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EXECUTIVE INFRASTRUCTURE INSIGHT 04

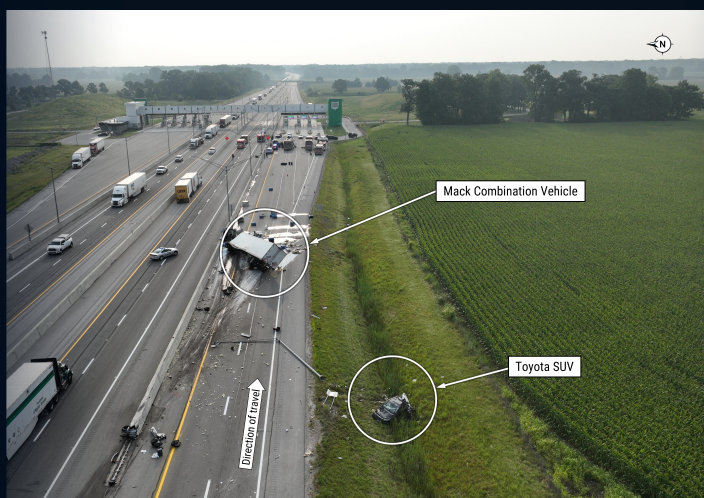
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DIGITAL TRANSITION • HIGHWAY SYSTEMS •
OPERATIONAL ASSURANCE

THE MOST DANGEROUS STAGE OF Digital Infrastructure Is the Halfway State

Operating legacy and digital systems together can create risks that neither system carries independently.

BY KIS PLUS LTD • 6 MIN READ • EXECUTIVE
INSIGHT 04



THE STRATEGIC SIGNAL

Digital transformation is most exposed when the old and new operating models coexist without system-level assurance.



01

THE DEVELOPMENT

A fatal crash exposed the risk inside a hybrid tolling system

The US National Transportation Safety Board concluded that a fatal 2024 crash at the Swanton Township Toll Plaza could have been avoided if the Ohio Turnpike had operated fully electronic tolling.

The plaza combined electronic lanes operating at up to 70 mph with conventional toll-booth lanes carrying a 10 mph limit. A driver approaching in the electronic section slowed sharply and crossed towards the manual lanes. A heavy goods vehicle struck the car, overturned and released hazardous materials. Two passengers died and three people were seriously injured.

Video captured 1,099 comparable last-minute lane changes over three weeks—an average of 52 every day. The NTSB recommended permanently closing the manual lanes, introducing fully electronic tolling and improving emergency access.

EVIDENCE BOUNDARY

The crash circumstances, observed behaviour and NTSB findings are verified. The wider application to other infrastructure sectors is KIS PLUS LTD analysis.



02

WHY IT MATTERS

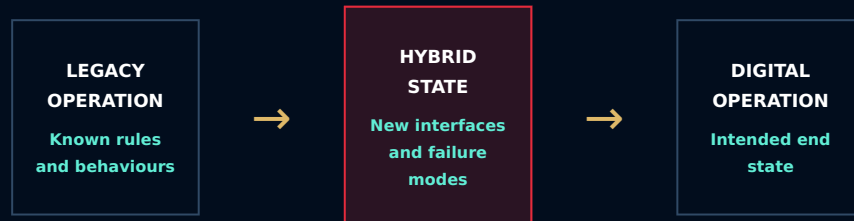
The interface between old and new can carry the greatest risk

Infrastructure owners often treat digitalisation as a sequence of equipment replacements. The Ohio evidence shows that the greater risk may sit between the old and new operating models.

Hybrid arrangements can preserve access and reduce implementation disruption. They also create new interfaces between technology, physical layout, human behaviour, payment rules, signage, enforcement and emergency response.

The same condition appears in airports operating automated and staffed passenger processes, utilities combining remote control with legacy local equipment, ports introducing autonomous systems within conventional traffic movements and asset owners running digital and manual maintenance records in parallel.

FIGURE 01 · THE TRANSITION ASSURANCE GAP



KIS PLUS conceptual view: the intermediate state needs its own requirements, ownership, risk controls and exit criteria.



03

STRATEGIC IMPLICATIONS

The intermediate state needs its own assurance case

Owners and delivery partners should define which legacy and digital functions will coexist; how users will understand the change; where conflicting speeds, decisions or operating rules emerge; what abnormal behaviours the transition may encourage; and when the legacy arrangement must be permanently removed.

Operational data must also trigger action. Fifty-two unsafe movements per day represented a persistent system signal. Governance should establish who responds, what threshold demands intervention and how quickly a temporary arrangement must be redesigned.

OUR PERSPECTIVE

The test is not whether the new equipment works. It is whether the complete infrastructure remains safe while two operating models coexist.



04

OUR PERSPECTIVE

Digital transformation changes the operating system

KIS PLUS LTD's view is that a halfway configuration is not automatically a temporary inconvenience. It is a distinct operating state with its own hazards, responsibilities and failure modes.

Transition assurance must examine people, information, physical assets, emergency arrangements and technology together. Temporary arrangements also require named owners, performance thresholds and expiry conditions. Without them, transitional compromises can become permanent infrastructure without ever receiving permanent-design scrutiny.



05

WHAT TO WATCH

The next proof points

- Ohio's timetable for permanently closing the manual lanes
- Updated Federal Highway Administration tolling guidance
- Wider reviews of hybrid toll plazas
- Video analytics used to identify unsafe behavioural patterns
- Transition-assurance requirements in digital programmes
- Temporary configurations with defined owners and closure criteria

BOTTOM LINE

Digital infrastructure does not become safer simply because more of it is automated.

The most exposed period may be the transition. If the halfway state is not designed and assured as a complete operating system, digitalisation can introduce the very risk it was intended to remove.

SOURCES & EVIDENCE

- | | | |
|----|---|-------------------|
| 01 | NTSB — Highway Investigation Report HIR-26-08 | 31 August 2026 |
| 02 | NTSB — Fully electronic tolling recommendation | 16 September 2026 |
| 03 | Reuters — Safety board urges fully electronic tolling | 16 September 2026 |



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