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Andersen Consulting

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ANDERSEN CONSULTING

ARTHUR ANDERSEN & CO., S.C.

The following profile outlines the products, services and support offered by Andersen Consulting to their clients for the implementation of downsizing, client/server and other distributed computing strategies.

1. Description of Principal Business

Andersen Consulting is an international management and technology consultancy which provides strategic services, systems integration, change management, and business process management services to clients in a variety of industries. Andersen Consulting was reorganized in 1989 and established as a separate business unit from its parent company, Arthur Andersen, S.A., the international finance and accounting firm. Currently, Andersen Consulting has over 26,000 employees operating in nearly fifty countries globally, although nearly 47% of revenue for calendar 1992 was generated in the United States. Exhibit 1 provides an overview of Andersen Consulting's financial performance over the last several years. Please note that since the company is a privately held partnership, these figures are reported differently than for a public company. Exhibit 2 provides a graphic synopsis of the services Andersen Consulting provides in various vertical industries. For purposes of this profile, systems software refers to Andersen Consulting's CASE products, which are summarized below.

2. Strategy for Supporting Client/Server Requirements

The basis for every service and product Andersen Consulting offers for client/server computing is the concept of business integration. The firm's philosophy dictates that in order for a customer to adapt and grow, technology, personnel, and

Exhibit 1

Overall Financial Performance by Industry Group
Andersen Consulting Corporation

Industry Group	1992 ($ Millions)	1991 ($ Millions)	1990 ($ Millions)
Financial Services	$672.3	$590.6	$534.5
Government	287.9	281.6	250.9
Health care	77.5	70.2	53.2
Products	1,122.6	985.4	907.2
Telecommunications	192.2	136.0	107.4
Utilities	260.3	184.7	124.0
Other	110.1	92.9	79.9
Total	2,722.9	2,341.4	2,057.1

Exhibit 2

Primary Offerings by Industry Group
Andersen Consulting

	SI Services	Outsourcing Processing Services	Apps. Software Turnkey Systems	Network Services	Systems Software	Desktop/ Client/ Server
Discrete Manufacturing	X	X	X	X	X	X
Process Manufacturing	X	X	X	X	X	X
Transportation	X	X		X	X	X
Utilities	X	X		X	X	X
Telecommunications	X	X		X	X	X
Retail Distribution	X	X		X	X	X
Wholesale Distribution	X	X	X	X	X	X
Insurance	X	X		X	X	X
Medical/Health	X	X		X	X	X
Business Services	X	X		X	X	X
Federal Government	X	X		X	X	X
State/Local Government	X	X		X	X	X
Banking/Finance	X	X		X	X	X
Defense/Aeronautics	X	X	X	X	X	X

process factors must be integrated in order for the customer to take full advantage of the strengths of these three components to meet strategic business goals. Providing for business integration continues to be Andersen Consulting's mission, and it has developed services and tools in systems integration, change management, strategic services, business process management, and CASE tools to pass on its knowledge to its customers. The components within these services are:

- Systems integration includes systems planning, design, building and implementation.
- The company's Change Management Services offers organization change, technology assimilation, education, and training.
- Strategic services includes competitive and market strategy, organization and change strategy, business operations strategy, and information and technology strategy.
- Business process management includes data center and/or network operations, applications development and management, and business functions outsourcing.
- CASE tools consists of Andersen Consulting's FOUNDATION product suite. FOUNDATION products provide software tools that allow the development and migration of applications for a client/server environment. FOUNDATION is discussed further in Section 5.

According to Ellen Ryske, a program manager in Andersen Consulting's Client/Server Program, these services are applied at different stages of a given project to the degree necessary for success.

As with business integration, Andersen Consulting's client/server migration strategies focus on technology, personnel, and process factors. Andersen Consulting approaches client/server migration in terms of architecture, which the company considers to be the conceptual structure and logical organization of a computer-based system. Andersen Consulting has found the architectural approach valuable for client/server where products from multiple vendors are integrated into a changing environment. By considering the target environment, the company uses what it terms Selective Engineering to achieve desired migration results on the technological side. Selective Engineering consists of:

- Reuse, which analyzes existing application and presentation elements and maps their usable components to defined client/server goals
- Modification, which considers existing applications and which, through modification of application code, can be migrated to the new client/server environment
- Replacement, whereby new applications are developed either replacing or enhancing existing applications in terms of performance and functionality for the new client/server environment

Andersen Consulting's FOUNDATION products will incorporate Selective Engineering methodologies in future versions.

Also of strategic importance to the company's client/server strategy is its Business Integration Partnership (BIP) program. Through the BIP program, the company has established business alliances with third-party client/server hardware, software, and specialized service providers. This has allowed the company to expand its business integration capabilities by partnering with leading client/server product vendors. Some of these include NCR, Digital, IBM, Informix, Microsoft, Novell, Hewlett-Packard, Sun Microsystems, and Sybase. These partnerships have also allowed the company to develop alternative avenues for business opportunities, as Andersen Consulting has served as a prime contractor, subcontractor, product vendor, systems integrator, value-added reseller, or trainer on projects involving its BIP program companies. According to Andersen

Consulting, the BIP program has been crucial to the company's ability to identify new technologies which can benefit and serve Andersen Consulting's customers. Ryske adds that the company may not yet be well-known across the information services industry for its strategic partnering and technology identification practices.

3. Scope of Current Client/Server-Related Activities

In calendar 1992, Andersen Consulting's revenues from client/server contracts and engagements totaled $1,080 million, a substantial increase from the $370 and $309 million earned in 1991 and 1990, respectively. These revenues were generated from a combination of systems integration, change management and strategic services. By the end of 1993, the company expects its client/server-related activities to generate nearly $2 billion in revenues. Currently, Andersen Consulting has nearly 900 people dedicated to packaged client/server software applications and CASE software research and development. Over 10,000 of the company's consulting personnel currently support Andersen Consulting's client/server contracts and engagements.

4. Client/Server Products and Services

In addition to the services mentioned in Section 3, the FOUNDATION product suite is made up of integrated tools which cover all phases of the client/server system development cycle. The practical goal of FOUNDATION products is to provide customers the software development services and methodologies they need to build their own applications within a multiple platform, network and architecture environment. The three core product suites in FOUNDATION are: FOUNDATION for Cooperative Processing (FCP), a set of CASE tools for client/server applications development; FOUNDATION, for mainframe-based client/server systems; and DESIGNWARE, client/server development tools for industry-specific needs. Andersen Consulting estimates that in 1992 FCP and FOUNDATION for mainframe-based Systems products have been installed in more than 1,500 sites worldwide, an increase from 1,100 in 1991.

The latest FCP, version 2.0, was announced in May 1993. It is built upon a fully relational data base management system which is LAN-based and allows application developers to store design objects in a repository and reuse them for creating client/server applications. The components integrated into FCP 2.0 include:

- FOUNDATION Methods, a field-tested, LAN-based methodology which provides guidance for the process of developing client/server applications, including data and process design guidelines; project management functions, such as project scheduling and maintenance and are integrated into this component
- FOUNDATION Design, which incorporates systems analysis and design functions, including GUI design and Rapid Application Builder, a point-and-click prototype application development tool which eliminates the need for 4GLs
- FOUNDATION Construction, which generates code from objects created with FOUNDATION Design and stored in the repository
- FOUNDATION Production, a component which incorporates FCP's multiplatform communications framework to allow developers to create multiplatform client/server systems and write applications without detailed knowledge of each system's technical architecture

FCP currently supports OS/2, Windows 3.1, OS/2, HP-UX, ULTRIX, VAX/VMS, CICS, Netbios, SPX/IX, TCP/IP, and LU6.2.

FOUNDATION for Mainframe-based Systems is also a fully integrated development system, but for the creation of mainframe-based information systems. It also allows applications development and implementation on a wide variety of platforms. METHOD/1, DESIGN/1 and PLAN/1 are the mainframe-based equivalents of the components described for FCP. In addition, FOUNDATION for Mainframe-based Systems includes INSTALL/1, which is a development environment and application development tool for DEC, IBM and Bull systems.

DESIGNWARE is a set of software template products built upon FOUNDATION. They provide prewritten, customizable design documents for developing standard information systems that are industry-specific. They include:

- CUSTOMER/1, an electronic model of customer information systems for the utilities industry
- INVEST/1, for investment portfolio management and securities accounting
- WORK/1, a work order management system for the utilities industry
- LIFE/1, a group of products which supports policy administration for life insurance companies.

5. Recent Client/Server Engagements/ Contracts

The following four brief case studies illustrate Andersen Consulting's recent client/server customer activity.

- **Sprint** - In 1991, this company formed its Business Services Group (BSG) in order to improve the ability of Sprint's Customer Service Associates to monitor customer behavior and target money-saving and value-added services. The project, which cost $60 million and took 2 1/2 years to complete, required rewriting, integrating, and migrating over ten data bases to a client/server-based system.

  The new system, designed and implemented using Andersen Consulting's FCP, utilizes VSAM, DB2 and ADABASE data bases residing on a IBM 3090 mainframe. Through a custom GUI and Novell, Banyan and CICS network technology, Sprint customer service personnel access customer data on the server data bases from IBM-compatible 386 and 486 PCs. Since the data bases are integrated on the mainframe, customer service personnel have one access point for obtaining reports on customer behavior instead of several, which formerly consumed much time. This has allowed Sprint to increase its competitiveness by devoting more customer service time to proactively calling customers and marketing new services, instead of collecting and collating customer information from numerous data sources.

- **Barclays Bank PLC** - Due to deregulation in the 1980s, the British banking industry became competitive enough so that this company revised its competitive strategies to focus on customer service and personal financial products for its 14 million customers.

  To do this, Barclays used business process reengineering services from Andersen Consulting to help it design a new data base which would combine customer profiles from its banking, credit card, and financial services business units. The result, after a four-year effort, was Barclays Customer Information System (CIS), which gives over 10,000 LAN-based workstations companywide access to a DB2 data base residing on a single IBM ES9000 900 mainframe server. By having one source for data, each Barclays business unit can target customers served by other units, and update customer profiles for more complete information. This has allowed the bank to develop new products

and services used to target customers selectively or more widely.

- **BC Gas** - This company services 95% of existing natural gas customers in British Columbia, Canada. The company determined it needed to improve its information systems strategy in order to provide its growing customer base of nearly 600,000 with reliable product delivery and fast customer service.

  The company hired Andersen Consulting, with which it developed Work/1 Cooperative, a customized work management system resident on a client/server system of intelligent workstations. Through the system, users can track various aspects of customer accounts, including initiation, planning, scheduling, dispatch, field reporting, and closeout. Any segment of a particular work order which is relevant to a given department is routed to that department automatically. In addition, information is available to any user on any terminal at any time, so departments can share information quickly. As a result, BC Gas employees now have faster, more complete access to work information, which allows faster response to customers.

- **1992 Winter Olympics, Albertville, France** - Using FCP, Andersen Consulting created Info 92, a client/server-based system, which supplied information to Olympic officials and the media, and also tracked scores for 13 separate sporting events.

  Through the use of 1,500 touch-screen IBM PS/2s networked throughout the Olympic Village, judges, athletes, journalists and broadcasters were able to track event scores and results, utilize an electronic mail system, and provide general information on such things as weather forecasts and hotel accommodations. The PS/2s were tied to OS/2 servers and thereby connected by LU6.2 communications protocol to an IBM 3090 mainframe. Frequently accessed information on sports scores and events were stored on servers in files custom built with FCP. Other Olympic-specific client/server applications were also built with FCP. Andersen Consulting will soon go back to the slopes, installing a similar network, Info 94, for the 1994 Winter Olympics in Lillehammer, Norway.

6. Future Plans

According to Hugh Ryan, Andersen Consulting's Partner for New Age Systems, Andersen is committed to the pragmatic application of leading-edge technology to leading-edge business problems. For the foreseeable future, Ryan says, this will revolve around client/server computing. Over the past several years, the company has been building up its force of consultants trained to deal with client/server business. By hiring new employees and redirecting existing employees, the company plans to have a client/server consultant force more than 15,000 strong by August, 1994. Ryske estimates that 5,000 employees will have been trained at the company's training center by August, 1993. By the same month in 1994, the total number trained will nearly double to 9,600.

In addition to the personnel and training commitment, each of Andersen Consulting's industry groups is looking for new ways to implement client/server computing, through the use of FOUNDATION products and emerging technologies. FOUNDATION itself is not standing still. Andersen Consulting was a beta tester for Microsoft's Windows NT, and the company's New Age Systems Group is currently determining how to leverage NT for the benefit of customers, such as Florida Power Corporation, who will avail themselves of NT technology.

Also, Andersen announced in February 1993 that it will build its new Technology Integration Center in Silicon Valley. Managing Partner George Shaheen has indicated this move is to foster closer ties between Andersen Consulting and high-technology companies. The company's plan is to continue to target emerging client/server technologies and incorporate them into its business integration strategies.

7. Overall Assessment

With the FOUNDATION group of products and its experience identifying and implementing important technology, Andersen Consulting has built up a formidable arsenal with which it attacks the challenges of client/server computing.

The company's fundamental philosophy of business integration is a sound one. Managing change while managing people, processes and technology is not easy, but it must be done correctly or even the best-intentioned client/server project will not deliver the best results. Andersen has taken its philosophy and incorporated it into its client/server software products. As a result, FOUNDATION has emerged as a leading CASE client/server solution, even when CASE technology is not universally popular. By continuing to successfully apply its philosophies to client/server solutions, Andersen Consulting will continue as a well-positioned solutions provider.