From autonomous ambition to connected infrastructure

Robotics could transform how cities operate, but autonomous services need clear ownership, connected infrastructure, and machines designed for the job.

https://www.intel.com/content/www/us/en/robotics/robotics-readiness-gap.html

Foundations forming

Smart city organizations have largely moved beyond experimentation and are beginning to embed robotics into long-term operational planning.

Almost three-quarters (74%) of leaders believe workforce planning and robotics strategy will be inseparable by the end of the decade. And many are optimistic about their readiness, with two-thirds (67%) confident they will be prepared to manage a mixed human-robot workforce by 2030.

One area where smart cities stand out is investment in physical AI infrastructure. This makes it one of the strongest sectors in preparing the digital foundations required for autonomous systems.

46% of organizations have a defined and funded edge AI strategy

38% are actively developing one

Governance lagging

Robotics will struggle to scale without clear ownership, accountability, and safety standards.

While 62% of organizations have a defined ROI framework, only four in 10 have a clear owner or governance model. The same proportion (40%) have standardized global safety standards for robotics, and just 34% have a robust training program to upskill employees.

Over half of organizations (52%) say safety concerns have delayed robotics deployment. Leaders believe this could be addressed through clearer regulation.

62% believe inconsistent standards across markets are hindering progress

69% say clearer global safety standards would accelerate adoption



Purpose prioritized

Future cities will not be served by general-purpose robots, but by different machines built for different jobs.

Four out of five leaders (81%) say robots must operate continuously across multiple shifts, 72% say robots will need to understand and respond to spoken instructions, while 74% believe form factors will become increasingly specialized for specific tasks.

At the same time, 67% feel current designs remain constrained by technological limitations rather than real-world requirements.

80% of leaders put robot reliability and performance above appearance

Primary readiness gaps:

Strategy Skills Safety Shape Scale

Robot types set to shape smart cities:

Autonomous mobile robots	Exoskeletons	Service robots
Inspection and sensing robots	Fixed industrial arms	Humanoids