OPTIMAL SOLUTIONS SOFTWARE, LLC
BUSINESS PLAN

CONFIDENTIAL INFORMATION

This Business Plan is informational only and is not meant as an offer to solicit funds. To obtain further information about Optimal Solutions Software, please contact:

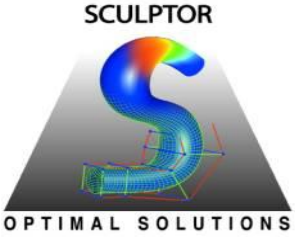
Mark D. Landon, Ph.D.
President
Optimal Solutions Software, LLC
2825 West, 1700 North
Idaho Falls, Idaho, USA 83402

Telephone: 208-521-4660
E-mail: **mlandon@optimalsolutions.us**

SEPTEMBER, 2006

OPTIMAL SOLUTIONS SOFTWARE, LLC

BUSINESS PLAN



SEPTEMBER, 2006

CONFIDENTIAL INFORMATION

This Business Plan is the property of Optimal Solutions Software, LLC, and is considered to be strictly confidential. It contains information intended only for the person to whom it is transmitted. With receipt of this Plan, recipient acknowledges and agrees that:

(i) **in the event recipient does not wish to pursue this matter, this document will be returned, as soon as possible, to the address listed on the previous page;**
(ii) **the recipient will not copy, fax, reproduce, divulge, or distribute this confidential Plan, in whole or in part, without the expressed written consent of the Optimal Solutions Software, LLC; and**
(iii) **all of the information herein will be treated as confidential material with no less care than that afforded to your own company's confidential material.**

This document does not constitute an offer to sell, or a solicitation of an offer to purchase.

Business Plan #: _____
Provided to: _____
Signature: _____
Company: _____
Address: _____
_____
Date: _____

OPTIMAL SOLUTIONS SOFTWARE, LLC
BUSINESS PLAN

CONFIDENTIAL

TABLE OF CONTENTS

		Page
I.	Executive Summary	4
	Overview	
	Financial Projections Summary	
	Optimal Solutions Team Summary	
	"The Deal"—A Recap	
	Concluding Remarks	
II.	Product Offering	8
III.	Market	17
	CFD/FEA—What are they?	
	CFD/FEA—Why use them?	
	OSS Market Share	
IV.	Marketing/Commercialization Plan	20
	North American Marketing Activities	
	European Marketing Activities	
	Asia/Pacific Marketing Activities	
V.	Competition	25
VI.	Management Team	27
VII.	Operations	31
VIII.	Financial Plan	32
	History/Current Status	
	Revenue Generation/Assumptions	
	Revenue Stream Chart	
	Statement of Income	
IX.	Summary	35

OPTIMAL SOLUTIONS SOFTWARE, LLC
BUSINESS PLAN

I. EXECUTIVE SUMMARY

Company Background

On October 1, 2003, Optimal Solutions Software, L.L.C., launched ***"Sculptor™",*** a revolutionary shape deformation and shape optimization software tool for computational fluid dynamics (CFD) and computational structural finite element analysis (FEA). This major offering to the CFD/FEA industry answers the question of how to improve engineering designs—in the most cost-effective, timely manner.

As of July, 2006, the Company boasts a "bootstrapped", no-debt corporate philosophy; a copyrighted software; excellent working relationships with government and complementary CFD/Finite Element Analysis (FEA) companies; numerous projects with Fortune 100 companies; two provisional patents in the works; a commercially viable technology; name recognition in the marketplace; a worldwide distribution network with a skilled team in place; and a solid growing market within which to work.

Computational Fluid Dynamics (CFD)/Finite Element Analysis (FEA)

CFD is a digital engineering simulation tool that describes fluid flow phenomena. It helps design engineers gain greater understanding of the fluid flow phenomena involved in the components being designed.

FEA is a computer simulation technique used in engineering analysis. It uses a numerical technique called the finite element method (FEM). The most common use of FEA is for the determination of stresses, displacements and other physical considerations in mechanical objects and other structural mechanical systems.

Product Design Using Digital Simulation

The prime attraction of digital simulation such as CFD and FEA is that it replaces physical testing such as the use of wind tunnels and building prototypes. This would seem to promise a significant savings in time and money. Unfortunately, this is often not the case. There are several stumbling blocks inherent in the digital simulation process, which have kept CFD and FEA from reaching the potential they seem to offer.

The Product

Optimal Solutions Software, LLC, (OSS) has developed an interactive design software program called ***Sculptor*** that provides capabilities to perform shape deformation and optimization in CFD and FEA design—in real time—thus, eliminating the numerous iterations inherent in the process when the designer has to manually modify the design.

The **A**rbitrary **S**hape **D**eformation (ASD) technology used by ***Sculptor™*** automatically, in real time, alters shapes that are typically very complex and hard to manipulate into designs that improve performance—without having to remesh. More accurate designs and faster design times are realized, resulting in appreciable amounts of time and money being saved.

Working synergistically with all the major commercial CFD analysis and optimization vendors, such as Fluent, Star-CD, CFD++, SC Tetra, Polyflow, ICEM-CFD, and others, Optimal Solutions has been successfully assisting Fortune 100 companies such as Boeing, Cessna, Cummins, Hamilton Sundstrand, Honeywell, and Lockheed Martin; as well as automotive, motorsport and Formula 1 groups, including Ford Motor Company, Daimler Chrysler, Williams F1 and Honda F1; government entities, such as the Department of Energy, Wright-Patterson AFB, NASA/Stennis AFB, and Eglin AFB; and educational institutions including the University of Stuttgart and Beijing Institute; quickly and efficiently find *optimal solutions* to their complex CFD and FEA shaping issue--with the use of ***Sculptor***.

The Market

Industrial advances in recent years have been characterized by a growing dependence on computer-aided engineering (CAE) of which CFD and FEA are major components. CAE software is used to address a wide range of engineering concerns, from the stresses on solids to the complex behavior of fluids.

The market size for this technology is substantial. The following twenty worldwide industries utilize CFD and FEA, making them potential users of ***Sculptor***:

Aerospace/Aeronautics	HVAC
Automotive & Motorsports	Marine/Off-Shore Systems
Biomedical	Nuclear Power
Chemical Processes	Oil & Gas
Defense/Military	Power Generation
Electronics	Pumps
Environmental	Railway
Fuel Cells	Semiconductor/MEMS
General Structures	Steel
Glass/Plastics	Turbomachinery

Optimal Solutions is in the early stages of penetrating three of the above 20 industry segments: aerospace/aeronautics; automotive/motorsports; and biomedical. The total worldwide market size, in U.S. dollars, for these three industries alone is approximately $1,831 billion.

INDUSTRY	TOTAL WORLDWIDE MARKET SIZE/YEAR
Aerospace/Aeronautics	**$ 563.30B**
Automotive/Motorsports	**1,078.46B**
Biomedical	**190.00B**
	$ 1,831.76B

With an approximate $1.8 trillion+ total market size for three of the above 20 industries, extrapolating the revenue projections from these figures for all 20 industries, and given the Company's current rate of growth, Optimal Solutions Software, LLC, per annum projections reflect conservatively $21M by the year 2012. When the sales team has been established and working at its optimum, long-range (18 - 20 years) out-year projections for the Company are approximately $120M/year.

Financial Projections Summary

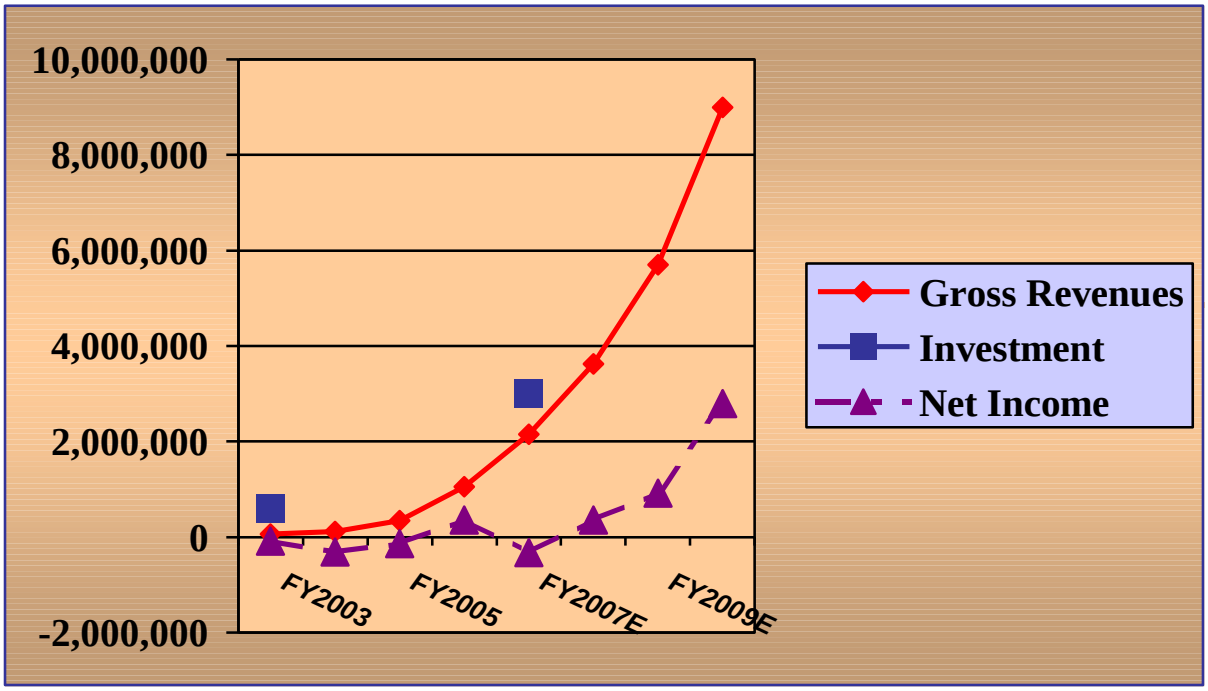
There are three major reasons for exceptional revenue opportunities for the Company:

- Outstanding, one-of-a-kind technology;
- Minimal competition;
- Customer base spans many different industry sectors;
- Past history with CFD software product industry leaders has shown a sizable revenue base and strong, steady market growth.

Since the commencement of the marketing and sales effort in October, 2003, Optimal Solutions has been operated on a frugal budget, resulting in a half-time sales/marketing staff and an understaffed management/technical group. In spite of the understaffed situation, the popularity of the technology and the hard work of the employees have driven FY 2006 projected corporate revenues to over $1 million--a 200% rate of growth from FY 2005 revenues.

Given the current rate of growth of the Company, coupled with a planned infusion of investment funding and/or a Company buyout, to not only support and enhance the Company's technical effort, but to shore up the Optimal Solutions sales effort, revenue projections for the Company in the out years are conservatively reflected in the revenue-to-investment projections below:

OPTIMAL SOLUTIONS SOFTWARE, LLC
PROJECTED MILESTONES



A more detailed discussion of the financial estimates and projections is located in the Company's Financial Plan section of the Business Plan.

Financial Request

Optimal Solutions is seeking one of the following:

- Equity Investment Opportunity - The Company is seeking $3.0 million lump sum financing. The funds will be used to hire management; programming, sales, and marketing personnel; as well as applications engineers, technical support and office space/equipment.

- Acquisition - The Company will entertain a buy-out by a willing and knowledgeable buyer, the terms and conditions of which to be negotiated at the appropriate time.

Optimal Solutions Team

The Optimal Solutions team is comprised of some of the brightest and most experienced CFD-based shape optimization personnel and sales and marketing professionals in the business.

Since 1990, the research team has expended thousands of man-hours in designing and refining the ***Sculptor***™ software program to its present form. The Company's current team has over 88 years of experience in computer-aided geometry-related work, computer graphics, numerical methods, finite element and finite volume codes; 23 years in running profitable businesses; and 46 years in sales, marketing, and technology commercialization. The result is a combined 157 years of experience to bring to the venture.

A synopsis of the team follows, with a more detailed description of the team members in the Business Plan's Management Section.

Mark D. Landon, Ph.D. is the President and a founding member of the Company. With over 23 years experience in computer-aided geometry, computer graphics, numerical methods, finite element and finite volume codes, Dr. Landon brings a wealth of knowledge and expertise to the team.

Ernest C. Perry, Ph.D. is the Director of Research and Development and a founding member of the Company. Dr. Perry has 16 years of experience in computer-aided geometry work and is the original author of the ASD algorithm, which was the core effort in his Ph.D. dissertation research.

Richard W. Johnson, Ph.D. is Chief Engineer and a founding member of the Company. Dr. Johnson brings over 26 years of expertise in the areas of computational and experimental fluid dynamics and heat transfer, optimization, numerical methods, turbulence modeling, multiphase flow, and technical writing. He is Editor-in-Chief of the CRC Book on Fluid Dynamics.

Wade L. Foster is the Chief Financial Officer of the Company. As owner of HK Contractors, Inc., he has developed the heavy-highway/utility contractor to a $60M+-a-year success.

Carolyn Harrison is Director of North American Marketing. With over 31 years of marketing, sales, and public relations experience, Ms. Harrison's expertise will be important to the success of the marketing and sales effort.

John Jenkins is the Company's Director of Sales. John has worked for over 23 in the CAD/CAM/CAE industry and has experience assisting over 80 small or startup technology enterprises in various aspects of technology commercialization.

Concluding Remarks

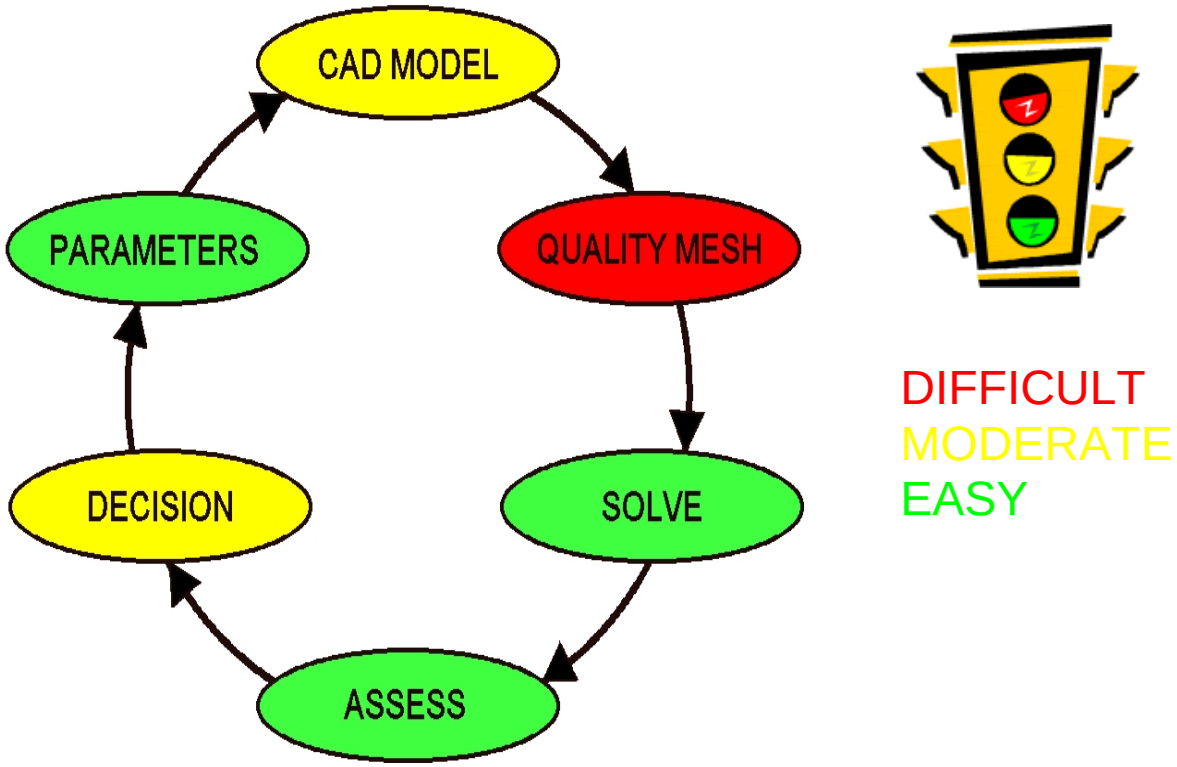
From its early beginnings in the 1960's, the CFD/FEA industries have expanded significantly. Substantial growth has continued into the Current Millennium as CFD/FEA software has become easier to use, highly automated, fast, and much more efficient. Simulations produce high-quality data about the performance of industrial processes that can often not be obtained by other methods, allowing engineers to solve larger and more complex problems than ever before.

Optimal Solutions is ready to meet the fast-growth challenge of the CFD/FEA design world by having put together the most experienced, best-educated, vibrant technical and sales/marketing team possible. Any company or industry that designs components with fluid flow, heat or mass transfer, chemically reacting flows and/or structural components, will attain significant successful results with the time and money saved by using the unique ***Sculptor*** ASD technology.

II. PRODUCT OFFERING

Product Design using Digital Simulation – What is it?

Today engineers create the design model using computer-aided design tools or CAD. When that design model is ready to analyze, a simulation model (also known as a computer aided engineering mode: "CAE") such as FEA or CFD is created and used to predict the design's performance. The performance of the design is assessed and accordingly, the design is modified, and the process continues until the desired performance of the design is achieved. This design process is shown below.



The difficulty in this process is the conversion of the design or CAD model into a CAE model or a "mesh". CAD models and CAE models are fundamentally based on entirely different geometric models. CAD models are composed of precise surface representations of the boundaries of the design model. CAE models are created from polygonal building blocks, such as tetrahedrons and hexahedrons, in three dimensions. Creation of a CAE model or mesh from a CAD model is a laborious, hands-on process. As a result, it currently takes hours or days to create an accurate CAE model. Additionally, for each design change, no matter how small, the CAE model has to be completely recreated.

Another less obvious problem with the process is that the ability to modify the CAE model is restricted by the parameters associated with the CAD model. As the engineer comes to better understand the weaknesses of his original design, he may want to change the shape of the model in a way that the original CAD model will not allow.

Because of these bottlenecks, many industries either terminate this design process very quickly or use traditional experimental methods to assess their designs.

What's the Solution?

Optimal Solutions Software, LLC, has developed Arbitrary Shape Deformation (ASD) that is a major advancement in solving these two problems. ASD is a method to control and manipulate the shape change of any type of geometry, either CAD or CAE models.

To use ASD, one defines a set of control points around the entity that is to be deformed. The control points are then moved, and the underlying functions deform the entity into a new shape. This gives the user the ability to mold the entity as if he were a ***sculptor*** molding clay. This is perhaps best understood by using a physical analogy:

Consider a cube of clear, flexible plastic, in which an object has been embedded. The embedded object has the same degree of flexibility as the cube so that as the plastic cube is deformed, the embedded object is also deformed in the same manner (see Figures 1 & 2). The cube is modeled with its deformation controlled by a small set of user-defined control points. In creating the ASD, the user has control over the number and placement of control points needed.

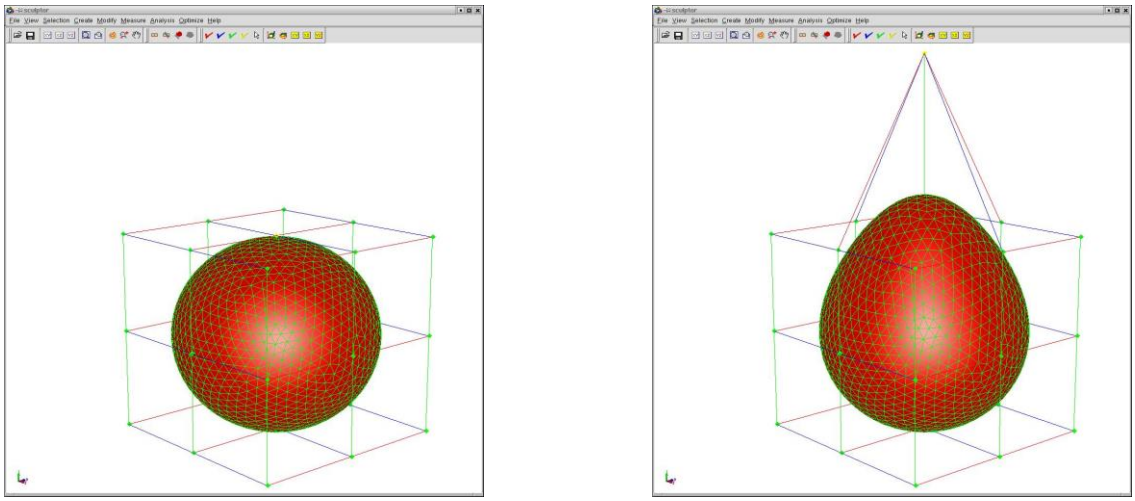


Figure 1. ***Sculptor's ASD shape change parameters (control points) allow the user to mold a shape as if it were clay in his hands. Here, only one ASD control point is moved causing the ball (a CFD mesh) to be deformed. The initial placements of the control points could have been placed anywhere.***

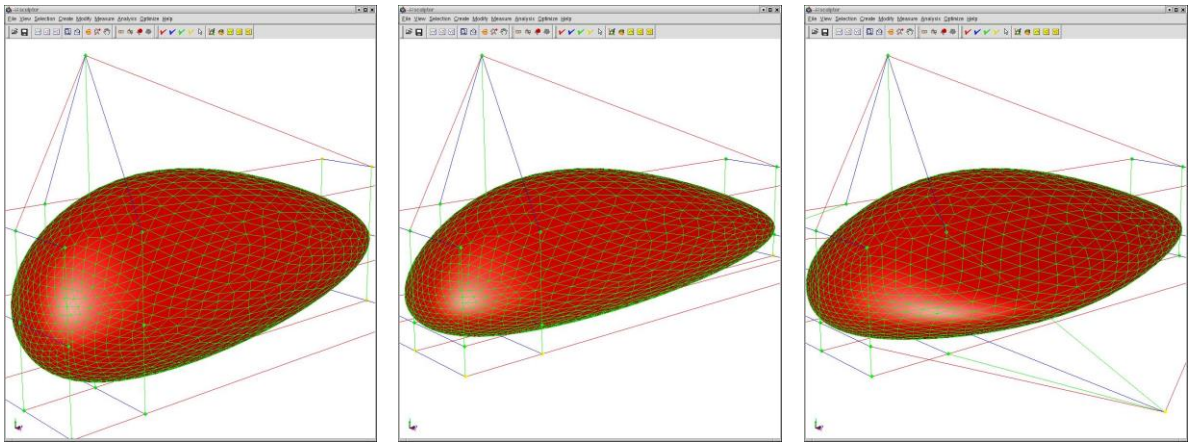
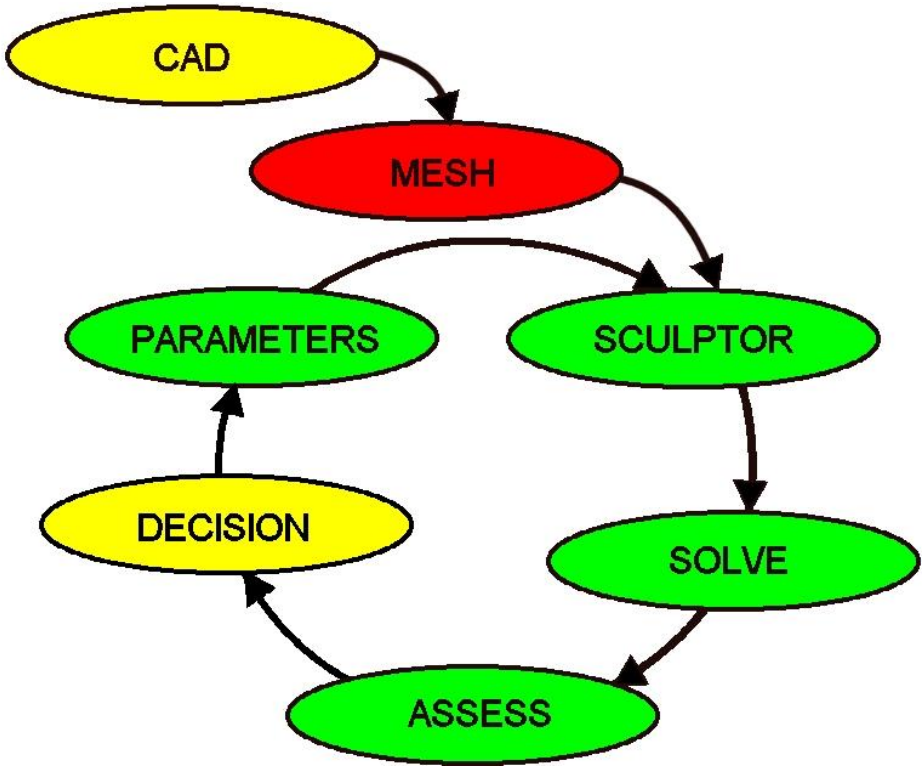


Figure 2. ***The first image shows further deformation of the mesh with the back plane of control points moved back. The second image resulted from the bottom plane of control points moved up. And the last image resulted from pulling two control points in a symmetric fashion—all smooth, volumetric changes.***

Sculptor is Optimal Solutions' current software package based on Arbitrary Shape Deformation (ASD). ***Sculptor*** performs a smooth volumetric deformation. This solves the first problem by eliminating the extremely costly process of having to recreate the CAE model for every shape change. ***Sculptor*** has demonstrated the ability to perform a geometry design change in seconds that would take hours—even days—to complete when one goes back to the CAD model to reshape and then remesh. Additionally, it solves the second problem by allowing the engineer to freely create his own shape-change parameters, therefore giving him the freedom to place shape control points where needed and not be restricted to using only the CAD parameters that happen to be available.

When ***Sculptor*** is added to the product design process, it becomes the following.



With the bottlenecks removed, this design process can quickly and efficiently create optimal designs.

Does it Work?

Sculptor has been able to dramatically alter the product design process for many companies and government agencies. A successful example of ***Sculptor's*** capabilities follows.

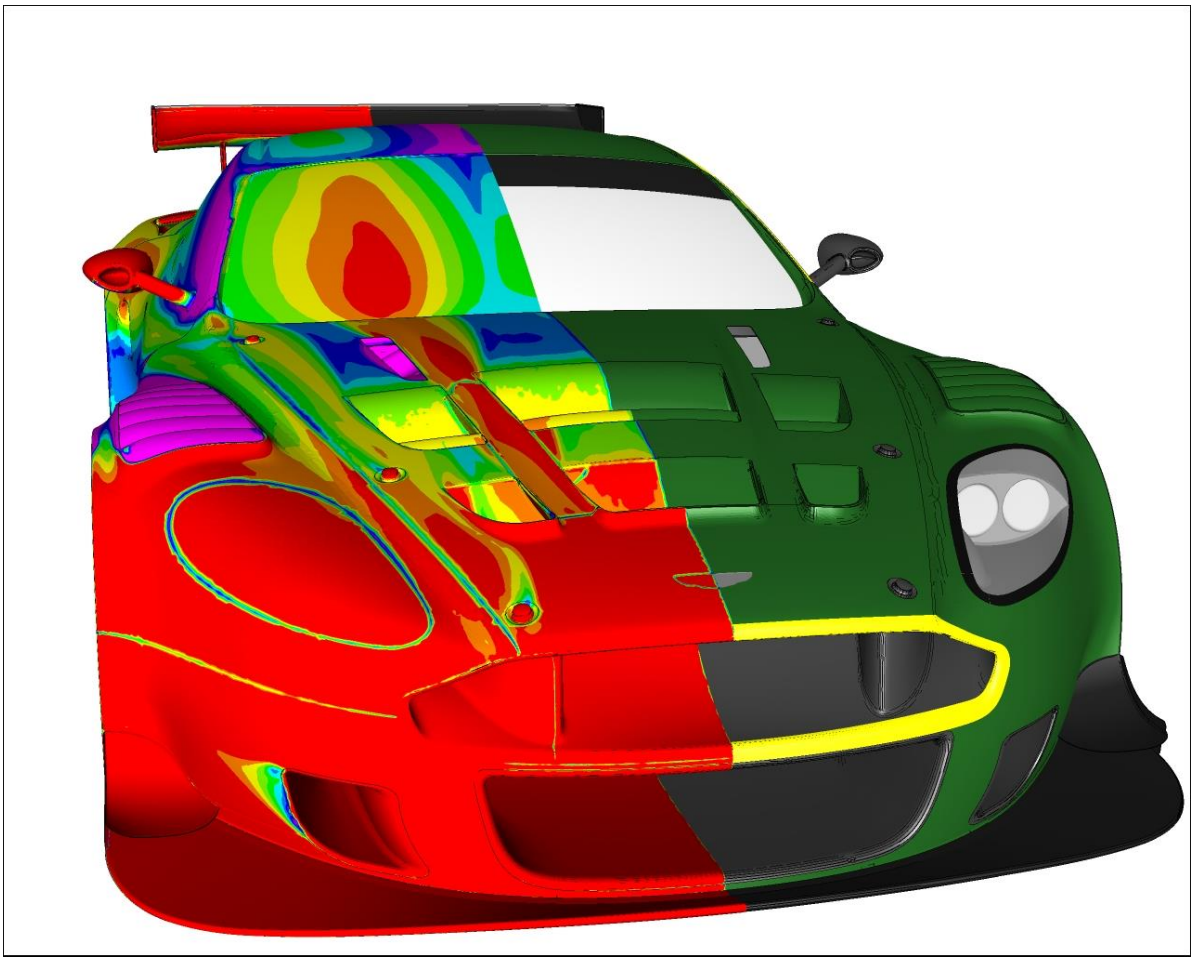
In the motorsport industry, the wind tunnel has been the primary design tool in aerodynamic development. Aston Martin made a major change in race car design when it decided to use CFD rather than the wind tunnel in designing their DBR9. According to ***Race Tech*** Magazine:

> ***"Aston Martin Racing believes that the DBR9 represents the first occasion when an aero package has been designed for a race car, at this level of competition, primarily using CFD."***

Aston Martin chose Advantage CFD, ***Sculptor's*** European distributor, to assist in this work. ***Sculptor*** was found to be essential in this effort. Again ***Race Tech*** Magazine states:

"For some changes to the vehicle, new mesh-deformation software, 'Sculptor', was used to make large modifications to the geometry rapidly. Sculptor was often found to reduce the time taken to assess some changes from days to hours. A bodywork change, for instance, could be accomplished within an hour where it would have taken a day. By using parametric variations to an existing CFD model, it was possible to use optimization techniques to try to improve performance."

The DBR9 won its very first race, the Sebring 12-Hour in 2005, defeating a factory works Corvette Chevrolet team that had won that class for the last three years. CFD results are displayed on the DBR9 below.



Examples of other real-life CFD design issues are depicted in the following illustrations.

Figure 3 shows an example of the results of the shape deformation and optimization of an elbow with a 90^{o} bend. The design criterion (the design objective) was defined to change the shape so that the pressure loss through the duct, from inlet to outlet, would be reduced. Geometric constraints were defined so that the inlet and outlet did not move or change shape. ***Sculptor's*** well-designed, easy-to-use graphical user interface (GUI) is shown in this example.

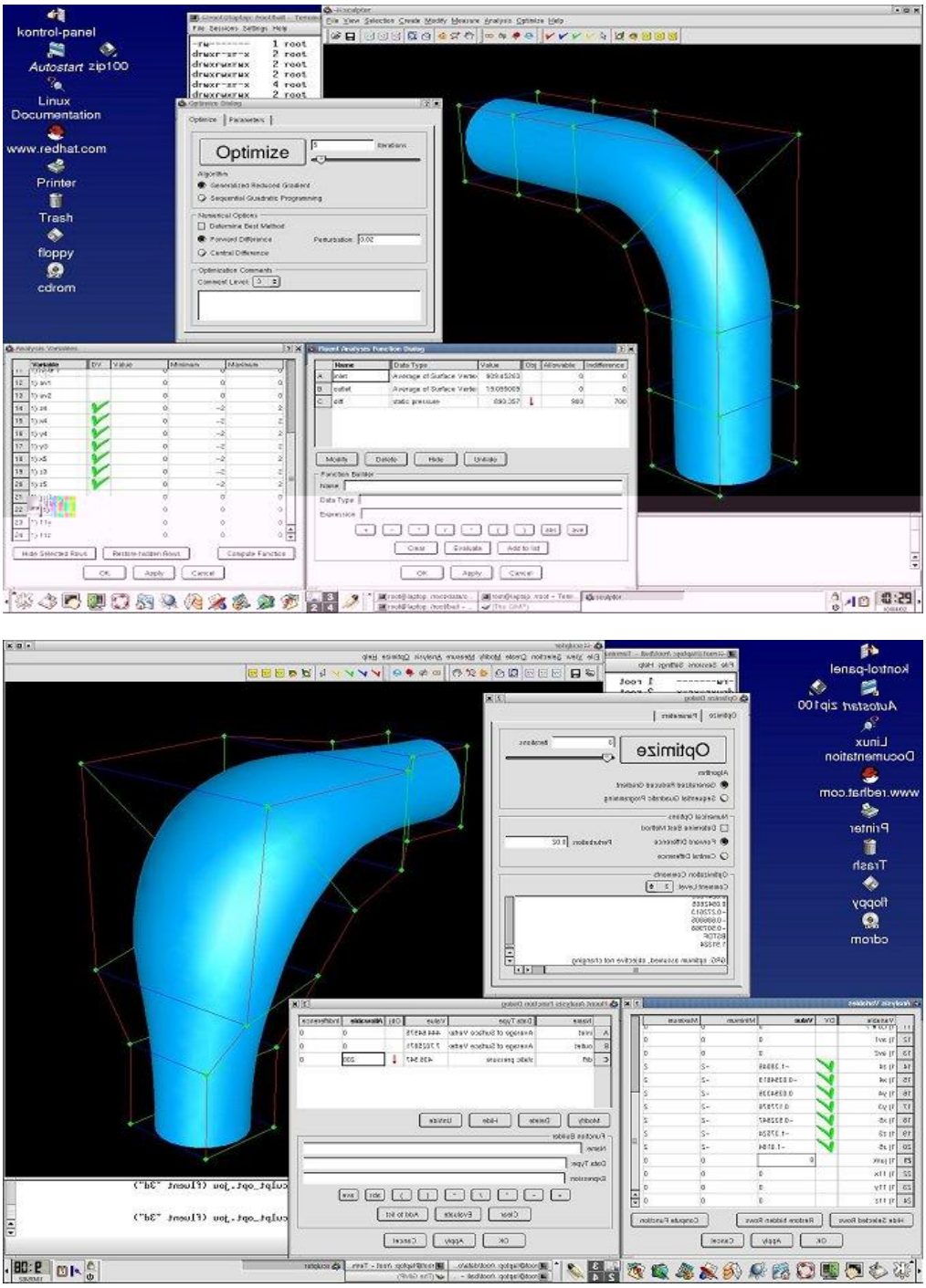


***Figure 3**. The top picture shows the initial elbow shape with the ASD volume superimposed. The bottom picture shows the optimized shape that Sculptor™ found automatically with a reduction of pressure loss exceeding 50%.*

Figure 4 shows the initial and optimal elbow design's pressure contours. Notice that the negative pressure zone in the bend (the blue area on the inside of the bend representing a re-circulation eddy) has been removed. **The improved design resulted in more than a 50% reduction in pressure loss.**

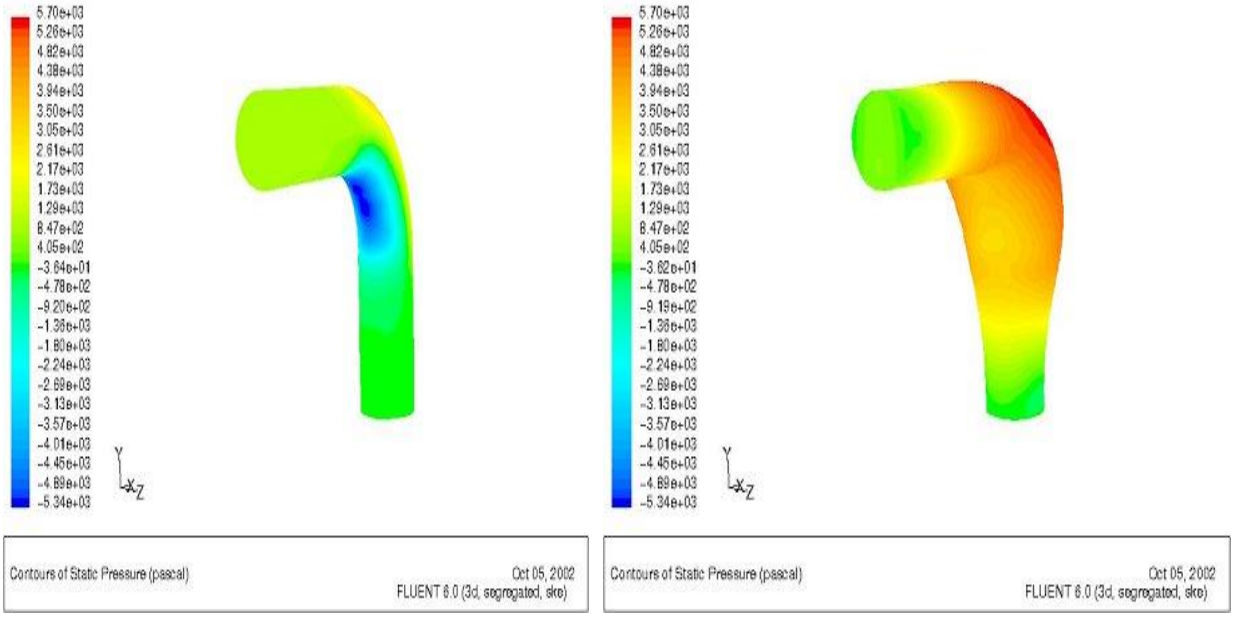
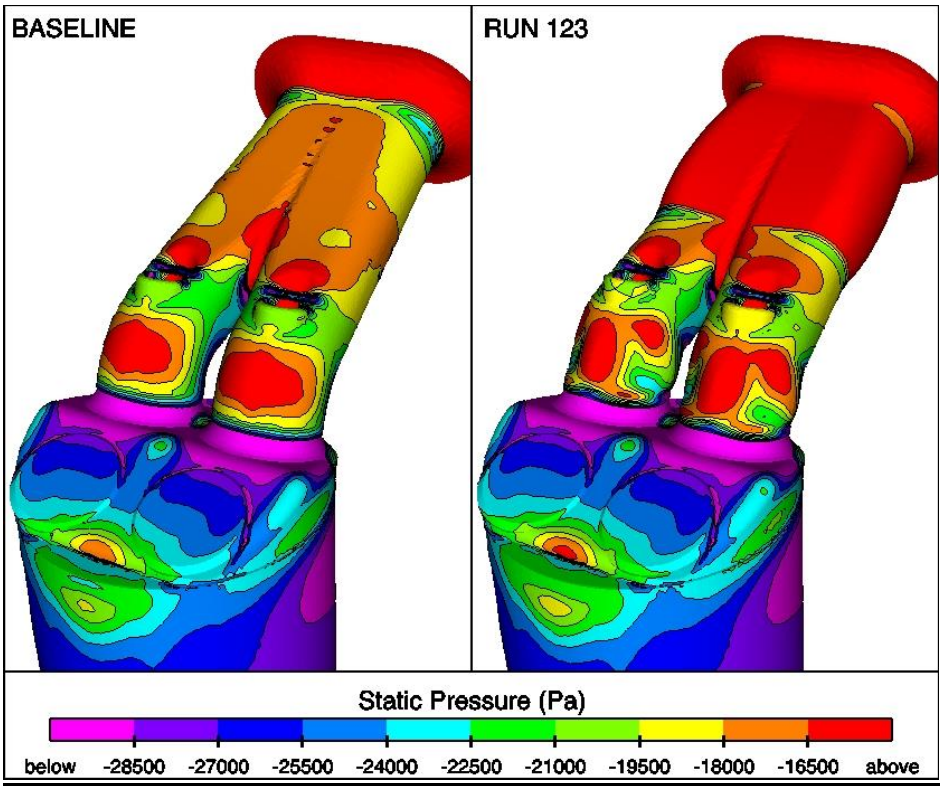


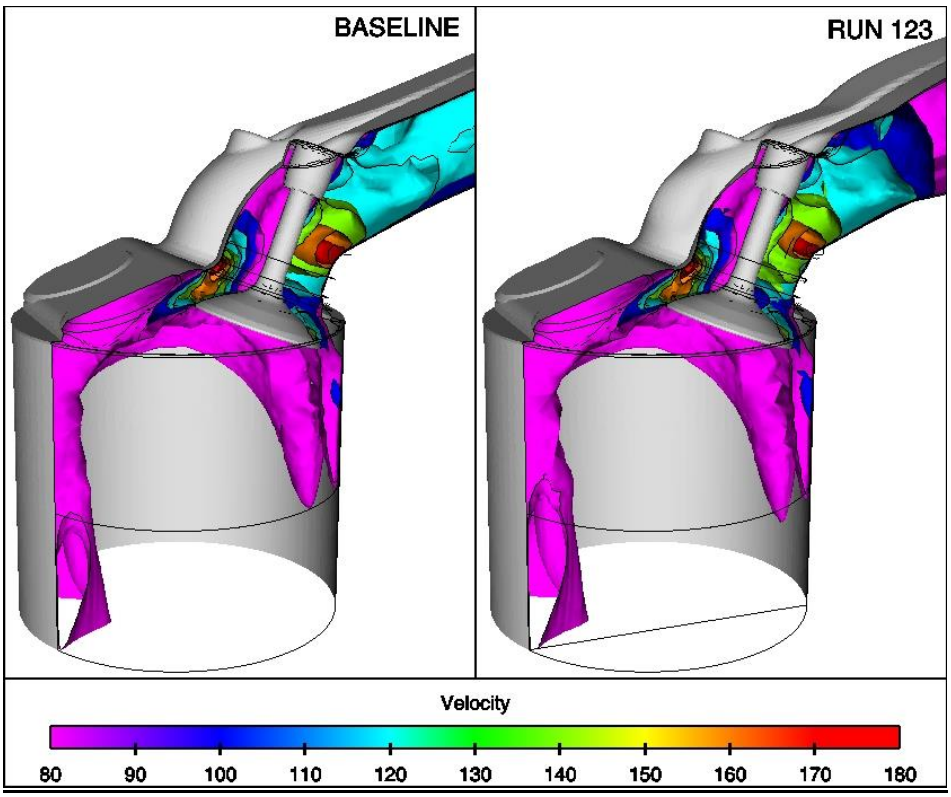
Figure 4*. The top picture shows the pressure contours initial elbow shape with the ASD volume superimposed. The bottom picture shows the optimized shape that Sculptor found automatically.*

Irregularly-shaped volumes may be created with ASD. This permits objects of complex shape *and* topology to be embedded in the deformation volume and then smoothly and continuously deformed. Figure 5 shows a windshield defroster (part of an automobile heating and air conditioning duct system) before and after being deformed with an ASD grid. Figure 6 shows a comparison of the velocity profiles for both the initial and optimal defroster duct system. This is an illustration of how the ASD grid can be used to deform and optimize complex shapes.

The Optimal Solutions ***Sculptor*** technology has already been applied to many different disciplines. Improved designs in external aerodynamics of automobile shapes, air intakes, aircraft wings and pylons, internal fluid flow of air conditioning ducts, diffusers and mixers are but a few examples of the endless potential applications for this tool.

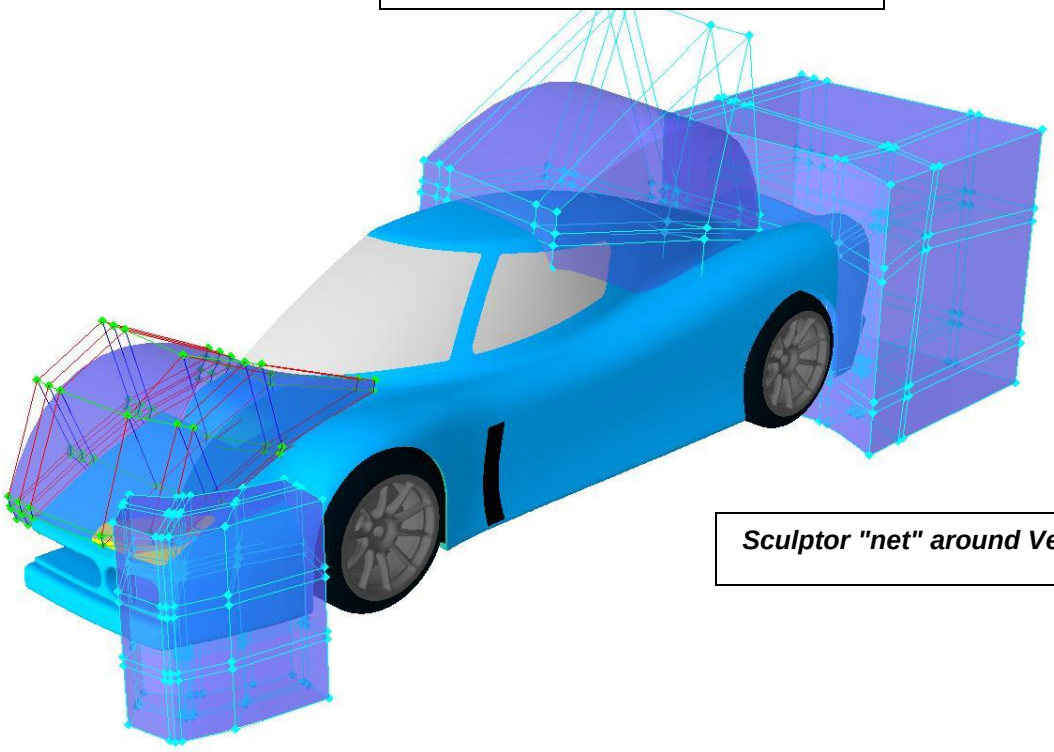


Comparison of surface pressure for two automotive engine intake ports.

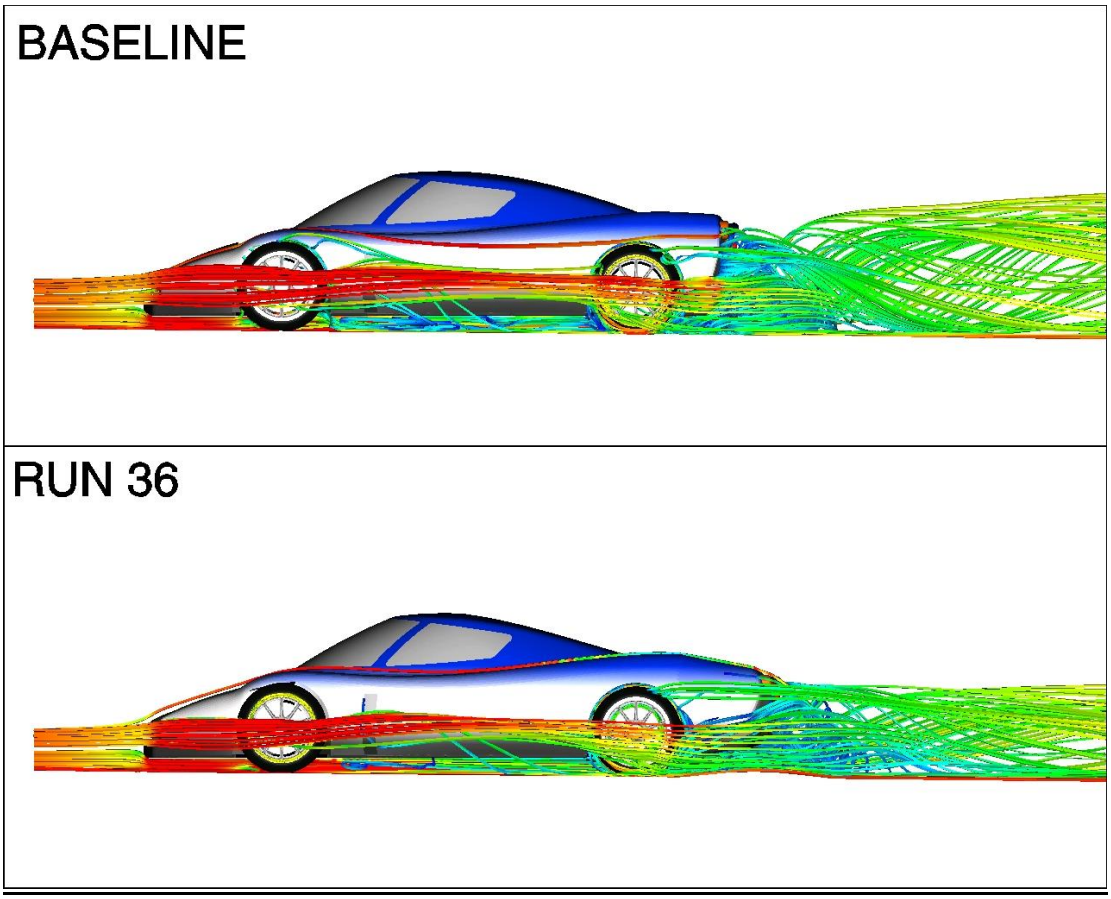


Comparison of isosurfaces of velocity through valve centerline of two automotive engine intake ports.

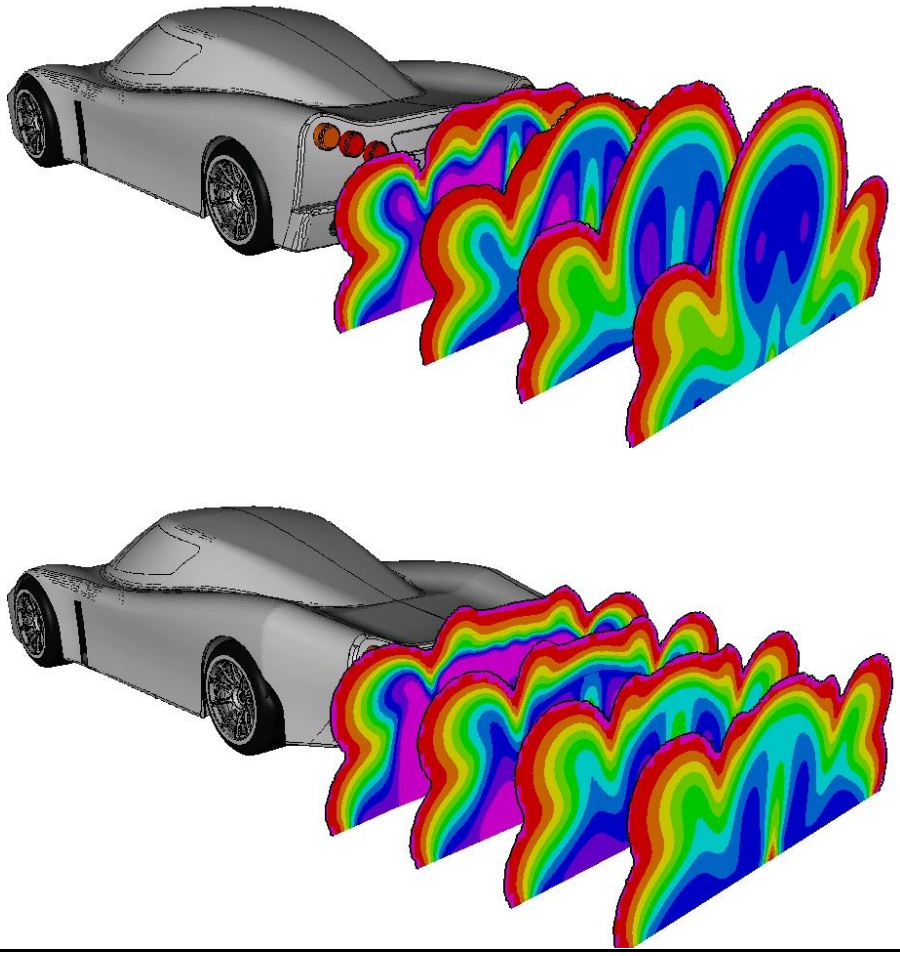
DRAG REDUCTION ON A GENERIC HIGH-PERFORMANCE ROAD CAR



Sculptor "net" around Vehicle



Comparison of streamlines around baseline and run 36



Comparison of wake structure behind baseline and run 36

III. MARKET

CFD/FEA – Are there future growth opportunities?

The application of innovative, emerging technology-to-engineering problems cannot be understated. "Upfront" analysis/design tools enable design engineers to generate higher quality and more innovative products faster and at lower costs than was previously possible. Fueled by broader availability and affordability of high-performance computing architectures and robust, intuitive analysis/design software tools, manufacturers are reducing product design cycle times, accelerating time-to-market, and increasing profits.

According to Daratech, one of the industry's leading providers of IT market research and technology assessment:

"Continued growth is expected in the computer-aided engineering (CAE) markets. Expenditures will experience a compound annual growth rate (CAGR) of 12% through 2009…"

The objective perspective of organizations such as Daratech add credence to the statement that:

"…forward-thinking manufacturers have accelerated the integration of engineering analysis/design tools and technology into their project development process..."

Is There a Bigger Picture?

Optimal Solutions Software has a vision of the potential market for ***Sculptor***, which is far broader than it currently serves. There is a need for what we would term “Poly CAD”. This would be a CAD-like tool, which operates directly on CAE models. ***Sculptor’s*** current capabilities would be a key subset of these tools. Often manufacturers have a large database of “legacy” designs, which reside in FEA and CFD models. Again, rather than recreate them, it would be most efficient to directly modify many of the features on these models. For example, this could be done by changing the radius of a fillet, moving a hole, changing the diameter of the hole, and even adding a hole to the model. In many cases, original CAD data does not even exist. Currently, it is possible to laser scan an existing object and create a CAE model directly from the scan data. This is particularly true in the biomedical industry where MRI images are used to create the simulation models. With a Poly CAD tool an engineer would be able to perform all of his design work directly on the CAE model and use that same model in the product design process. There are some key needs to make Poly CAD a reality. They are:

- Efficiently create a CAD model from the CAE model.
- Develop new deformation capabilities.
- Add advanced, robust remeshing capabilities.

Optimal Solutions Software is confident that in conjunction with our partners, such a tool could be developed. Currently, there is no such comprehensive software package for working with CAE models on the market. We feel the potential for such a product is vast.

Optimal Solutions Software Market Share

In an effort to arrive at a solid market share projection, as well as out-year financial projections, Optimal Solutions has taken a two-pronged approach to defining its market share:

- ***Global Market*** - This method looked at the size of the market segments for the three industries with which the Company is now working, number of customers and/or number of units in the respective industries, as well as past and future growth patterns of each segment. Addressing the total potential world market segments for three of the industries, the size of the global market for all 20 industry segments is shown. All 20 industry segments need CFD/FEA engineers now and will need even more engineers in the future driving the increasing CAE software market.

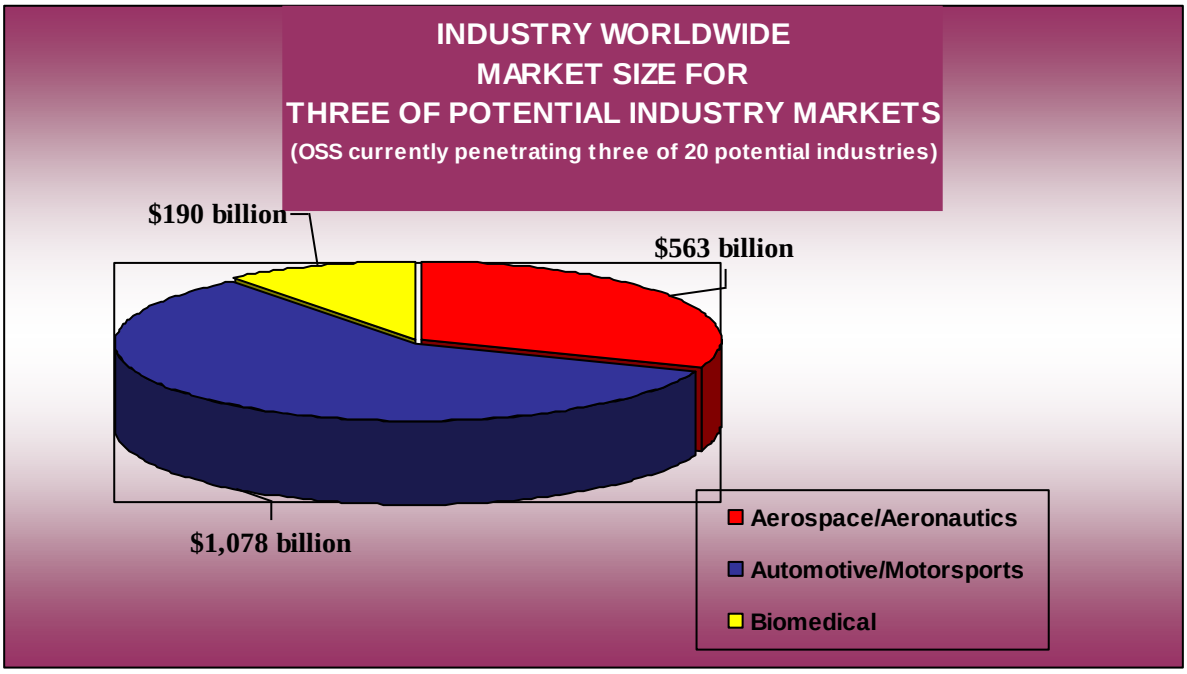
- ***Targeted Market Share*** - Utilizing the market statistics already generated by Fluent, Inc., the world's largest CFD company, Optimal Solutions was able to forecast its own future growth patterns based on number of total CFD software licenses.

1. **Global Market** - As stated earlier, the following industries utilize CFD and FEA:

Aerospace/Aeronautics	HVAC
Automotive & Motorsports	Marine/Off-Shore Systems
Biomedical	Nuclear Power
Chemical Processes	Offshore Systems
Defense/Military	Oil & Gas
Diving Systems	Power Generation
Electronics	Pumps
Environmental	Railway
Fuel Cells	Semiconductor/MEMS
General Structures	Steel
Glass/Plastics	Turbomachinery

To demonstrate the breadth and stability of the industries now utilizing CFD and/or FEA, the Optimal Solutions Team delved into the market size of each of the three markets (of the above 20 markets) within which it is currently working--and arrived at the below findings:

INDUSTRY	INDUSTRY MARKET SIZE
Aerospace/Aeronautics	**$ 565.30B**
Automotive & Motorsports	**1,078.46B**
Biomedical	**190.00B**
	$ 1,833.76B



2. Targeted Market Share

Fluent, Inc. is the largest supplier of computational fluid dynamics (CFD) software and technical services in the world, with revenues exceeding $100M per year. Utilizing Fluent's worldwide revenue history as a bellwether for its own market opportunity estimates, Optimal Solutions has been able to arrive at a solid worldwide market share for its own market projections.

With revenues exceeding $100M per year, Fluent has captured approximately 35% of the total worldwide market share, which conservatively translates to 10,000 Fluent licenses per year. Extrapolated out, this results in approximately 30,000-seat--total commercial CFD worldwide market.

Optimal Solutions eventually projects an approximate 5% share of the total worldwide market--or 1,500 seats of ***Sculptor***. In the near term, the Company expects to sell at least 600 seats per year, generating over $8.0 million in software license revenue by the year 2010. At the current retail price, annual software sales will total over $21 Million (projection for year 2012).

Additional Revenue-Generating Factors

The above numbers are compelling--and conservative. Additional revenues are projected to be generated for the Company because of the following factors:

1. These figures do not take into account the FEA market, which Optimal Solutions is beginning to penetrate, and which is expected to generate even larger revenues for the Company.
2. The commercial CFD/FEA markets will not remain stagnant and are expected to increase markedly over time.
3. Mesh deformation tools are quickly gaining exposure and interest and are expected to grow even faster than the CFD/FEA markets in the long-term.
4. It is also important to note that ***Sculptor*** is a shape deformation and shape optimization engineering design tool, not a CFD or FEA analysis tool. ***Sculptor*** works with the analysis tools and thus *expands* the market rather than *competes* with the CFD/FEA market.

IV. MARKETING/SALES/COMMERCIALIZATION PLAN

Perhaps nothing is more conducive to the success of a firm than the image that it conveys of itself to the public. Having had considerable experience in the sales and marketing arenas and in the promotion of new products to the marketplace, the Optimal Solutions Management and Marketing/Sales Team realizes that a company's sales and marketing functions do the most to shape the company's image. Several avenues exist for marketing and selling the Optimal Solutions software:

- **Licensing** – All license fees shall be calculated according to current U.S. currency rates.

  NORTH AMERICA:

  1. Twelve-month floating license: $14,000 per seat
  2. Six-month floating license: $8,000 per seat
  3. Perpetual License: $35,000 per seat (20% annual maintenance fee commencing second year of license term.)
  4. Discount offered for multiple seats; negotiated on case-by-case basis

  EUROPEAN UNION (EU):

  1. Twelve-month floating license: €14,000 (~$18,000) per seat
  2. Six-month floating license: €8,000 (~$9,500) per seat
  3. Perpetual License: €35,000(~$45,000) per seat (20% annual maintenance fee commencing second year of license term.)
  4. Discount offered for multiple seats; negotiated on case-by-case basis.

  ASIA:

  1. Twelve-month floating license: ~$20,000 per seat
  2. Six-month floating license: ~$11,000 per seat
  3. Perpetual License: $ TBD per seat
  4. Discount offered for multiple seats; negotiated on case-by-case basis.

  ACADEMIC:

  Academic licenses shall include discounts and will be negotiated on a case-by-case basis. Conditions to obtaining an academic license include:
  1. Used for academic and/or research only; if institution is compensated for design, or if the license is being used for research for government and/or commercial for-profit companies, academic institutions shall pay above-mentioned full-amount license fees;
  2. One license per institution; and
  3. Students only to participate in the program.

- **Consulting/Training** – $150/hour for CFD or FEA modeling, design and shape optimization in North America and €150/hour the EU; $165/hour in Asia; a discount may be offered for larger projects.

- **Technical Support** – Technical support is supplied via email, telephone, internet (Webex). If technical support for any customer becomes more than answering questions or bug fixes, then a consulting/training contract will be necessary.

- **Initial Design Assessment** – Five-step process:

  1. Potential customer provides a specific CFD design model for assessment;
  2. OSS prepares company's model for deformation and optimization;
  3. Potential client obtains one-hour WebEx deformation and optimization demonstration on company's model; and

4. Potential customer receives deformed model for comparison with company's initial model.
5. Normally a no-cost initial exercise, but should not involve more that a few hours of engineering time.

- **Sixty-Day Project Demo** - Investment of $5K to receive the following:

  1. Sixty-day ***Sculptor*** license;
  2. Ten hours of CFD consulting expertise;
  3. Unlimited support on installation and system basic use of ***Sculptor***;
  4. Unlimited support on included ***Sculptor*** tutorials.

  May be applied toward first twelve-month license if upgrade is purchased within 30 days of the end of the demo period.

- **Advertising** – Publications and/or electronic platforms such as “CFD Review”, "RaceTech", “Mechanical Engineer, "Aerospace Engineering", "Automotive Engineering International", "Aviation Week", "Medical Design", “NASA Tech Briefs”, “CAD Digest”, CAD depot.com, TenLinks.com, and CAD panel are appropriate opportunities for announcing and attracting public attention to the Optimal Solutions product.

- **Trade Shows** – Such regional, national and international trade shows as the following are beneficial for meeting potential customers, collaborating with existing CFD/FEA analytical companies, and creating long-lasting relationships that create a synergistic approach to the marketing of the technology:

  1. SAE World Congresses,
  2. AIAA Fluid Dynamics CFD Conferences,
  3. AIAA Aerospace Sciences Meetings and Exhibits, European Automotive CFD Conferences, Fluent CFD Summits (Automotive Conferences, Users' Group Meetings),
  4. Gridgen Users' Group Meetings,
  5. Star CD Conferences,
  6. Automotive Engineering Expositions, Design Engineering and Manufacturing Solutions Expo./Conferences,
  7. VINAS Seminars,
  8. MIRA International Vehicle Aerodynamics Conferences ; and the
  9. Abaqus Michigan Users' Conferences.

- **Direct-Mail** – Marketing pieces, such as brochures and product-enhancement announcements are sent out

- **Web Site** – The Optimal Solutions web site is designed to promote its service to thousands of potential customers. The Web site is easy to navigate and does a good job of summarizing the Optimal Solutions product.

- **Strategic Partnerships** – The Optimal Solutions marketing team continues to explore strategic alliances with both hardware and software providers to achieve greater synergy and efficiency for the Optimal Solutions customers.

- **Web-based demos and training**: Maintaining a conservative approach, the Optimal Solutions research and development group has initiated an exciting tool that allows one-on-one marketing demos and training without the client, nor the Optimal Solutions team, leaving their respective offices. The “WebForum” service allows Optimal Solutions personnel to connect and communicate with clients over the web using the commercial tool "Webex". Time and resources are, therefore, wisely used, while providing the clients the ease of controlling the session from their own computers. Advanced WebForums are designed and offered for those topics that use ***Sculptor*** in special or advanced methods that are beyond the basic introductory training.

NORTH AMERICAN MARKETING APPROACH

The North American market holds the best return-on-investment opportunities for the Company in the near term. The technology was developed in the United States, and with a high percentage of the marketing activities having taken place on the North American continent, projections call for roughly 40% of the Company's revenues to be derived from the U.S. market during FY 2006 and FY 2007.

With the addition of the below-listed Optimal Solutions distributors throughout the globe, projection percentages will be more evenly distributed in the out years:

Distribution Area	***Distributor***	***Location***
European Union (excluding Germany)	Advantage CFD	UNITED KINGDOM
Midwest U. S. (including Germany)	Mindware Engineering, Inc.	DETROIT, MI
Japan	VINAS Co., Ltd.	OSAKA, JAPAN
China	Sightna Technologies Co.	BEIJING, CHINA

Through the efforts of Advantage CFD, two resellers have signed End User Agreements to distribute ***Sculptor*** in the Czech Republic:

Reseller Area	***Reseller***	***Location***
Czech Republic	TechSoft Engineering	Czech Republic
France	Sirehna	France

The dedicated marketing and sales effort for the product commenced in October, 2003. Three years hence, unprecedented sales opportunities have been consummated through licenses and/or consulting agreements with government agencies, large and small commercial entities, universities, and Fortune 100 companies:

Advantage CFD
Airbus
Beijing Institute
The Boeing Company
Cessna
CIIT
COBB, Inc.
CraftTech
Cummins
John Deere
Diamond Aircraft
DuPont
Eglin Air Force Base
Engineous, Inc.
Ford Motor Company
Hamilton Sundstrand
Honda Formula 1 Racing
Honda Research Institute
Honeywell
Karem Aircraft
Lockheed Martin
MIRA
NASA
Nova Chemicals
RAMGEN
Sikorsky
Skoda Auto
Solar Turbines
University of Stuttgart
Visteon
Williams Formula 1 Racing-Patterson AFB
Wright Patterson Air Force Base

MIDWEST UNITED STATES OPPORTUNITIES

With the Big Three auto companies and their corresponding OEMs situated in and around the Detroit, Michigan, area, Optimal Solutions sought a distributor to sell the product in the industrial Midwest. The choice was easy: Mindware Engineering, Inc.

This Detroit-based CAE/CAD/software engineering firm already had a solid base of customers to whom to sell the ***Sculptor*** software package. Discussions between the two companies ensued in January, 2005, and on February 1, 2005, Optimal Solutions Software, LLC, and Mindware Engineering, Inc., finalized

their negotiations by signing a Distribution Agreement for Mindware to distribute the technology to the Automotive Industry, in the midwest section of the United States, as well as in Germany.

EUROPEN UNION (EU) MARKETING ACTIVITIES

As previously stated, Advantage CFD is the Company's EU distributor. Owned by Honda F1 Racing, this United Kingdom-based company has a reputation as being one of the best CFD resources in the international motorsports industry. From the first time Advantage CFD was introduced to ***Sculptor***, the ACFD team knew this was going to be a winner! Advantage CFD was so enthralled by the technology, they asked Optimal Solutions to distribute the product in the EU--and have found success in applying it to its customers' needs ever since.

It is projected that 30% of the sales of ***Sculptor*** will be derived from European marketing activities in FY 2006 and out years.

ASIA/PACIFIC MARKETING ACTIVITIES

JAPAN - The winner among Japanese contenders to distribute the Optimal Solutions ***Sculptor*** was VINAS (Visual Integration & Numerical Analysis Systems). With its corporate office in Osaka and its sales office in Tokyo, Japan, VINAS was ideally located for distributing the product to the greatest amount of customers and being able to service them in a timely manner. The company offers CFD/CAE solution services to improve productivity of product design to a wide spectrum of industries, including aerodynamics, automotive, chemical, governmental organizations, and academic institutions.

VINAS, with over 400 clients and 1,000 existing licenses, is a leading provider of pre and post-CFD/CAE processing software and consulting and is a welcome partner to the Optimal Solutions team.

CHINA - As a subsidiary of Engineous Software, Sightna Technologies Co., Ltd. in Beijing, China, brings a wealth of technologies, expertise, existing clients, and sales capabilities to the Optimal Solutions distributor group. Established in 2002, Sightna's main business is "to promote and sell design automation, process integration and optimization and design enhancement capabilities for the three principles of modern industrial design: system design; parametric design; and robust design".

Projections show that 30% of the Company's revenues will be derived from sales in the Asia/Pacific market.

Optimal Solutions Software is actively seeking distributors and/or resellers in other regions of the world, including India, South Korea, Australia, and Scandinavia.

Where Do We Go From Here?

It is imperative that Optimal Solutions Software develop a "laser like" focus on its sales, marketing, and development activities to ensure that a strong foundation for the Company is created. The following industries and companies plan to be targeted in the near-term:

- **Airbus** – This aerospace company will soon begin using ***Sculptor*** on a trial basis. Optimal Solutions will provide excellent support and development so that ***Sculptor*** becomes a vital part of their design process.

- **A major CAD company** – The Company is currently in negotiations to provide ***Sculptor's*** functionality to be integrated into a large CAD product. The royalties that would result from this would provide a steady vital income.

- **Lockheed Martin** - Already a ***Sculptor*** user, the recent award of the multi-billion dollar Crew Environment Vehicle (CEV) contract to Lockheed is an exciting opportunity for Optimal Solutions Software. Lockheed used ***Sculptor*** in their preliminary design in order to obtain the contract, and they have already expressed an interest is again utilizing ***Sculptor*** on this project.

- **NASA** – Optimal Solutions Software is nearing the end of an SBIR Phase II contract with the NASA Stennis Space Center. There appear to be numerous opportunities to continue work with NASA.

- **Motorsports** – It is important that Optimal Solutions Software continue its leadership in this industry with penetration into NASCAR and the continuing development of the Company's CFD consultancy in this field.

- **Turbomachinery** – Optimal Solutions has been working with several leaders in this industry such as Seimens, Rolls Royce, Honeywell, and Solar Turbines. It is apparent that with additional development specific to this industry, ***Sculptor*** will be a major design tool in this industry.

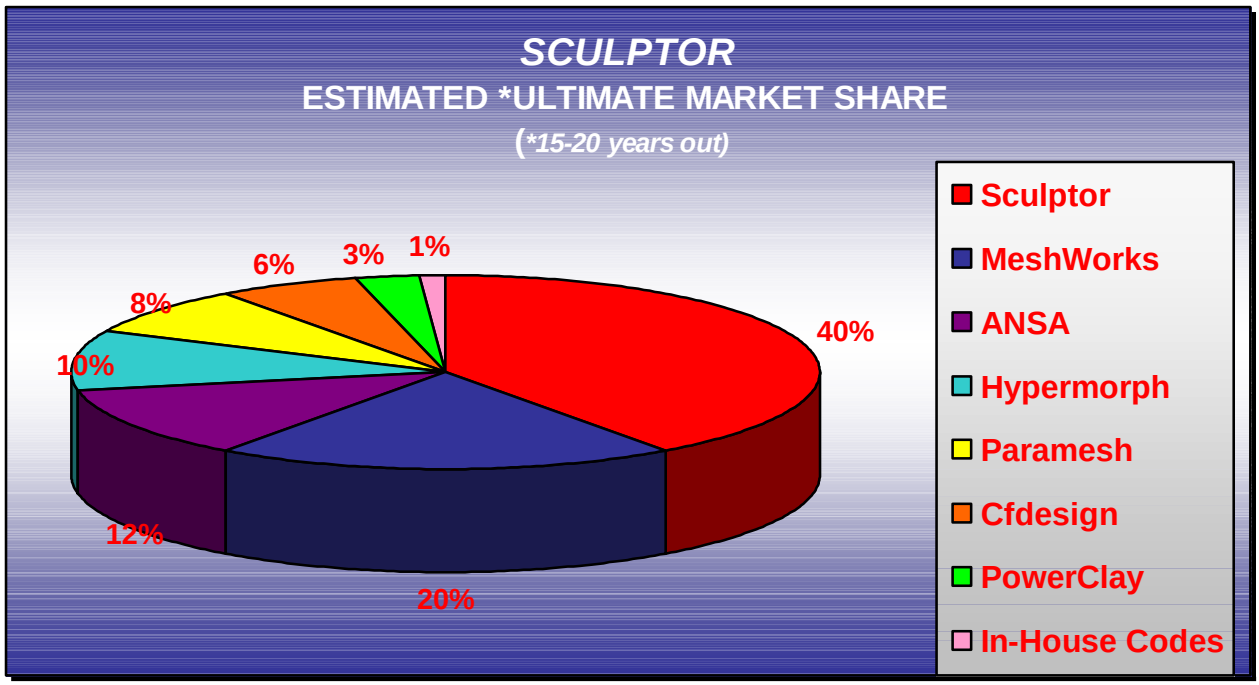
***PROJECTED MARKETING COSTS**
FY 2007

Marketing Activities	**Funding Requirement**
Advertising	$ 75,000
Five Publications @ $15,000/Publication	
• "Mechanical Engineering" Magazine;	
• "Aerospace Engineering" Magazine;	
• "Medical Design" Magazine;	
• "Performance Racing Industry" Magazine;	
• "Power Magazine" Magazine	
Brochure "Rework"	15,000
Direct Mail	40,000
Web Site Maintenance	30,000
Exhibit Enhancements	10,000
Trade Shows/Conferences	70,000
Client/Potential Client Visits	180,000
TOTAL:	$ 420,000

V. COMPETITION

There is nothing in the marketplace like Optimal Solutions' ***Sculptor*** software. It is an interactive design tool—not an analysis tool. Thus, ***Sculptor*** does not compete with CFD *analysis* tools in the CFD market – rather, ***Sculptor*** enhances the market. There are several CFD *design* tools on the market; however, none of these products is capable of performing the unique automatic CFD shape design that ***Sculptor*** has to offer.

Once the Optimal Solutions sales force is established and working at its optimum, long-range projections (15-20 years out) call for Optimal Solutions to capture a 40% share of the market.



A brief description of the above companies follows.

Detroit Engineered Products, Inc. (DEP) of Troy, Michigan, markets MeshWorks/Morpher software. It is a design tool originally designed for use in structural shape optimization but has recently started to be offered for use in CFD shape design. In the many head-to-head comparisons, ***Sculptor*** has been found to be superior in the much more complex and demanding shape deformations needed in CFD. DEP does not provide any optimization algorithms with their module, thus requiring the customer to purchase additional software.

ANSA – A product of Beta CAE that was mainly created for FEA and structural mesh morphing. It is not used much in the CFD world. Does not have the fine smooth volumetric deformation necessary for CFD shape deformation/optimization.

Hypermorph of Altair Engineering is a mesh morphing tool tightly coupled with Altair's Hypermesh mesh preprocessor tool kit. It also was mainly created for FEA rather than CFD.

Paramesh – A product of Ansys, Inc. Has some similarities to ***Sculptor*** but is limited in its ability to maintain mesh quality after deformation. ***Sculptor*** is better at real-time deformation, creation of user-

defined shape change parameters, interfaces with almost all CFD and FEA products, including Ansys, ICEM-CFD, Fluent (Ansys products).

CFdesign operates on the CAD model, using the available shape change variables on the CAD entities. Remeshing is necessary, thus requiring much time and loss of initial connectivity. To its credit, CFdesign has its own CFD solvers (analysis); therefore, there is a close coupling of design and analysis tools. Also does not provide optimization tools.

Exa's PowerClay is a shape change tool that is tightly coupled with Exa's CFD solvers. As a competitor, any user will have to use Exa CFD solver, which has a small portion of the overall CFD market, PowerClay poses no real competition to ***Sculptor*** in over 98% of the CFD design market.

It is important to note that all of these software tools require remeshing. Because of ***Sculptor's*** real-time deformation capabilities, the time-consuming remeshing activity is eliminated.

Sculptor does not compete with the CFD analysis software market directly. Optimal Solutions works with CFD codes to expand the market by enhancing capabilities to perform CFD design, not analysis, with arbitrary shape deformation and optimization capabilities. There is no CFD design optimization tool on the market today that is capable of automatically re-designing and altering, in real time, the object to its optimal shape.

VI. MANAGEMENT

Optimal Solutions' planned corporate growth rests upon a number of principles that have been created by the Management Team that will ensure the steady and healthy advancement of the Company and its objectives:

- The highest level of professional integrity in all business practices;
- Exceptional quality products and services that exceed customer demand; and
- Unfailing commitment to the Company' customers, suppliers, and staff.

The Management Team is comprised of the following individuals:

Mark D. Landon, Ph.D. – Dr. Landon is the President of Optimal Solutions Software, L.L.C. and is one of the founding members of the Company. Dr. Landon received his Ph.D. in Civil Engineering-Structural Mechanics, from Brigham Young University in 1989; his Masters degree in Civil Engineering in 1983 and his Bachelor of Science in Civil Engineering, both from Brigham Young University, as well. Since 1996, Dr. Landon has been President of Optimal Solutions; from 1993, he has been an Instructor of Engineering and Computer Science at the University of Idaho, as well as Senior Advisory Engineer at the Department of Energy's Idaho National Laboratory (INL).

Dr. Landon provides engineering and scientific support for research projects at INEEL for the Department of Energy-sponsored activities, other government agencies, and work for other with industry. He has worked on a Laboratory-Directed Research and Development (LDRD) projects for optimal planning of Boron Neutron Capture Therapy brain cancer treatment, optimal planning of D&D waste, radiation visualization for exposure reduction, and deposition of fiberglass into arbitrary-shaped preforms via a water-fiberglass process.

Previously, Dr. Landon served as a program manager and Principal Investigator on projects, including

- Development of a software package for the automatic shape optimization and graphical display of supersonic and hypersonic aerodynamic vehicles (Air Force and Navy).
- Development of a software package for the real-time computer graphic animation of six-degree-of-freedom vehicle trajectories (Air Force).
- Development of a software package to solve 3-D physical fit compatibility studies (Air Force).
- Development of a software package to find optimal solutions to 3-D packaging problems (Air Force).
- Development of a turnkey animation system for the animation of dynamic phenomena, including stress, temperature, fluid flow, coastal erosion, and tidal prediction (Army Corps of Engineers).
- Performed structural optimization for lightweight a man-portable footbridge (Army).
- Developed software for the optimal object stowage NASA Space Station and Space Shuttles.

The successful completion of these research programs required extensive knowledge of advanced numerical methods and computer programming techniques for software development in the areas of:

1. computer-aided geometry,
2. design optimization (gradient methods, global optimization algorithms),
3. finite element, finite volume, and other engineering analysis codes, and
4. computer graphics.

This included dynamic finite element development for x-ray deposition impulse calculation, spall prediction, nuclear weapon effects, conventional weapons effects, vulnerability and lethality, and center-of-impulse calculations.

From 1986 to 1993, Dr. Landon was an Engineering Instructor at the University of Colorado. Previous to that, he was a structural engineer for Rockwell International, Rocketdyne Division, where he was responsible for the structural integrity of Space Shuttle Main Engine Components.

Ernest C. Perry, Ph.D. – Dr. Perry is the Vice President of Research and Development for the firm and is another of the founding members of the Company. Dr. Perry directs the Development Team and is currently working on the commercialization of the ***Sculptor*** software.

Dr. Perry received his Bachelor of Science degree in Mechanical Engineering, his Master's of Science in Civil Engineering, and his Ph.D. in Civil Engineering/Structural Mechanics from Brigham Young University (BYU). His Master's Thesis was entitled, "Spatial Packaging of Parametric Solids via Optimization"; his Ph.D. Dissertation was entitled, "Three-Dimensional Shape Optimization of Internal Fluid Flow Systems using Arbitrary Shape Deformation Coupled with Computational Fluid Dynamics".

During the course of his career, Dr. Perry has developed a unique three-dimensional shape optimization algorithm. He has been involved with shape optimization research studies for Ford Motor Company, Daimler/Chrysler, and Lockheed Martin Skunkworks.

From 1995 until 1998, Dr. Perry performed finite element analysis for several companies that included: prediction of failure of subsurface geologic structures during coal mining, prediction of stresses and deformation in an anvil of a diamond press, and calculation of displacements and stresses in plastic electrical switch assemblies, and the design and analysis of a flight simulator motion base.

While he was a Research Assistant at BYU, Dr. Perry assembled a collaborative effort between BYU and FIBERTEK to look at flexible assembly tolerancing research. He performed finite element analysis to compute the assembly forces required to join composite panels in an assembly and the resulting deformation and residual stresses in the panels after assembly. PATRAN, MSC/NASTRAN, and SDRC's I-DEAS were used in this project.

As a Structural Engineer for FIBERTEK, he performed linear statics, natural frequency mode shape, and linear buckling analysis of composite railroad car modules and structures using
SDRC's I-DEAS. While there, he oversaw physical destructive tests of the composite modules and instituted a training program for engineers and draftsmen in solid modeling.

Another stint as a Research Assistant at BYU saw him developing and implementing shape deformation algorithms and added NURBS entities to the aerodynamic shape solid modeler for the following projects: Rapid Aero-shape Generator (RAGE) project for the United States Air Force and the Optimal Maneuvering Reentry Body Shape Design Package (MaRB) project for the United States Navy.

As Technical Manager for Graphica Computer Corporation, he created and managed a finite element analysis center and technical support team. While there, he conducted training seminars and demonstrations in the Japanese language. He developed a special element meshing system for a radiosity light simulation software package.

From 1988 to 1989, Dr. Perry developed and implemented a quaternion-based spatial transformation algorithm for Packer, the optimal packaging module for the following project: An Interactive Optimization-Based Computer Graphic Software Package – Phase II for the United States Air Force.

Richard W. Johnson, Ph.D. – Dr. Johnson is the Chief Engineer for the Company, whose experience includes: the application of optimization to engineering design problems; analysis of multiphase flow for fiberglass matte manufacturing processes; courses taught in turbulence modeling, advanced engineering math, advanced fluid mechanics, two-phase flow, ordinary differential equations, fluid mechanics and thermal-fluid laboratory; as well as a Ph.D. thesis advisor for a university student; flow and combustion modeling of effluents from in-situ vitrification (ISV) process for buried waste remediation; research in computational fluid dynamics and heat transfer including 3D code development using k e and ASM turbulence models; development of turbulence wall models; design and commission of apparatus to measure turbulent flow and heat transfer in a square duct with a U-bend; and development of 3D finite-volume codes for simulating turbulent flow and heat transfer in confined flow.

Dr. Johnson's employment background ranges from the following: being a member of the Technical Staff for Sandia National Laboratories in Albuquerque, New Mexico; to a research assistant/graduate student at the University of Manchester Institute of Science and Technology; Assistant Professor of Mechanical Engineering at the University of Kansas, Department of Mechanical Engineering; summer faculty fellow at NASA-Lewis Research Center; Senior Engineering Specialist, Advisory Engineer, and Consulting Engineer at the Idaho National Laboratory (INL).

Dr. Johnson received his Bachelor of Arts degree in Physics and Master's degree in mechanical engineering from the University of Utah; and his Ph.D. in Mechanical Engineering from the University of Manchester Institute of Science and Technology in England. His Ph.D. thesis was entitled, "Turbulent Convecting Flow in a Square Duct with a 180-Degree Bend; an Experimental and Numerical Study".

Wade L. Foster – Mr. Foster, the Company's Chief Financial Officer, received his Bachelor of Science degree in Civil Engineering from Brigham Young University and a Master in Business Administration from Texas A&M University in College Station, Texas. Mr. Foster is the owner of HK Contractors, Inc., a $60+million-a-year heavy highway and utility contractor located in Idaho Falls, Idaho.

Carolyn Harrison, Director of North American Marketing/Technical Writer, represents Optimal Solutions in marketing and selling the product. Ms. Harrison has over 33 years of sales, marketing, and technology commercialization experience.

Ms. Harrison has a Bachelor of Arts Degree from the University of Idaho with further education in Technical Writing, Marketing, Sales, Business Development, Business Law, and Finance at Arapaho College in Denver, Colorado.

Having worked as a Senior Account Executive at the Idaho National Engineering and Environmental Laboratory (INL) for EG&G and Lockheed Martin, Ms. Harrison negotiated approximately $40M worth of contracts while at the Lab.

As Director of Marketing for the second-largest architectural/engineering firm in the world, Hellmuth, Obata and Kassabaum (HOK), Ms. Harrison worked in the firm's Denver, Dallas, and Tampa offices.

Previous to that, Ms. Harrison worked as a real estate sales associate in Denver, Colorado, for the largest commercial/residential real estate company in the State of Colorado; an Independent Landman in southwestern Colorado, writing lease documents and negotiating oil and gas land transactions for independent oil and gas companies; and as Public Relations Manager for a newly-formed, at the time, business information firm in San Diego, California.

John Jenkins, the Director of Sales for North American Operations for Optimal Solutions Software, LLC, took his first position out of college at General Electric Steam Turbine Generator Division's Interactive Graphics Group in Boston, Massachusetts. Then, on to Bethlehem, Pennsylvania, first as CIM Laboratory Manager at Lehigh University; then, to Regional Business Development Manager for the Ben Franklin Technology partners. Mr. Jenkins then led the development of an Internet collaborative engineering design system and the creation of a $4 million venture-backed spin-off from the Department of Energy's Idaho National Engineering and Environmental Laboratory (INL), located in Idaho Falls, Idaho and operated, at that time, by Lockheed Martin and Bechtel Corporation.

Selected Publications of Optimal Solutions Personnel:

Johnson, R. W., Editor in Chief, The Handbook of Fluid Dynamics,*CRC Press* 1998.

Perry, E. C.; Balling, R. J.; Landon, J.D.; and Johnson, R.W.; "Numerical Shape Optimization of Three-Dimensional, Laminar, Branching Flows", Proceedings of ASME FEDSM '00, June 11-15, 2000, Boston, MA.

Perry, E. C.; Balling, R. J.; and Landon, M. D.; "A New Morphing Method for Shape Optimization", *Seventh AIAA/USAF/NASA/ISSSMO Symposium on Multidisciplinary* Analysis *and Optimization*, Lt. Louis, MO, September 2-4, 1998.

Perry, E. C.; Balling, R. J.; Landon, M. D.; and Johnson, R.W.; "Aerodynamic Shape Optimization of Internal Fluid Flow Systems", *16th AIAA Applied Aerodynamics Conference,* Albuquerque, N.M., June 15-18, 1998.

Landon, M. D.; Yeager, D.; Rapid Aero-shape Generator (RAGE), ASD-TR-95-1000, August 93, Aptek, Inc., Colorado Springs, CO (DTIC AD-A295635).

Landon, M. D.; Perry, E. C.; Hall, D. W.; Udy, J. L.; Automatic Supersonic/Hypersonic Aerodynamic Shape Optimization, AIAA Applied Aerodynamics Conference, Presented June 21, 1993, Colorado Springs, CO.

M. D. Landon and R. J. Balling, "Optimal Packaging of Complex Parametric Solids According to Mass Property Criteria", ASME ADVANCES IN DESIGN AUTOMATION – OPTIMAL DESIGN AND MECHANICAL SYSTEMS ANALYSIS, Vol. 2, pp127-134, presented September 16, 1990, at the ASME 16th Design Automation Conference, Chicago, IL.

M. D. Landon, E. C. Perry, D. W. Hall, and J. L. Udy, "Automatic Supersonic/Hypersonic Aerodynamic Shape Optimization", AIAA Applied Aerodynamics Conference, presented June 21, 1994, Colorado Springs, CO.

R. W. Johnson, M. D. Landon, "Optimization of Pressure Drop and Average Heat Transfer Coefficient through Shape Deformation of a Curved Flow Channel", Open Forum, Proceedings of the 4th ASME/JSME Thermal Engineering Joint Conference, Lahaina, Maui, HI, March 19-24, 1995.

M. D. Landon and R. J. Balling, "Optimal Packaging of Complex Parametric Solids According to Mass Property Criteria", ASME TRANS. JOURNAL OF MECHANICAL DESIGN, June 1994.

Johnson, R. W.; Landon, M.D.; and Camp, A.; "Shape Optimization of Electronic Cooling Channels," ASME publication HTD-Vol. 319/EEP-Vol.15, proceedings of the ICEME (ASME Winter Annual Meeting), San Francisco, November 12-17, 1995, pp. 17-23.

Johnson, R. W. and Landon, M.D., "A B-Spline Based Collocation Method to Approximate the Solutions to the Equations of Fluid Dynamics", FEDSM99-7160, Proceedings of the 3rd ASME/JSME Joint Fluids Eng Conf, July 18-23, 1999 San Francisco, California.

Johnson, R. W. and Landon, M.D., 'Chapter 14 Design Optimization' CFD in Industrial Combustion, Baukal, C. E., ed., *CRC Press*, Boca Raton 2001.

VII. OPERATIONS

Optimal Solutions Software, L.L.C. was formed in January, 2001. Its goal was to take tools created in Research and Development activities under Optimal Solutions, Inc., for general CFD-based shape deformation and shape optimization and create a commercial quality product (***Sculptor***) for engineers to use in cooperation with CFD analysis software (commercial CFD or in-house CFD codes).

Four equal partners make up the Optimal Solutions partnership: Ernie Perry, Mark Landon, Richard Johnson, and Wade Foster.

World headquarters, the central marketing and sales office, and other technical and administrative work are performed in Idaho Falls, Idaho. The research and development operation is located in Provo, Utah.

Distributor Mindware, Inc. in Novi, Michigan, is responsible for marketing and sales in the U.S. Automotive Industry, as well as Germany. With offices in Korea, Spain, and India, Mindware affords marketing and sales coverage in other parts of the world, as well. As stated earlier, sales and support for the European Union is located at Advantage CFD, in Brackley, United Kingdom, with resellers in the Czech Republic and France. Marketing, sales and support in Japan is covered by VINAS with its main office in Osaka and another office in Tokyo. Sightna (Engineous subsidiary) is the Optimal Solutions distributor in China.

Optimal Solutions has the necessary modern computing resources needed for state-of-the-art software development and office work and continues to upgrade and keep current in a business that relies on the best and most up-to-date computing resources. Current computing resources include:

- Seven desktop PCs running Redhat or Suse Linux. These PCs have high-speed CPUs and high-end graphics accelerators. Adequate storage devices, such as hard drives, zip drives, CD-RW drives, etc., are attached.
- Several desktop PCs running MS Windows XP. These computers are used for word processing, accounting, Internet communication, web page publishing, etc. Photo-quality color printers are used for proposal writing, invoices, reports, and data entry.
- Four dual-boot laptops capable of running both Redhat Linux and MSWindows. These serve as daily development platforms, as well as computing, marketing, and training resources while on travel.
- Hewlett Packard workstation running the HP UNIX operating system.
- Silicon Graphics workstation running the IRIX operating system.
- IBM workstation running AIX.
- All the necessary office equipment necessary (copy machines, fax, printers, etc.).
- High speed Internet access.
- With proceeds from the $10,000 cash prize awarded the Company at the Idaho TechLaunch Idaho Start-Up Company Most Likely to Succeed Competition in June, 2006, a high-end multi-cpu AMD 64bit cluster running Suse Linux was purchased. This new resource allows the Company to solve very large CFD models--resulting in another market opportunity for the Company.

VIII. FINANCIAL PLAN

History

Four equal partners formed Optimal Solutions Software, LLC, in January 2001. Desiring a conservative approach to launching, and perpetuating, the life of the ***Sculptor*** product, the four Optimal Solutions partners bore the start-up costs, equally, as follows:

> Ernest Perry, Mark Landon and Richard Johnson, owners of Optimal Solutions, Inc. (the initial name of the company at that time) contributed the technology and software that comprised the ***Sculptor*** shape deformation and shape optimization code.
>
> In order to sell the ***Sculptor*** product to the general public, it was necessary for the company to make the software "user friendly" by creating a commercial graphical user interface (GUI). Mr. Wade Foster, the fourth partner in Optimal Solutions Software, L.L.C., provided the necessary initial investment capital to develop the ***Sculptor*** GUI.

The initial investment from the four partners, and income from several customers, advanced the development of the ***Sculptor*** GUI. Additional, borrowed capital and some uncompensated labor were needed in order to finalize the GUI development and commence the marketing activities.

It is important to note that the four partners who founded the Company were very careful—even frugal—in spending only what was necessary to bring the ***Sculptor*** product to its current state of development. Since the product is currently commercially viable and producing revenues, the time to look at the purchase of this Company is now.

Current Status

Unprecedented success with NASA in the field of computational fluid dynamics has resulted in the Company having been successfully awarded another Small Business Innovative Research contract, as well as the second phase of the SBIR--the only NASA SBIR awarded in FY 2003 in the State of Idaho. The information gleaned from this R&D project has greatly enhanced the product and its attractiveness in the marketplace.

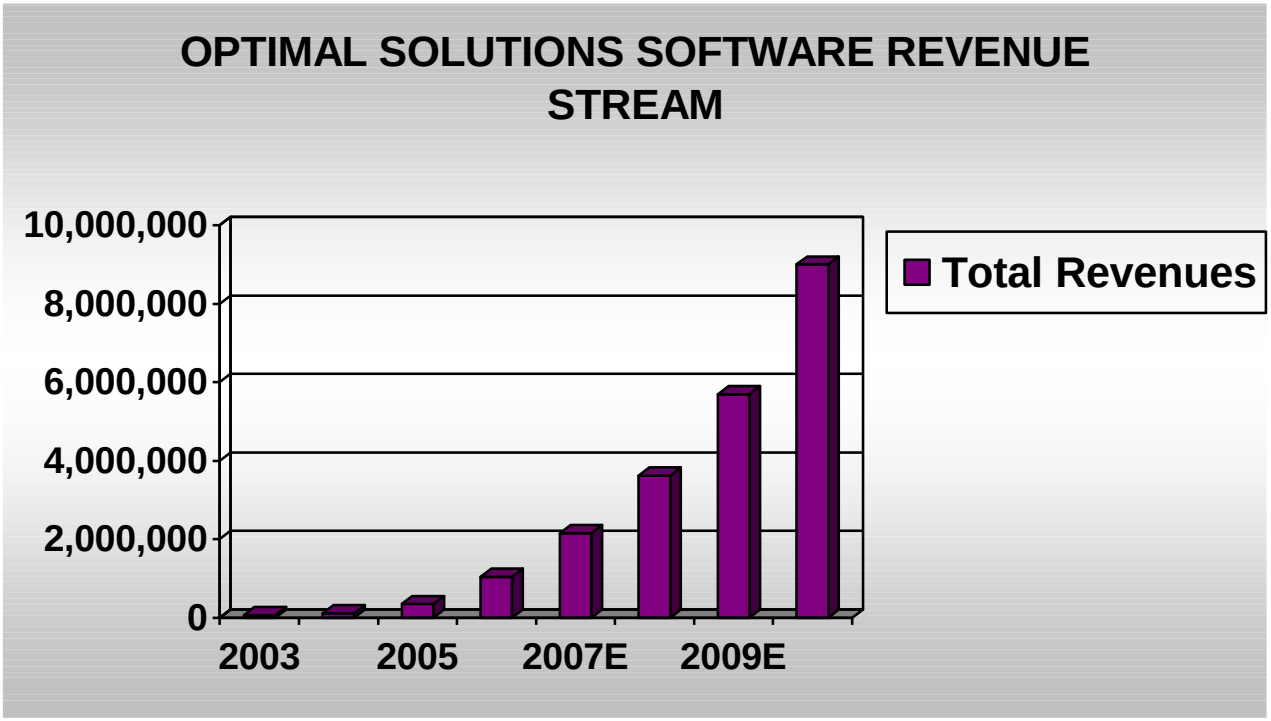
Additionally, in May, 2006, the Company partnered with Engineous Software, Inc. of Cary, North Carolina, on another Phase I SBIR for "Improved Modeling Tools for High Speed Reacting Flows". The goal of the research was to investigate the use of a software integration and automation framework to seamlessly link together CFD, structural analysis and mesh morphing tools to solve fluid-structure interaction problems". The two companies are presently in the throes of preparing a Phase II follow-up submittal, which is due in September, 2006, to Wright-Patterson Air Force Base. Revenues generated from the second-phase SBIR will be approximately $725K, split evenly among the partners.

Revenue Generation

Revenue for the Optimal Solutions' ***Sculptor*** software has been generated from the following sources: **non-exclusive and/or exclusive licenses, training, consulting services, and grants.**

Revenue Assumptions

The Company has concluded from the exponential growth in the revenue stream from the outset of the marketing/sales effort in October, 2003, to today; coupled with the substantial CFD design optimization market, that the revenues derived from the ***Sculptor*** software tool will be sizable as shown in the MARKET segment above.



Statement of Income

The Company's profit and loss statement from FY2003 through FY2005, with corresponding projected revenue figures through FY2010, is reflected on the following page.

OPTIMAL SOLUTIONS SOFTWARE, LLC
PRO FORMA STATEMENT OF INCOME
for years ending December 31,…..

	ACTUAL			FORECAST				
INCOME STATEMENT	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
REVENUE								
Sales	$ 64,400	$ 115,446	$ 348,305	$ 673,000	$ 1,691,452	$ 2,886,196	$ 4,800,000	$ 8,000,000
Services				75,000	157,000	435,000	600,000	700,000
Research Grants				300,000	300,000	300,000	300,000	300,000
Total Revenues				**1,048,000**	**2,148,452**	**3,621,196**	**5,700,000**	**9,000,000**
***Less* Cost of Goods Sold**								
Sales								
Labor				0	10,000	12,000	15,000	20,000
Total Cost of Goods Sold	**0**	**0**	**0**	**0**	**10,000**	**12,000**	**15,000**	**20,000**
GROSS PROFIT	**64,400**	**115,446**	**348,305**	**1,048,000**	**2,138,452**	**3,609,196**	**5,685,000**	**8,980,000**
OPERATING EXPENSES								
Salaries/wages	100,753	302,595	314,282	477,000	1,350,000	1,782,000	2,592,000	3,240,000
Employee benefits	0	0	0	66,240	432,000	570,240	829,440	1,036,800
Payroll taxes	0	0	0	15,836	33,048	43,623	198,288	247,860
Sales & Marketing	28,271	90,727	142,716	25,000	420,000	504,000	600,000	720,000
General & Administrative	14,547	29,063	24,705	48,850	124,000	138,000	166,000	191,000
Miscellaneous	2,474	6,341	8,179	52,000	104,600	159,900	211,000	268,000
Total Operating Expenses	**146,045**	**428,726**	**489,882**	**684,926**	**2,463,648**	**3,197,763**	**4,596,728**	**5,703,660**
OTHER INCOME/EXPENSES								
Other Income	0	0	0	0	0	0	0	0
Interest Expense - Loans	0	0	0	0	0	0	0	0
NET INCOME (LOSS) BEFORE TAXES	**(81,645)**	**(313,280)**	**(141,577)**	**363,075**	**(325,196)**	**411,433**	**1,088,272**	**3,276,340**
Income Tax Expense	0	0	0	0	0	52,715	163,241	492,801
NET INCOME (LOSS) AFTER TAXES	**(81,645)**	**(313,280)**	**(141,577)**	**363,075**	**(325,196)**	**358,718**	**925,031**	**2,783,539**
CUMULATIVE NET INCOME (LOSS)	**(81,645)**	**(394,925)**	**(536,502)**	**(173,427)**	**(498,623)**	**(139,905)**	**785,126**	**3,568,665**

Services - includes consulting/ training
Sales/Marketing - includes marketing/promotion advertising, brochures, website, exhibits, trade shows, clients visits
General & Administrative - includes office expenses: rent, utilities, internet, repairs/maintenance, insurance, telephone, postage, office supplies
Miscellaneous - includes distributor support, customer support, professional fees, training/development, bank charges, depreciation, WebEx expenses, miscellaneous

NOTE: All losses covered by investment capital - no debt.

IX. SUMMARY

In summary, the Optimal Solutions team, in its attempt to bring the ***Sculptor*** software product to market in the most timely, efficient, and effective manner, has assembled the best CFD-based professionals and marketing and sales team in the business.

The Company relies on a simple doctrine of striving to provide an environment, products, and services that continually meet and exceed expectations.

The founders of Optimal Solutions Software, LLC, established the Company upon the belief that consistent application of principles, in conjunction with outstanding personnel and technology, will provide a unique position for the Company and its people to embrace present challenges that will develop into future successes.

Just as the popularity of the Xerox and Kleenex brands gave rise to their respective names being used interchangeably as either a noun or a verb, so too, for this up-and-coming revolution to the CFD design world:

"Let's Sculptor this…"
Willem Toet, Senior Aerodynamicist
Honda Formula 1 Racing