GROUP CTO MESSAGE

From products to possibilities

Praveen Chakrapani Rao
Group Chief Technology Officer

Dear Shareholders,

During FY 2024-25, we marked a significant milestone by making a grand entry into CES – the Consumer Electronics Show in Las Vegas, the world's largest and most influential technology event. This global stage vividly demonstrated the rapid evolution of mobility technology and the opportunities that lie ahead.

While consumer electronics remained a key highlight, what truly captured attention was the revolution in mobility: electrification across virtually every mode of transport, the accelerating promise of autonomous vehicles, and the rise of humanoid robots. These humanoids, once confined to science fiction, are now being heralded as the next big leap—poised to transform automation across consumer, industrial, and even household and eldercare services.

In alignment with our vision – to be the most respected and valuable mobility technology company, we have begun to look beyond the traditional boundaries of the automotive sector. This is not just about expanding into adjacent products and markets; it's about stepping boldly into transformative spaces that will redefine how the world moves.

As we venture deeper into these domains, it has become clear how much time and effort it takes to bring new products to life. There is a need to streamline and strengthen our innovation process. This led us to take a closer look at our approach to technology forecasting, technology scouting and specifically the process of technology development and infusion. A common thread emerged; the need for a unified and structured system to evaluate and monitor progress across product lines. After extensive research and careful evaluation, we adopted the Technology Readiness Level (TRL) framework, which is a well-established methodology for representing technology's progress through three phases – Research (TRL 1-3), Development (TRL 4-6), and Deployment (TRL 7-9). This has brought about uniformity in representation across diverse product lines as well as within individual product lines.

TRL	Definition	Hardware	Software	Exit criteria
Research				
1	**Basic principles observed and reported.**	Scientific knowledge generated underpinning hardware technology concepts/applications.	Scientific knowledge generated underpinning basic properties of software architecture and mathematical formulations.	Peer reviewed publication of research underlying the proposed concept/application.
2	**Technology concept and/or application formulated.**	Invention begins, practical application is identified but is speculative, no experimental proof or detailed analysis is available to support the conjecture.	Practical application is identified but is speculative, no experimental proof or detailed analysis is available to support the conjecture. Basic properties of algorithms, representations and concepts defined. Basic principles coded. Experiments performed with synthetic data.	Documented description of the application/concept that addresses feasibility and benefit.
3	**Analytical and experimental critical function and/or characteristic proof of concept.**	Analytical studies place the technology in an appropriate context and laboratory demonstrations, modelling and simulation validate analytical prediction.	Development of limited functionality to validate critical properties and predictions using non-integrated software components.	Documented analytical/ experimental results validating predictions of key parameters.
Development				
4	**Component and/ or breadboard validation in laboratory environment.**	A low fidelity system/ component breadboard is built and operated to demonstrate basic functionality and critical test environments, and associated performance predictions are defined relative to the final operating environment.	Key, functionally critical software components are integrated, and functionally validated, to establish interoperability and begin architecture development. Relevant environments defined and performance in this environment predicted.	Documented test performance demonstrating agreement with analytical predictions. Documented definition of relevant environment.
5	**Component and/ or breadboard validation in relevant environment.**	A medium fidelity system/ component brassboard is built and operated to demonstrate overall performance in a simulated operational environment with realistic support elements that demonstrates overall performance in critical areas. Performance predictions are made for subsequent development phases.	End-to-end software elements implemented and interfaced with existing systems/simulations confirming to target environment. End-to-end software system, tested in relevant environment, meeting predicted performance. Operational environment performance predicted. Prototype implementations developed.	Documented test performance demonstrating agreement with analytical predictions. Documented definition of scaling requirements.
6	**System/sub-system model or prototype demonstration in an operational environment.**	A high fidelity system/ component prototype that adequately addresses all critical scaling issues is built and operated in a relevant environment to demonstrate operations under critical environmental conditions.	Prototype implementations of the software demonstrated on full-scale realistic problems. Partially integrate with existing hardware/software systems. Limited documentation available. Engineering feasibility fully demonstrated.	Documented test performance demonstrating agreement with analytical predictions.
Deployment				
7	**System prototype demonstration in an operational environment.**	A high fidelity engineering unit that adequately addresses all critical scaling issues is built and operated in a relevant environment to demonstrate performance in the actual operational environment and platform.	Prototype software exists having all key functionality available for demonstration and test. Well integrated with operational hardware/software systems demonstrating operational feasibility. Most software bugs removed. Limited documentation available.	Documented test performance demonstrating agreement with analytical predictions.

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TRL	Definition	Hardware	Software	Exit criteria
8	**Actual system completed and 'flight qualified' through test and demonstration.**	The final product in its final configuration is successfully demonstrated through test and analysis for its intended operational environment and platform.	All software has been thoroughly debugged and fully integrated with all the operational hardware and software systems. All user documentation, training documentation, and maintenance documentation completed. All functionality successfully demonstrated in simulated scenarios. Verification and Validation (V&V) completed.	Documented test performance verifying analytical predictions.
9	**Actual system flight proven through successful mission operations.**	The final product is successfully operated in an actual mission.	All software has been thoroughly debugged and fully integrated with all operational hardware/software systems. All documentation has been completed. Sustaining software support is in place. System has been successfully operated in the operational environment.	Documented mission operational results.

With that clarity in place, our next step was to de-clutter the roadmap and communicate our long-term goal of becoming a leader in EPIC mobility - an acronym that encapsulates mobility that is Electric, Personal, Intelligent, and Connected. We also recognised a need to communicate our growing capability, from just products sub systems to complete systems, making us a capable partner for delivering everything from components to complete solutions. This evolution not only enhances our value proposition but deepens our engagement with customers.

All of these efforts are driving us toward our core goal: to be a dominant player wherever and whenever the movement of people or goods is involved.

Today, the global landscape is rife with disruptions (we have all been VUCA-ed again!). The need for entire industries and companies to remain agile has never been more urgent. At Sona Comstar, we are fortunate to have a management and team that stays focused on what matters most: our customers and our business. Agility is one of our core values, and it is empowering us to respond quickly and effectively to evolving market conditions.

Technology is, and will be at the centre of our growth and sustenance. It's embedded in every conversation - from new product development and day-to-day operations to ESG and customer engagements. To stay ahead, we are actively integrating AI and machine learning across our business. These technologies are helping us not only in operational improvements, but also in strategic innovation through the use of AI agents, digital twins, and advanced scenario planning. These tools are enabling us to operate leaner, adapt faster, and unlock new opportunities for sustainable growth.

But none of this would be possible without the energy, drive and aspirations of our talented people. It is their passion and vitality that are powering our journey, shaping the future and helping position Sona Comstar as a global leader in EPIC mobility.

While we cannot predict the future with certainty, we can fully invest our minds and hearts in what we believe – helping our customers succeed, adding value every day, and continuing to innovate for a better world.

As I walk in the footsteps of my predecessor, Mr. Deshmukh, I am continually inspired by his vision, simplicity and focus. These qualities will be my guiding light as we step into a future filled with opportunities.

Warm regards,

Praveen Chakrapani Rao
Group Chief Technology Officer