• Symphony Overview
• Engineering Services Overview
• Case Studies
Symphony Technology Group Completes Acquisition of MSC.Software; Transition to Privately Held Company Creates Foundation for Growth; MSC Appoints New CEO, CFO

PALO ALTO, Calif. - October 14, 2009 - Symphony Technology Group (STG), a private equity firm with a strategic focus on software and services, today announced it has successfully completed its acquisition of MSC.Software Corporation (Nasdaq:MSCS). MSC.Software is a global software company, with industry leadership in engineering simulation solutions, and whose suite of applications and services drive innovation through accelerated design, improved product quality, and reduced engineering costs. Under the terms of the deal, Maximus Holdings Inc., an investment vehicle of STG and co-investor Elliott Management Corporation has purchased all outstanding shares of MSC stock for a price of $8.40 per share in cash, a total purchase price of approximately $390M. Effective immediately, Dominic Gallello joins MSC as CEO. Gallello comes to MSC from Graphisoft, a Budapest-based architectural design software developer, where he was CEO. In addition, Jim Johnson joins MSC as CFO. Johnson was most recently CFO of VG Holdings, a videogame producer that was acquired by Electronic Arts in 2007.

"STG's mission is to be a catalyst and partner in helping to build great companies, by enabling them to deliver breakthrough value to clients, by investing in growth through innovation and by attracting and retaining the best talent," said Dr. Romesh Wadhwani, founder, Chairman and CEO of STG. "Under the leadership of Dominic, Jim and senior members of the existing MSC management team, we will build a stronger company, leveraging MSC's outstanding reputation, longstanding customer relationships, leading technology, and talented team."

"The acquisition of MSC by STG is the culmination of Elliott's activist effort to maximize shareholder value by finding the right partner for MSC," said Jesse A. Cohn, portfolio manager at Elliott. "STG's outstanding track record of working with companies to improve their execution and innovation will help MSC truly succeed as a leader in simulation software for manufactured products."

"An investor like STG will be an active partner for the MSC team," said Ashfaq A. Munshi, Interim CEO and President of MSC. "MSC has made important strides during the last year, and STG will accelerate that progress. STG has consistently helped its portfolio companies to achieve best-in-class business performance by focusing on improving value delivered to customers. While I will now transition out of my interim CEO role, I'm very excited about the future of MSC."
Symphony Technology Group nutre prospettive ottimistiche per i settori del software e dei servizi
Il portafoglio dell’impresa d’investimento privata sta registrando una domanda sostenuta di servizi, analisi di dati e servizi di analitica predittiva

27 Aprile, 18:37 GMT

Symphony Technology Group (STG), una società d’investimento privata specializzata in investimenti strategici a lungo termine, ha rilasciato oggi dichiarazioni ottimistiche per i settori del software e dei servizi e un aggiornamento sull’andamento delle aziende facenti parte del suo portafoglio.

Al 27 aprile 2010, le aziende facenti parte del portafoglio di STG sono: Capco; Symphony Information Resources Inc.; MSC.Software; Symphony Services; Teleca; Netik; Lawson Software; e Aldata. Compiessivamente, le suddette aziende generano un utile pari a 2 miliardi di dollari e impiegano 15.000 dipendenti a livello mondiale.
Symphony Services – Corporate Summary

Product Development
Commercial Grade Software Product Development Capability

Engineering Services
Engineering Design & Analysis Services across Automotive and Aerospace

Embedded Systems and Software
Complete Product Development Capability
World Class Team and Standards
- World-class talent with over 3,500 employees
- Approximately 600,000 sq ft across 6 delivery centers
- 6 Sigma process proficiency
- Strong IP Protection: ISO 27001 certified
- ITIL Compliant (ISO 20000) and SAS70 Certified infrastructure
- Certified Agile Development personnel

Exceptional Delivery Record
- Commercial Software Engineering DNA & Focus
- More than 150 clients
- More than 300 products under management
- 1,200 product releases annually
- 1:1 Onshore/Offshore productivity
Markets Served

Enterprise Software
- ORACLE
  - Torexretail
- LAWSON
- MIOSS
- redhat

Storage & ILM
- IRON MOUNTAIN
- Kazeon
- EMC
- adaptec
- NetApp
- MIMOSA

Engineering Services
- agile
- VOLTH
- autodesk
- Faiveley SA
- MSC Software

Telecom & Mobile
- AVAYA
- NORTEL
- ciena
- BROADCOM
- ELLACOYA NETWORKS

High Tech Mfg Design
- HITACHI
  - MOTOROLA
- Bilcare
- freescale
- ASPECT

Service Providers
- IPI
  - capco
  - D&B
- Patent Board
  - The generations network
Symphony ES – Key Differentiators

• The only player in India capable of providing high-end Flight Physics (Aerodynamic Data Analysis, Mass Properties, CFD Analysis, Aero Elasticity, Flight Dynamics) end-to-end analysis

• Symphony’s Product Development rigor for ISV’s replicated into Engineering software development & ability for quick ramp-up and turnaround of knowledge transfer capability in GOC model

• Our close partnership with MSC, the defacto standard in the Structural Analysis space, gives an enormous edge vis-à-vis other ESO service providers & helps us enter other targeted customer segments - especially Automotive and Aerospace
  – One stop solution for all Meshing and Analysis requirements
Recognized as a Leading Service Provider

Recognized Technology Visionary
- Largest Specialist Product Engineering Firm
- #1 Rated R&D Services Company by Zinnov Consulting Ltd.
- #1 2009 “Best Offshore Product Development Partner” by Global Service 100 & Four-time GS100

Top 10 Service Providers: OPD
1. Symphony Services
2. EPAM Systems
3. Luxoft
4. Ness Technologies
5. HCL Technologies
6. GlobalLogic
7. Exigen Services
8. L&T Infotech
9. MindTree
10. Mera Networks
Source: Global Services and neoIT, 2009 Global Services 100 Study
Symphony ES – How do we Engage

- Setting up Process (Onsite/Offshore)
- GOC Handbook
- Process (Knowledge) Transfer
- Additional Trainings
- Operation Metrics
- Delivery
- Governance
- Infrastructure availability
- Business Continuity
- Acceptance Criteria

2-way of publishing projects versus people availability

Core Team with SSC

Shortlists

Competency Center (Pilot)

Engagement

Pilot Team selections / Profiles

Acceptance Criteria

Flex Team

Core Team Ramp up

Readiness for Operation

0 1 2 3 4 months
• Symphony Overview
• Engineering Services Overview
• Case Studies
**Engineering Software Development**

- CAD/CAM/CAE/PLM software development
- CAD-CAE integration
- Interface development
- PLM implementation and customization
- Scientific computing
- Systems Simulation

**Tools**
- Enovia / Teamcenter / Windchill / Agile PLM
- Matlab / Fortran / C++ / Python for scientific computing
- CAA / Java for interface development

**CAD Design**

- 2D to 3D migration
- Modeling / Surfacing / GD&T
- Detailing & tool design
- Assembly & digital mockup

**Tools**
- Catia
- Pro-E
- NX (Unigraphics)
- Solid works
- Autodesk Inventor

**CFD Analysis**

- Internal / external CFD
- Rotational flows CFD (moving mesh)
- Fluid thermal analysis
- Fluid structural interaction analysis

**Tools**
- Fluent, Ansys – CFX, Star-CCM, ICEM-CFD, Centaur

**CAE Analysis**

- **Disciplines**
  - NVH / Durability / Crash / Vehicle Dynamics

- **Analysis Types**
  - Linear, non-linear /
  - Thermal / Acoustics /
  - Optimization / DOE

**Tools**
- Nastran / Patran / Dytran / Adams / Ansys
- SimXpert / SimManager / Marc
Meshing Factory offering

**Description**
- Take CAD model as input data or create CAD elements as required
- Create discrete components (discretization) of model with finite element cells required for analysis
- Deliver preprocessed model ready for analysis - complete with meshed geometry and defined boundary conditions
- Automate manual tasks such as CAD cleanup and surface stitching as required

**Scope**
- Edit, clean, create or repair model geometry as required
- Determine appropriate analysis approach – finite element or finite volume
- Discretization
- Define appropriate boundary conditions
- Applicability across the following
  - Structural analysis
  - CFD analysis
  - FSI (fluid structure interactions) analysis

**Benefits**
- Increase time to market for complex analysis
- Reduce cost per analysis through leverage of Symphony multiple domain competencies
- Increase quality of complex analysis through tool, methodology, and automation framework leverage

**INPUT**
- Import from various CAD products (CATIA, NX, Pro-E)

**PRE-PROCESSING**
- Geometry clean up
- Automated & manual meshing

**OUTPUT**
- FEA Model
- Meshed Model (Nastran, LS Dyna, Ansys)
## ES Offerings – Aero/Auto

<table>
<thead>
<tr>
<th>CAE</th>
<th>CFD</th>
<th>CAD</th>
<th>Software Development</th>
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| • Design solutions  
• Structural Analysis  
• Mechanism and Multi-body Dynamics  
• Structural integrity  
• Fatigue & Damage Tolerance  
• Thermal Analysis  
• Mechanisms for Spacecraft Systems | **Flight Physics/CFD**  
• Aerodynamics  
• Loads and Aeroelastics  
• Mass Properties  
• Wind Tunnel Support  
• Computational Fluid Dynamics  
• Methods and Tools  
• Rapid decompression | • Parametric Modeling  
• Surface Modeling  
• Tool design  
• Routing, piping & wire harness  
• Engines & Fuel Systems | • Development/maintenance of in-house Software tools  
• Simulation tools with integrated GUI  
• Integration in any CAx environment through open general code coupling interface |

### Disciplines
- NVH  
- Durability  
- Crash  
- Vehicle Dynamics & Mechanisms (ABS & Safety Systems)

### Analysis Types
- Linear, Non-Linear  
- Thermal  
- Acoustics  
- Optimization/DOE  
- Full body Aerodynamics  
- HVAC  
- Filters/Fuel/Exhaust Systems  
- Disk brake oil systems  
- Windshield Deicing analysis  
- Seating & Interiors  
- Chassis  
- Sheet metal & Plastics  
- Electrical wirings  
- Steering & Brake Systems
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**Problem**
- Intake CFD analysis to optimize the Intake design.
- Part of a larger project to compare the outputs of different commercially available CFD tools results.

**Solution**
- Symphony established dedicated CFD team (part of Flight Physics team).
- CFD solutions were delivered with emphasis on flow behavior rather than a packaged colorful plots.
- Value addition comments and future scope defined for improving results for the customer.

**Benefits**
- Excellent compliance to customer specified quality standards.
- Value additions for improved results by way of consultation suggestions.
- Completed additional meshing for result improvement along with the project.
CFD Simulation for Automotive Industry

**Problem**
- Automobile Industry in today’s scenario is extensively using CFD for both internal and external flow simulations.
- CFD simulations are used for quick analysis of designs and faster turn around to market with optimized design solutions for this industry.

**Solution**
- Symphony established a CFD simulation setup for the client Mindid (Indo – Japanese Collaboration).
- CFD simulation of a Air-Conditioning system Louver design is shown in this cases study.

**Benefits**
- Improved time to market.
- High degree of achieving passenger comfort by design optimization.
Modeling Spot welding for Volkswagen AG Body In White calculations

Challenge

- Modeling spot welding for body-in-white calculations

Solution

- MSC.Nastran with enhanced analysis capabilities for spot weld modeling

Value

- Time savings in variant testing, simplified handling of spot welds, greater accuracy and reliability
**Challenge**
- Investigate NVH performance of commercial vehicles

**Solution**
- MSC.Nastran acoustic solution

**Value**
- Accelerate engineering cycles. Efficiently exchange model data with other groups
**Scope of Work**

- Parametric modeling of components from the 2D Drawing
- Design of A-class surfaces for Automotive Industry
- Drafting & detailing including GD&T

**Solution**

- Symphony is working with multiple Customers on CAD surfacing, modeling & drafting
- Caters to Automotive & General Engineering

**Benefits**

- Improved accuracies of Design
- Industry best practices
- Increased Productivity due to the use of macros
CATIA Add-on package development – Pipeline

Scope of Work

- Project name: “BF GEO”
- BF GEO will consist of the analysis, design and developing an application to create a belly fairing geometry through parameters in CATIA environment

Solution

- Symphony to provide expertise in the add-on module development for the customer.
- The expertise area include Advanced mathematical background in geometry modeling (b-splines, nurbs), advanced knowledge of CATIA, CAA coding.

Benefits

- Faster turnaround in design optimization
- Unique toolset for the customers design team
- Cost savings due to quick optimization

Belly Fairing
Case Studies - Aerospace

**Linear Static Analysis**
- Primary objective of the task was to conduct Model Check, Normal modes analysis, Mass properties check, 1g gravity load check to find out load path, Lpolen check, manual check for fasteners. Multi-subcase with different load cases.
- Margin of safety calculations, limit load case and presentation case. Integrated modes analysis.

**Intake Aerodynamics CFD Analysis**
- Intake CFD analysis to optimize the intake design.
- Part of a larger project to compare the outputs of different commercially available CFD tools results.

**AeroAMI - Tool Development & GUI Customization**
- AeroAMI Program generates aero data for Loads input for use in a multidisciplinary wing design program.
- Conversion of existing Matlab code with enhancements to upgraded version of Matlab.

**ADAMS Simulation of Landing Gear Retraction**
- To carry out landing gear retraction test using MSC Adams and Adams/Control along with control system software MSC Easy5.
- The result of using ADAMS/Controls in conjunction with control systems software is a complete and accurate picture of mechanism's real-world operational behavior, with the effects of control systems fully represented.

**Mesh Factory for Global Aerospace Manufacturer**
- Multi discipline engineering analysis requires complex meshing.
- Improved time to market 30% for complete aircraft mesh.
- Solutions 100% compliant with manufacturer specifications.

**CATIA Add-on package development**
- RGEFO will consist of the analysis, design and developing an application to create a belly fairing geometry through parameters in CATIA environment.
- Faster turnaround in design optimization.
- Unique toolset for the customers design team.
- Cost savings due to quick optimization.
Case Studies - Automotive

Modeling Spot Welding for Body in White
- Manufacturer required modeling spot welding for complex body-in-white calculations
- Time savings in variant testing using improved features
- New CWELD capability in Nastran, which helps in reducing 20% time.

In-house Aerodynamics CFD Analysis
- CFD simulations are used for quick analysis of designs and faster turn around to market with optimized design solutions
- Improved time to market
- High degree of achieving passenger comfort by design optimization

Meshing Factory for an Auto-engine manufacturer
- Symphony established a Meshing Factory
- Facilitates reuse of parts for modular mesh and meshing process
- Factory drives leverage across products, parts, platforms, domains

Crash Analysis using MSC Dytran
- Conduct vehicle crash analysis for road worthiness and safety certification
- Safety critical analysis accelerating certifications
- Time and Cost involved in analysis

Legacy Data Management
- 3D Modeling / Migrations
- Mfg Drawing Creation
- Quality deliverable for the client by multi point checks and QA mechanisms
- Solution based on Understanding Design intent & Mfg. processes

ABS Analysis using ADAMS
- Prevent the vehicle running at 70kmph from skidding on a wet road while braking
- Insure controlled Braking using Antlock Braking System (ABS)
- Safety critical analysis for proving vehicle road worthiness and accelerate certifications
Filippo Carcani
filippo.carcani@mscsoftware.com
Cell.+39-3357421941
Uff. 06.4227-2254