

CAMBRIDGE TECHNOLOGY GROUP



Making Information Technology Work for You

OVERVIEW

Cambridge Technology Group solves critical business problems -- fast. When you are faced with diminishing market share, bloated inventories, or lagging production, you do not have time for a five-year or even an 18-month solution. When business opportunities crop up, you need to capture them before your competition.

CTGroup's methodologies provide unparalleled speed of development, complete user involvement, full systems integration capability, vendor independence, and complete offerings from identification of strategic applications to implementation to long-term maintenance.

CTGroup's SURROUND® architecture enables organizations to capture fleeting business opportunities as they present themselves today, while putting in place a framework that will offer flexibility and responsiveness to market changes in the future.

OVERVIEW OF CTGROUP OFFERINGS

The *Executive Education Program* series at CTGroup shows you, a key decision maker, the many ways that technology can enable you to achieve your most critical business goals.

Strategic Consulting and the Hunt provide a means for you to identify strategic opportunities – the mission critical information systems that will change the way you do business.

The Solutions Workshop (SW) addresses your business needs. One form results in the creation of a working pilot system and cost/benefit analysis of your strategic application.

The Scoping and Business/User Design Specification translate user and technical needs into a blueprint design for the full system.

The System Design/Project Plan results in a technical specification and detailed work plan.

System Development turns your application concept into a fully operational and secure system using proven software tools.

Internal Empowerment allows your MIS department to build strategic applications throughout your organization.

External Empowerment is a special partnership with CTGroup which enables you to provide systems integration services to targeted market segments.

Cross Industry Networks bring together data from various organizations. Everyone benefits from the pooled information.

WHY CAMBRIDGE TECHNOLOGY GROUP?

From its inception in 1978, CTGroup has partnered with a wide variety of organizations, helping them to achieve their strategic goals through the application of information technologies. Today, CTGroup, a pioneer in the client/server architecture, is a premier systems integration firm. We work with organizations to develop a migration strategy to open systems and to identify and develop strategic information systems.

To make this possible CTGroup has assembled a unique combination of technical processes, state-of-the-art tools, and motivated people.

Benefits of the CTGroup approach are many:

- Fast, open systems-based solutions
- Business case and user driven methodology
- Focus on development of strategic applications
- A process and architecture that can continually grow to give you a sustained competitive advantage
- Migration strategy from proprietary to open systems.
- Experience – Over one hundred pilot and operational systems implemented
- Twelve-year proven track record
- An outstanding staff drawn from top U.S. and Foreign universities

The SURROUND architecture, which includes client/server migration from proprietary systems, can be expanded as you grow and as your business needs change.

A business focus, speed, and total user involvement are the cornerstones of the Cambridge Implementation Process which CTGroup uses to implement strategic applications.

In a customized process, CTGroup will identify, prototype, design, and build an application which will give your business a competitive advantage. The fully operational systems are developed in as little as 20-30 weeks. Systems designed and developed at CTGroup can be easily maintained and enhanced through the utilization of Cambridge Customer Support Services, or through Empowerment, a process designed to enable your organization to build and support SURROUND applications.

EXECUTIVE EDUCATION

In today's increasingly global marketplace, meeting competitive challenges is a more formidable task than ever before. Your organization's resources must be strategically focused. Key decision makers must understand the challenges they face, which options are strategic, and how rapidly to implement solutions. Information technology is integral to this strategy.

Executive Programs at Cambridge Technology Group provide you with a powerful and proven process for identifying strategic applications, choosing the right technology, and rapidly implementing and managing the right strategic solution.

FOUR TYPES OF EXECUTIVE EDUCATION:

- Executive Education Program for Key Executives
- Program for Presidents and CEO's
- Sales Training for Key Sales People
- Customized Programs

LECTURE TOPICS INCLUDE:

- Identifying strategic opportunities
- Crisis in technology - what you can do when traditional approaches fail
- How to rapidly implement your strategic system
- The importance of the business case
- Innovative technologies
- Migration strategies from proprietary systems to open systems

CUSTOMIZED PROGRAMS FOCUS ON:

- Your goals and critical success factors
- How to leverage your existing systems to gain a competitive advantage

"Excellent learning experience. The lectures were a good mix of focus on business strategy and technology."

Paul A. Allaire
President
XEROX Corporation

STRATEGIC CONSULTING AND THE HUNT

CTGroup's staff will assist you with your platform, architecture, and technology choices. One form of consulting is the Hunt. The Hunt is a vehicle for you to identify the most strategic applications for your organization.

During a Hunt, CTGroup staff visits your organization for a minimum of one and a half days and works with your team of executives, strategists, users, and technologists to define potential business opportunities. Discussion begins with an analysis of your organization's goals, critical success factors, and business processes, and leads to the identification of a number of potential applications. Weighing both the business case and the technical implications associated with each opportunity, the group chooses those strategic applications which will give your organization the greatest business benefit.

After identifying the strategic applications you need, you are ready to prototype the business solution.

WHAT IS UNIQUE?

- Examination of your goals, critical success factors, and business processes
- Communications between your users, technologists, and executives
- Application of technology to meet your business needs

WHAT ARE THE DELIVERABLES?

- Identification of strategic application(s) for your organization
- Analysis of the business case associated with each application defined
- Implementation plan
- Education in the Cambridge Process for your executives, users, and technologists.
- Exposure to a new, significantly more effective, way to identify and develop strategic systems.

***"Cambridge turned our vision into reality.
As a result, Cambridge has given CIGNA
the opportunity to be leading edge."***

Deborah Kowalczyk
Vice President
CIGNA

SOLUTIONS WORKSHOP

The Solutions Workshop (SW) is a customized process which brings together key users and executives from your organization in an intense development session at CTGroup. The SW is designed to fit the needs of different organizations; it varies from a five-day to a two-and one-half week process and from a four to fourteen person effort.

The scope of the Solutions Workshop will vary from designing a system, to designing an architecture, to implementing a pilot system.

OBJECTIVES

- Achieve a substantial running start on solutions to a strategic business opportunity.
- Establish strategy consensus and executive decision.
- Define business case and implementation cost of alternative solutions.
- Educate on strategic value of technology and how to take advantage of it.
- Demonstrate capabilities of open systems architectures and advanced technologies.

The two-week Solutions Workshop, one form of the SW, begins before your team even sets foot in Cambridge. Members of a CTGroup team visit your organization, consult on your system architecture and strategic opportunities, and begin analysis of the business case for your application. By the time your team arrives, the SW is underway.

During the week at CTGroup, each morning begins with a lecture by Dr. John Donovan, founder, CEO, and President of Cambridge Technology Group. The lectures focus on technology's power to fuel business vision.

Throughout the week, both your team and a CTGroup team work together to develop a

cost/benefit analysis of your strategic application and to develop a functional prototype which demonstrates the potential functional and technical capabilities of the completed system. Your users are involved with the development process at all times. Thus, the prototype is a product of their experiences and needs.

On the final day of the SW your team presents the results and accomplishments of the week to your senior management.

POSSIBLE COMPONENTS:

- Education
- Goals, Strategies
- Business Case
- Pilot Application
 - User Interface
 - Local Database
 - Remote Host Connectivity
- Business Process Model
- Data Flow
- Database Design
- Technical Design Alternatives
- Functionality Prioritization
- Implementation Cost
- Client/Server Design Demonstrations
- SURROUND

"The [workshop] provided a unique opportunity for our business and Information Systems professionals to become partners - allowing us to develop a working prototype and supporting business case in less than 5 days!"

John D. DiFronzo
Vice President
Group W

SCOPING YOUR APPLICATION

Once you have finished the SW, you are ready to envision the major functionality that implements your business case. Scoping, the first step of the development and implementation process, is a chance for you to define the boundaries of your project.

For one week, a CTGroup team visits your site to devote time to understanding your business concerns and technical environment. The team defines a functionality matrix which prioritizes all potential functions of the system according to their associated business benefits.

Key users are chosen and begin work with the team. MIS staff work with the team to create a preliminary design of the environment, architecture, and security considerations of the new system.

The functionality matrix, the product of the week's effort serves as a guide for the rest of the systems integration process, identifying which system capabilities will afford you the greatest business benefit.

BUSINESS/USER DESIGN SPECIFICATION

Using the functionality matrix as a guide, the full team comes to CTGroup for two weeks to develop a detailed business and user design specification. For each piece of functionality identified during scoping, the team must determine how the function is currently accomplished and how it should be accomplished when the completed system is in place.

The analysis begins by examining the existing business processes with the employees who are involved with the tasks daily. Users design the interface that they will use—including the screen layout and flow.

On the technical side, members of your MIS department work with CTGroup staff to identify data sources and detail all database and connectivity needs.

At the completion of this phase, the team has spelled out the functionality flow of the complete system. The team then presents the Business/User Design Specification to visiting executives from your organization.

"The increased profitability and customer satisfaction are a direct result of the SURROUND® project."

George Trumbull
President
CIGNA Investment Division

SYSTEM DESIGN/PROJECT PLAN

The CTGroup strategy provides flexibility in what your new platform can be, e.g. OSF compliant, X Windows, Microsoft Windows, Token-Ring, TCP/IP. During the four-week System Design/ Project Plan, your organization's present hardware and software are evaluated in order to identify connectivity requirements. You also begin to examine the hardware and third-party software that will be required for your system.

By the end of this phase the full project plan for development and testing is set. You will have a document which explicitly lays out the steps necessary to bring your project to completion. Screens are finalized, connectivity options into your existing systems are defined, and the database design is completed.

SYSTEM DEVELOPMENT

System Development translates your application design into a production system using proven software tools.

SPECIFIC TASKS COMPLETED ARE:

- Development of all program code
- Development of all connectivity scripts
- Development of the local database and all data manipulation functions
- Integration of all modules
- Addition of security functions and performance enhancements
- Implementation of all error testing functions
- Implementation of backup system plans
- Implementation of system administration functions

SYSTEM TESTING

After system development, rigorous system testing is carried out over four weeks at CTGroup. This testing ensures that the application is functioning in accordance with the user design.

USER TESTING/ACCEPTANCE

Once system testing is complete, your organization's system users perform application tests to identify and fix performance discrepancies. Your users run the system for four weeks and provide CTGroup with comments and suggestions, thereby ensuring quality assurance, user acceptance, and initial user training.

ROLLOUT

CTGroup provides various deployment and training services to assist you in the rollout of your system to your users. These include:

- Detailed pilot test and rollout planning
- Hardware, software, and network selection and configuration
- Application installation and testing at pilot and rollout sites
- User training services
- Porting to production hardware

CUSTOMER SUPPORT SERVICES

Once your strategic system is up and running, CTGroup offers complete customer support services. These include:

- Application maintenance
- Application enhancements
- Periodic upgrades of applications and tools
- Application network management
- Facilities management
- Self-sufficiency training

EMPOWERMENT

The empowerment process is a customized relationship between your organization and CTGroup which can include training of your staff, tools support and development, management training, and recruiting assistance.

INTERNAL EMPOWERMENT

For organizations aware that their MIS departments need to be developing and implementing strategic business systems, CTGroup has a solution.

With CTGroup's technology and methodology, your organization can establish a process for consistently bringing new technologies into your data processing environment.

Through the internal empowerment process, your organization can cultivate in-house systems integration capabilities — you can internally develop, deploy, and support strategic applications using CTGroup's architecture, tools, and methodologies. And with the open-system SURROUND architecture, you will be able to continue integrating new applications into your internal systems environment.

EXTERNAL EMPOWERMENT

CTGroup will work with a few organizations to empower them with our tools and process so that they can provide rapid strategic systems development services for specific geographic and market sectors. External Empowerment is a customized relationship focused on offering CTGroup's technologies and methodologies to given markets (e.g. vertical, geographic, and technological).

Our goal over the next few years is to create multiple joint ventures that will address particular market segments.

CROSS INDUSTRY NETWORKS

At Cambridge Technology Group we realize that by bringing together data from various organizations, everyone benefits from the pooled information. Therefore, we are working with organizations to create cross industry networks in banking, broadcasting, food distribution, and manufacturing, among others.

One network undergoing development is a media workstation linking advertising agencies to broadcasting companies. This network is designed to link the advertising agencies' systems to broadcasters (e.g., Westinghouse Broadcasting) so that crucial information such as invoices and payment status can be accessed on-line via a common Media Reconciliation Workstation.

Advertising agencies that participate in the media network enjoy better customer service, a reduced billing cycle, and response time far in advance of the competition. In addition, this system is being resold throughout the media industry.

Many opportunities exist to develop networks that address particular industry needs. Benefits to the organizations that participate in these networks include, among others, increased efficiency, increased market share, and increased revenues due to a shorter billing cycle.

TOOLS

The CTGroup toolset has been developed over ten years and has been used in numerous fully operational systems, including American Airlines, CIGNA, and British Columbia Telephone.

CTGroup tools fulfill an organization's need for a total applications development environment based on open systems, distributed databases, a client/server design model, and access to heterogeneous applications and environments.

Cambridge Technology Group's tools provide a complete client/server architecture including design, maintenance, management, and backup and recovery.

Cambridge Technology Group has implemented a messaging architecture and robust development toolset which permits:

- Client/server applications design
- Creation of servers for access to existing applications and data on virtually every vendor's platform
- Mixing and matching of commercially available software products, e.g., relational databases and graphical user interfaces
- High productivity through high-level programming interfaces, transaction/ data dictionaries, scripting facilities, and managing configuration
- Easy integration of additional functionality and databases
- A rational migration strategy to open systems
- Complete management of a reliable production network environment

"SURROUND® put in place a client/server architecture which allows us to take advantage of new and future technologies. CIGNA has continued to expand the benefits of its reporting capabilities quickly and easily thanks to the SURROUND® platform's flexibility."

Deborah Kowalczyk
Vice President
CIGNA

WHAT IS THE TOOLSET?

CTGroup's client/server architecture provides a complete messaging structure and programming interface for implementing *true* client/server applications.

While many tools are available today for separating the presentation of data from the host applications, CTGroup's architecture goes much further by permitting any module to act as either a client or a server.

DATA GATEWAY TOOLS

With CTGroup's *Data Gateway Tools*, existing applications and databases can be used as full functioning data servers. These tools allow the users to create servers for remote systems. The application's client/server design model is preserved without rewriting existing applications or creating new databases. The *Data Gateway Tools* interface with a spectrum of:

- Networks, (e.g., SNA, X.25, TCP/IP, LU6.2),
- Specialized protocols (i.e. block mode devices),
- Operating environments (e.g., MVS, CICS, VMS).

DATA ACCESS TOOLS

CTGroup's *Data Access Tools* permit the incorporation of any relational database into the client/server design. New application functionality and databases can be implemented on commercial SQL database products such as ORACLE, INFORMIX, and Sybase, and integrated seamlessly with other data servers and client interfaces.

USER INTERFACE TOOLS

CTGroup's *User Interface Tools* allow integration of a variety of user interface products and simultaneous use of these

different interfaces (Microsoft Windows, Macintosh, X Windows, New Wave, FAX, voice response, etc.).

CTGroup client/server architecture ensures separation of the presentation layer and permits the easy incorporation of additional user interfaces without changing application and data servers. Developers and users can interact with a customized interface without having to know the source of the data and access methods. Also included are enhancements to third-party interface products (e.g. Vermont Views, JYACC).

APPLICATION MANAGEMENT TOOLS

CTGroup's *Application Management Tools* provide the robust network and production management tools required to operate an application reliably. They incorporate security, customizable system administration, transaction management, server configuration, and recovery capabilities, which reduce the complexity of managing a client/server environment.

FUNCTIONALITY SERVER TOOLS

CTGroup's *Functionality Server Tools* provide a set of customizable filters and an application library which greatly speed up the applications development.

DESIGN TOOLS

CTGroup's *Design Tools* incorporate CASE tools for business process and data flow modeling. Included in the design tools is application molding, which is the technique for specifying a user interface and documenting back-end functionality via stub programs. Molding provides a thorough definition and design of the functionality to be implemented. The Functionality Matrix is used for prioritization of functionality on the basis of the business benefit and technical complexity of implementation.

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