

## Industry Summary: Automotive & Transportation

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### The CEO 360 Perspective: Sustainable Mobility – Vision 2020

Larry Rinek, Senior Consultant in the Frost & Sullivan North American automotive practice, presented this well-attended session. The 30-slide PowerPoint presentation focused on several perspectives, or key domains, of great interest to CEOs. These included global and regional perspectives on: economic aspects, the integrated industry view, competition, industry best practices, technology (powertrain, safety, infotainment), and customers (based on our own proprietary customer research). The audience had questions on GM plans (new pro-electric strategy, such as Chevy Volt plug-in hybrid), particulars on our automotive customer research sample size/mix, the North American powertrain outlook, and why diesel penetration is so high in Europe compared to other world regions.

### Growth Success Story—Growth through Innovation in Business Model and Strategic Partnering

Presented by Pankaj Dhingra, President/CEO of Nanostellar, a California based start up company focusing on IP licensing. Nanostellar's first application is a nanotechnology catalyst for diesel exhaust emissions control.

The talk provided an overview of the company and focused on the key considerations in developing a successful strategic partnership in the automotive industry with long sales cycle and legacy systems and processes. In addition, the growth challenges in a mature industry were also presented. The key to success for Nanostellar was an acute sensitivity to industry dynamics and a business model that created a win for all the partners - vehicle manufacturers, catalyst suppliers, and Nanostellar. Nanostellar positioned itself as a technology partner and not a competitor to the established and dominating catalyst suppliers.

The talk provided a good case study for how a start up company should approach entering a traditional industry with a well-established structure and supply-chain partnerships. The audience had questions about changes in the existing process, lead time to start-of-production, savings and other benefits from Nanostellar technology to vehicle manufacturers and catalyst suppliers. Pankaj was kind enough to answer all the audience questions.

### Interactive Panel Session: Meeting Your Industry's top Three Competitive Challenges

Veerender Kaul, F&S Director of Advanced Automotive Technologies, moderated this panel consisting of Brian McLaughlin of PeopleNet Communications, Kathleen Glass of DriveCam, Jeff Wade of Fleet Management Solutions, and Adam Kotrba of Tenneco (emissions controls).

The interactive discussion was focused on identifying the key challenges in the trucking industry and the technology/system solutions (powertrain/emissions, safety, and telematics) to profitably address these.

At the outset, Veerender provided some key recent trends in the trucking industry, such as the decline in trucking activity, high fuel and other operating costs, new EPA 2010 and anti-idling regulations. The panelists provided their perspective on these trends and high fuel price was identified as the single biggest challenge in the industry. Jeff Wade of Fleet Management Solutions provided his perspective on the telematics needs of heavy equipment operating in remote areas. He defined telematics as a resource tracking and management solution that can significantly improve the operational efficiency of heavy equipment fleets and improve ROI.

Brian McLaughlin talked about the benefits of truck navigation solutions in reducing travel time and cost and improving customer satisfaction through on-schedule delivery of goods. He also talked about the benefits of interfacing telematics with engine and other vehicle systems to not only provide remote monitoring, but also support location based optimized driving to enhance fuel efficiency and safety.

Kathleen Glass talked about the safety aspects of telematics, particularly DriveCam's camera-based solution, which monitors the inside (driver) and outside (immediate front of vehicle) and records a total of 12 seconds of data before and after an event (accident). Such solutions she mentioned have significant potential of reducing insurance costs. However, the need to prove the benefits to insurance companies and other government entities is a challenge in its adoption. Insurance companies generally ask for 3 years of field data.

Adam Kotrba of Tenneco talked about some of the advanced engine technologies and how they help save fuel and reduce emissions. The key technologies identified were automatic start-stop and Auxiliary Power Units (APUs) to provide power during idling, Selective Catalytic Reduction (SCR), Lean Nox Traps (LNTs), and Homogenous Charge



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Compression Ignition (HCCI). Adam also talked about the benefits of using OBDII data to optimize vehicle driving in changing driving conditions, besides supporting remote monitoring/diagnostics and prognostics.

The audience asked questions about specific telematics solutions for school buses, which Brian McLaughlin addressed. Additionally, the audience asked questions about the challenges of working/partnering with insurance companies. Kathleen Glass addressed this question.

#### **Executive Insight—How Microsoft and Ford got in SYNC**

Mr. Velle Kolde, Senior Product Manager, Automotive Business Unit for Microsoft spoke on the Microsoft Auto platform (basically an onboard mini-PC with MS software), as applied in Ford's factory-installed onboard Ford SYNC offering, new for MY 2008 (\$395 option). The SYNC system uses voice-commands to interface with and control in-car communication and entertainment devices such as mobile phones and digital music players. In the event of an air bag deployment, SYNC can directly call the local 911 seven times faster than GM's satellite-linked OnStar solution.

Mr. Kolde talked about the lessons learned from the failed Auto PC solution and the new product development approach and business model they used for the SYNC. Velle also talked about the various considerations and challenges in developing the SYNC, key among them was the different product cycle times of the consumer electronics industry and the automotive industry.

Questions from the audience concerned Google's new browser program vs. MS Explorer, browser solutions that would work in a car, i.e. voice enabled or speech to text. Also, Mr. Kolde was asked what is following Ford for MS Auto: Kia is coming for MY 2010+. Finally, the outlook for embedded telematics solution (OnStar) vs. connected telematics solution (SYNC). Velle's opinion was that both had their unique advantages in specific applications and would co-exist. He believed that most solutions would be a hybrid of the two solutions.

#### **Interactive Panel Session: Seizing your Industry's Top Three Growth Opportunities**

Facilitated by Subroto Banerjee, Senior Partner A&T, the discussion mainly focused on automotive aftermarkets, and was open to the entire audience. A representative of Snap-on was asked to say a few words. The company has traditionally favored higher-value tools for diagnostic technicians but has added new lines of lower-value tools for maintenance technicians. Snap-on's chrome tool side is steady and ongoing. The company likes to sell its tools directly to technicians from its own trucks, a business model that is challenged offshore where employers own the tools and truck fleets work less well.

A review of aftermarket opportunities was undertaken. The OEs are getting so good on hard parts (such as kingpin bearings), that can discourage aftermarket demand. However, Mr. Banerjee pointed out the other aftermarket-personal customization opportunities, which remain strong. CES and SEMA trade shows now collaborate on electronics for the digital lifestyle in cars. With a worldwide parc (sp?) of something approaching 800 million vehicles, that can generate lots of aftermarket demand. The OEs serving US markets will also be spending large sums out to 2020 for CAFE compliance (perhaps \$30 billion for big 3 domestic, plus \$15 billion for Japanese big 3). A question arose whether the MS Auto platform (now OE only, as at Ford) would be coming to aftermarket, no solution yet but could arrive later.

#### **Interactive Session: -Tapping the Growth Potential in Technology Convergence Session: New Applications, New Markets**

Represented by the Frost & Sullivan Automotive & Transportation, Energy, Environmental & Building Technologies, and Chemical/Materials/Food.

The target topics areas included emissions reduction, alternative energy sources, and sustainable products. Senior Consultant Larry Rinek represented A&T at this session, which had many participants from other target industries, such as chemicals.

One question dealt with common use of emissions controls technology in the energy/power generation domain and automotive vehicles. A key example was cited—selective catalytic reduction (SCR) for combustion gas after-treatment of NOx. This technology, using nitrogen-based reductants (such as aqueous urea solutions that break down into ammonia) are highly effective (around 90%) in reducing NOx.

The audience also probed the alternative fuel outlook with the Frost & Sullivan team. One question on waste-to-energy programs dealt with the economic implications of having to pay for waste feedstock (typically if that happens, projects are no longer viable). In building technologies, HVAC and lighting are the key energy consumers, so energy-saving technologies were discussed there. A European manager (John Raspin) provided perspective on European



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initiatives for reducing carbon footprint (carbon dioxide/global warming). The audience was well engaged and provided many questions/comments on the various topics.