



Software and Consulting for Computer-Telephony Integration



*We link
communication worlds*

Bridging the gap between PC and

Today, the telephone and PC constitute the most important tools of a modern enterprise. They usually sit side by side on the desk. Yet, as closely linked as they might seem in the day-to-day office routine, they are isolated from one another and operate in different worlds.

***Problem:
linking information is difficult***

Many details of business contacts are stored in the PC, including telephone numbers. Before a conversation can even start, numbers must be displayed on the screen, read and manually dialed on the phone. If a customer calls, the relevant data has to be retrieved from the system during the course of the conversation. Because of the missing link between PC and telephone, valuable working time is lost.

How much more effective would it be if a mouse click on the electronic address book entry was sufficient to automatically establish the connection? How useful would it be if the PC was able to immediately identify the caller's number, and, while the phone is still ringing, load important data about the caller onto the screen?

Solution: Computer-Telephony

Linking these two communication worlds is known as CTI (Computer Telephony Integration). Such innovative CTI solutions for the active exchange of data between PC and telephone are ilink's focus. With this, ilink is paving the way for new, innovative forms of communication.



telephone

Client service and business success

CTI-Software is the basis for the effective interaction between PC and telephone. Tailor-made modules enable the exchange, interpretation and processing of data, facilitating process automation.

The customer, not the telephone manufacturer, determines the required functions and level of performance of these processes. Every workstation user can benefit from the improved telephone handling offered by CTI, and the integration of existing company-wide services becomes possible.

Linking the telephone system with the operating system and allowing direct dialing from applications or any workstation within the company network increases these advantages substantially.

Automated processes for telephone campaigns

When Sixt Car Rentals' booking center in Rostock, Germany, was planning to review more than 8000 client data entries by telephone, a tailor-made CTI solution was required. Apart from the electronic data, no software application was in use. However, the telephone campaign was supposed to generate answers from clients, and – according to the nature of the information – initiate different actions: the dispatching of discount vouchers, distributing brochures or arranging meetings for the Sixt representative.

The ilink solution:

Calls could be fully managed from the PC screen. Moreover, the telephony software was linked with the questionnaire, which could be edited. Answers generated during calls were passed on to the dispatch department where different brochures, vouchers etc. were automatically enveloped and labeled.

Advantages of CTI at a glance

- *More effective communication*
- *Shortened response times*
- *Increased productivity*
- *Multitude of options for telephone management*
- *Immediate access to information*
- *Fast update of data*
- *Company-wide communications management*
- *No more lost calls*
- *Every call-back request is registered*
- *Contact data are immediately displayed on screen*
- *Callers can be greeted with their name*
- *For incoming calls, on-screen data forms or other files automatically open*

We are a team of experienced

ilink is a software house and consultancy developing Computer Telephony Integration (CTI) software solutions.

We have been developing individual integrated solutions linking PBX systems with existing IT infrastructures since 1990. Our aim: increased efficiency, productivity and economy. Our approach: know the technical environment and understand the client. At present, we have 30 members of staff.

Linking heterogeneous software and hardware is our particular strength. In the course of several hundred projects, we have gained expertise and conceptual experience with diverse technical conditions, our clients' requirements and the international CTI market.

We advise competently

In order to develop a new solution, thorough knowledge of the situation is essential. Together with the client, we find the clearest, most functional and most economical answer to the problem.

We listen carefully to what our clients want. We then draw upon a varied and proven spectrum of tools and modules to determine the most beneficial application for each customer.

We offer future-proof solutions

We develop our CTI-software based upon state-of-the-art technologies and observing current industrial standards. This helps ensure that our software can be deployed in a modular and flexible manner, taking the guesswork out of migrating to reflect changing infrastructure conditions.

ilink software spans multiple platforms. It supports all established operating systems, telephone systems, as well as many application interfaces. In addition, our existing components are developed and optimized continually.

Transfer of caller data to SAP

Schering AG, Germany, wanted to optimize the order process in its sales call center. 20 members of staff were collecting and managing client data with SAP software. When clients called to place an order, the respective data entry had to be retrieved manually, and then the order would be taken. Our task was to link the call with the client data.

The ilink solution:

Incoming calls are recognized and automatically transferred to SAP. Every client is clearly identified by his/her telephone number. A prepared form containing the basic client data opens immediately. Only additional or new information is relevant for the order – the process has become fast and simple, and clients feel well taken care of

specialists

The ilink-strategy: focus on the client

Our clients' requirements determine our activities. We develop exactly what our clients want, and what is most suited to fulfill their needs.

ilink software is middleware in the original sense of the word: our solutions link the PC and the world of telecommunications. In doing so, we respect and preserve the interests of the main players in this market.

Innovative ideas for demanding clients

- **Manufacturers of PBX systems** require state-of-the-art, easy to operate and powerful telephony options that can be networked and that fulfill specific client needs.

ilink middleware does all this. Moreover, it is able to keep even visionary CTI promises and make use of new sales opportunities.

- **Hardware manufacturers** require technical solutions that enable CTI on their servers, smoothing their entry into the dynamic call center market.

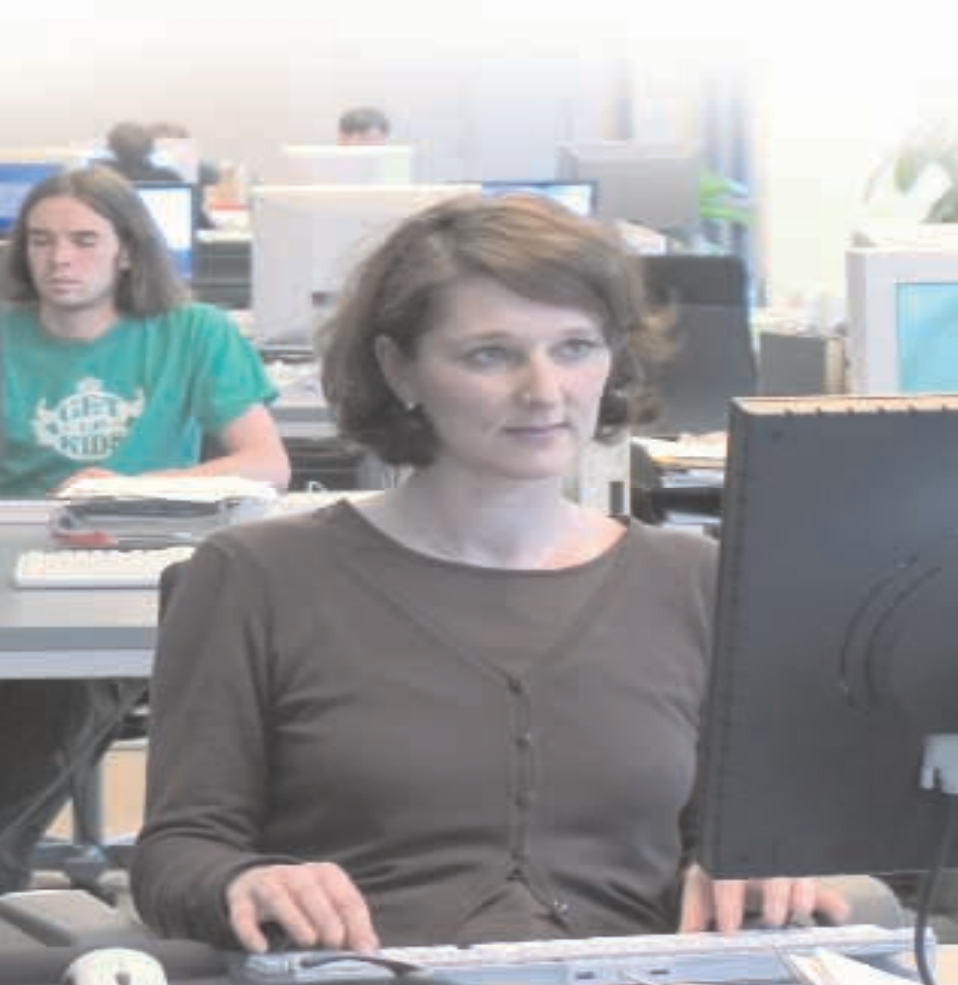
ilink middleware offers the required system extensions and standardized interfaces.

- **Software manufacturers** are interested in extending their applications with CTI functions in order to penetrate new markets.

Via easy-to-implement interfaces, ilink middleware is the key to enhancing the power and versatility of such applications.

- **End users** are looking for flexible, cost effective and, above all, individual solutions to enable telephony in their computer networks.

ilink middleware offers tailor-made answers when the functionality of existing applications must be enhanced and platform limits are to be overcome.



CTI-middleware: the mediator in the

Controlling from the screen

ilink middleware operates behind the scenes. Without being visible to the user, it links PC and telephone. It acts as interpreter and gateway between different communications platforms.

Data signals from the PBX are translated so that computer applications are able to understand, process, store and evaluate them.

This principle also applies vice versa: the PBX system can be controlled from the computer screen – much more comprehensively, clearly, easier to handle, and faster than is possible with only the telephone display.

Bridging the gap flexibly

ilink middleware is the result of a continuous development process. It mirrors our entire experience and knowledge gained from many integration projects. Today, our middleware is a mature and freely scalable product with clearly defined basic functions.

We are very keen to preserve the middleware character of our software: it has neither a pre-designed desktop nor any functions comparable to standard commercial applications. This is the only way our middleware is able to continually fulfill its central purpose: to flexibly bridge the gap between PBX and PC software. As an independent application, it would lose much of this versatility.

Dialing from the Intranet Address Book

Many thousand workstations of the Schering AG, Germany, use contact data from an intranet address book: in total, 8.000 telephone extensions and 10 nodes. The telephone book entries needed to be dialable with a mouse click – supplemented by such functions as queries, waiting calls, forwarding calls and telephone

The ilink solution:

Today, our software links the telephone system with the network via a common server. The tool for the web-based functions is called WebDial – a browser-based application that is fully independent of the operating system.

background



The range of middleware applications

Over the last few years, the technical standard of both PBX systems and PCs has improved drastically. All contemporary PBX systems can be managed by a computer. However, opportunities to apply CTI-functions are seldom realized.

One reason for this is the different definition of PBX system interfaces. Despite the existence of international standards, many systems, often due to some detail, prove to be incompatible, isolated solutions.

ilink middleware offers the flexibility necessary to overcome platform limits to meet specific requirements.

Today, increasing numbers of software applications offer basic computer telephony functions. However, these ready-made solutions often fail when the pre-defined CTI abilities must be extended or adjusted to meet special requirements.

Individual requirements and a heterogeneous technical environment are ideal scenarios for ilink middleware to demonstrate its strengths.

Our middleware can be adapted to almost any need – from the company switchboard to an entire call center. It can be configured for all standard PBX systems and may be installed on network servers for company-wide use. It supports interfaces utilized by most current operating systems and important applications.

Our software: Fit in every

Multitalented platform

ilink *TeamCall* is the heart of our middleware and the crucial link between telephone and PC.

The platform monitors the telephone system and forwards incoming calls to the connected client applications. It is ideally suited for heterogeneous company networks.

With *TeamCall*, PBX system functions become freely available for processing in software applications. Additionally, proven modules are available for other ranges of use.

TeamCall supports the majority of currently commercially available integrated components, platforms and interfaces. Open Application Program Interfaces (APIs), libraries, example programs, technical documentation and our comprehensive project experience guarantee the smooth deployment and quick availability of individual computer-telephony functions.

context

Interfaces

ilink *TeamCall* offers easily usable interfaces and is therefore an ideal basis for CTI-enabled web or desktop applications.

- **CSTA** (Computer Supported Telephony Applications)
TeamCall supports the CSTA interface. CSTA has been defined as a computer-telephony standard by the organization ECMA. All leading manufacturers of PBX systems are members of that body.
- **STLI** (Simple Telephony Interface)
TeamCall and the client application may communicate via the STLI-protocol. The data exchange is comparable to that of web server and client. STLI was developed to offer basic CTI functionality in an uncomplicated way. With STLI it is possible to furnish any TCP/IP compliant application with telephony functions. For this, script languages like Perl or Python can be used.
- **TAPI** (Telephony Application Interface)
TeamCall supports the standard interface of Microsoft systems and applications.
- **JTAPI** (Java Telephony Application Interface)
JTAPI is the telephony interface for all Java applications. Via *TeamCall* JTAPI support, developers are able to integrate professional telephony functions into their Java software.

Product specifications

Open standards

We use the relevant CSTA (Computer Supported Telephony Applications) standards. Therefore ilink TeamCall is compatible with any type of implementation, and independent of the existing PBX system.

Harmonizing of the existing infrastructure

Our middleware provides a common interface, normalizing the behavior of different telephone systems. From the evaluation of PBX information and the event sequence, to complex scenarios, we harmonize conditions for the development of software applications.

Platform independence

Our middleware is operational on more system platforms than any other solution: Microsoft Windows, Mac OS X, Linux, Unixware, Solaris.

Secure migration

ilink TeamCall also works with interfaces of older applications. We safeguard the backward compatibility to legacy TK systems.

Install and simple with your

Click & Dial

The most basic of all CTI functions is to dial from the screen. To enable this, we have developed Click & Dial. Click & Dial functions are intentionally limited to a minimum. The clearly defined task is to dissolve any existing deficits of the dialing function. Because of this, Click & Dial is designed as a tool with a user interface focused on essentials.

With Click & Dial, telephone numbers can be dialed directly from within MS Outlook and Lotus Notes. It is equally simple to dial from web applications. Dialing is done by mouse click. Once the conversation partner has been selected from an address book or an internet application, all that is required is a mouse click on the telephone number. The connection is set up immediately.

Easy dialing for large address contingents

A national lottery company was interested in enhancing its mainframe call center application with CTI functions in order to avoid manual dialing when working through their address database.

The ilink solution:

The existing database software was upgraded with Click & Dial functions. Today, the contact is selected from the address book by a simple click, and the connection is set up.

dial: program

direct

Mac OS X does not offer its own telephone dialer to support PBX systems. In order to enable dialing out of an address book, we have developed direct, enhanced with some features for ease of use. direct is a CTI solution for Mac OS X, automating telephone handling. direct uses ilink TeamCall to link Mac and telephone system.

Dialing is easier with direct: the caller's identity is displayed on screen. The computer may react to incoming calls by executing preset activities. Telephone numbers can be found quickly with direct. The adaptive search function recognizes the most commonly used contact data. A mouse click is sufficient for direct to set up the connection.

Within the network, direct indicates the status information of all other direct users. Whether a colleague is currently engaged or free to take a call is visible at a glance. Calls can also be taken over – even without configuration of working groups – simply using the Mac OS X Bonjour function.

Click & Dial Functions

- *Dialing out of your address book or your contact management system*
- *Fast installation within the company's IT infrastructure*
- *Integrates your application software with your communication system (PBX systems, VoIP-PBX systems, PBX, Centrix)*
- *Scaleable from small and medium-sized enterprises to worldwide groups*
- *Dialing out of Outlook, Notes, MS Office Communicator, Windows, Mac, Linux, AS/400, WebSphere, J2EE, .NET, SAP, ERP, CRM, as well as tailor-made application software*

direct functions

- *Search in the Mac OS X Address book*
- *Search in LDAP servers*
- *Short dial list can be configured*
- *Redial*
- *Group functions within local network*
- *Dialing of selected telephone numbers from within almost all Mac OS X applications*
- *Integration in applications through AppleScript*

Integrated are team

ilink middleware is intended to be complementary. It complements and connects communications components of different system providers. Wherever existing standards and technical prerequisites do not satisfy the client, we offer our know-how as partners.

We are partner to both software and hardware developers

We offer manufacturers of software and hardware the opportunity to purchase licenses for ilink middleware, allowing them to integrate it into their products.

Manufacturers can furnish their applications with flexible telephone functions or offer interfaces for these functions. In this way, ilink middleware provides access to the Call-Center market, providing obvious competitive advantages without itself appearing as a standalone product.

We are partner to manufacturers of PBX systems

At first glance, there would appear to be a conflict of interest between manufacturers of PBX systems and platform-spanning CTI middleware. However a closer look reveals that ilink middleware offers a multitude of opportunities to win new clients. The ability to deal with the existing infrastructure and meet individual requirements with flexible solutions has become an increasingly important selling point. In many projects carried out jointly with manufacturers of PBX systems, ilink middleware was able to fulfill specific client needs. Our experience and competence helps manufacturers of PBX systems to develop and produce new technical concepts and fulfill demanding functions.

Joint integration projects are an ideal starting point for an enduring and successful partnership.



projects work

We share our know-how

Along with our specialist knowledge of computer-telephony-integration, we have a professional infrastructure for the development of innovative CTI solutions at our disposal.

Our partners can hire slots in our test laboratory in order to test their applications under realistic conditions and simulate complex processes.

Over and above our infrastructure expertise, we are happy to provide advice on related matters.

Clients (Selection)

- *Alcatel Deutschland GmbH, Stuttgart*
- *DaimlerChrysler AG, Stuttgart*
- *DATEV eG, Nuremberg*
- *Deutsche Bank AG, London*
- *Hapag-Lloyd AG, Hamburg*
- *Staatliche Lotterie-Einnahme Walter Günther, Bamberg*
- *Otto GmbH & Co KG, Hamburg*
- *Schering AG, Berlin*
- *Siemens AG, Munich*
- *Sixt AG Communication Center, Rostock*
- *taz, die tageszeitung, Berlin*

Project Partners

- *Alcatel*
- *Avaya*
- *Cisco Systems*
- *DeTeWe*
- *IBM*
- *NextiraOne*
- *Nortel*
- *Siemens*

Mile- stones

1990

Establishment of ilink focusing on the idea of CTI for the individual workstation. At that stage, the computer was not yet regarded as the actual telephone device, but used only to control telephone functions.

1991

With „mix“, we presented a unified messaging system to link different communications media.

1994

The new focus is on scalable CTI solutions for large company networks. Start of co-operation with DeTeWe on a development project for telephone software.

1995

Integrated CTI project with Sun and Alcatel to combine Sun server systems with Alcatel telephone systems. The complex challenges involved round off our expertise with interfaces.

1996

ilink middleware TeamCall has matured into a flexible platform.

1997

Our range of services expands into the internet area. We carry out demanding projects for dynamic web solutions, server based applications, and develop data base software.

1998-2001

We acquire a lot of specialist knowledge from our internet projects, which is also very valuable for complex CTI solutions. At the same time, these projects secure our investment requirements for the further development of our ilink middleware.

During that time, the demand for CTI solutions grows steadily. The technical development of PCs and telephone systems progresses considerably. Standards are set.

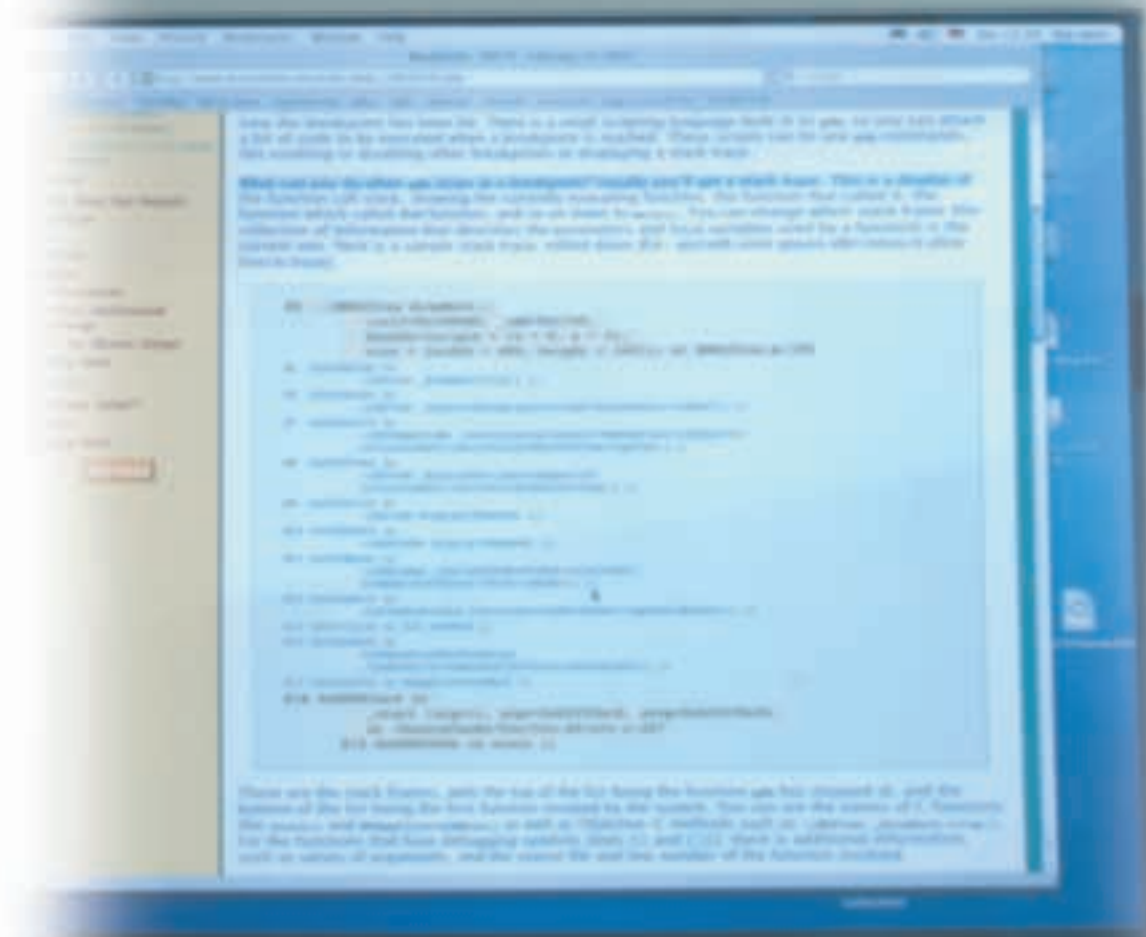
It is a very positive environment for clients to decide in favor of CTI functionality. Our versatile solutions garner growing acclaim.

Since 2001

Our international profile grows, as many telephone systems supporting our solutions are in operation worldwide.

Our goal is to increase our presence in the USA and become more prominent on the growing US market.

For the future, we envisage that wherever telephones work with computer applications, our ilink middleware will make the connection.





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