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September 2007

Tactical Vehicles

STRATEGY AND MARKET SUPPORT

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Survivable Strategies:

Competitive Positioning in the New TWV Market

Speed is a critical factor in the tactical vehicle market. Speed to respond to a new requirement, to develop new solutions, to ramp up production, to deliver vehicles to the field, and to respond to the next requirement and start the cycle all over again. Field commanders and procurement officials are sacrificing commonality, development schedules, competitions, and price pressure for speed. Are you responding in kind?

Recent military engagements around the world have changed the tactical vehicle space forever. The concept of operations that had unarmored logistics vehicles operating safely behind friendly lines has been swept aside by a determined insurgent threat. Although operations in Iraq and Afghanistan are drawing the most attention, insurgents and terrorists around the world are taking notes.

The most fundamental change is that insurgents have adapted too quickly for traditional methods of setting requirements, developing a solution, and fielding a technology to keep pace. Industry instead of government has taken control of what the next round of protected vehicles soldiers in the field will have at their disposal.

However, the expedient platforms of today will not be the preferred platforms of tomorrow. On their heels will likely be the next generation of tactical wheeled vehicles that incorporate survivability with the mobility and performance of unarmored light and medium tactical vehicles. The competitive landscape for this requirement will be far wider and deeper than any tactical vehicle competition in recent history.

As the end of war-related funding looms sometime in the future, the competitive positioning, investment priorities, and organizational decisions tactical vehicle firms make today may impact their success for years to come.

THE AVASCENT ADVANTAGE

Avascent has extensive experience serving clients across the tactical vehicle market. From major automotive component manufacturers and raw material suppliers to weapon system integrators and armor providers Avascent continues to help companies make the hard decisions. Our consultants combine our deep market knowledge with proven rigorous market validation and strategic planning methodologies to provide invaluable decision support to our defense clients.

SURVIVABLE STRATEGIES:
COMPETITIVE POSITIONING IN THE NEW TWV MARKET

By James Tinsley, Chris Greenwood & Aaron Connelly

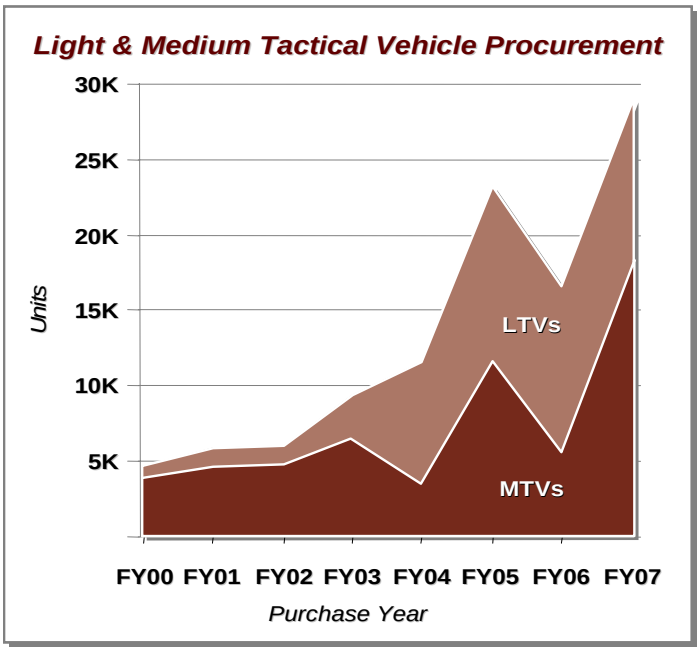
The use of asymmetric tactics in Iraq, and specifically the development and application of improvised explosive devices (IEDs), has exposed critical weaknesses in the current vehicle fleet and created a threat environment with which current assets are ill-equipped to contend.

Initial efforts to combat the prevailing threat environment saw the military focus on two main activities: (1) Up-armoring HMMWVs, and (2) Increasing the production of new vehicles with added protection and survivability.

Up-armoring consists of attaching, hanging, and bolting supplemental armor kits onto an existing vehicle to provide additional protection against IED threats. Although it represents the best interim strategy for fortifying deployed vehicles already in-theater, up-armoring has created new problems that preclude it from being an ideal long-term solution.

The increased weight associated with the added armor puts undue stress on the vehicle's chassis and structural components, and decreases its maneuverability, thus reducing survivability. Fuel requirements are also increased as more energy is needed to power these heavier vehicles while decreased payload means more vehicle trips per ton delivered. These costs, as well as those resulting from the operation of depots seven days a week, eighteen hours a day, at thirty to forty hours of labor per vehicle, create an environment that is untenable, even over the mid-term.

The greater need for up-armoring coincided with an increase in overall demand for tactical vehicles that occurred soon after the commencement of operations in Iraq. Since FY03, the U.S. military has procured over 85,000 tactical vehicles, with major buys of approximately 23,000 vehicles in FY05, and a further 30,000 in FY07. The Services relied heavily on supplemental funding to compensate for the spending gap between programmed peace-time budgets and their heightened demand for vehicles.



Aside from the obvious funding demands created by the acceleration in production, vehicle manufacturers and component suppliers alike were placed under significant pressure to address these heightened requirements. Large vehicle primes, most prominently AM General, sought ways in which to increase manufacturing capacity while suppliers, many of which are "mom-and-pop" companies, struggled to keep up with production.

The long-lead times required by many of the critical vehicle subcomponents further complicated the situation, making planning for future requirements more difficult and the resulting supply channels increasingly complex. Steel procurement, for example, had to be coordinated through multiple suppliers, and fulfillment of orders took twelve to sixteen weeks at times.

In light of these challenges, as well as the general ineffectiveness in keeping up with the evolving threat environment, the military has come to acknowledge that an alternative to the reactive strategy currently being employed is required to support a sustained presence in Iraq and Afghanistan. Implicit in this realization is also the understanding that existing R&D programs tasked with cultivating next-generation vehicles and technologies must be re-evaluated, and potentially restructured, to better align with emerging capability requirements.

Fortunately for the military and the warfighter, political will to fulfill these requirements is extremely high. Congress has consistently demonstrated a willingness to provide whatever support is necessary to sufficiently equip deployed forces. Tactical trucks are regarded as particularly attractive targets as both self-described hawks and doves desire to invest in increased protection to American troops in-theater.

Industrial Capacity Issues

- ***Steel Procurement:*** MRAP has been given a DX rating for the steel it requires, affording it top priority over all other DoD programs that require steel
- ***Sub-Suppliers:*** Vehicle manufacturers tend to rely on the same set of suppliers for key sub-components (e.g., axles bearings, wheels), creating critical capacity concerns in times of accelerated demand

Current debate is therefore centered on the best means to provide those soldiers with the requisite protection while at the same time developing a vehicle that will effectively confront present and future threats. The solution with greatest support to-date is a dual-pronged strategy consisting of the Mine Resistant Ambush Protected (MRAP) vehicle and Joint Light Tactical Vehicle (JLTV) platforms. While the MRAP is intended to serve as a near-term stop gap and to maintain funding lines for future truck procurements, its long-term status is a bit more unclear. Its prospects, as well as those of JLTV and other ongoing vehicle programs, depend greatly on the dynamics arising from the military's presence in Iraq, the timeframe from which drawdown plans are referenced, and the manner in which an exit strategy is executed.

Overview of TWV Programs

The proliferation of DoD truck programs in the last two years has occurred in a manner that might be described, diplomatically, as "non-linear." In the past year, however, the way forward for the military's trucks has become slightly more clear. The roadmap consists of four waypoints—two recent demonstration projects, FTTS and CTV, and two ongoing procurement programs, MRAP and JLTV.

The Future Tactical Truck System (FTTS), managed by Army TACOM, was launched as a research and development initiative, parallel to the Future Combat Systems (FCS) program, to identify the Army's truck of the future. Though it was initially believed that the FTTS program would morph into a procurement program at a later stage, this never materialized. Instead, FTTS has functioned as a demonstration program, the readout of which will play a major role in the development of requirements for the Joint Light Tactical Vehicle Program.

Entrants from Lockheed Martin and Navistar's International Truck division won the contracts to build the FTTS-Utility Vehicle (UV) demonstrator, while AM General built a demonstrator with IRAD funds. Though Navistar and Lockheed Martin were tasked only with construction of a demonstrator, the announcement was the first of a number of signs that new military requirements will cause significant adjustments in the market's competitive landscape. Still, the significance of FTTS should not be overstated. The latest JLTV specifications are much more aggressive, consigning the FTTS-UV to be more of a useful guide to technologies rather than a prototype.

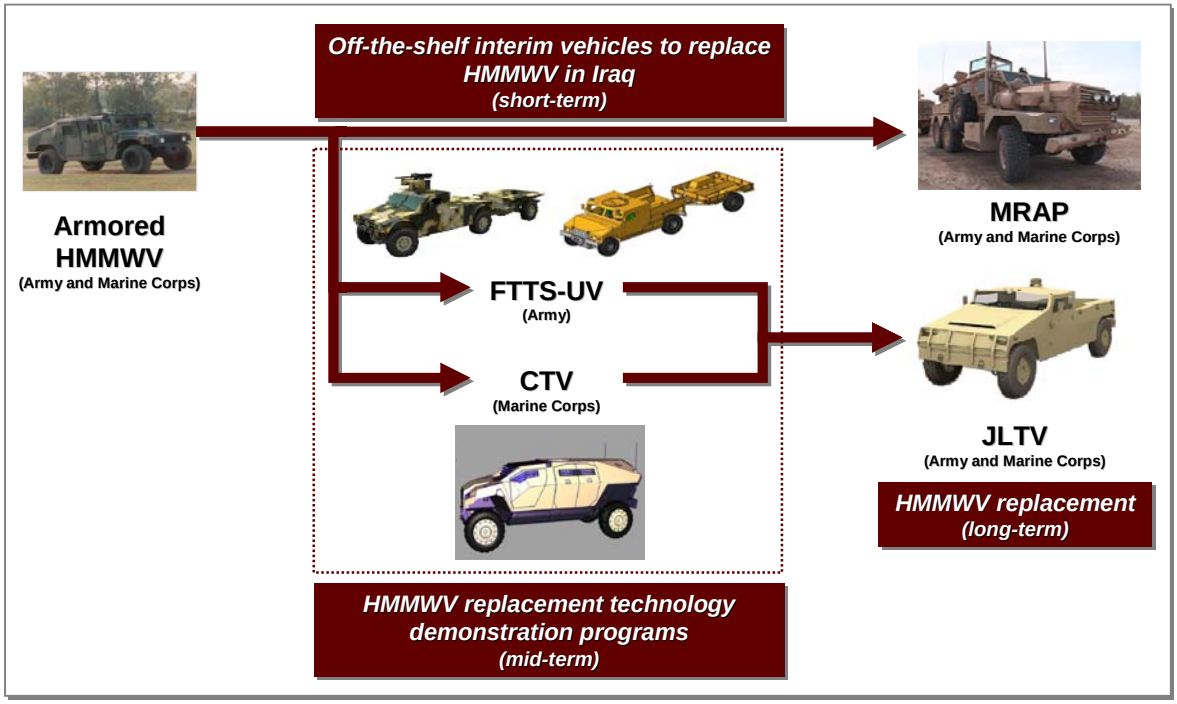
The long-term nature of the FTTS program was in stark contrast to the process that characterized the development of the Combat Tactical Vehicle (CTV). The Marine Corps created the CTV program to address the concerns that the HMMWV was ill-suited to its mission requirements in Afghanistan and Iraq. Marine Corps Combat Development Command (MCCDC) solicited proposals for the demonstration and simulation of a truck that would better

suit its expeditionary warfare model, emphasizing greater capacity and mobility, while boasting less high tech equipment than the Army's FTTS requirements. The difference between the Marines' CTV and the Army's FTTS-UV drew attention to the ways in which the different strategic roles of soldiers affect their truck requirements.

Unlike the above demonstrator programs, MRAP was initiated in late 2006 to provide quickly three categories of tactical vehicles to deployed Army and Marine forces. Management of the procurement effort was given to the Marine Corps Systems Command (MCSC), with a directive to put as many vehicles as production capacity would allow in Iraq over the next year. MCSC leadership responded with a vigorous procurement effort, awarding IDIQ contracts for nine distinct vehicles, and low-rate initial production contracts to six of those. Concerns about the emerging hodgepodge of makes and models were pushed aside in favor of putting the vehicles in the desert as quickly as possible. The nature of this accelerated process has dramatically shaken up the truck market.

The JLTV program has been stood up to replace HMMMV as a tactical vehicle, and over an extended period of time, as a utility truck. Army TRADOC expects to release a request for proposals and award design contracts in the first half of next year.

There will be five JLTV variants to accommodate the different needs of each Service. The expected variants are: Combat Tactical Vehicle, Utility Vehicle, Command and Control On-the-Move Vehicle, Long Range Surveillance Vehicle, and a heavier Ground Maneuver Vehicle. Just over 40,000 vehicles are currently planned, but the ultimate number could end up closer to 160,000 if all HMMWVs were replaced. JLTV is expected to incorporate lessons learned from the FTTS and CTV demonstrators, as well as the ongoing MRAP engagement.



The weight of the HMMMV replacement process continues to rest largely on this program's progress, yet there has been considerable uncertainty about the status of JLTV. Army's record with large-scale modernization projects has been uneven, and the scaling back of FTTS does not inspire great confidence. Already, preoccupation with MRAP has delayed full-scale JLTV production by two years into 2012. Moreover, the new presidential term beginning in 2009 may bring with it major changes in defense funding priorities. JLTV is therefore, paradoxically, the most important and the most uncertain program in the U.S. TWV market.

Strategic Decisions within the Competitive Landscape

Proliferation of Potential Contractors

Several years ago the TWV market was relatively straightforward with clear incumbents. After the FMTV competitive re-buy was awarded to Stewart and Stevenson over Oshkosh in 2003, the big-three incumbents seemed very secure in their respective segments: AM General in light, Stewart and Stevenson in medium, and Oshkosh in heavy. There were a few adjacent platform developments worthy of note, as well as a few truly new players that made tiny ripples that would grow into large waves.

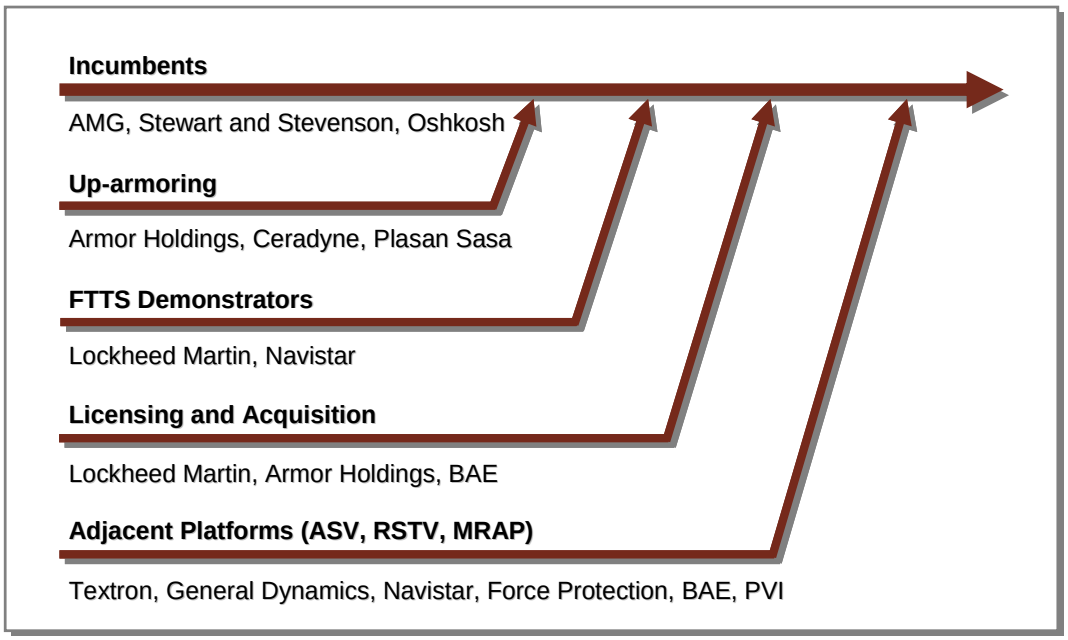
Fast forward to 2007 and decisions are complicated by the variety of strategies at the prime contractor level and the lack of a clear front-runner. The landscape changes weekly, if not daily.

The proliferation of potential prime-contractors based on incumbency, up-armoring, FTTS demonstrators, licensing and acquisition, and adjacent platforms makes the environment particularly volatile. There has been a similar explosion of potential sub-contractors from adjacent defense and commercial markets.

Many potential prime- and sub-contractors are facing the current TWV market as a go/no-go decision for entry into the defense market as a whole, while others are trying to maintain and grow their share against these new providers. The interdependency of this market also means that a strategic error at this point by one company may change the fortunes of a host of others.

Adjacent Platforms & New Players (2002-2004)

- Although only 53 vehicles were in inventory in 2003, Textron's ASV was poised for its first deployment to Iraq with the 984th Military Police Company
- General Dynamics was developing and testing the RSTV which seemed to hold promise for introducing hybrid-electric technology into TWVs
- Armor Holdings owned the up-armored HMMWV, although these were a distinct minority of the overall HMMWV fleet
- Lockheed Martin was licensing the rights to supply HMT's Supacat platform for potential specialized military roles
- Navistar was working with the Army on military applications of commercial truck technologies with its SmarTruck III concept vehicle
- Force Protection was hoping initial sales of Buffalo vehicles to the Army for mine clearance would help it turn a profit as its recreational boat-making business faced a downturn



MRAP vs. JLTV

One of the first strategic decisions companies will have to make is whether to devote scarce marketing and development resources to MRAP, JLTV, or both.

MRAP offers the most immediate opportunities to capture defense revenue, demonstrate technologies and gain past performance qualifications that may help with a potential JLTV bid. However, the acquisition velocity of the program combined with the lack of R&D funding limits opportunities for companies with unqualified commercial solutions or long-lead advanced technology solutions requiring additional development. Therefore MRAP may just be a distraction for certain companies who would be better served by targeting development programs such as JLTV in the mid- to long-term.

There is a risk to waiting for JLTV as well – the potential long-term retention of "interim" MRAP vehicles, continued evolution of the HMMWV for non-combat duty, and post-war budget cuts may eliminate, or significantly curtail, the JLTV requirement. This would redirect business development efforts to the incumbent prime AM General and potentially lock new prime- and sub-contractors out of the market entirely.

While there are some synergies between the programs, they may not be as pronounced as they seem on the surface when one looks at the overlap of competing prime contractors. MRAP and JLTV capture teams within those potential primes may have very different teaming, sub-contracting, and test and evaluation strategies despite working for the same company. Likewise, these teams may have vastly different chances of winning a share of their respective competitions. Companies looking for sub-contracting opportunities must therefore plan for contingencies across the range of acquisition scenarios and potential winning contractors.

Strategic Shifts

With the proliferation of prime contractors has come a number of strategic shifts in the way tactical wheeled vehicle opportunities are pursued. These strategic shifts are largely due to the lack of platform incumbency amongst the newest market entrants and the incumbents' realization that going it alone may be too risky an option.

Pre-competition Best-of-Breed Teaming

Some companies have sought to create best-of-breed teams consisting of a prime, several critical and differentiated sub-contractors, and, in many cases, a hot production line. The circumstances a company faces when choosing this strategy can be very different but the advantages of this strategy are multifold:

- Accrue past performance benefits for its bid through the incumbency of one or more of the team members rather than just the prime
- Stronger technical proposal through the integration of innovative platform and sub-component solutions that might not emerge from a single contractor
- Greater risk management benefits: the prime- and sub-contractors can share costs to reduce risk to IRAD technology investments while the DoD customer can reduce production and cost risk through the strength of individual team members
- Stronger political package as a best-of-breed team can spread benefits to a large number of Congressional districts or help maintain a production base and jobs in districts that would be threatened by a winner-take-all competition

JLTV Best of Breed Teams

- Current light segment incumbent AM General chose to team with General Dynamics in the General Tactical Vehicles JV to maximize its chances of preserving its market share on the JLTV which may replace a large number of HMMWVs
- Lockheed Martin chose a team of BAE (formerly Armor Holdings), Axletech Int'l, Alcoa, and JWF Industries to demonstrate that, while it was a new entrant to the TWV market, it brings incumbent suppliers to reduce risk

However, there are some significant disadvantages to this strategy that make it unattractive to some prime- and sub-contractors.

- Stronger team members may be hampered by weaker players, precluding any revenue opportunity
- Potential for prime to ask for exclusive relationships that could disrupt other potential partnerships or cross-platform applications of sub-components
- Balancing interests within the team can be difficult and may lead to a sub-optimized technical proposal. This can be based on a number of factors including a flawed design approach favored by one team member that reduces platform performance and/or existing production methods within an incumbent team member that hurt platform manufacturability
- Potential for the system integration role of the prime contractor to be seen as a liability rather than a strength

Best of Breed Teaming Downside

- The DoD's recent rejection of the Protected Vehicles' Alpha and Thales Australia Bushmaster has left their partner Oshkosh without a solution in the running despite seeming to be a front-runner early in the competition
- Oshkosh hopes for better luck with Ceradyne's Bull platform but is once again fully dependent on its partner's technical solution

Strategic Questions for Sub-Contractors

- *Who should you be selling your solution to: a prime, a team member, the government customer?*
- *Does a position on the incumbent's platform translate to a position on their new development platform?*
- *How can you leverage an existing relationship with the DoD customer to maintain your position? Have you built a relationship with the DoD customer directly?*
- *Will you be asked to provide a measure of exclusivity? Is it worth it to limit your marketing and sales efforts to one team or are you giving away your own position which may be stronger independently?*
- *If you do sign an exclusivity arrangement, can you be guaranteed a share of full rate production if your prime wins but the customer wants a solution you don't offer?*
- *Will you be spec'ed out if you don't team early? Is your value proposition strong enough for you to join the winning team if your initial team loses or you haven't teamed at all? Should you expect post-competition pull from the DoD customer, prime, or other subcontractor?*
- *Are you able to meet the level of investment will be required to give you and your team the best chance of winning the contract?*

Leverage Adjacent Market Experience

Some companies are leveraging existing adjacent military or commercial solutions to compete for the JLTV program, rather than relying on platform incumbency. This strategy has become more relevant in light of the MRAP program which has given a number of companies a platform to demonstrate the value of low risk off-the-shelf technologies in a performance-driven market. Apart from MRAP there are other adjacent platforms, such as ASV, RSTV, and various medium and heavy truck platforms, that have demonstrated alternative approaches to meet JLTV requirements in specific areas such as survivability or fuel efficiency.

Adjacent Market Players

- MRAP contract award winners such as Force Protection and Protected Vehicles hope that their MRAP experience and production base transform them into viable JLTV competitors
- Defense contractors such as Textron and Oshkosh hope the DoD customer will perceive their proven military platforms solutions and government contracting experience as stepping stones to low-risk, high performance JLTV solutions
- Navistar will leverage its successful MRAP platforms, SmarTruck III and FTTS-UV demonstrators, and significant commercial truck manufacturing business to bring advanced COTS solutions to a military truck market that tends to be generations behind the commercial market in terms of automotive technology

Adjacent Market Experience Downside

- The Army suffered through significant delays and quality control issues with Stewart and Stevenson's initial deliveries of FMTV but still awarded the company the competitive re-buy contract despite a strong competitive bid from Oshkosh
- The Army's less than stellar experience with militarized commercial trucks through the Commercial Utility Cargo Vehicle (CUCV) is likely to color its opinion of COTS solutions
- There is a long history of DoD-sponsored truck innovation programs such as the SmarTruck I, II, and III, FTTS, CTV, hybrid electric demonstrators, and the Expedited Modernization Initiative Procedure (EMIP) events that have failed to yield significant applications of advanced military and commercial technologies in the current truck fleet

There are two significant advantages to this approach:

- Enables potential prime-contractors to gain past performance benefits for their bids without an incumbent prime or sub-contractor on its team
- Allows for the integration of innovative technologies and manufacturing techniques to improve performance while reducing cost and development risk of military specific technologies

The disadvantages of this strategy stem from a conservative DoD buying community that will see baggage where others see opportunity:

- The DoD customer may attribute unflattering characteristics of contractors' adjacent platforms when assessing risk for a proposed JLTV technical solution: MRAP, medium, and heavy truck contractor designs will be too "heavy" and face significant weight growth in RDT&E and production, commercially-derived designs will need to be "militarized" at great schedule and cost risk, platforms from system integrators will be "gold plated" with high technology items that aren't affordable for the whole fleet, and so on.
- This strategy also assumes a degree of customer dissatisfaction with the current incumbent prime- and sub-contractors. Even when this dissatisfaction is very real, the DoD's conservative acquisition community will sometimes default to incumbents when presented with a large number of competing solutions with unknown risk factors

Strategic Questions for Sub-Contractors

- *Who is the best partner for your adjacent market solution: a traditional prime or one of the new market entrants?*
- *Are you committed to the military market enough to face a long development and acquisition cycle and its inherent risks to implementation of your solution in full rate production?*
- *Have you begun to demonstrate and qualify your solution with the DoD customer?*
- *Do you know who your competitors are from both the commercial and military markets?*
- *Do you have a competitive differentiation strategy that is aligned with key prime and DoD customer discriminators?*

Mapping a Course

As the market remains undefined and the future requirements unset, many non-traditional TWV companies will be tempted to remain on the sidelines and allow for a clearer market picture to crystallize. However, settling on a "wait-and-see" approach is a strategic decision with potentially dire consequences.

Current and potential TWV suppliers can be spec'ed out early in the development process, often before the competitive phase begins. Those that take action, but follow the lead of peer competitors, will dilute their message and sub-optimize their value propositions. Companies that defer the chance to define their role during this crucial period risk having the market define it for them.

Successful strategies will be distinguished by differentiated positions, products, and services within the specific contexts of the MRAP and JLTV programs. Given the revenue potential of the TWV market, it behooves competitors to invest in activities that maximize their insight into how their particular capabilities can address market demands.

Specifically, aspiring vehicle prime- and sub-contractors must develop strong contingency plans and tailored processes to gain market traction. Those that can demonstrate a clear understanding of customer requirements through an offering that aligns with prevailing needs and priorities can certainly be TWV players for years to come.

The Avascent Advantage

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