people deliver on the value and the economics^{iv}.

For BT, there is no single knowledge management strategy in answer to this, since diverse products and services require different competitive strategies. Thus “customer service” demand in BT ranges from the routine and simple (e.g. requests for PSTN provision) to the novel and complex (e.g. software and equipment interworking problems).

Evidently, BT’s UK plant inheritance and market position mean that there will continue to be many millions of customer service transactions at the “simple” end of the scale. Equally evidently, the presence of many different vendors and the sale of increasingly powerful products and services mean that an important part of BT’s value to customers will be delivered at the “novel and complex” end of the scale, e.g. by technical helpdesk services.

For BT’s Customer Service division to deliver value at both ends of the complexity scale, we may expect its competitive strategies (and thus its preferred technologies and work systems) to polarise. Certainly the adoption of differing targets for call handling time and structures for call centre teams signify that some kind of polarisation is already underway, in addition to which call centres tend to specialise in support for different sets of products and services. It thus follows that knowledge management opportunities will arise in different parts of BT Customer Service in line with their service specialisation and the related competitive strategies for handling customer- and service-related knowledge.

For analytical convenience, the ensuing discussions of peoples’ requirements and knowledge management opportunities are split between *customer satisfaction* and *employee efficiency and effectiveness*. It is recognised that in a healthy customer service organisation, the one is likely to be reinforced by the other.

2.2 Customer Satisfaction: Delivering a Consistent Customer

Experience

2.2.1 Knowledge Management Tools and Management Style

Service centre managers say that (through their Customer Service Advisers) they aim to deliver a service that customers will perceive as the same throughout the geographical area they are supporting (e.g. the UK).

Agents may deliver what their managers perceive as a “consistent customer experience” if the managers either enforce rules of behaviour, e.g. with an authoritarian management style; or supportively and consistently coach their agents. Knowledge management can support either style of management, but if used to provide domain-specific, customised information flows to the workforce as a whole, it will support the more permissive management style by helping to create and sustain work group autonomy. This in turn could lead to diversity, which could be a mark of learning and business excellence, rather than insufficient control and failure.

2.2.2 Disseminating Customer Handling Rules

An authoritarian management style – often recently referred to as “command & control” – is becoming discredited^v. However, in such a working environment there can be little doubt that the BT Intranet, even without supplementary knowledge management tools, could be a cost-effective channel for the promulgation and maintenance of all sorts of rules and instructions, ranging from Health & Safety rules for the working conditions of Display Screen Equipment users to sales scripts for Telesales Representatives.

2.2.3 Disseminating Best Practice

A similar proposition may be made for the Group-wide Intranet dissemination of best practice. Senior managers are demonstrably eager to hear about global best practice in call centres. BT Intranet publication of best practice reports is technically relatively simple and, through careful version control and website management, could theoretically raise managerial awareness in call centres and thus contribute to service consistency.

Of course, raised awareness of others’ working practices will not automatically lead to imitation, let alone conformance. Even with an e-mail alerting process in place, Intranet pages may be easily disregarded by those who consider themselves to be working under pressure and who have sufficient autonomy to do so. One way around this is to make the consideration of alternative (“best”) working practices a part of the job of a manager as a facilitator.

Managers need to promote behaviours that are acceptably consistent across call centres. Such co-ordination may induce call centre agents to pay due regard to Best Practice resources on the BT Intranet. This co-ordination needs to be augmented by call centre managers being given community-building knowledge management tools.

2.3 Call Centre Agents' Efficiency and Effectiveness

2.3.1 Teamwork and Community Requirements

Currently there is some evidence that in call centres agents tend to be supported as individuals but not as interdependent team members.

The knowledge management strategy in such a context would be to support person-to-person relationships. Agents thus need electronic networks and/or messaging systems that link people across space and/or time (where customers can accept a postponed reply), so they can most easily share problems and tacit knowledge.

In a community such as a call centre, using a knowledge-sharing tool can have the valuable side effect of raising members' awareness and appreciation of one another, potentially as friends as well as helpmates. We may call this the "community effect".

Given enough time and encouragement to use such a knowledge management tool in a supportive atmosphere, call centre agents and their managers can expect to find that it would benefit

- routine collaboration, short-term productivity
- mutual awareness, camaraderie and social support
- long-term organisational effectiveness - achieved via organisationally sanctioned reflection and learning how to learn ("double-loop learning"^{vi}).

2.3.2 Staying Alert - Interest Profiles

Development of existing agent-based profiling techniques would appear to offer a further opportunity to build agents' knowledge – or at least to keep them well-informed. Typically user profiles are collected via: (a) general questionnaires, (b) ratings of representative sample data, and (c) detailed and lengthy surveys. Unless repeated frequently, all methods provide only a static view about the individual, and methods (a) and (b) provide only a superficial and/or a narrow perspective. Detailed surveys may provide sufficient detail, but they place too much burden on the user, especially if requested frequently to track changing interests.

Thus, a knowledge sharing facility must be able to learn a user's interests and preferences autonomously (with minimal feedback from the user) and adapt to changing needs of the user over time.

2.3.3 Help with Searching

A huge amount of paper documents, especially in the form of product and service documentation need to be accessed and passed to the call centre agents in a structured and controlled way.

In practice customer service people frequently cite difficulty with finding information as the biggest waste of their time. Call centre operators need instantaneous desktop access to all forms of information as they are the first point of contact with customers and the

integration of disparate information sources is essential to achieving this. Information gathered from the call centre operation must be analysed and classified according to its potential impact on business strategy.

2.3.4 Help with Browsing

Browsing is an informal, unaided search through information sources. It distinguishes itself from formal querying by serving casual visitors wandering along the information highway.

Special ontologies are needed that contribute to the navigability of databases and web resources. The user interface has to support the navigation through disparate case study material found in call centre best practice reports, and displaying the technical compatibility of a multitude of products and services to an agent in a service or sales role.

2.3.5 Help with Training and Process Review

Access to Intranet-published corporate history and goals must help agents gain and maintain an understanding of the context in which they are working ('the big picture'). Such insights will help them as people responsible for their own career development to select appropriate training packages. They will also contribute to agents' capacity to review and revise their operating processes – if empowered.

2.4 Field Engineers' Efficiency and Effectiveness

2.4.1 IT Support and Perceived Job Characteristics

Partly to satisfy customers with more personalised service delivery, Field Engineers will begin to get IT support via large screen systems. Their task performance may thus benefit from the kind of user interfaces that support their call centre colleagues. As Field Engineers' direct contacts with our customers are thus informed and enriched, knowledge management software may be automatically contributing to Field Engineers' job satisfaction.

A pilot survey of how Field Engineers perceive their jobs is planned for Summer 2002. If successful, it will tell us the particular features of Field Engineers' work that may need revision in order to sustain efficiency and effectiveness. Meanwhile, it is clear from recent fieldwork that there are two major challenges beyond job design, addressed below.

2.4.2 Computer Interface to Customer Information

The service delivery support system *Work Manager* outputs to a handheld, small screen device. It is thought to be ergonomically unsuited to the display of present customer information. Screens lack much of the transaction history that may prompt a feeling of mutual understanding between Field Engineer and Customer. The Field Engineer is relatively starved of knowledge about the customer.

2.4.3 Access to Plant Records

Unless the Field Engineer enjoys particular local knowledge, his ability to work efficiently can be dependent on access to well-maintained plant records. Records appertaining to Distribution Points have been a much-mentioned case in point, since they appear to be at

greatest risk of neglect. Fieldwork indicates that those who have been sent by *Work Manager* to connect a customer too often cannot, on arrival, because of the unexpected state of the Distribution Point. With a system review, an opportunity could be seized to transfer these paper records to a database, in which case the subsequent recording of the authoring of record updates would provide the basis for performance feedback, reward and recognition.

3 The Global Front Office Call Centre

Over the past two and a half years, the Global Front Office (GFO) have offered enhanced call centre services to BT Major Business (that part of BT which markets and sells products and services to large corporate customers). Concert, a subsidiary of BT, is also using the enhanced supplied by the GFO, as well are some Joint ventures outside the UK.

The GFO work hand in hand with other divisions to solve faults, arrange engineering visits and deliver and install new computing kit, all in targeted time scales which are lower than is offered to the vast majority of other BT users.

In addition to the customers mentioned above, the GFO is going to take on other parts of BT who have a heavy dependence on travelling customers. The services offered differ slightly for each customer but the same philosophy is at the heart of each agreement, thus mass customisation is achieved and the perception of each user community is of a bespoke service tailored specifically for them.

3.1 Knowledge Management Opportunities for the GFO

For the GFO, opportunities abound for Customer Service to draw on the Knowledge Management perspective and to organise and equip itself accordingly. As a means to apply knowledge management competitively and to differentiate themselves in terms of service, the GFO management decided to introduce a knowledge sharing facility.

The GFO expects that the introduction of an ontology-driven knowledge sharing facility will positively affect both *customer satisfaction* and *call centre agents' efficiency and effectiveness*. The one is likely to be reinforced by the other.

Regarding *customer satisfaction*, the GFO expects that a knowledge sharing facility will help to deliver a customer experience that is:

- consistent
- personalised
- not laborious

Regarding the call *centre agents' efficiency and effectiveness*, a knowledge sharing facility is expected to help Call Centre Managers and Agents in several ways:

- promoting teamwork and long-term effectiveness
- share Intranet based knowledge
- utilise user profiles to speed searches;
- offer classification and graphical interface to speed browsing; and
- allowing access to Intranet-published corporate history and goals to help their people understand 'the big picture'.

To achieve these goals the knowledge sharing facility will employ ontologies as shared expressions of belief and agreements on terminologies for communication and action. Ontologies will serve to bound discourse, facilitate communication within and across communities of practice.

Ontologies will help to orientate new agents and act as the stores for key learnings and best practices accumulated through experience. Ontologies will help with the tacit transfer of context. They are useful in helping agents become familiar with a new domain, they will provide a sharable structure for a knowledge base, and they will provide a common language for communication between call centre agents.

3.2 Requirements for Knowledge Sharing Facility

3.2.1 Disseminating Customer Handling Rules

GFO history has already shown significant cost savings as reference manuals have been made obsolete by the Intranet. The knowledge sharing facility has to offer a cost-effective channel for the promulgation and maintenance of all sorts of rules and instructions, ranging from Health & Safety rules for the working conditions of Display Screen Equipment users to sales scripts for Telesales Representatives.

As new products and services are introduced agents have to be provided with timely information on the new products and services. Making this information available on the Intranet is not enough, agents have to be alerted that new customer handling rules are in place. Relevant information has to be disseminated to the right agents at the right time!

3.2.2 Disseminating Best Practice

Use of the knowledge sharing facility within Customer Service has to help to promote behaviours that are acceptably consistent across call centres. Such co-ordination should also help managers to become more aware of Best Practice resources on the BT Intranet.

The knowledge sharing facility has to augment this co-ordination by supporting call centre managers in building communities of best practice.

Currently experts tend to get many questions from less experienced call centre staff. The GFO wants to make sure that experienced call centre experts do not get overloaded with queries. This could serve as a success target, e.g. average number of questions to an expert per day from other call centre staff prior to and after the introduction of the knowledge sharing facility.

3.2.3 Teamwork and Community Requirements

The knowledge sharing facility has to provide a solution for person-to-person relationships by installing IT-mediated 'communities of interest'.

The knowledge sharing facility has to offer an acknowledgement function that makes it easy periodically to reward and/or recognise people for having directly shared knowledge with others.

Sharing a document has to be kept simple – all that should be required is the Uniform

Resource Locator, (URL), of the document on the Intranet or Internet. Additionally the user should be allowed to specify a comment to be shown with the reference to this document, an interest group to copy the reference to and also a list of users who definitely should be notified about the document, overriding their user profile. The knowledge sharing facility has to take care of the rest of the process, extracting keywords and phrases from the document, and generating a locally held summary for convenient reference.

3.2.4 Staying Alert - Interest Profiles

The knowledge sharing facility must be able to learn a user's interests and preferences autonomously (with minimal feedback from the user) and adapt to changing needs of the user over time. Where possible these user profiles should be acquired automatically with the users' role being one of review to correct/refine their profile. This way, the majority of the effort involved in constructing the profile is performed by the knowledge sharing facility. The knowledge sharing facility has to free users from the tedium of detailed and frequent surveys about their interests.

3.2.5 Help with Searching

The knowledge sharing facility has to accommodate storage of or links to information in all current formats required by GFO. It has to provide a fast, single interface to all GFO's information repositories and will ensure presentation of consistent and accurate information at point of need. Most importantly it will offer an easy to use query interface.

Ontologies play an important role in searching. They specify the common background knowledge shared by the user and the knowledge sharing facility, allowing the knowledge sharing facility to make inexact matches between the user's request and the stored knowledge.

The knowledge sharing facility has to allow the user not only to enter search words but also to select on one or more topics from the ontology in order to restrict the search.

3.2.6 Help with Browsing

When browsing the searcher has no specific idea in what exists in the knowledge bases, and little idea of where relevant information might be. Since the casual browser will not know the precise designation of what is wanted, assistance is needed. A number of methods will be employed

1. A menu can be provided. Since there might be too much information to fit on one menu page, the menu will be hierarchically organised. At each level of a hierarchy a choice among up to seven categories seems optimal for human perception.
2. Multiple menus are needed. A single hierarchy imposes one organisation principle. Even if it can be shown that one taxonomy is best, say arranging system faults by network type, operating system, and computer type, some agents will prefer to search for the same faults by programming language, database system, and user interface.
3. Generalising from examples. An agent may want to bring an example, perhaps by reference, and look for similar items. An agent may want a case that is similar to one fixed earlier.

3.3 The GFO Pilot

Moving forward with a pilot of the knowledge sharing facility will necessitate some effort by GFO resource to analyse their information sources and populate the repository. This task needs to be completed before the pilot commences. The identification and availability of this resource is to be discussed with GFO Management. It is anticipated a pilot will be undertaken by accessing a remote server at Adastral Park. A potential live environment will be discussed at a later date. Capacity and performance are not currently an issue but require further consideration and close monitoring during a pilot.

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