



Presentation:

Julia Mörtberg, Managing Director at Cummins Scania XPI Manufacturing,

XPI manufacturing - our Joint Venture within Fuel Systems.

During the next 15 min I will share my view of ways to boost competitiveness into Swedish Manufacturing

"I wish I could stand here today and say that the future looks Simple – Predictable - Comfortable. But it doesn't.

We are in the era where uncertainty is the new normal — and resilience will define who survives, and simply, who does not."

This statement challenges researchers and industrial leaders alike to move beyond incremental improvements and address the fundamental question: how do we design manufacturing systems that can survive and thrive in an uncertain future?

The answer lies in purposeful collaboration, practical research, and a clear understanding that resilience does not happen by accident. It is designed.

I was asked to come here today and give my perspective on this topic. Everything you'll hear from me is not scientifically proven but it is based on my empirical studies from within the industry. I hope my reflection on this topic can contribute to further reflections and engaging collaborations for the future.



Summary of what happens in the world around us.

We can easily come to the conclusion that it was better before, it's a typical Swedish saying and really address the scare of change. Leaning in to the unknown is far from simple and the last few years have been filled with pandemics, wars, climate crisis and non-sustainable competition. A new, more uncertain, normal is definitely forming and we must make sure to adapt if we want to remain in the top.

Manufacturing has always involved uncertainty, but the scale and frequency of disruptions have increased dramatically in recent years. Geopolitical instability, pandemics, trade restrictions, energy price volatility, and climate-related events have exposed vulnerabilities in even the most advanced production systems. What was once considered exceptional is now becoming routine.

In this context, uncertainty should not be treated as a temporary phase that will eventually pass. Instead, it must be accepted as a structural condition.

Companies that continue to design systems optimized only for steady-state operations risk becoming fragile, unable to cope with sudden changes.


Examples:

- tightly optimized supply chains with minimal buffers may perform well under ideal conditions but collapse quickly when a single node fails.
- highly specialized production lines may struggle to adapt to shifts in product mix or volume.

What does it mean to be resilient?

Resilience is the capacity of individuals, organizations, communities and system to withstand shocks and stresses, adapt to change and continue to thrive in the face of uncertainty.

It is not about avoiding the storm, it is about learning to navigate it.



Lately many companies and world leaders have started talking about resilience. It is crucial for us to be resilient but what does it really mean?

According to Oxford University Dictionary

1. *The ability of people or things to recover quickly after something unpleasant, such as shock, injury etc.*
2. *The ability of a substance to return to its original shape after it has been bent, stretched or pressed.*

Stockholm Resilience Centre – Stockholm University

“Resilience is more than bouncing back. It is the ability to live and develop with change and uncertainty. It requires the capacities to cope, adapt, and transform in the face of change. This definition is grounded in an understanding that humans and nature are intertwined, where human well-being and prosperity depend on the stability of the Earth system, and thus a just and equitable world can only exist within planetary boundaries”

My own summary:

“Resilience is the capacity of individuals, organizations, communities and systems to withstand shocks and stresses – adapt to change and continue to thrive in the face of uncertainty

Companies that can reconfigure production, reroute logistics, or adjust schedules rapidly gain a significant advantage over less adaptable competitors.

Research plays a key role in supporting this transition. Traditional optimization models often focus on steady-state performance, whereas resilient systems require multi-objective approaches that balance efficiency with robustness.

Resilience contributes to long-term sustainability. Systems that can adapt to new regulations, energy constraints, or customer expectations are better positioned to meet environmental and social goals without compromising economically. In this sense, resilience and sustainability are mutually reinforcing rather than competing objectives.

By reframing competitiveness through the lens of resilience, this section encourages both industry and academia to rethink success metrics. The most competitive manufacturing systems of the future will not be those that perform best under ideal conditions, but those

that perform reliably under real ones.

It is clearly not about avoiding the storm, it is about learning to navigate it.



For researchers, this reality demands a stronger focus on variability, disturbances, and boundary conditions. Research must therefore embrace uncertainty as a central design parameter, not a deviation to be ignored.

Recognizing uncertainty as the new normal also has implications for leadership and culture. Organizations must encourage learning, experimentation, and transparency, rather than penalizing deviations from plan. Resilient manufacturing systems are supported by resilient organizations, where people are empowered to act, adapt, and improve continuously.

By acknowledging uncertainty openly, I believe that industry and academia can engage in more honest and productive collaboration. This shared understanding creates the foundation for developing solutions that are not only innovative, but also robust enough to withstand the realities of modern manufacturing.



For industry to stay competitive—especially in a fast-changing environment shaped by geopolitics, technology shifts, and sustainability pressures—research needs to move from being *supportive* to being *strategically embedded* in business. It's not just about more research, but the right kind of research, delivered in the right way.

It must be

- Relevant, research must solve real problems
- Rapid, short time from idea to small scale and adaptable for large scale
- Collaborative, co-created with the industry. Research adapted for its customer.
- Forward-looking, anticipating change and not for ideal conditions



I hope I did not destroy a sunny picture of the future for you, but I believe we also must acknowledge the gloomy part of it. Only when we know the current state we can break down the gap from target state and set actions. – Simple problem solving methodology.

I represent the manufacturing industry today and I want to emphasize on the real need to keep close collaboration between manufacturing and research. We need research that can solve our real problems. We must design with uncertainty as a boundary condition and stay alert for changes.

We must act wisely to keep Swedish manufacturing standard in the top positions from a competitor view. We might not be cheapest but “made in Sweden” stamp must be worth the extra cost for our customers and they must feel confident in the quality of our products.

We have long shared innovation and technical development in Sweden, culture from generations back where trust is high and responsibility is rooted. We follow the rules and regulations and don't compromise with safety being the long term choice both for our customers but also for the ones working for us. We compete with competence and sustainability and in parallel act and adapt in speed in order to learn from the reality. That is my view on how we can build a resilient and more competitive manufacturing industry in Sweden.

With all this said, I wish you a fantastic and well spent two days in this atmosphere of innovation and development. I think I made it clear, we need you and we also depend on you. Thank you all for being here building competence and growth for the industrial backbone in Sweden.



THANK YOU FOR LISTENING!

20 MAY 2026

SWEDISH MANUFACTURING CONFERENCE / SCANIA / JULIA MÖRTBERG

7