

# CIO Outlook

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## Top 25 Simulation Solution Providers - 2017

**F**rom the smallest of elements such as nuts used in a common man's commuter bike to a space launch vehicle, today all organization are going through one or the other form of simulated inspection. From planning and production to testing product behavior, simulation has come to the forefront while designing innovative products and delivering business strategies.

The need for simulated content at the forefront of design and development has played a vital role in the rise of simulation content developers and solution providers. Manufacturing sectors such as a microprocessor, integrated circuits, 3D printing and intricate machinery have a dire need for simulated content as they regulate losses of raw material, resources, and revenue. Organizations are reaching out to AVR content developers for disaster prevention modules to be better prepared for the adverse effects of the uncertainty.

When Oculus Rift, an AVR simulation platform that started as a kick-starter campaign went on to raise \$2.4million, the content development industry woke up

to the revolution of simulated content and augmented virtual reality. By 2020, Virtual Reality in itself is expected to surpass 1billion in global revenue generation, and that is just 10 percent of the entire simulation industry. Considering the manufacturing sector, the product life cycle of an organization has significantly reduced the lead-time of operation by 40 percent with the implementation of one or the other forms of simulation. Ranging from a simple CADD (Computer Aided Machine Design) modeling to complex Maya iterations, simulation has found its way into the bare essentials of the industry.

APAC CIO Outlook's current edition lists "Top 25 Simulation Solution Providers - 2017" that hold expertise in helping businesses implement the best technologies. The list presents to you some of the most prominent organizations in the simulation industry, capable of leading their clients towards excellence by supporting them extensively. By getting direct support from these eminent simulation solution providers, companies can ramp up their operations.



### Company:

Entuple Technologies

### Key Person:

Rajesh Agarwal  
Director

### Description:

Entuple is a next generation solutions enabler in system design technologies across telecommunication, defence, aerospace, power and utility, academics

### Website:

entuple.com

# Entuple Technologies: Next Generation Solution Enablers

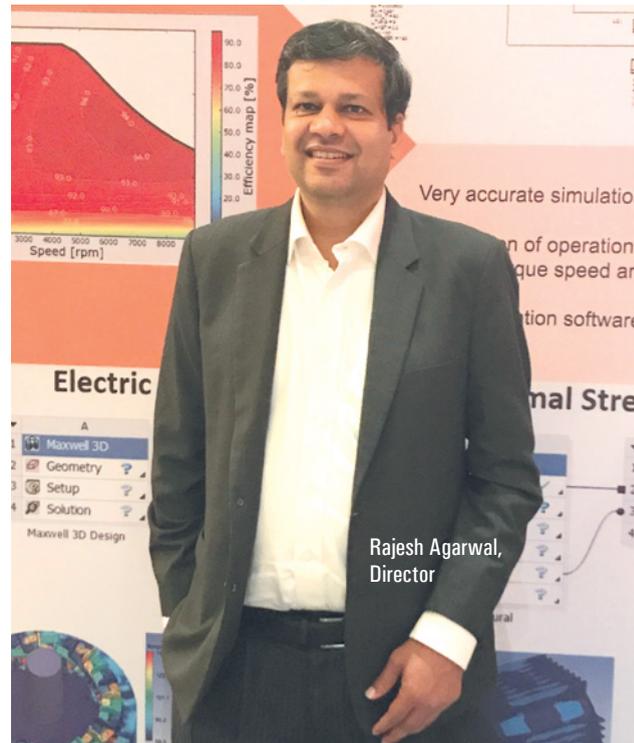
**F**ounded in 2010, Entuple is a next-gen solution enabler in system design technologies in the telecommunication, defense & aerospace, power & utility and academic sectors. In an exclusive interview with APAC CIO Outlook, Rajesh Agarwal Director of Entuple Technologies talks about how the company has positioned itself in the Simulation technology space.

## 1. HOW DOES ENTUPLE'S SOLUTION SUITE PAVE THE WAY FOR MULTI-DIMENSIONAL POSSIBILITIES AND GROWTH FOR THE CUSTOMERS AND ASSOCIATES?

Entuple being partners of Ansys, a simulation company in system design technology works with all Indian companies in a simulation-based product development environment. The company has built technical capabilities in the field of simulation for Electromagnetics, Structural, and CFD design. Entuple enables customers to overcome integrated Multiphysics simulation challenges to achieve high performance optimized product design with the lowest cost in shortest possible development time. This provides a huge benefit to the customers to bring products early to the market with ROI compared to the global standards. These solutions have enabled customers to reduce a significant number of prototypes before achieving actual design goals.

## 2. HOW DO ENTUPLE'S SYSTEM DESIGN CAPABILITIES MAKE IT A CUT ABOVE OTHER SIMULATION SERVICE PROVIDERS IN THE MARKET—HELPING CLIENT ORGANIZATIONS ENHANCE THEIR BUSINESS VALUE?

Today's system design technologies involve Multiple Physics including Structural, Fluid Dynamics, and Electromagnetics to realize product design and validation. Entuple Largely focuses on working with product design companies to simulate Multiphysics product challenges using various technologies including RF, Circuit Simulations, EMI/EMC, SI/PI in the High Frequency domain. Electromagnetic products



like machine design, Power electronics, and Solenoid valves can be simulated using low frequency tools coupled with structural and CFD simulation tools to have a better understanding of product performance before a prototype is built.

## 3. WHAT IS THE REAL WORLD SCENARIO OF THE INDUSTRY? GIVE AN INSTANCE WHERE AN ORGANIZATION HAS UTILIZED YOUR SOLUTION—THE CHALLENGE FACED BY THE CLIENT—THE SOLUTION OFFERED BY ENTUPLE—THE BENEFITS EXPERIENCED BY THE CLIENT AS A RESULT OF THE IMPLEMENTATION?

Today the world is moving towards energy efficiency. Govt of India has made it mandatory for all rotating machine in India to be at least of IE2 grade starting Oct 1, 2017—posing a challenge as Indian industry is not technologically ready for this. Govt of India has a



mandate to reduce carbon emission because of the global commitments. Norms will get more and more stringent in the time to come. Soon most customers will be looking for designing IE4 and IE5 machines too.

In this scenario, Entuple plays a prominent role by developing in-house capabilities to design high-efficiency machines of up to IE5 grade. The team uses simulation to attain this with a minimum amount of time. Bharat Bijlee used simulation approach along with Entuple's intensive training programs, and it has helped them to come up with IE4 design

For the automotive sector again, technology is the big challenge. Although there are some isolated efforts at building indigenous technology bulk of the action that is because of imported equipment. There must be an effort at creating standards and channeling R&D in this area. There must be a support structure for initiatives taken by start-up companies. The projected numbers can still be met by pushing for a technology development at the earliest. Not to forget that the existing internal combustion engine based technology took more than 100 years to evolve and stabilize into the way it is in. The same thing has to happen in EV in less than ten years, which will require an enormous amount of effort in terms of technology and cost.

## 4. WHAT IS THE FIRM'S PLANS PERTAINING TO NEW SOLUTIONS AND TECHNOLOGIES THAT COULD PLAY A ROLE IN THE COMPANY'S OFFERINGS IN THE NEAR FUTURE?

The automotive market is going through disruptive phase especially in India wherein government has mandated

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100 percent electric vehicles on Indian roads by 2030. Huge innovations and development are happening in electric vehicle design to achieve this goal. Solutions on Powertrain, ADAS, and BMS charging systems are happening in the country, and Entuple is working very closely with all automotive OEMs in India to develop solutions in this domain.

Power electronics product development requires complex technologies, which need massive investment to innovate and develop deployable products. These products can now be developed much faster—using simulation tools. Entuple is building expertise in power electronics domain which is going to be very critical for next-generation energy efficient power equipment for solar energy, wind, and automotive. **ACIO**

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