Future Launch Management

Why the rules of the game have changed

A quick look at
the main insights

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Executive Summary

> ***The complexity of the software code.***

Six words from Volvo CEO Jim Rowan, on a July 2023 earnings call, as he postponed the EX90 launch – his company's most important launch in six years – by five to six months.[1] Meanwhile, in China, Xiaomi was announcing its first car on 28 December 2023 and shipping it to paying customers 91 days later.[2] By the end of 2024, more than 135,000 SU7s were on the road.[3] While Western OEMs measure launches in years and write down billions on software they cannot ship, a smartphone company built and shipped a sedan in less time than a typical European facelift cycle. The launch game has changed, and traditional launch management is no longer fit for it.

Yet, the challenge is not only about software. For all the attention on code, much of what still derails a launch is stubbornly physical – tooling that is not capable, parts that arrive late or out of tolerance, ramp-ups that refuse to stabilize. Most Western OEMs are still fighting these old-world battles even as the new software and AI demands pile on top. Future Launch Management must master both worlds at once. This article maps the way forward across eight focus areas – Software-Defined Vehicles, Digital Launch Backbone & Twins, Physical AI, Launch Velocity, Early Integration of Suppliers, Launch Organization & Culture, Data-Driven Launch Control, and Ecosystem Orchestration – the building blocks that turn launch into a repeatable advantage.

With EU passenger car production down 27% since 2019 and cars built in China already at 7% of EU sales [4][5] there is no margin for slow cycles or unstable ramp-ups. The companies that master this transition will not just reduce launch risk – they will turn launch into a structural advantage in speed, quality, and execution reliability.

TRADITIONAL LAUNCH MANAGEMENT	FUTURE LAUNCH MANAGEMENT
Hardware-first, software add-on	Software-centric, SDV-ready launches
Isolated single-vehicle projects	Platform-based, parallel launches
Spreadsheet tracking, status meetings	Digital launch control towers, predictive, AI-driven risk management
Functional silos, sequential handovers	End-to-end value chain integration
Many late-involved suppliers	Early integration of fewer, strategic suppliers
Data islands, fragmented systems	Digital backbone with twins, one data model, new roles (software integrator, twin engineer, launch data owner)
Hero culture in crises, war rooms	Prevention-driven culture
Launch seen as the “last mile”, plant-centric perspective	Launch as ecosystem orchestration capability across product, production, software and supply chain

Source: Berylls by AlixPartners

WHY LAUNCH MANAGEMENT MUST REINVENT ITSELF

Traditional launch management was designed for a world where hardware dominated the critical path, product cycles were measured in years, and risk could be absorbed by escalation routines and weekend war rooms in the plant. That model is breaking down on three fronts at once, before most Western OEMs have mastered the old-world fundamentals – stable ramp-ups, first-time quality, disciplined supplier integration. The new software, AI, and ecosystem demands do not replace those problems; they pile on top of them.

Software has moved onto the critical path. In 2024 alone, software defects drove the recall of 13.4 million vehicles in the US – a fourfold increase over the year before – and accounted for 46% of all recalled vehicles, up from 14% in 2023.[6] Volkswagen's software unit CARIAD posted operating losses of approximately €6.9 billion across 2022 to 2024 and delayed the Porsche Macan Electric and Audi Q6 e-tron by more than a year.[7][8] Rowan's six words at Volvo were not an exception. They were a diagnosis the entire Western industry has yet to internalize.

> ***Speed has shifted from a tactical KPI to a structural competitive advantage.***

Xiaomi went from market entry to mass-market delivery in roughly 33 months (authors' estimate) – the full-program clock behind the 91-day reveal-to-delivery headline. Geely's Zeekr reached first deliveries seven months after brand founding, on the pre-developed SEA platform.[9][10] Geely's restructured European R&D organization has now committed to closing the gap between Chinese and international launch to under six months.[11] Western OEMs cannot match this with willpower alone; their launch model itself is the bottleneck.

The competitive context has hardened. Chinese brands have roughly doubled their EU registration share year-on-year to around 6% in early 2026, led by BYD, Leapmotor and Chery, and average European factory utilization has slipped to 54% in higher-cost Western Europe – well below the 70% threshold for plant-level profitability.[12][13][14]

Future Launch Management must acknowledge this new reality. It elevates launch from a narrow industrialization function to a cross-functional orchestration discipline that links strategic product and platform decisions with operational ramp-up performance – not the last mile of an industrial project, but the proving ground of a company's strategy.

8 Focus Topics define the Future of Launch Management.

1 SDV & SOFTWARE-CENTRIC LAUNCHES
From hardware-ready to launch-ready

2 DIGITAL LAUNCH BACKBONE & TWINS
From simulation to living systems

3 PHYSICAL AI IN LAUNCH
From rigid lines to learning ramp-ups

4 LAUNCH VELOCITY
Closing the China speed gap

5 EARLY INTEGRATION OF SUPPLIERS
Less is often more

6 LAUNCH ORGANIZATION & CULTURE
From firefighting to fire prevention

7 DATA-DRIVEN LAUNCH CONTROL
From spreadsheets to smart control

8 ECOSYSTEM ORCHESTRATION
Launch as strategic capability

Source: Berylls by AlixPartners

1 | Software-defined vehicles & software-centric launches. From hardware-ready to launch-ready.

In a software-defined vehicle, the moment hardware can be built and the moment the car is genuinely "launch-ready" are no longer the same event. Software completeness, cybersecurity readiness, and the orchestration of digital services increasingly decide whether a program is shippable. The ID.3 launched in 2020 in a "toned-down" software state, with functions to be added later via update.[15] The financial evidence is unambiguous: CARIAD's operating loss in 2023 alone was €2.392 billion.[7]

Future Launch Management therefore needs a launch model that explicitly separates hardware readiness from software SOP – the point at which feature scope is locked and stable – while still orchestrating both in one integrated governance structure. This requires joint hardware–software gate criteria, dedicated cross-functional launch owners, and roadmaps that synchronize feature releases with production milestones and homologation. The cadence reference points are well understood: Tesla released 138 distinct OTA updates in 2024 (per Teslascope tracking data),[16] and NIO shipped 23 FOTA waves with 482 new features.[17] European OEMs do not need to copy that cadence, but they cannot afford a launch governance model that presumes software changes happen on a hardware timeline.

> *__Future Launch Management therefore needs a launch model that explicitly separates hardware readiness from software SOP.__*

2 | Digital launch backbone & twins. From simulation to living systems.

Digital twins of product, process, and plant are evolving from one-off simulation tools used just before SOP into a persistent digital backbone for launch. BMW's Virtual Factory, built on NVIDIA Omniverse and now scaled across all 31 production sites, projects a 30% reduction in production planning costs and has already cut pre-launch collision checks from almost four weeks to three days.[18] Mercedes-Benz reports that its MO360 ecosystem and digital-twin-based planning "doubles the speed for converting or constructing an assembly hall" and reduces supplier coordination effort by 50%.[19][20] Volkswagen's Industrial Cloud connects more than 120 plants and targets €1 billion in supply chain savings.[21]

30% reduction in production planning costs cut pre-launch collision checks from almost four weeks to three days.

What matters is not the simulation itself, but what happens after SOP. A backbone that stays alive through ramp-up and early series production – fed by live MES, quality, maintenance, and supplier data – turns the twin into a real-time learning system. Deviations surface earlier and root causes are traced faster, on fact rather than assumption. ISO 23247 provides the international framework for this convergence,[22] but the harder transition is organizational: the twin must be funded and owned as launch infrastructure, not as a one-off engineering artifact.

3 | Physical AI in launch. From rigid lines to learning ramp-ups.

Physical AI – the combination of AI models with physical robotics – is no longer a concept discussion. It spans mobile robots, cobots, AI vision, predictive maintenance, and, on a longer horizon, humanoid robots. The break with classical automation is systemic: where conventional lines are rigid and single-purpose, physical AI is adaptive, software-defined, and multifunctional. A cobot switches tasks via software update, a mobile robot replans routes in real time, a vision system catches defects no human can identify consistently. Physical AI makes variance manageable as variant counts rise and lot sizes fall.

> ***AI-based predictive maintenance cuts unplanned downtime by 35 to 50% and maintenance cost by 25 to 30%.***

For launch, the business case already carries in mature fields with payback under two years.[23] More than 18,000 mobile robots operate in automotive plants worldwide; BMW supplies its Munich plant with around 60% of material movements – 2.5 million parts per day – via the idealworks platform, payback at 12 to 18 months and downtime reduced by up to 21%. AI-based Predictive Maintenance cuts unplanned downtime by 35 to 50% and maintenance cost by 25 to 30%. Humanoids fit into this landscape as one mobile platform among many – from BMW's AEON pilot at Plant Leipzig to Mercedes' Apollo and Hyundai's Atlas – not as a separate revolution.[24][25][26]

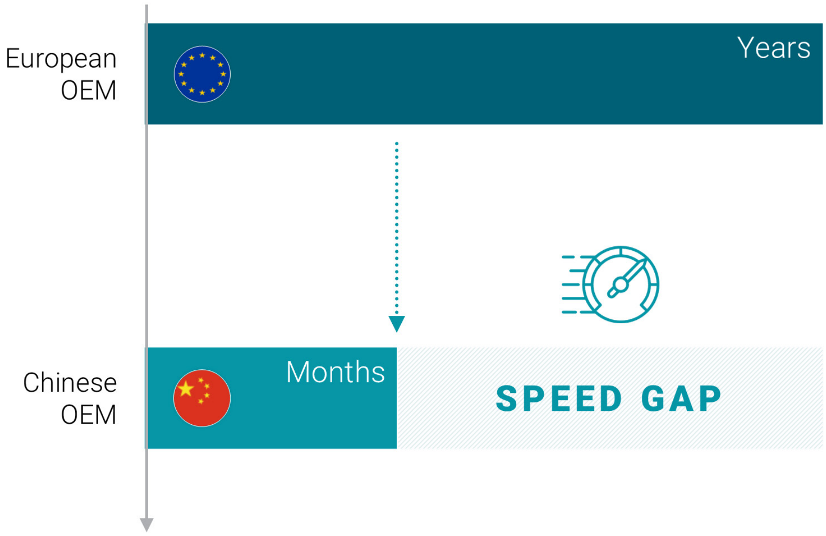
For launch management, this shifts the question. Physical AI introduces new risk dimensions around data quality, OT security, ISO 10218:2025 and EU Machinery Regulation 2023/1230 conformity, and the operator-to-supervisor workforce shift – exactly the dimensions a launch model must control before SOP, not after. Future Launch Management treats physical AI as a launch-gate problem from day one: simulation frameworks for AI-enabled cells, joint validation and safety concepts, a unified orchestration layer rather than isolated cell pilots, and clear go/no-go criteria. Done right, it **shortens start-up losses and stabilizes ramp-ups faster.** Done as a late automation add-on, it adds complexity exactly when stability is needed most.

This is where launch risk and learning meet. A learning ramp-up only works if the learning is contained where it cannot destabilize the live line: validate AI-enabled cells in simulation and in a shadow mode that runs against – but never controls – the running line before handover; ring-fence experimentation in designated pilot cells, so a setback stays contained in one cell rather than slowing the whole ramp-up; and keep deliberate stabilization windows between build phases, so each learning loop is absorbed before the next ramp step loads the system. Handled this way, learning accelerates the ramp-up rather than threatening it.

4 | Launch velocity. Closing the China speed gap.

Xiaomi, Zeekr, and Geely SEA are not outliers – they define the new tempo. The diagnosis points to four structural weaknesses in the Western launch model: late configuration freezes, sequential hardware–software development, supplier integration that begins after design lock, and a zero-defect SOP discipline that rewards late perfection over early correction.

Chinese OEMs flip all four. Modular EV platforms like Geely SEA and BYD's e-Platform 3.0 take on this complexity at the platform level, so each new model can focus on what sets it apart instead of re-engineering the basics.[10][27] Hardware and software are developed in parallel, not in sequence, with frozen configuration baselines protecting both streams from late-cycle disruption. Key suppliers are co-developers from concept, not negotiated partners after RfQ. And they accept calculated risks in design and industrialization, then correct fast through OTA updates and rapid hardware iterations rather than absorbing risk through extended pre-SOP loops. A note on terminology: a *platform* is the shared technical and software base across multiple vehicles; a program is the project that turns a platform into derivatives; a model is the individual vehicle that reaches the customer.



The result: speed is built into the way they work, so every program is fast by default – not something a single team has to fight for each time.

The Western response has begun. Volkswagen has set a group-wide product development process target of 36 months or less, around 25% faster than today.[28] Audi developed the E5 Sportback with a Chinese partner in record time, cutting development by 30%.[28] Renault delivered the electric Twingo – a fully European program – in 21 months, under what CEO François Provost has set as a 24-month floor for new platforms.[29] The capability constraint is no longer the issue: Bosch develops series products with Chinese manufacturers in 12 to 18 months today.[30] **What changes is the operating model, not the engineering talent.** As Bosch Mobility chairman Markus Heyn argued at the IAA 2025, carmakers and suppliers now have to think far more holistically; a simple demarcation of responsibilities no longer makes sense.[30]

The answer for Western OEMs is therefore neither imitation nor a generic "speed playbook." It is a specific set of structural choices made above program level: platform-level launch governance with named accountability for the platform, not the model; configuration baselines locked at gate-defined points, with disciplined change boards rather than rolling re-openings; and digital validation that replaces, not duplicates, physical loops, with cross-plant learning so the second derivative inherits the first one's lessons. **The lever is execution discipline at platform level** – and the willingness to subordinate model-level autonomy to it. Companies that hold on to program-by-program launch sovereignty will not close the China speed gap with effort. They will lose it through structure.

5 | Early integration of suppliers. Less is often more.

Most avoidable launch risk sits upstream. The economics are unforgiving: in INSEAD's empirical case study, **an engineering change arriving after production tools were committed cost more than 19 times** an identical change made before prototype tools – with engineering change orders typically consuming a third to half of engineering capacity in large programs.[31] The pattern holds on the supplier side: in a **Berylls by AlixPartners analysis of Tier-1 launches,** the true cost of a delayed launch runs two to three times its visible figure once warranty chargebacks and lost follow-on business are counted, and roughly **three in four launches hit meaningful issues** – only the top quartile clears every gate cleanly.[32]

> ***Future Launch Management points toward earlier and deeper collaboration with a smaller number of strategic suppliers.***

The contrast with Toyota is instructive. Its Kyohokai supplier association of roughly 200 members is known for exceptionally stable, long-term relationships, with very few suppliers leaving over the decade.[33] In Plante Moran's 2025 Working Relations Index – a primary survey of Tier-1 suppliers rating their OEM customers – Toyota scored a record 386 points; Ford and Stellantis sat in the "poor" category.[34] BYD pushes a different model entirely: vertical integration deep enough that BYD Semiconductor holds 28.9% of China's power module market and supplies up to 90% of BYD's own IGBT and SiC needs.[35]

Neither model is directly transferable to a European OEM. But both share the same insight: launch stability is built upstream, with fewer partners, earlier, on terms designed for joint problem-solving rather than commercial leverage. Future Launch Management points toward earlier and deeper collaboration with a smaller number of strategic suppliers – defining design, target technology, and cost frame jointly, rather than handing down thousand-page specifications. As Renault CEO François Provost has put it, the spec belongs on a single A4 sheet, with the supplier as partner rather than executor.[29] Less, integrated earlier, beats more, integrated late.

6 | Launch organization & culture. From firefighting to fire prevention.

The transformation of launch is not only technical; it is organizational and cultural. The CARIAD case is the most visible illustration. Founded in 2020 with around 6,000 engineers and over €14 billion in funding, the unit was ultimately restructured in late 2025 with software development outsourced to Rivian and Xpeng.[7][36] The lesson is not that software is hard. The lesson is that legacy organizational structures – brand-by-brand engineering matrices, hardware-trained leadership, sequential gate ownership – cannot govern a software-defined launch. Our own launch-project experience points the same way: **the avoidable failures cluster not in the technology but in the operating model** – unclear end-to-end ownership of cross-system defects, escalation paths with too little senior presence on the plant and commercial side, and ramp-up plans that leave no deliberate stabilization window between build phases.[37]

New roles such as software integrator, digital twin engineer, and launch data product owner are becoming essential to bridge hardware, software, and data streams. The structural fixes are visible at Mercedes-Benz with MO360 and at BMW with iFACTORY and its Virtual Factory – cross-plant operating models that pull launch governance out of brand-by-brand silos.[19][18][38] Renault offers a sharper counter-example to CARIAD: within four months of François Provost's August 2025 appointment as CEO, Renault stood up a single engineering organization under a new CTO, with the new operating model now standard for every new program.[29]

The cultural shift is harder than the structural one. Too many launch organizations still glorify firefighting – the manager who "saves" the SOP at the last minute – instead of recognizing the teams that quietly prevent crises. Future Launch Management requires a different reward system: incentives, recognition, and leadership communication focused on early risk identification, disciplined preparation, and cross-functional stability rather than late heroics.

> ***Prevention does not photograph as well as a war room.***
> ***It just costs less.***

7 | Data-Driven launch control. From spreadsheets to smart control.

The same imperative applies to the process itself: the industry talks at length about digitalization in the product, but it is the development process itself that has to be digitalized and accelerated. In many companies, launch control is still run from spreadsheets and weekly steering meetings – structurally blind to real-time risk and unable to keep pace with a modern program. Engineering, production, quality, logistics, and supplier data live in fragmented systems, with no consistent cross-functional data model.

Future-ready launch management replaces this with launch control towers that integrate real-time information across the entire ecosystem. The first move is simple to state and hard to do: make every system tell the same story. When PLM, MES, ERP, and quality each define a part or a status differently, no dashboard can give a true launch picture – it only spreads the confusion faster. Catena-X provides the industry-wide spine: according to the consortium's own figures, by the end of 2025 the network had grown to over 190 members, with eight of the top ten automotive suppliers live and procurement mandates from Volkswagen, BMW, and Ford.[39]

On this foundation, AI use cases – scrap prediction, equipment failure forecasting, supplier readiness scoring – move launch from late escalation to early, predictive control. The technology is no longer the bottleneck. The bottleneck is data discipline, ownership, and the willingness to retire spreadsheets that have served as a coping mechanism for two decades.

> ***The first move is simple to state and hard to do: make every system tell the same story.***

8 | Ecosystem orchestration. Launch as strategic capability.

The final shift is conceptual. Traditional launch management sees itself as project coordination at the tail end of development, focused on the plant and the immediate SOP. Future Launch Management acts as the orchestrator of a broader ecosystem encompassing product, production, software, suppliers, and digital platforms. It connects upstream strategic decisions – platform strategy, make-or-buy, partner model – with downstream launch execution and continuous improvement.

The Volkswagen–Rivian joint venture is an early indicator of what this looks like in practice: a 1,500-person organization governing the SDV architecture for the SSP platform, explicitly placed outside the brand-matrix structure that produced CARIAD's failure mode.[36] The pattern – platform governance lifted out of brand silos, software ownership consolidated, supplier integration built around the platform rather than the model – is the orchestration logic Future Launch Management needs to apply more broadly. Launch is no longer the last mile. Treated as the proving ground of every upstream strategic decision under one converging deadline, it becomes a strategic capability in its own right.

SUMMARY

A launch is no longer where strategy gets executed. It is where strategy gets tested – moving launch management out of the plant and into the heart of how a company competes.

The reinvention is not optional and the clock is unforgiving: the players setting the pace today build in months what much of the West still plans in years. Rebuild launch now and it becomes a durable advantage in speed, quality, and execution. Leave it as the last step of an industrial project, and it stays a recurring bill – paid in delays, recalls, and lost shareholder value.

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