

Business Plan for:

Distributed Computing Corporation

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Project By: Siddhant Bhansali

Executive Summary

1. The Company

- a. Current Status
- b. Objectives, Near-Term
- c. Objectives, Long-Term
- d. The Management Team
- e. Management Objectives

2. Markets and Competition

- a. The Present Market
- b. Customer/User Benefit
- c. Market Future
- d. Competition
- e. Projected Sales and Market Share
- f. Sales Strategy to Reach Objectives

3. The Product - The Service

- a. Theory of Operation
- b. Applications
- c. Product Performance Data
- d. Product Economics and Advantages
- e. Present Product Status
- f. Patents and Proprietary Know-How

4. Selling

- a. Current Selling Methods
- b. Selling Methods, Long-Term
- c. In-House Sales Support
- d. Custom Engineering Sales Requirements
- e. Product Pricing and Warranties

5. Development

- a. Facilities Needed
- b. Major Purchasing Issues
- c. Quality Control Plans
- d. Staffing Requirements

6. Financial Data

- a. Financial History
- b. Financial Projection
- c. Current Stockholders, Number of Shares

7. Investment

- a. Use of Proceeds
- b. Description of the Offering

8. Appendices

- a. Management Team Biographies
- b. Other Important Data

EXECUTIVE SUMMARY

Description of the Company

Distributed Computing Corporation, provides data processing and computing services for high tech corporations with those needs. The potential markets are regions and industries which require rapid data processing at reduced cost. We anticipate that our primary customers would be companies in the computing and engineering fields. These technical sectors are one of the fastest growing business sectors of the American economy, and Distributed Computing Corporation intends to capitalize on the success of these industries by taking care of their utmost needs.

The CEO of the company would ideally have the qualifications of founding and operating a small software company, with an experience in Sales. The CEO should also be in a position to recruit sales staff suited to the unique needs and aspirations of the company. Ideally, staff would be chosen which have an extensive repertoire of contacts within the high tech sector.

The CEO and sales staff would bring in a repertoire of industry contacts, enabling us to pinpoint those companies which are most likely to require services offered by us.

Mission Statement

The mission of Distributed Computing Corporation is to become one of the premier provider of distributed data processing services. Distributed Computing Corporation is dedicated to building long-term relationships with its customers through quality service and support. The company's goal is develop its unique product during its first two years and then to grow steadily, becoming a profitable entity by the fifth year of operations. [See Table I]

Products and Services

DCC is a company offering data processing services to companies in the sectors of Life Sciences, Financial Services, Chip/Product Design and Optimization, Ray Tracing and Rendering Applications. We offer a low cost alternative to high-end processing needs. We utilize a distributed processing system by which not only does the computation process faster, but at very low costs also. We intend to utilize spare CPU cycles which normally would go waste on machines scattered throughout the internet, and utilize that time efficient. We hope to enroll at least 75,000 CPUs by the end of year 5. The compensation for a volunteer to donate his computer time – would be the knowledge that at least 60% of our potential Jobs are being used for social, scientific or charitable purposes. [See Appendice – (c)]

As an illustration, it may be noted that United Devices, a competitor in our field, has also positioned itself in a similar manner; and has recruited 818,770 members with a total of 1,587,328 devices in a short time span. Similarly, [Seti@home](#), a non-profit research organization has taken the aid of numerous volunteers over the internet numbering at 3,713,495 members and growing every day. In this case, the volunteers receive nothing except the knowledge that their spare CPU time is being donated for the Search for Extra Terrestrials.

Financial Forecast

The financial forecasts for the company as a whole are based on a worst case scenario in terms of Clients signed on and Jobs that need to be processed. This is due to the fact that none of the competing corporations at our level are publicly held, making research into their internal finances difficult. For a rough analysis, employees of a competitor were contacted for a general idea of important figures.

A small company by the name of Parabon Computation, with only 33 employees and by no means the market leader was contacted for the purposes of this analysis. It was revealed that

they presently have approximately 1500 clients. This is impressive, given that they were only recently formed in 1999.

In the analysis below, we estimated that our final fifth year clientele would be only 150 clients, a tenth of this average. Even though we are grossly underutilizing our computational power, we intend to grow more slowly and steadily than is the norm. [See Table VII]

Financing Requirements

The company as it stands today requires approximately \$1.018 million USD over the period of the first two years, enabling the crucial software development to take place. As per the estimates below, we anticipate the breakeven point to occur at approximately the middle of Year 4, thus enabling the Angel Investor to recover his initial investment. [See Table III]

In return for the Angel Investor's investment, a holding of 50% of the company stock would be sold. We anticipate the Angel would be able to make a return of ~100% on his investment over a period of 5 years. The company is offering such a generous return because despite the cautious approach we have taken in calculating figures, there lies certain inherent risks in all software based projects. [See Section 6-(c)]

1. The Company

a. Current Status

At present the company exists as a legally formed corporation between 3 University of Illinois students, Mr. William H Conroy, Mr. Adam Cresse and Mr. Siddhant Bhansali. These three individuals have had a significant experience in developing a similar distributed computing project during their undergraduate years, and thus would be apt candidates to take on the role of programmers during the lifetime of the company. [See Appendice-(a)]

b. Objectives, Near-Term

The near term objectives would be to evaluate the present approach of developing such a software – and determine a course of action which will yield the maximum return in terms of compatibility with a Client’s existing programs and one that can be processed efficiently over the internet. Preliminary discussions held within the company led to an estimation of 2 years before the program is ready to be deployed. [See Table IX]

c. Objectives, Long-Term

After the initial 2 year development period, the company plans on selling its services to other corporations. A small team would be necessary in order to ensure compatibility between the DCC software and the Client’s programs. The company hopes to increase the number of Jobs being sold, thus more efficiently utilizing the computing resources we have. Eventually, a much larger sales force shall be needed to market the service.

d. The Management Team

As none of the founding members possess significant management skills, we hope to recruit an experienced CEO which has a significant experience in managing a small team of programmers and sales force.

e. Management Objectives

Although this is subject to change once the Management has been hired, we do not anticipate a significant deviance from the course of action we propose. There are aspects to which greater attention could have been paid – for instance we may choose to greatly increase our sales force during the last 3 years.

2. Markets and Competition

a. The Present Market

As of the present, two kinds of services/products exist which compete with what DCC has to offer. Large corporations such as IBM, Sun and HP offer high-end server systems to companies with such a need. These options can range from about \$25,000 to \$1,000,000 for a system. That does not factor in the learning curve in adapting your product to fit the specific operating system on such systems. [See Appendice-(d)] [See Table X]

The market we hope to establish a presence in, is fairly scattered with only about 7 companies in the fray. Unfortunately, a detailed and accurate analysis of the actual need for such services is hampered by the fact that all of these companies are privately held. Nevertheless, research shows Parabon Computation to currently have over 1500 clients all over the world, leading to a 'market size' of roughly 10,500 companies. This figure will do doubt increase in the future, as demands for faster and more reliable data processing grows.

b. Customer/User Benefit

The average corporation who has such a need for data processing typically does not feel the need to invest in a large server system involving significant expenditure and a tremendous reworking of their software to match the server system's. It must be noted that this concept of distributed computing involves the internet, and therefore is slowed down by the data-communication speed. But certain computational tasks require an analysis of a small quantity of data, and consequently do not require large volumes of data transfer over the slow internet. We intend to work with only those clients which have requirements such as these, and therefore we are in a strong position to assist them.

c. Market Future

The scope for distributed computing is growing everyday, as more companies feel the need to quickly and reliably process their data. And, as newer and faster machines are joining the internet, those machines can also be utilized in order to significantly improve our total computation speed and capacity.

d. Competition

Although corporations such as IBM, Sun Systems and HP are listed as provided the same services as ours, their version of it involves selling hardware components. The companies DCC will be in competition with are smaller, privately held companies offering the use of their software interface to the distributed processing on the internet. There exist a total of 7 companies, with no established market leader, thus hinting at the possibility of another entrant to the field. [See Table XIV]

e. Projected Sales and Market Share

As stated previously, we estimate a total market size of 10,500 companies. We project a (worse case) market share of less than 3% at the end of Year 5.

f. Sales Strategy to Reach Objectives

To reach our goal of a 150 Clients by the end of year 5, we are significantly increasing our Print Media advertising in years 4 and 5. [See Table V and Table VI]

3. The Product - The Service

a. Theory of Operation

The software product would, nearing the end of Year 2 would be distributed to interested volunteers via the internet. Their interest would be garnered by appropriate online advertising. Once we have reached the predetermined level of distribution, our sales force will begin to get in touch with companies whom we know have needs of this type. This information can be gathered by examining research and trade journals.

If a Prospective Client shows interest, the company shall enable the software developers on both ends to converse and determine compatibility and appropriateness of the DCC product. Once the go-ahead is received from both sides, a contract shall be signed – lending the use of a said number of computational units over a said period of time.

b. Applications

Currently, such data processing needs are felt most by companies in the following fields:

Life Sciences

Financial Analysis

Chip/Product Design and Optimization

Ray Tracing and Rendering Applications

c. Product Performance Data

A table of approximate values is shown, indicating the number of volunteers we need and how much computational power we can gather from them. [See Table X]

d. Product Economics and Advantages

On the whole, use of DCC software results in cheaper and faster data processing than can be obtained by outright purchase of high-end equipment.

e. Present Product Status

At present, the software exists as a college project made by the founding members of the company. It is perfectly functional, and handles distributed computing in a similar matter to what we hope to make by the end of the first two years.

f. Patents and Proprietary Know-How

There is a significant amount of know-how which was acquired by the developers during their work on this project. This knowledge would transfer over to the company and assist in formulating its own software program. The 3 developers agree to sign a contract binding them to DCC for a period of 3 years.

4. Selling

a. Current Selling Methods

The primary means of attracting volunteers would be through online media – as it targets the appropriate segment of the computer-using population. Additional advertisements could be placed on sites which discuss diseases such as cancer and AIDS. The banner would advertise the fact that DCC is a company dedicating to assisting research into cures for such diseases.

To attract Clients, an in-depth plan would have to be formulated once a CEO and sales force has been hired. Although preliminary data indicates the manner in which it would be done, the opinions of more qualified people are more useful.

b. Selling Methods, Long-Term

We anticipate a strong need for our services in the fields of Financial Analysis. Therefore, we are targeting the readers of well-known magazines such as: Business Week, Forbes and Fortune.

[See Table V and Table VI]

c. In-House Sales Support

A team of 5 sales staff will be present to handle all inquiries. Technical queries will be passed onto Student Workers.

d. Custom Engineering Sales Requirements

Although it would seem that there is a requirement for our software developers to visit the physical sites of our Clients, we hope to (at least initially) reduce that amount by only signing on Clients in the immediate vicinity of Chicago, or those whose program and data can be transferred through the internet.

e. Product Pricing and Warranties

The product is sold in terms of Jobs where each Job is an 'allocation' of 1000 GigaFlops of computing power running over a 2 week long period. The approximate price for this service is \$30,000. This figure was reached upon information obtained from United Devices and Parabon Computing. [See Table X and Table XI]

5. Development

a. Facilities Needed

An office premises would be needed for the duration of existence of the company. Besides misc expenses (telephone, internet, etc), an upfront investment in a server system would be needed. Approximately 20 computers would also be needed although we do not have that many people, the software needed to be tested over a host of different machines running at the same time.

[See Table IV]

b. Major Purchasing Issues

As we intend to develop this software from scratch, or build upon the version used by the developers for their college project, we can easily utilize publicly available, 'free' software that has already been proven to be reliable.

c. Quality Control Plans

As indicated in Table IX – Phase IV, we intend to spend a significant amount of time and money to iron out any wrinkles or bugs in the system. We realize that the quality of the system is critical since the program will be distributed publicly across the internet to thousands of volunteers. An error in the program would greatly hamper our efforts to portray the company as a reliable means of getting data processing done.

d. Staffing Requirements

The companies needs will be slightly fluctuating, ranging from just 4 in the beginning to about 16 in the middle of the second year, ending in the fifth year at the same value. We intend to avail the services of a headhunter for purposes of hiring a CEO, and later seek his assistance in hiring a sales staff. This has been accounted for in Table IV and Table VIII

6. Financial Data

a. Financial History

As DCC is a newly formed entity, no previous history exists. All of the founding members are in good standing with their creditors.

b. Financial Projection

An investment of \$1.08 million will be required over a period of 2 years to get the company up and running. The companies net profits are estimated at: [See Table III]

\$596,355	for Year 3
\$1,394,730	for Year 4
\$2,070,300	for Year 5

c. Current Stockholders, Number of Shares

At present, all three primary developers (William Conroy, Adam Cresse, and Siddhant Bhansali) are equivalent shareholders in the company holding 33% each. Each will relinquish 16% of their shares to the Angel Investor, leaving the following distribution:

Angel Investor	49%
William Conroy	17%
Adam Cresse	17%
Siddhant Bhansali	17%

7. Investment

a. Use of Proceeds

As stated previously, the investment from the Angel Investor shall be utilized to develop the software program. [See Table IV]

b. Description of the Offering

The 3 primary developers are selling 50% of their stock to the Angel Investor. As part of the condition of this sale is that the company sign a contract with each primary developer hiring their services for a minimum of 3 years.

8. Appendices

a. Management Team Biographies

William Conroy and Adam Cresse are graduates of the Dept of Computer Science from the University of Illinois. Siddhant Bhansali is a graduate of the Electrical and Computer Engineering Dept. All have had significant experience in the field of computer programming and have been working on this project for the previous year.

b. Other Important Data

Table I: Estimated Sales and Income of the Company

	Year 1	Year 2	Year 3	Year 4	Year 5
Sales(M\$)	\$0.00	\$0.00	\$1,500,000.00	\$3,000,000.00	\$4,500,000.00
Net Income	\$0.00	\$0.00	\$795,140.00	\$1,859,640.00	\$2,760,400.00

Table II: Sales Forecast Projection (for Year 3)

	Q1	Q2	Q3	Q4	Year Total
Potential clients through advertising/marketing and cold calling	50	50	50	50	200
Viable customers	10	15	25	25	75
Actual customers/Jobs	6	12	14	18	50
Average cost per Job	\$30,000	\$30,000	\$30,000	\$30,000	
Sales:	\$180,000	\$360,000	\$420,000	\$540,000	\$1,500,000

Table III: Profits in Years Three to Five

	Year 3	Year 4	Year 5
Sales	1,500,000	3,000,000	4,500,000
Gross profit	1,500,000	3,000,000	4,500,000
Less expenses	704,860	1,140,360	1,739,600
Net income before taxes	795,140	1,859,640	2,760,400
Provision for taxes (~25%)	198785	464910	690100
Net income after taxes	\$596,355	\$1,394,730	\$2,070,300

Table IV: Investment required for first 2 years

Item	Cost/unit		Cost
Establishing offices	\$5,000.00		\$5,000.00
Incorporation expenses	\$1,500.00		\$1,500.00
Rent per month	\$1,000.00	x 24 months	\$24,000.00
Purchasing equipment	\$900.00	x 20 stations	\$18,000.00
Misc expenses	\$300.00	x 24 months	\$7,200.00
Programmer recruitment	\$2,500		\$2,500.00
Cost of developing software	\$631,680		\$631,680.00
Specialized hardware/servers/storage	\$10,000		\$10,000.00
CEO hiring process	\$10,000		\$10,000.00
CEO Salary	\$80,000	x 2 years	\$160,000.00
Sales staff recruitment	\$2,000		\$2,000.00
Sales staff	\$45,000	x 3 persons x 1 year	\$135,000.00
Distribution of software (Year 2)*	\$12,000		\$12,000.00
		Total Cost	\$1,018,880.00

Notes:

Salary figures taken from BusinessWeek and Salary.com

Until end of Year 2, software is classified as in 'development status' and only test versions are given to volunteers

Table V: Advertising costs for print media

Print magazines	Rate/Ad	# of Ads	Cost
Business Week	\$37,900	1	\$37,900
Forbes	\$41,060	1	\$41,060
Fortune	\$29,700	1	\$29,700
			\$108,660

Note:

*Source: MRI+ Mediamark Research Inc

Table VI: Total Marketing Cost

	Year 3	Year 4	Year 5
Online media	\$2,000	\$4,000	\$6,000
Print media	\$108,660	\$434,640	\$869,280
Cost:	\$110,660	\$438,640	\$875,280

Table VII: Estimated Unit Sales for Year 3 to Year 5

	Year 3	Year 4	Year 5
Customers/Jobs-sold	50	100	150
Sales generated	\$1,500,000.00	\$3,000,000.00	\$4,500,000.00

Table VIII: Overall Expenses for Year 3 to Year 5

	Year 3	Year 4	Year 5
Advertising	\$110,660	\$438,640	\$875,280
Rent/year	\$13,200	\$13,200	\$14,520
Misc expenses (~\$600/month)	\$7,200	\$7,200	\$7,200
Programmers (5, 7, 10 resp)	268800	376320	537600
CEO Salary	\$80,000	\$80,000	\$80,000
Sales Staff (5 people)	\$225,000	\$225,000	\$225,000
Total:	\$704,860.00	\$1,140,360.00	\$1,739,600.00

Table IX: Estimated Cost of Developing the Software

Phase I: Setting up	
Professional Workers	3
Length of work (weeks)	12
Phase I Cost	\$40,320
Phase II: Expanding program, add functionality	
Student Workers	7
Professional Workers	5
Length of work(weeks)	48
Phase II Cost	\$349,440
Phase III: Optimizing Code	
Student Workers	2
Professional Workers	5
Length of work(weeks)	24
Phase III Cost	\$145,920
Phase IV: Testing and Debugging	
Student Workers	10
Professional Workers	5
Length of work(weeks)	12
Phase IV Cost	\$96,000
Total cost (over 2 years)	\$631,680
Total time required (weeks)	96
Notes:	
Student Worker Wage	\$12
Student Hours/Week	20
Professional Worker Wage	\$28
Professional Hours/Week	40

Note:

Cost_Per_Phase = length_of_time * (Student_Employees * Avg_Hrs_Per_Week * Wage_Per_Hour + Professional_Employees * Avg_Hrs_Per_Week * Wage_Per_Hour)

Professional Salary of Computer Programmer estimated at \$53,000 (Source: BusinessWeek Salary Survey)

Table X: Potential Computation Capacity

	By the end of:	Installed on:	CPU Manu.	Model	Speed	Current Utilization	GigaFlops(potential)
		10	Intel	PII	500	10%	3.38
Year 1		100	Intel	PII	500	10%	33.75
Year 2		1000	Intel	PII	500	10%	337.50
Year 3		10000	Intel	PII	500	10%	3375.00
Year 4		50000	Intel	PII	500	10%	16875.00
Year 5		75000	Intel	PII	500	10%	25312.50

Notes:

Largest CPU market share is by Intel (Source: EuroMonitor)

Most popular CPU type and speed is PII - 500MHz

In general, only 10% of a PC's power is used. (Microsoft SIGMetrics, 1998-2000)

The worst case scenario in terms of CPU model and speed is presented above - future systems are going to be much faster

Numbers obtained from:

http://www.ud.com/products/mp_power_calc/mp_power_calc.htm?udwin=true

For comparison purposes, please note that United Devices has 818,770 members with 1,587,328 devices and Seti@home has 3,713,495 members (unknown number of devices).

Table XI: Jobs available for commercial use

For Year:	GigiFlop Capacity	Max Job Capacity per year*	%for charity	Jobs for Charity/Research**	Jobs available for commercial uses
2	337.50	8.78	0%	0	8.78
3	3375.00	87.75	40%	35.1	52.65
4	16875.00	438.75	60%	263.25	175.50
5	25312.50	658.13	60%	394.875	263.25

Notes:

*Assuming an Job entails runs for 2 weeks and consumes a capacity of: 1000 Gigaflops

**A certain percentage of data processing jobs will be for charitable causes

Table XII: Income Statement at the end of Year 5

Income Statement		
At the end of Year 5		
Revenue:		
Gross Sales		\$4,500,000.00
Less: Sales Returns and Allowances		\$0.00
Net Sales		<u>\$4,500,000.00</u>
Cost of Goods Sold		
Gross Profit (Loss)		\$4,500,000.00
Expenses:		
Advertising	\$875,280.00	
Office Expenses	\$7,200.00	
Rent	\$14,520.00	
Wages	\$842,600.00	
Total Expenses		<u>\$1,739,600.00</u>
Net Operating Income		\$2,760,400.00
Other Income:		
Gain (Loss) on Sale of Assets	\$0.00	
Interest Income	\$0.00	
Total Other Income		<u>\$0.00</u>
Net Income (Loss)		<u><u>\$2,760,400.00</u></u>

Table XIII: Cash Flow Worksheet for Year 5 – last 6 months

Cash Flow Budget Worksheet							
	July	August	September	October	November	December	Total
Beginning Cash Balance	1,380,200	\$1,464,353	\$1,767,327	\$2,070,300	\$2,154,453	\$2,457,427	\$2,250,000
Cash Inflows (Income):							
Accts. Rec. Collections	375,000	375,000	375,000	375,000	375,000	375,000	2,250,000
Loan Proceeds							0
Sales & Receipts							0
Other:							0
							0
Total Cash Inflows	\$375,000	\$375,000	\$375,000	\$375,000	\$375,000	\$375,000	\$2,250,000
Available Cash Balance	\$1,755,200	\$1,839,353	\$2,142,327	\$2,445,300	\$2,529,453	\$2,832,427	\$2,250,000
Cash Outflows (Expenses):							
Advertising	218,820			218,820			437,640
Miscellaneous	600	600	600	600	600	600	3,600
Payroll	70,217	70,217	70,217	70,217	70,217	70,217	421,300
Rent or Lease	1,210	1,210	1,210	1,210	1,210	1,210	7,260
Total Cash Outflows	\$290,847	\$72,027	\$72,027	\$290,847	\$72,027	\$72,027	\$869,800
Ending Cash Balance	\$1,464,353	\$1,767,327	\$2,070,300	\$2,154,453	\$2,457,427	\$2,760,400	\$869,800

Table XIV: Primary Competition (Companies offering similar services)

Avaki Corporation	One Memorial Drive, Cambridge, MA 02142 Tel: 617-374-2500	www.Avaki.com	Makes Avaki 2.0, grid computing software for mixed platform environments and global grids. Includes a PKI based security infrastructure for grids spanning multiple companies, locations, and domains.
DataSynapse Inc.	408 8th Ave., Penthouse A, New York, NY 10001 Tel: 212-842-8842	www.datasynapse.com	Makes LiveCluster, distributed computing software middleware aimed at the financial services and energy markets. Currently mostly for use inside the corporate firewall.
Entropy, Inc.	10145 Pacific Heights Blvd., Suite 800, San Diego, CA 92121 Tel: 858-623-2840	www.entropy.com	Makes the Entropy distributed computing platform aimed at the life sciences market. Mostly for use inside the firewall. Boasts binary integration, which lets you integrate your applications using any language without having to access the application's source code. Recently integrated its software with The Globus Toolkit.
IBM	International Business Machines Corporation, New Orchard Road, Armonk, NY 10504 Tel: 914-499-1900	www.ibm.com	IBM is involved in setting up over 50 computational grids across the planet using IBM infrastructure for cancer research and other initiatives. Also involved in creating the "world's most powerful grid," which will be capable of processing 13.6 trillion calculations per second. IBM also markets the IBM Globus ToolKit, a version of the ToolKit for its servers running AIX and Linux.
Parabon Computation	3930 Walnut Street, Suite 100 Fairfax, VA 22030-4738 Tel: 703-460-4100	www.parabon.com	Makes Frontier server software and Pioneer client software, a distributed computing platform that supposedly can span enterprises or the Internet. Also runs the Compute Against Cancer, a distributed computing grid for non-profit cancer organizations.
Platform Computing	3760 14th Ave Markham, Ontario L3R 3T7, Canada Tel: 905-948-8448	www.platform.com	Makes a number of distributed and grid computing products, including for Windows desktops, and for mixed environments of UNIX, Linux, Macintosh and Windows servers, desktops, supercomputers, and clusters. Also offers a number of products for distributed computing management and analysis, and its own commercial distribution of the Globus Toolkit. Targets computer and industrial manufacturing, life sciences, government, and financial services markets.

Scientific Computing Associates, Inc.	One Century Tower, 265 Church St. New Haven, CT 06510 Tel: 203-777-7442	www.lindaspaces.com	Developer of a variety of systems software and provider of industrial engineering services. LINDA and Paradise are tools for creating parallel applications and to allow them to function in a machines' idle cycles. The software runs on UNIX and Windows NT.
United Devices, Inc.	12675 Research, Bldg A, Austin, Texas 78759. Tel: 512-331-6016	www.ud.com	Makes the MetaProcessor distributed computing platform aimed at life sciences, geosciences, and industrial design and engineering markets and currently focused inside the firewall. Also partners with Intel on the Intel-United Devices Cancer Research Project, which enlists Internet users in a distributed computing grid for cancer research.

Table XV: Other Non-commercial products

Distributed.Net		www.distributed.net	Founded in 1997, Distributed.Net was one of the first non-profit distributed computing organizations and the first to create a distributed computing network on the Internet. Distributed.net was highly successful in using distributed computing to take on cryptographic challenges sponsored by RSA Labs and CS Communication & Systems.
The Globus Project		www.globus.org	A research and development project consisting of members of the Argonne National Laboratory, the University of Southern California's Information Science Institute, NASA, and others focused on enabling the application of Grid concepts to scientific and engineering computing. The team has produced the Globus Toolkit, an open source set of middleware services and software libraries for constructing grids and grid applications. The ToolKit includes software for security, information infrastructure, resource management, data management, communication, fault detection, and portability.
Grid Physics Network		www.griphyn.org	The Grid Physics Network (GriPhyN) is a team of experimental physicists and IT researchers from the University of Florida, University of Chicago, Argonne National Laboratory and about a dozen other research centers working to implement the first worldwide Petabyte-scale computational and data grid for physics and

			other scientific research. The project is funded by the National Science Foundation.
NASA Advanced SuperComputing Division (NAS)	NAS Systems Division Office NASA Ames Research Center Moffet Field, CA 94035 650-604-4502	www.nas.nasa.gov	NASA's NAS Division is leading a joint effort among leaders within government, academia, and industry to build and test NASA's Information Power Grid (IPG), a grid of high performance computers, data storage devices, scientific instruments, and advanced user interfaces that will help NASA scientists collaborate with these other institutions to "solve important problems facing the world in the 21st century."
Network for Earthquake Engineering Simulation Grid (NEESgrid)		www.neesgrid.org/	In August 2001, the National Science Foundation awarded \$10 million to a consortium of institutions led by the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign to build the NEESgrid, which will link earthquake engineering research sites across the country in a national grid, provide data storage facilities and repositories, and offer remote access to research tools.
Particle Physics Data Grid (PPDG)		http://www.ppdg.net	A collaboration of the Argonne National Laboratory, Brookhaven National Laboratory, Caltech, and others to develop, acquire and deliver the tools for a national computing grid for current and future high-energy and nuclear physics experiments.
SETI@Home		http://setiathome.ssl.berkeley.edu/	A worldwide distributed computing grid based at the University of California at Berkeley that allows users connected to the Internet to donate their PC's spare CPU cycles to the exploration of extraterrestrial life in the universe. Its task is to sort through the 1.4 billion potential signals picked up by the Arecibo telescope to find signals that repeat. Users receive approximately 350K or data at a time and the client software runs as a screensaver.

c. Sample Sales Brochure

What is Distributed Computing?

As its name implies, Distributed Computing (also referred to as Grid Computing) harnesses the idle processing cycles of the PCs on a large network of computers and makes them available for working on computationally intensive problems that would otherwise require a supercomputer to solve.

The Process:

Project Stage	Services
Setting Performance Objectives	Determine application fit. During a preliminary analysis, DCC engineers work in conjunction with your company's engineers to help port (or transform) your existing code into one which is 'modular', and can utilize our services at maximum efficiency.
Trial / Network Diagnostics	Evaluate our services with a sample application.
Application Integration	Integrate the DCC interface with your application. Rigorous QA to ensure mission-critical reliability. Once the code has been converted, data and test cases are sent to our servers – where they await allocation.
Maintenance Services / Technical Support	To meet client needs, we offer on-site, on-line, and remote support options

How does the DCC software work?

A servers splits your large applications into very small computing tasks, which are then distributed to PCs to process in parallel. Results are sent back to the server where they are collected and presented to you. A network of only a few thousand PCs can process applications as quickly as today's fastest supercomputers.

A small software program runs on each PC, allowing the server to send and receive jobs to and from that PC. The software program runs unobtrusively in the background, never interfering with the routine work being performed by that PC. Whenever a PC is not being fully utilized (which is most of the time), its processing cycles are applied to your large applications distributed over the network.