

This is a Cagan’s opportunity assessment framework. We suggest using it to assess whether AWF should switch to the ODD for Autonomous Racing.

Process:

1. TSC Members collaboratively answer the questions below
2. TSC Members score the answers (anonymously) from -1, 0, 1.
3. Score will then be the base for the TSC vote

Questions	SW for Autonomous Racing	Score	SW for Low Speed Autonomous Services.	Score
Exactly what business problem will this solve? (value proposition)	Making Autoware Famous System.		Make Autoware usable for real world cost-saving applications.	
Exactly what technical problem will this solve? (value proposition)	Solving “edge case” scenarios – Problems or situations that occur only at an extreme operating parameter, such as avoiding unanticipated obstacles at high speeds while maintaining vehicular control, need to be addressed to ensure safety across all operating environments. Performance, cutting edge, new architecture.		Safety, quality, reliability.	
For whom do we solve that problem? (target market)	Initially it is just for students and universities. In the long run - this could be another DARPA Grand Challenge or PR2 Beta Program .		Initially: Companies looking for a starting point for developing delivery robots. In the long run companies doing urban and industrial autonomy.	
How big is the opportunity? (market size)	Motorsports: \$6B (link).		Cargo delivery: \$8B to \$417B .	
What	Custom built stacks.		Apollo, Custom built stacks, Project Arslan,	

alternatives are out there to Autoware.Auto ? (competitive landscape)			Autoware.AI Waymo, Uber, Argo, Cruise are also directly applicable to these use cases.	
Why are we best suited to pursue this? (our differentiator)	ROS2 (framework), Embotech (highly reactive control), Autoware.Auto (LiDAR-based object perception). AWF members are supplying components to the IAC.		ROS2 (framework) Existing users / customers. Existing Autoware.AI implementation.	
Why are we not suited	Missing domain knowledge, camera-based perception.		Safety certification is needed for the application.	
Why now? (market window)	Challenge is happening now. It is super exciting.		Commercial evaluations are happening now.	
How will we get this product to market? (go-to-market strategy)	Josh + developer outreach or Josh + developer outreach + AWF members (if we change the ODD). or IAC teams		Josh + developer outreach + AWF members	
How will we measure success/make money from this product? (metrics/revenue strategy)	By increasing Autoware.Auto capabilities (e.g. performance and edge cases) By winning the challenge and getting lots of press. By getting the developed algorithms back into Autoware. By massively increasing the user base and becoming the de-facto open source AD stack.		By getting the developed algorithms back into Autoware. Number of commercial customers of AWF members.	

	By looking back in 10 years and saying: “yup, that was transformational”.			
What factors are critical to success? (solution requirements)	<p>We need to recruit enough developers. We need to be adopted by the 30 competing teams. We need to prove that we have value add.</p> <p>Common and well defined hardware platform.</p>		<p>We need to recruit enough developers.</p> <p>Common and well defined hardware platform.</p>	
What are the downsides and risks	<p>Racing crashes become the headlines.</p> <p>We will not have a stack for urban driving in the next 2 years.</p> <p>We will lose commercial opportunities.</p> <p>We will disrupt the continuity of work in the AWF (e.g. ODD work).</p> <p>Possibly we will get no code back.</p> <p>It's not clear to us that they (universities) would use Autoware even if it were available.</p> <p>We have VERY limited engineering resources.</p> <p>The environment is very different from ordinary traffic environments – no lanes, no pedestrians, no traffic lights, no intersections, and very different traffic rules and models - so development effort can be large/difficult.</p>		<p>We won't generate headlines and publicity like racing can.</p> <p>The competition (waymo, uber, cruise, argo, zoox, apollo) will be even further ahead in terms of performance.</p>	
Given the above, what's the recommendation? (go or no-go)				