ACCELERATING SMARTER DEVELOPMENT

July 2025

This report was produced in partnership between

URBIS | nbn

Acknowledgment of Country

Urbis

Urbis acknowledges the Traditional Custodians of the lands we operate on.

We recognise that First Nations sovereignty was never ceded and respect First Nations peoples' continuing connection to these lands, waterways and ecosystems for over 60,000 years.

We pay our respects to First Nations Elders, past and present.

nbn

nbn acknowledges First Nations peoples and recognises their role as the Traditional Owners of the lands and waters across Australia. We are privileged to work across all corners of this vast country and pay our respects to all Elders past and present.

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Part 1
Setting the Scene

This section outlines the Smarter Development context and describes what it involves, who has a role and what is at stake.

Foreword

nbn

At nbn, we believe that smarter development is not only a possibility but a necessity.

This report is the result of a national collaboration aimed at accelerating the adoption of smart technologies across Australia's development landscape. Drawing from extensive engagement with industry, government, and community stakehodlers, it outlines practical pathways to overcome barriers and unlock value through innovation, connectivity, and collaboration.

While many developers are eager to embrace smart technology, they often face challenges in determining how to start. To address this, nbn and Urbis have collaborated to create a report that provides an overview of key considerations for developers and industry professionals embarking on the journey to creating Smarter Developments.

> *"Through the nbn Smart Solutions program and our national reach, nbn is proud to serve as a connector, linking developers with the right partners to build future-ready, connected communities. We encourage all stakeholders to use this report as a foundation for action."*
>
> Kamie Ang
> General Manager,
> Partnerships, New Developments at nbn

Urbis

Urbis is an urban consultancy, inspiring and creating solutions for a changing world.

We believe that prosperous and resilient Australian cities and regions are deeply linked to our ability to harness smarter development. Navigating a complex and rapidly changing technology landscape can be daunting, but the impact on our cities and communities has never been greater.

More sustainable, liveable, affordable and inclusive places are possible. Smarter Development is a pathway to that future.

Those proactively considering these opportunities, to use modern, effective tools in tackling our most urgent liveability challenges, stand to reap the benefits.

We are proud to have led this work with nbn. We are deeply grateful for the insights and support of all project partners and broader industry. We all have a role to play in this journey. Our desire is that this report can simplify the task and help chart the course.

> *“Our Smart and Sustainable Places team are industry-leading experts dedicated to effective technology planning and deployment at all scales. We bring the full scope of Urbis’ deep technical expertise and strategic advisory services to these challenges.”*
>
> Clare Brown
> Partner and Director,
> Smart and Sustainable Places at Urbis

Project Partners

The Accelerating Smarter Development project is a collaborative effort involving several partners, each bringing their unique expertise and contribution.

nbn and Urbis initiated the project having observed ongoing barriers and missed opportunities in the deployment and implementation of Smarter Development across Australia. A range of like-minded industry stakeholders, leaders, and associations were assembled and engaged to investigate and prepare this report.

Key Project Partners

nbn
A wholly-owned Commonwealth company with the enduring purpose to provide fast, reliable, and affordable connectivity to enable Australia to seize the economic opportunities before it and service the best interests of consumers.

Urbis
An urban consultancy inspiring and creating solutions for a changing world. We are future focused and known for deep technical expertise and strategic advisory services shaping our cities and communities.

Independent Expert Advisor
Professor Chris Pettit, City Futures Research Centre UNSW

An internationally renowned institute conducting scholarly applied public interest research on our cities.

Expert Reference Group
Australian Smart Communities Association (ASCA)
Australia’s only not-for-profit peak body championing smart communities.

Planning Institute of Australia (PIA)
The peak body representing planning and the urban and regional planning profession.

Property Council of Australia (PCA)
The voice of the Australian property industry, championing a strong, thriving sector that leaves a positive legacy for all Australians.

Urban Development Institute of Australia (UDIA)
The peak industry body for the nation’s urban development industry.

Project Management and Coordination
Delos Delta
Management consulting firm with industry leading smart city, region and community expertise.

Introduction

Australia is missing out on the benefits of Smarter Development.

This introductory guide describes the complex ecosystem and diverse interests at stake, investigates and recognises the challenges and barriers to Smarter Development, and highlights opportunities to overcome these barriers.

Ultimately, our purpose is to accelerate the adoption and realisation of Smarter Development across Australia.

To achieve this goal, nbn and Urbis engaged in a range of detailed conversations with key stakeholders from across the development industry.

Smarter Development is a multilateral space, with effort and collaboration required across a complex and multidimensional environment.

To address this complexity the Project has been:

- Steered by a committee comprised of nbn, Urbis and Professor Chris Pettit.
- Supported by an expert reference group comprised of ASCA, PIA, PCA, and UDIA.
- Focused on the development sector as a driving instigator, catalyst, and primary audience.
- Engaged with the experiences and insights of industry and community stakeholders from across Australia.

Through this document the term ‘development’ is used broadly to include all public and private place-making. It includes residential, industrial and commercial purposes; various densities and activities; rural, regional, remote, suburban and metropolitan sites; and both greenfield and infill development.

Defining Smart Development

Smarter Development leverages technology, data, and innovation to deliver community and commercial value and improve liveability, social, environment, and economic outcomes. Smarter developments are the building blocks of smart cities and communities.

Smarter Development can encompass a wide range of activity, and comes to life through a diversity of projects, partnerships, programs, and policies. Some common demonstrations of Smarter Development technologies include:

Digital and Data-Led Planning
Increasing demand for place data and digital design tools to inform planning, approval and development processes.

Smart Irrigation
The use of sensors, connected networks, and remote control to optimise irrigation and reduce water consumption.

Advanced CCTV
Intelligent systems integrate traditional closed-circuit television systems with features such as advanced analytics, built-in AI, and remote monitoring.

Automated Energy Management
Combines sensors, communications networks, analytics, and automation to monitor, manage, and optimise the generation, transmission, and distribution of energy.

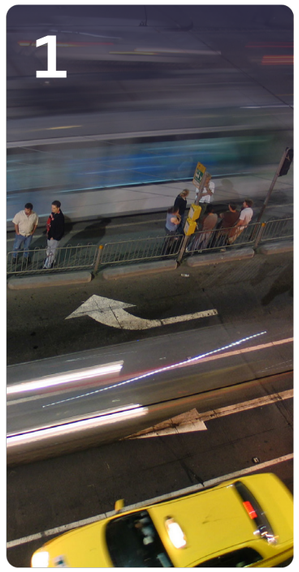
These applications are mature technologies and increasingly adopted across the industry. Smart technology projects and ‘use-cases’ are generally composed of a range of integrated technologies, infrastructure, and systems, including:

- AI and system automation.
- Physical and wireless networks.
- Sensors and IoT devices.
- Algorithms and data models.
- Cameras and visual sensors.
- Digitised tools and platforms.
- Data collection and management.
- Privacy and security policies.

Technology Application
Case Studies

What do smarter developments look like in practice?

The horizon of innovation is always moving forward, and smart technology continues to adapt and transform in line with our evolution as communities. There are a range of proven applications forming the foundations of smart development globally.



Smart Safety and Place Monitoring

What Is It?
The collection and analysis of data pertaining to a place and the people, objects, and activities that interact with it. In a Smart Safety context, place monitoring technologies can include the use of video technology, AI analytic software, and real-time alert systems.

Key Users
Community, Governments, and Utility and Infrastructure Providers.

Benefits

- Real time alerts that accelerate emergency response.
- Perceived safety and improved asset usage.
- Data-driven insights and asset value demonstration.
- Predictive workplace safety insights and maintenance notifications.

ROI Example
Perceived Safety and Improved Asset Usage
The introduction of a smart pole, CCTV and related smart infrastructure in Guildford Laneway drove a 5-6x rise in peak-hour foot traffic and raised the proportion of surveyed local women and girls who felt safe from 8% to 59 % at night, and who felt extremely safe from 39% to 92% during the day. [1]

Smart Irrigation

What Is It?
Automated watering systems that use soil-moisture sensors, weather data, flow controllers, and data analytic software to optimise the distribution of water.

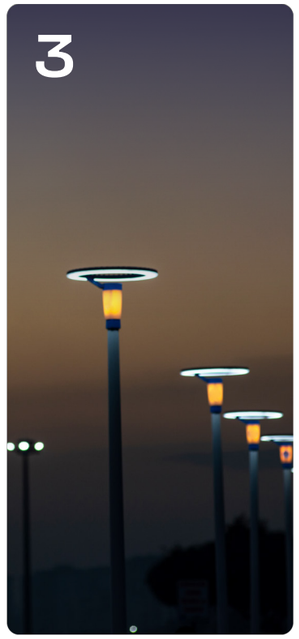
Key Users
Developers, Governments, and Utility and Infrastructure Providers.

Benefits

- Automated resource optimisation including water efficiencies and labour cost savings.
- Reduced environmental impact and improved sustainability reporting.
- Optimised crop and vegetation health.

ROI Example
Climate Resilient Irrigation
SIMPACT, Australia's largest smart green infrastructure project, leverages a machine learning approach to irrigation management (and heat management) which is estimated by Delos Delta to have a BCR of 3.08 and to deliver public health benefits worth $2.3 million annually. [2]

Source: [1] Cumberland City Council, Guildford Laneway Data Dashboard [2] NSW Government & Western Sydney University (2024), SIMP@CT in Practice: Phase 2 Final Report



Smart Lighting

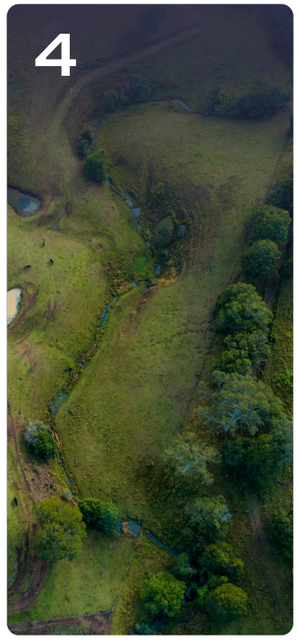
What Is It?
Real-time remote monitoring and control of LED lights for the purposes of energy efficiency, maintenance, and dimming and trimming related to safety, the environment, and resource optimisation.

Key Users
Community, Developers, Governments, and Utility and Infrastructure Providers.

Benefits

- Automated light management for condition responsive light control. Dynamic light control for events, wayfinding, safety, and environmental considerations such as dark sky initiatives.
- Cost and energy efficiencies including in cases of faulty or day-burning luminaires.
- Accurate and variable street lighting metering and billing.

ROI Example
Energy Efficiency
In addition to the efficiencies gained from LEDs smart lighting, it is estimated that smart lighting controls including 'dimming, trimming and enabling constant light output controls' are realising 20-30% energy savings. These savings are further increased by deploying 'presence/traffic sensing devices'. [3]



Environmental Monitoring

What Is It?
Distributed networks of data collection and analysis technologies monitoring environmental conditions including air-quality, pollen, pollution, humidity, temperature, noise level, water quality, soil conditions. Enabling technologies include IoT sensors, edge computing, and data sampling and analysis technologies such as predictive machine learning algorithms.

Key Users
Community, Developers, Governments, Utility and Infrastructure Providers, and Industry Associations.

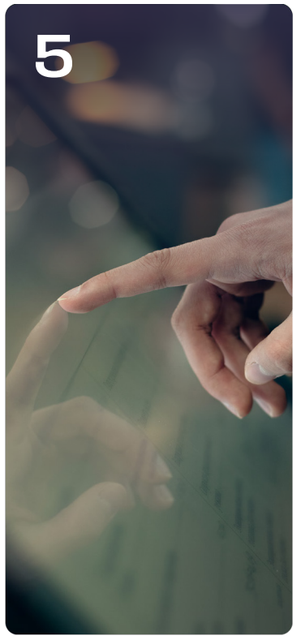
Benefits

- Data-driven environmental management.
- Real-time data for research and targeted environmental programs.
- Carbon monitoring and climate change mitigation adaption activity.
- Early detection of environmental anomalies and potential health risks.

ROI Example
Healthier Communities
In NSW, air pollution causes 603 premature deaths and $4.8 billion in annual health costs. OpenAir is a state-funded network of low-cost air-quality sensors across a number NSW councils. It provides award-winning near-real-time insights to support evidence-based management, policy, and research. [4]

Source: [3] The Institute of Public Works Engineering Australasia (2023), IPWEA Submission for AEMC on Minor Energy Flow Metering [4] IoTHUB (2024), IoT Awards: How the OPENAIR project is helping councils monitor air quality

Technology Application
Case Studies



Smart Kiosks and Signage

What Is It?
Interactive digital displays that communicate information, often providing real-time data insights or responsive information to support wayfinding, health and safety outcomes, educational and cultural experiences, and tourism and advertising.

Key Users
Community, Developers, Governments, Infrastructure and Utility Providers, and Technology Companies.

Benefits

- Remote content management and real-time data dashboard capabilities.
- Targeted messaging to support commercial and community activities.
- Engaging and interactive multi-media experiences.

ROI Example
Audience Reach and Engagement
The City of Sydney has updated its smart street furniture with 18 new smart kiosks and an associated network of communication pylons that reaches 2.6 million people a week. [5]

Smart Emergency Management

What Is It?
The systematic use of technology and data to improve disaster and emergency preparation, response, and recovery. Typically involving a combination of sensors and predictive data analytic algorithms in bushfire, flooding, and earthquake management.

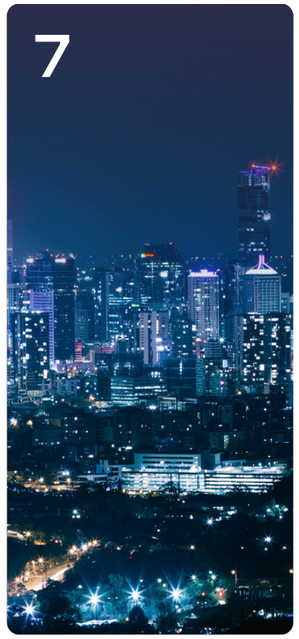
Key Users
Developers, Governments, and Utility and Infrastructure Providers.

Benefits

- Rapid and automated environmental incident detection.
- Automated public health and safety alerts.
- Real-time data optimised emergency resource deployment.

ROI Example
Early Warning
The application of smart technologies, sensors, analytics and alert systems as an early warning system has the potential to deliver 'a ten-fold return on investment'. [6] The United Nations Office for Disaster Risk Reduction estimates that a 24-hour advance warning can reduce aggregate disaster losses by up to 30%. [7]

Source: [5] QMS Media (2022), QMS Officially Launches New City of Sydney Network [6] United Nations Office for Disaster Risk Reduction (2025), First Global Early Warnings for All Multi-Stakeholder Forum launches with call to accelerate universal protection from disasters [7] United Nations Office for Disaster Risk Reduction (2024), Early warning systems benefit from shared knowledge



Living Labs

What Is It?
Innovation ecosystems that embed technology, incentivising policies, and structured partnerships to support the testing, trialling, and deployment of practical technology solutions, improve local outcomes, and support local business innovation sectors.

Key Users
Community, Developers, Governments, Technology Companies, and Industry Associations.

Benefits

- Accelerated, practical, and scalable innovative solutions.
- Context specific and targeted problem solving technologies.
- Innovation attraction, economic growth and knowledge sharing.

ROI Example
City as a First Adopter
The BOOST Fredericton Living Lab lists Hotspot as its 'poster child' program. Through its early adopter and testbed program, the Canadian living lab translated a prototype transit and parking idea into a scalable product which has created over 30 full-time jobs and reached more than 100 cities and 500,000 clients nationally. [8]

Expanded Connectivity

What Is It?
Secure fixed and wireless networks ranging from high-bandwidth 5G capabilities to low-latency Internet of Things (IoT) application enablers such as LoRaWAN (Long Range Wide Area Network); enabling both immediate connectivity and digital backbone infrastructure for future smart development.

Key Users
Community, Developers, Governments, Utility and Infrastructure Providers, Technology Companies, and Industry Associations.

Benefits

- Future-ready infrastructure for cost efficient integration of smart technologies.
- Baseline support for a diverse range of smart applications and services.
- Secure and seamless data exchange and interoperability across smart assets.

ROI Example
Digital Inclusion
The City of Launceston's award-winning Public Wi-Fi initiative covers some of the most disadvantaged suburbs in the country. 1,500 unique devices connect daily with survey findings indicating the top four purposes include 'searching for employment, accessing government services (e.g., MyGov), connecting with family, and engaging in education or training.' [9]

Source: [8] City of Frederickton (2023), Case Study Hotspot [9] Infrastructure Australia (2024) 'Regional Growth' Category Winner: City of Launceston, TAS

Technology Application
Case Studies

Smart Water Meters

What Is It?
Water meters equipped with digital flow sensors and wireless connectivity to provide real-time water usage data to both utility providers and consumers.

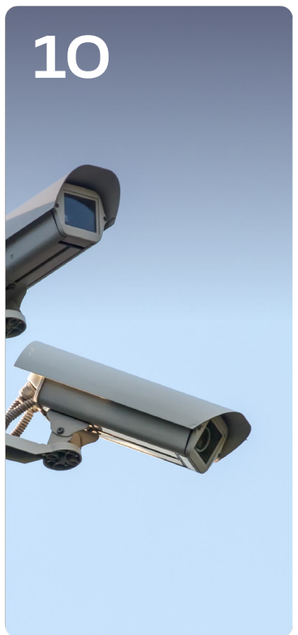
Key Users
Community, Developers, Governments, and Utility and Infrastructure Providers.

Benefits

- Early leak and anomaly detection.
- Accurate, real-time, and detailed data availability and billing, fostering community trust.
- Water usage data to support effective forecasting and service planning.

ROI Example
Self-Informed Water Use
WaterSmart is a Victorian Government funded initiative to assist businesses and councils to improve water efficiency through digital water meters and dataloggers. Successful case studies include:

- Bellarine Bayside caravan park saving 1.5 million litres of water and $3,590 in annual bills.
- Yarra Trams saving 6.6 million litres of water annually. [10]
- 30% of participants identifying water waste or leaks onsite.



Smart Poles

What Is It?
Multi-functional poles that provide the infrastructure for a suite of smart services including smart lighting, environmental sensors, essential connectivity, CCTV, EV charging, and edge computing capabilities.

Key Users
Developers, Governments, Utility and Infrastructure Providers, and Technology Companies.

Benefits

- Consolidated technology infrastructure to improve smart development efficiency.
- Multifunctional delivery of environmental, safety, and community outcomes.
- Seamless and resilient baseline connectivity.
- Interoperable, scalable, and future-ready platforms for smart development.

ROI Example
Multi-Function Enabler
Smart poles are a foundational enabling technology, providing the base platform to efficiently integrate a range of smart technologies with demonstrated benefits such as smart lighting, safety, and traffic monitoring. [11]

Source: [10] Victorian Government (2024), WaterSmart [11] Transport NSW (2023), Deploying Multi-Function Poles

Smart Energy Grids

What Is It?
Smart energy grids integrate traditional energy networks with Consumer Energy Resources (CER) to enable real-time, bilateral balancing of supply and demand. Including through smart meters, rooftop solar, wind turbines, residential to utility Battery Energy Storage Systems (BESS), and Electrical Vehicles (EVs).

Key Users
Community, Developers, Governments, Utility and Infrastructure Providers, and Technology Companies.

Benefits

- Dynamic energy management through real-time data and distributed energy generation and storage.
- Revenue generation and cost-cutting for consumers through demand-responsive load-shifting.
- Accelerated decarbonisation through optimised renewable integration, minimised peak fossil-fuel generation, and unlocked grid capacity.

ROI Example
Increasingly Important Role of Distribution Networks
The Australian Energy Market Operator (AEMO) recently warned of rising transmission-line costs, while indicating that well-coordinated CER connection "will help deliver reliable and secure energy, at lower costs for all consumers, and contribute to lower emissions. [12]

Source: [12] Australian Energy Market Operator (2025), Draft 2025 Electricity Network Options Report

Artificial Intelligence and Smarter Development

The rapid emergence of AI into public consciousness has highlighted the transformative potential of AI in urban and property planning and development, with Generative AI (GenAI) a popular innovation. However, GenAI is just one of many kinds of AI systems.

Other significant types include machine learning, automated controls, and computer vision pattern recognition. These technologies are transforming how cities are designed, approved, constructed, and managed. Considering the potential implications and benefits of AI in smarter development can enhance efficiency, accuracy, and sustainability.

It assists urban planners and developers to make more informed decisions, streamline processes, and create smarter, more resilient communities. Some leading applications of AI in smarter development are outlined in the below graphic.

Development Stage

Planning and Design	Approval and Construction	Operation and Management
Rapid Iteration of Design Concepts AI tools rapidly create and refine design options, optimising for sustainability, cost, and aesthetics, saving time and labour.	**Accelerated Approval Processes** AI automates review of planning applications, reducing approval time and minimising human error, streamlining the process.	**Predictive Maintenance** Machine learning predicts equipment failures and schedules maintenance, reducing downtime and extending infrastructure lifespan, ensuring reliability and efficiency.
Site Selection AI algorithms identify optimal development locations, considering accessibility, environmental impact, and economic potential, ensuring strategic and sustainable growth.	**Automated Compliance** Machine learning ensures adherence to building codes and regulations, continuously monitoring compliance to improve safety and reduce legal risks.	**Dynamic Systems Operation** AI optimises HVAC systems for energy use and comfort, leading to significant energy savings and improved indoor environmental quality.
Predictive Modelling and Simulations AI forecasts urban growth and environmental impacts, enabling adaptable, longterm urban plans that mitigate risks and enhance sustainability.	**Construction Robotics and Drones for Site Inspection** AI-powered robots and drones enhance precision, safety, and efficiency on construction sites, providing real-time insights and reducing accidents.	**Energy Management** AI optimises energy use in buildings and infrastructure, resulting in substantial energy savings and reduced carbon footprints, promoting sustainability.

Maturity of AI Applications

"Trustworthy AI solutions have the potential to transform our planning system. GenAI-powered digital platforms can deliver actionable insights that empower urban planners and other key stakeholders to shape more sustainable, liveable, and resilient cities."

Professor Chris Pettit
Director, City Futures Research Centre, UNSW

Building on Smart Foundations

A lot has been achieved in this journey to date, but we have some distance still to travel.

This report acknowledges that there has been a lot of hard work, energy, and activity devoted to Smarter Development.

The core purpose of this report is to recognise, highlight, and promote opportunities to address these gaps and challenges.

We acknowledge the following selection of activities represents only a portion of the abundant efforts of a much broader range of key contributors. However, it indicates the variety of important work already undertaken, helps to position the stepping stone nature of this report, and emphasises the openness of project partners to future collaboration and partnership.

A sample of smarter development activity

In terms of some of the smart foundations that have helped move us forward, we note a small selection of leadership and activity, including by:

Industry Rating Bodies

Green Building Council of Australia's *Green Star Communities: Guide for Local Government* provides an independent voluntary rating platform to assess, incentivise, and lead the sustainable transformation of our communities in part through green and smart technologies.

Industry Planning Bodies

PIA's *PlanTech Best Practice Guidelines* provides best practice guidance on how technology can be used to deliver better planning and development outcomes tailored to planners.

State Governments

NSW Government's *Smart Places Strategy (2020)* was the first state-based approach to smart technology integration in public places. Supported by a dedicated funding program the Strategy promotes benefits-driven smart technology adoption by NSW place owners.

Local Governments

Sunshine Coast Council's *Smart Infrastructure Manual* provides evolving guidance for the location and distribution of smart technologies in Council, and is a pioneering example of the impressive body of local government Smarter Development work across Australia.

Smart Cities Networks

The Australian Smart Communities Association and Smart Cities Council (ANZ) are member-driven organisations sharing resources and knowledge across private industry and the public sector and advocating for better urban technology policy.

Standards Bodies

Standards Australia's *Smart Cities: An essential enabler for Australia's Future* outlines the position and role of smart technologies and data in addressing challenges facing cities and regions across Australia.

Cooperative Research Centres (CRC)

Australia's triple-helix CRC program incorporates academia, industry, and government to co-invest in the research and development of innovation that translates into value. The Building 4.0 CRC is a recently commenced example of collaboration targeting resource efficiencies, sustainability, capability building in development sector.

The Case for Smarter Development

Smarter development is an approach that integrates technology, data, and innovation to create more efficient, sustainable, and liveable communities.

Digital connectivity is the emerging critical infrastructure, increasingly fundamental to a wide range of place and community outcomes. Smart technologies and place-specific data enable stakeholders to make more informed planning and operational decisions, to improve place interaction, optimise resource allocation, evaluate impact, and enhance the overall amenity and experience for residents and visitors.

By leveraging digital infrastructure and connectivity, smarter development provides a foundation for creating future-ready and resilient developments.

Smart tech offers enormous value in a development context

The below is a sample of value delivered through established smart technologies:

- **Efficiency and cost savings** through intelligent energy management, streetlights, smart traffic infrastructure, and on-demand systems.
- **Enhanced connectivity, innovation, and productivity** via faster expanded fixed and wireless connectivity networks.
- **Sustainability and decarbonisation** through accelerated and integrated renewables, and data-based urban heat and cooling initiatives and water management.
- **Data collection and analysis** to inform future planning, evaluate effectiveness of interventions and support Environment, Social and Governance (ESG) reporting requirements and aspirations.
- **Safer people, places, and property** through CCTV and intelligent monitoring systems.
- **Lifecycle cost benefits** through energy efficient housing and buildings.
- **Optimised investment and maintenance** through place and space utilisation data collection and analysis.
- **On-demand and tailored** services through smart access, parcel, and service app infrastructure.

Smart technology implementations are generally capital investments justified by long-term returns, or complementary or surplus infrastructure or services. Up-front costs are an often-cited barrier. Yet the demand for sustainable and efficient buildings and places is increasing. Smart technologies, if utilised, can help meet these compliance requirements and deliver on consumer expectations.

Australia is yet to take full advantage of this opportunity

Consider the following engagement insights:

- **55%** of industry stakeholders **net agree or strongly agree** that Australia is currently **missing out** on the benefits of Smarter Development.
- **45.3%** report smart technology is **rarely, or very rarely considered/integrated** into development projects, **41.6% occasionally**.

Work urgently needs to be done to collaboratively address Smarter Development confusion, uncertainty, and risk aversion.

> *"The Property Council of Australia has always promoted new technology as a means of improving workforce efficiency, design capability, planning processes, construction productivity, and the sustainability of the urban environment. The prize is far bigger. This report shows safer, more liveable, more sustainable, connected communities across Australia are within reach."*
>
> Mike Zorbas
> CEO, Property Council of Australia

The Smarter Development Ecosystem

Planning and executing smart technology in a development context is multilateral.

The Smarter Development ecosystem is complex, involving a wide range of individuals, organisations, and sectors. The development sector is crucial to the prosperity, wellbeing, and future of Australians. Integrating technology in a strategic, collaborative, and principled manner is essential to realise future-ready development opportunities.

Throughout our engagement program, risk and incentive were identified as key parameters for all stakeholders. The complex mix of interests, motivations and incentives complicates the Smarter Development environment.

> *"We need a shared language and information about the value proposition. Information for decision-makers in both private and public sector to understand how Smarter Developments make a difference."*
>
> Government Stakeholder
> Industry Survey

A critical finding of this report is the need for more stakeholder connection, both formal and informal. However, coordination challenges are characteristic of the broader development sector, for example:

- The construction sector is highly fragmented and dominated by Small to Medium Enterprises.
- Council planning frameworks and digital-infrastructure standards are often inconsistent.
- The utility market, while comparatively consolidated, often operates within jurisdictional borders which can disincentivise national coordination.
- Technology providers can be driven toward strategies such as vendor/proprietary lock in through competitive incentive.

While these multilateral challenges introduce potential for uncertainty, disconnection, or duplication, they also lead to exciting opportunities for collaboration and innovation.

To leverage these collaborative opportunities, it is essential to understand the interests, perspectives, and challenges of the key stakeholder groups that drive outcomes in the smarter development ecosystem.

The Stakeholder Landscape

The key stakeholders addressed in this report and their role in smarter development are outlined below:

Developers

Developers include planners, designers, engineers, architects, landowners, and construction stakeholders involved in the development of land and property. Developers are responsible for conceptualising, designing, and executing Smarter Development projects. They integrate smart technologies and innovative practices to create efficient, sustainable, and liveable communities.

Governments

All levels of government (local, state, and federal) are relevant to Smarter Development and play an important role in policy-making, regulation, and funding. Governments set the regulatory framework, provide funding and incentives, and ensure that Smarter Development aligns with public policy goals. They also facilitate collaboration between stakeholders and promote public trust and engagement.

Utility and Infrastructure Providers

Utility and infrastructure providers include firms and organisations involved in delivering water, sewerage, stormwater, energy, and digital connectivity services, as well as general civic infrastructure. These providers ensure that the necessary infrastructure is in place to support Smarter Development. They collaborate with developers and governments to integrate smart technologies into existing and new infrastructure, enhancing efficiency and sustainability.

Technology Companies

Technology companies include developers, providers, and vendors of technology solutions. Technology companies supply the digital infrastructure, smart technologies, and innovative solutions that enable Smarter Development. They also play a crucial role in upskilling the broader ecosystem and driving technological advancements.

Industry Associations

Industry associations include peak bodies and membership-based organisations representing various sectors involved in Smarter Development. Industry associations advocate for best practices, provide industry standards, and facilitate knowledge sharing and collaboration among stakeholders. They play a key role in promoting Smarter Development and supporting industry-wide initiatives.

Coordinated Collaboration

Effective action in a multilateral environment depends on structured and coordinated activity.

Smarter Development implementation occurs in a fragmented environment full of collaborative frictions, including:

Technical
System-to-system interoperability gaps.

Governance
Stewardship, handover, and acceptance challenges.

Communications
Misaligned language, framing, and incentive structures.

Sustainable collaboration relies on recognising and understanding these frictions and having a range of formal and informal mechanisms (templates, standards, models, etc.), through which to address them.

Coordinated collaboration enhances effectiveness; but can also foster innovation and trust, enable shared risk and investment, and build collective capability and knowledge.

The crucial challenge inherent to the multilateral Smarter Development environment is that too often collaboration is ad-hoc, fragmented, and unstructured; or even simply put aside and avoided because it is perceived as just too hard in practice.

"We continue to see key barriers such as fragmented collaboration, inconsistent regulation, and limited digital capability across the development sector. The report calls for a shift in mindset–treating Smarter Development as essential infrastructure that supports liveability, sustainability, and economic resilience."

James Sankar
ASCA President

"A more coordinated approach is required between stakeholders including all levels of government, utility providers and our property development sector. That means regulatory frameworks and infrastructure approvals must match motors with the speed of digital change and capability."

Col Dutton
President UDIA National

Engagement Summary

A National, Cross-Cutting Conversation

This report is founded on a long and wide-ranging stakeholder engagement program.

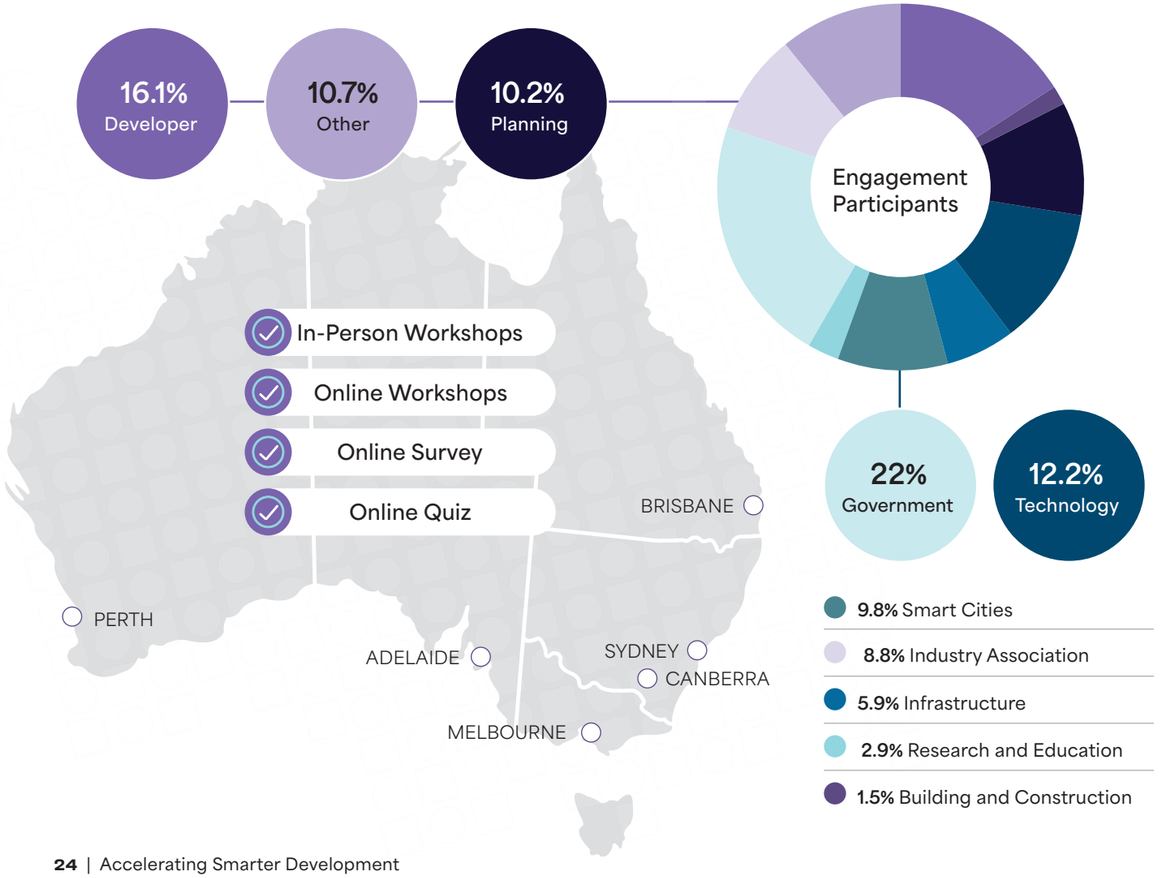
The engagement brought together industry leaders from across Australia's capital cities, representing a multitude of sectors and perspectives.

Engagement workshops were complemented by a range of digital engagement mechanisms, including additional workshops, interactive audience engagement platforms, and a detailed online survey.

The resulting data comprises a combination of qualitative and quantitative data that reinforces, echoes, and develops the founding premises of this project.

Of industry leaders surveyed:

- **55.0% net agree** that 'Australia is currently **missing out** on the benefits of technology, innovation and data in developments.'
- **36.4% net negative** sentiment (slightly aware) on 'How do you perceive the general **awareness** of Smarter Development **in the market?**'
- **95.0% net agree** that 'I would **like to see more done** in the Smarter Development space across Australia.'



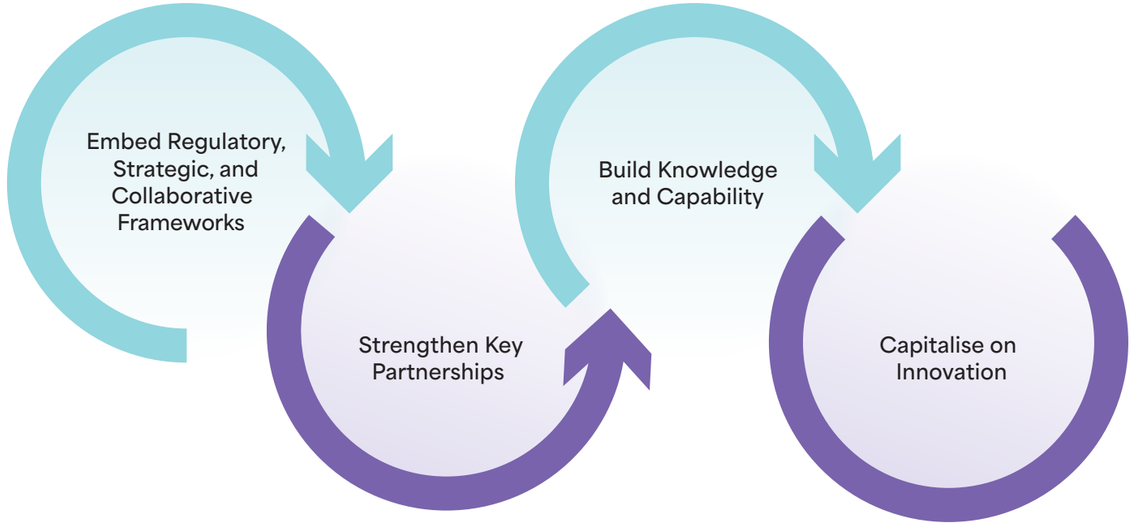
Industry Ranked Drivers, Barriers, and Actions

Industry leaders identified the following top priority drivers of investment, barriers to implementation, and actions to accelerate Smarter Development:

	Drivers	Barriers	Actions
1	Operational efficiency and cost savings	Unclear ROI	Standard models of collaboration, asset sharing and hand-over
2	Future-proofing infrastructure	High upfront costs	Clear mapping of smart tech to strategic priorities
3	Sustainability and energy efficiency	Resistance to change and risk appetite	Demonstrations of returns on investment

Engagement Action Themes

Across the course of engagement four critical themes emerged as areas for action and focus to support, enhance and accelerate smarter development in Australia:



Key Challenges

Smarter Development invites innovation and carries with it many issues to address. Eight key challenges were consistently identified by stakeholders in a nation-wide industry engagement.

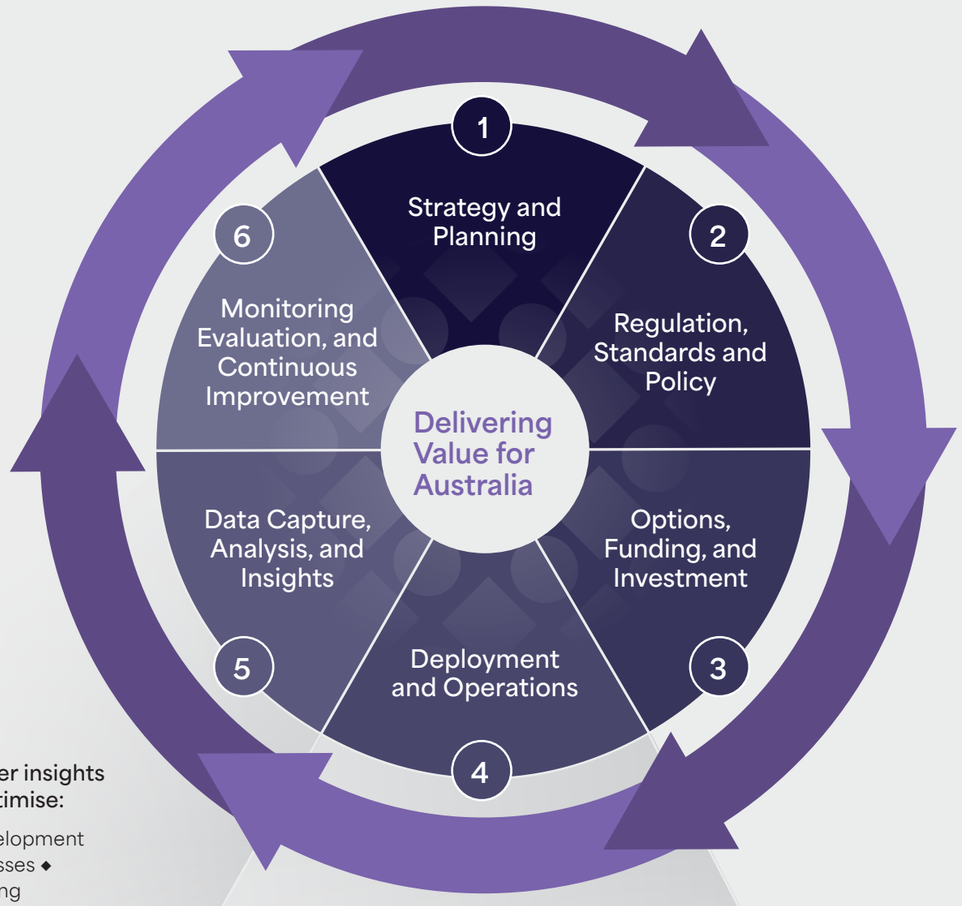
The broad-ranging nature of smarter development means this list is not exhaustive and seeks to spotlight a few high-priority issues to consider.

Issue	Description	Impacts	Quote
Asset Innovation and Handover	◆ Developers often consider and propose implementing technologies ◆ Innovative technologies carry more complex handover protocols ◆ Developing authorities often have a low-risk appetite and persistent ROI and asset utilisation/management capability concerns	◆ Unclear, obstructed, and slow pathways to implement smart technologies ◆ Unsustainable or poor management of implemented technologies	*"Unclear mechanisms for handing technology over to government remains our biggest barrier to smarter development."* **Survey Respondent**
Funding and ROI	◆ Development funding is competitive ◆ Smarter Developments balance up-front costs with lifecycle benefits; however, there is persistent industry ROI uncertainty ◆ Limited investment in collaborative ROI demonstration/sharing	◆ Deprioritised funding of Smarter Developments ◆ Hindered Smarter Development maturity ◆ Long-run missed ROI	*"The return on investment is unclear, particularly when the benefits accrue to a party who is not funding the initiative."* **Survey Respondent**
Housing Affordability	◆ Smarter Development is often perceived by industry as an added upfront cost burden ◆ While smart technology is intended to improve development processes and generate cost and efficiency savings, they often require capital investment and poor execution is a real concern	◆ Higher sale prices ◆ Investor hesitancy ◆ Slower adoption of smart features	*"Increase density where the supporting infrastructure is already present, thus creating a bit higher upfront cost for home buyers but a lower and more affordable living condition."* **Survey Respondent**
Regulatory Uncertainty	◆ Developers and technology providers often operate across jurisdictional development/ planning boundaries ◆ Genuine technology risk concerns are amplified by rapidly emerging technologies and low tech-literacy	◆ Longer approval cycles ◆ Disparate compliance standards ◆ Risk adverse stakeholders	*"We need alignment of policies regarding the installation of smart technology across all levels of government."* *"Mandate a baseline Smarter Development building code."* **Survey Respondents**

Issue	Description	Impacts	Quote
Security, Privacy, and Trust	◆ Cyber security and privacy are core priorities for both businesses and community ◆ Implementing new technologies can introduce vulnerabilities or privacy concerns ◆ An evolving policy and regulatory landscape adds compliance complexity	◆ Policy and regulation generation ◆ Community trust and brand management ◆ Risk aversion	*"With this call to embrace technology to fast-track smarter design and construction, comes the acknowledgement that we also need a robust response to growing cyber security risks."* **UDIA**
Knowledge, Awareness, and Skills	◆ Industry awareness of opportunities remains limited ◆ Data, knowledge, and information silos obstruct collaborative knowledge building/sharing ◆ A competitive digital-skills market leads to challenges acquiring digitally capable talent	◆ Smarter Development opportunities are often overlooked simply due to a lack of awareness ◆ Industry efforts are often duplicated efforts or inconsistent ◆ Development industry digital maturity remains low	*"52.1% of industry surveyed indicated low market awareness, while 32.1% indicated 'somewhat aware'."* **Industry Survey**
Multilateral Governance	◆ Smarter Developments typically involve a complicated network of stakeholders, including developers, a development authority, tech-providers, and the community as beneficiaries ◆ The relationship between these stakeholders is vital to the success of a development; however, they are too often unstructured and ad hoc	◆ Enhanced risk across a broad range of categories including asset transfer and acceptance, risk management, regulatory compliance, etc. ◆ General uncertainty leads to risk aversion ◆ Complex coordination challenges	*"Only 21% of industry surveyed agreed there effective collaboration between the private sector, government, and other stakeholders on Smarter Development. 36% neutral, 43% disagreed."* **Industry Survey**
Strategic Direction and Commitment	◆ Typical absence of formalised Smarter Development strategies ◆ Where Smarter Development opportunities are considered, they are often deprioritised through the planning process ◆ If smart technologies are implemented, this implementation is often fragile, short-sighted, or unsustained	◆ Smart technology is still considered, in many respects, an 'add-on', a 'nice to have', and certainly not BAU ◆ Digital infrastructure is typically not afforded the level of respect and certainty as physical infrastructure	*"Decision-makers are often unwilling to decide for the long term. There's a lack of understanding of better technologies being cheaper."* **Survey Respondent**

Smarter Development Lifecycle

Smarter development is a holistic lifecycle. As with each stage of development, it requires early consideration, stakeholder management and consultation and effort to realise its full potential and return on investment.



Further insights to optimise:

- Development processes
- Planning decision-making
- Resource usage
- Safety and security

Delivery of key benefits including:

- Efficiency
- Environmental sustainability
- Economic development
- Liveability and inclusion

There is no silver bullet for successful integration or implementation of Smarter Development. Nor is it as simple as choosing from a menu of smart technologies.

While there is proven ROI for individual smart technologies, true value is derived from the ability of the technologies to seamlessly integrate with the principles of the development, its environment and customer base.

Urban and regional strategy and planning is being rapidly digitised and increasingly data-led. Smarter Development encapsulates the deployment of systems for both optimising place operations and interaction, and generating the data required for better long-term planning of our precincts and cities.

The smarter development lifecycle demonstrates the steps that move a project from a 'technology for the sake of technology' approach to 'delivering value for Australia' right across the smart development stakeholder landscape. It emphasises the multilateral approach required upfront to enable benefits across deployment and operations.

While this report encourages and promotes the inclusion of smart technology in developments, the smarter development lifecycle affirms the importance of considered, values-focused prioritisation and design.

> *"Smarter Development is not just about deploying new technologies, it's about using them to shape great places that are resilient, inclusive, efficient and future-ready. For planners, smarter development means aligning people, policy and digital infrastructure to serve long-term public outcomes."*
>
> Matt Collins
> CEO, PIA

Most desirable features of smart technologies identified by industry participants:

- 52.50% Cost-effectiveness
- 44.20% Easy integration with existing systems
- 42.60% Scalability and future proofing
- 37.70% Real time data insights

Smarter Development and ROI

ROI is a key challenge in Smarter Development, especially for developers who face increased capital expenditure and upfront costs. However, as the benefits can be substantial, making informed investment decisions is crucial.

Consider both direct and indirect benefits

Direct financial benefits include cost savings from reduced energy consumption and maintenance, improved access to investment capital through ESG compliance, and revenue generation from high-value assets. Indirect social and economic benefits encompass enhanced property values, marketability, and community satisfaction. Understanding these returns is vital for developers.

ROI varies across stakeholders

Developers focus on financial returns, while governments prioritize social and economic benefits. Utilities seek long-term efficiencies, and technology providers aim for market expansion and innovation.

Achieving ROI involves strategic planning and collaboration

Benefits accrue at different stages of the development cycle. Initial investments in smart infrastructure can lead to long-term savings and increased property values. Early engagement with local governments can secure funding and incentives, while partnerships with technology providers can ensure cost-effective solutions and identify innovative revenue models.

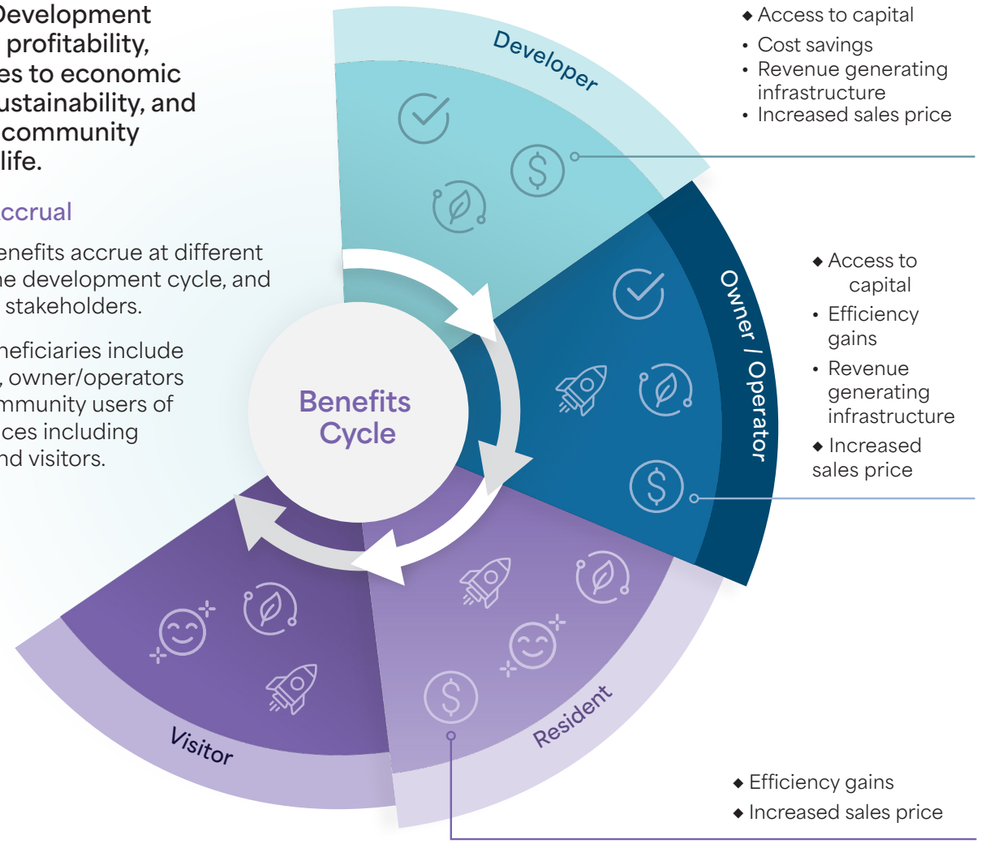
An additional consideration is the potentially negative impact of neglecting Smarter Development. This can lead to out-of-date inclusions and expensive upgrades and retrofits. Projects may face early obsolescence significantly impacting future value and profitability. Failing to meet consumer expectations and compliance requirements can result in rapidly declining consumer desirability, reduced market share, and compromised commercial viability.

Smarter Development enhances profitability, contributes to economic growth, sustainability, and improves community quality of life.

Benefits Accrual

Different benefits accrue at different stages of the development cycle, and to different stakeholders.

Primary beneficiaries include developers, owner/operators and the community users of estate services including residents and visitors.



Access to Capital
Improving access to investment capital through compliance with ESG reporting requirements and mandates.

Cost Savings
Generating cost savings through enabling efficiencies in future site or estate operation.

Cost Savings
Mitigating additional foreseeable costs through early planning and consideration of digital infrastructure requirements.

Revenue Generation
Creating assets that can generate commercial revenue, and marketing sales estates with a high value add to enhance the commercial value of sales.

Sustainability
Utilising smart technologies to meet or exceet targets around energy and water consumption and carbon emissions.

Future Ready
Ensuring customers and residents are enabled to participate effectively in future-ready liveable communities.

Quality of Life
Utilising smart technologies to improve the residential experience through optimisation, resilience and connectivity.

Accountability
Utilising smart technologies to monitor systems and activities and provide data to ensure compliance with ESG responsibilities and resporting requirements.

Part 2 **Seize the Opportunity**

Reflecting on the smarter development stakeholder landscape, the following guidance unpacks the key motivations and drivers for these groups as uncovered by this project.

To support action and activity towards smarter development, a selection of high-impact pathways to opportunity have been identified across the stakeholder landscape.

Empowering Developers to Lead the Way

Developers are at the heart of the Smarter Development ecosystem, being the primary actor conceptualising, designing, and delivering the projects that create efficient, sustainable, and liveable communities. Engaging developers is essential because they have significant influence on embedding Smarter Development into new communities and precincts.

Despite a persistent and high level of interest, several barriers hinder progress, including a low understanding of Smarter Development principles, unclear return on investment, asset management concerns, and high up-front costs.

To overcome these challenges, developers should focus on framing development opportunities through smart community frameworks that identify high-value initiatives, rationalise upfront spend, align with local priorities, and clearly communicate the benefits of Smarter Development to stakeholders and the market.

Establishing agreements with local governments on asset ownership and management can streamline handover and open potential revenue opportunities. Investing in no-regrets future proofing can mitigate expensive retrofits and ensure projects remain relevant. Embedding smart technology enables data-led decision-making for operations and management, environmental compliance and user experience.

Seeking collaboration across industry, government, and academia can help developers to build this understanding and internal capability, enhancing their ability to deliver successful Smarter Development projects.

> *"The next decade presents an unparalleled opportunity for governments and property organisations to ensure placemaking is led by technology to benefit communities across the country.*
>
> *Every new development should have a smart community strategy - education, productivity and prosperity benefits are there for the taking."*
>
> Mike Zorbas
> CEO, Property Council of Australia

Key Motivations and Drivers

Operational Efficiency and Cost Savings
Implementing smart technologies across project lifecycles, like digital modelling, predictive maintenance, energy management, and automation to streamline operations and reduce long-term costs, making developments more profitable and attractive to investors.

Future-Proofing Infrastructure
Incorporate forward-thinking design and technology to ensure developments remain adaptable and functional, protecting investments and meeting evolving community needs.

Environmental Sustainability
Prioritise energy-efficient buildings, renewable energy sources, and green infrastructure to meet sustainability goals, comply with regulations, attract eco-conscious buyers, and support global climate efforts.

Improved User Experience
Enhance the appeal of your developments with smart technologies that improve convenience, safety, and quality of life, attracting residents and businesses and increasing property values.

Competitive Differentiation
Leverage unique smart technologies to stand out in the market, attract buyers and investors, and demonstrate your commitment to innovation and forward-thinking development practices.

Pathways to Opportunity: Developers

Opportunity	Step Forward	Potential Challenges	Mitigating Action
Increasing Revenue and Sales Avenues	Leverage technology and innovation strategically in developments to realise community and user benefits, and communicate these to the market.	Overcoming high upfront costs.	Employ a strategic approach, including the development of a Smart Community Strategy, to rationalise costs and avoid mis-investment.
Maximising Competitive Differentiation	1. Leverage unique and innovative smart technologies to stand out in the market. 2. Highlight Smarter Development features in marketing and communications.	Demonstrating the value and benefits of smart technologies to potential buyers and investors.	Develop case studies and success stories to showcase the tangible benefits of Smarter Development.
Driving Reputational Development and Dividends	Demonstrate Smarter Development delivery capacity and the associated benefits as intrinsic to the development approach.	Understanding asset ownership and management.	Identify preferred asset hand-over and acceptance approaches to be negotiated with local governments and other stakeholders; align and integrate Smarter Development projects with local Smart Community Strategies and local government terms of agreement.
Increasing Efficiency of Development and Eventual Operations	Consider developing a Smart Community Strategy for new developments; identify and prioritise projects and initiatives that have an operational impact on any given development.	Value capture for long-term investments.	Negotiate with local governments and other relevant stakeholders, such as strata companies, to establish value-sharing methods that balance capital costs and operational benefits over the long term.
Increasing Operational Efficiency and Cost Savings	1. Implement predictive maintenance and energy management systems. 2. Collaborate with technology providers to integrate automation solutions.	High upfront costs for implementing smart technologies.	Seek funding or incentives from government programs designed to support Smarter Development initiatives.

Opportunity	Step Forward	Potential Challenges	Mitigating Action
Improving the User Experience	1. Integrate smart home systems and efficient public transport options. 2. Enhance public safety through security and emergency response systems.	Ensuring seamless integration of various smart technologies.	Partner with technology providers to ensure compatibility and interoperability of smart systems.
Future-Proofing Infrastructure	1. Incorporate forward-thinking design and technology in the planning phase. 2. Engage with local governments to align infrastructure plans with future community needs.	Uncertainty about future technological advancements and infrastructure needs.	Develop flexible infrastructure plans that allow for adaptability and upgrades as technology evolves.
Environmental Sustainability	1. Implement energy-efficient buildings and renewable energy sources. 2. Collaborate with environmental consultants to ensure compliance with sustainability standards.	Meeting regulatory requirements and attracting eco-conscious buyers.	Work with industry associations to stay informed about best practices and regulatory changes in sustainability.
Furthering Environmental, Social, and Governance (ESG) Objectives	Pursue technological and innovative approaches to meeting ESG commitments and aspirations.	Fostering understanding and capability within the industry.	Build and share knowledge through industry associations and membership-based networks.

Government Advancing Smarter Development

Governments across Australia are increasingly active in Smarter Development. Initially led by the local government sector, it is now also a key agenda for state and federal governments. Their roles align with goals of liveability, economic development, safety, efficiency, and future-proofing infrastructure and environmental outcomes.

For developers, understanding and engaging with government stakeholders is crucial. Governments set the regulatory framework, provide funding and incentives, and ensure that Smarter Development aligns with public policy goals.

Local governments are crucial in Smarter Development, facing resource constraints and the need for interoperability. They invest in smart community strategies and framework agreements to enhance operational efficiency and community outcomes. Engaging with local governments ensures that Smarter Development principles are embedded from the start, aligning expectations across stakeholders.

State governments guide local governments and developers, through regulatory, policy and strategic frameworks and advice on future-proofing investments. State governments can drive Smarter Development by updating regulations to match technological advancements. Digital infrastructure may be overlooked in development schemes, presenting an immediate opportunity for action.

The Australian Government influences Smarter Development through legislation and funding. It can enhance the National Construction Code to support digital outcomes and incentivise Smarter Development. Federal support can help local governments achieve their smart community goals and foster collaboration with academia and other government levels.

Engaging with government stakeholders is crucial for developers. Governments set regulations, provide funding, and ensure alignment with public policy, making projects more impactful and successful. By working with all levels of government, developers can accelerate smarter development and create vibrant, resilient communities.

Key Motivations and Drivers

Liveability
Enhance residents' quality of life by integrating smart technologies that improve public services, safety, and community engagement.

Economic Development
Drive economic growth by attracting businesses and investors, creating jobs, and fostering innovation.

Safety and Security
Integrate smart technologies like digital safety measures, CCTV, emergency response systems, and data analytics to improve public safety and decision-making.

Efficiency
Streamline operations, reduce costs, and improve service delivery through automation and data analytics.

Future-Proofing Infrastructure
Future-proof infrastructure to ensure it remains relevant and functional as technology and community needs evolve, protecting investments.

Environmental Sustainability and Resilience
Smarter developments create places that can use natural resources more efficiently, monitor environmental systems in real time, and support decarbonisation objectives.

> *"This prospectus represents a great opportunity to demonstrate the value of Smarter Development that can be a co-owned vision from private, public and community."*
>
> Local Government Stakeholder
> Industry Survey

Pathways to Opportunity: Government

Opportunity	Step Forward	Potential Challenges	Mitigating Action
Local			
Developing Efficient and Effective Infrastructure	Identify a statement of developer expectations regarding digital infrastructure and the interaction of smart technology with traditional infrastructure (e.g., smart water meters).	Developing cohesion and consistency across an LGA and multiple developments.	Integrate minimum standards into planning and assessment frameworks to create common requirements.
Improving Service Levels, Offerings, and Delivery Methods	Provide effective digital services to the community and development sector, along with clear educational and informational resources.	Overcoming resourcing and capacity limitations.	Align strategic priorities and projects to funding opportunities from other levels of government; apply an efficiency lens to smart community projects and programs.
Increasing Efficiency of Operations	Ensure alignment between technological priorities in developments with operational processes in government.	Breaking down internal silos, especially between planning and smart community/city teams.	Include internal reform within strategic activities, and establish norms for smart community input in planning processes.
Enhancing Liveability	Integrate smart technologies to enhance public services and safety; engage with community stakeholders to understand their needs and priorities.	Resource constraints and budget limitations.	Seek partnerships with private sector developers and technology providers to share costs and resources.
State			
Driving Greater Digital Investment from Developers	Regularly update developer contribution requirements in step with technological progression.	Calibrating investment to meet future community and technological requirements and norms.	Partner with academia and industry to understand emerging and future technological and societal needs.
Tailoring Infrastructure Investment to Current and Future Demand	Develop insights relating to infrastructure use, and leverage in the planning of developments and investments.	Guiding development across disparate community needs.	Contribute to frameworks and guidelines for approaching Smarter Development for remote, regional, suburban, and metropolitan stakeholders.

Opportunity	Step Forward	Potential Challenges	Mitigating Action
Driving Economic Development	Promote Smarter Development projects to attract businesses and investors; provide incentives for developers to implement smart technologies.	Balancing economic growth with sustainability goals.	Collaborate with environmental consultants and industry associations to develop sustainable economic development plans.
Federal			
Mandating Digital Infrastructure and Outcomes in Developments	Include expected digital outcomes in the National Construction Code.	Direction of funding to high-impact parts of the Smarter Development ecosystem.	Prioritise community impact when contributing to partnerships, including a prioritisation of the role of local government.
Cross-Government			
and Security	Implement digital safety, CCTV, and emergency response systems; use data analytics to enhance public safety measures.	Privacy concerns and data security issues.	Develop robust data privacy and security policies in collaboration with technology providers and legal advisors.
Improving Efficiency	Streamline government operations through automation and data analytics; implement smart infrastructure to reduce operational costs.	Resistance to change within government departments.	Provide training and upskilling programs for government employees to build confidence in using smart technologies.
Future-Proofing Infrastructure	Develop flexible infrastructure plans that allow for future upgrades; collaborate with developers and technology providers to align infrastructure with future needs.	Uncertainty about future technological advancements.	Engage with academic institutions and research organisations to stay informed about emerging technologies and trends.
Implementing Privacy and Security by Design	Ensure privacy by design and cyber security principles are embedded in planning assessment and procurement frameworks.	Maintaining privacy and security requirements within a rapidly evolving technological landscape.	Regularly review comprehensive privacy and cyber security standards in collaboration with technology providers and legal experts.

Utilities and Infrastructure as Catalysts for Smarter Development

Utilities and infrastructure providers play a crucial role in Smarter Development and are essential for integrating smart technologies that improve efficiency and sustainability. Reducing resource use, enhancing operations, and optimising capital investment are all desired outcomes that significantly impact their operations throughout the infrastructure lifecycle.

For developers, working with utilities and infrastructure providers as early as possible is vital to ensure that smart technologies are well supported and cost-effectively integrated into projects, enhancing overall project success and community benefits. Collaboration with utilities and infrastructure providers can improve future-proofing and help mitigate evolving customer expectations and rapid technological change.

A range of barriers can obstruct the realisation of significant benefits for this sector. These include the difficulty of anticipating how infrastructure needs will change over time, the speed of technological development disincentivising investment, evolving customer expectations, and understanding the stakeholder environment. The dynamism of the technological environment and evolving infrastructure needs pose challenges for utilities and infrastructure providers.

To accelerate smarter development and future technology applications, developers should include redundancy in base infrastructure by adding conduit pathways for power and fibre. Liaison with utilities and infrastructure providers can ensure effective integration.

Additionally, utilities and infrastructure providers can accelerate smart projects by adopting proven established smart technologies like smart metering, asset usage monitoring, and responsive maintenance to improve operations and reduce risks.

> *"Until governments mandate the implementation of smart technologies in developments then it will be difficult to convince developers of the benefits. At the very least, infrastructure should be made mandatory for future rollouts."*
>
> Infrastructure Provider
> **Industry Survey**

Key Motivations and Drivers

Operational Efficiency and Cost Savings
Smart technologies like predictive maintenance, energy management, and automation can streamline operations and reduce long-term costs, improving profitability and customer satisfaction for utilities and infrastructure providers.

Future-Proofing Infrastructure
Incorporate forward-thinking design and technology to ensure infrastructure remains adaptable and functional, protecting investments and meeting evolving community needs

Environmental Sustainability
Prioritise energy-efficient systems, renewable energy sources, and green infrastructure to meet sustainability goals, comply with regulations, attract eco-conscious customers, and support global climate efforts.

Enhanced Operations and Maintenance
Use smart technologies like smart metering, asset usage monitoring, and responsive maintenance to improve operational efficiency, reduce downtime, and enhance service reliability.

Optimised Capital Investment
Strategically plan and integrate smart technologies to maximise the return on capital investments, ensuring effective resource allocation and high-value infrastructure projects.

Pathways to Opportunity:
Utilities and Infrastructure

Opportunity	Step Forward	Potential Challenges	Mitigating Action
Future-Proofing Infrastructure	Ensure additional redundant base infrastructure (particularly with regards to fibre and power conduit) is included in the design of developments to cater for future needs.	Recognising current and future digital infrastructure needs.	Regularly review demand projections and global best practices with regards to digital infrastructure and development service levels to anticipate emerging needs.
Meeting Evolving Consumer and Customer Expectations	Identify opportunities to modernise and digitise the customer experience.	Resistance to deviation from established processes and norms.	Commence Smarter Development activity with proven initiatives of shared value - whereby utility/ infrastructure providers, developers, government, and community can all benefit.
Increasing Operational Efficiency	Embed as business-as-usual proven technological solutions to operational challenges.	Navigating the complex stakeholder environment to ensure alignment and collaboration with all relevant parties.	Ensure effective stakeholder engagement and collaborative decision-making to establish and maintain buy-in for technology solutions.
Increasing Operational Efficiency and Cost Savings	1. Implement smart asset usage monitoring systems. 2. Use predictive maintenance to optimise operations.	High initial investment costs.	Adopt a phased implementation approach to spread costs over time and demonstrate early successes to build support for further investment.
Enhanced Operations and Maintenance	1. Use smart technologies for responsive maintenance processes. 2. Monitor asset usage to optimise maintenance schedules.	Integration of new technologies with existing systems.	Partner early with technology providers to ensure compatibility and integration of smart systems.
Optimising Capital Investment	1. Strategically plan and integrate smart technologies in infrastructure projects. 2. Use data analytics to maximise the return on capital investments.	Difficulty in demonstrating the ROI of smart technologies.	Develop case studies and success stories to showcase the tangible benefits and ROI of smart infrastructure investments.
Supporting Environmental Sustainability	1. Implement energy-efficient systems and renewable energy sources. 2. Collaborate with environmental consultants to ensure compliance with sustainability standards.	Meeting regulatory requirements and customer expectations.	Work with industry associations to stay informed about best practices and regulatory changes in sustainability.
Ensure Network and Asset Security	Integrate cyber security measures into all infrastructure and utility projects to protect data and systems.	Ensuring robust security while maintaining operational efficiency.	Collaborate with cyber security experts to develop and implement comprehensive security protocols and regularly update them to address emerging threats.

Technology Companies Driving Innovation in Smarter Development

Technology companies and vendors are intrinsically involved in accelerating Smarter Development and are incentivised to promote higher levels of Smarter Development in the market.

Typically involved late in the process through delivery contracts, they often miss opportunities to fully leverage their expertise. Early involvement, especially during the design phase, can significantly expand understanding of possible approaches and drive innovative Smarter Development projects. Early participation of technology companies can add significant value, provided it aligns with competitive procurement and unbiased strategy setting.

For developers, engaging with technology companies earlier and establishing clear contract terms ensures the effective integration of smart technologies. Mandating service standards, ongoing maintenance, and outcome-based KPIs are essential.

Additionally, requiring that any technology incorporated into smarter developments integrates with other providers and the broader smart community ecosystem can enhance functionality. Establishing common expectations among all vendors early in processes can help overcome integration challenges.

Technology providers have deep awareness of the constraints and requirements of smart solutions. Beyond informing project design and planning, they can contribute to upskilling and knowledge sharing across the ecosystem, benefiting the broader industry and enhancing their market prominence and reputation.

Building trustful relationships between technology providers, local governments, and developers enables trialling, piloting, and testing technologies in developments. This avenue can open potential advantages, including testing concepts in a living lab and boosting marketing, communications, and revenue.

Key Motivations and Drivers

Market Expansion
Promote Smarter Development to increase market opportunities and demand for their services, expanding their reach and creating new opportunities for their products.

Early Involvement
In the design phase leverages expertise and ensures smart technologies are integrated effectively adding greater value to projects.

Service Standards and Maintenance
Set clear service standards, ongoing maintenance, and outcome-based KPIs in contracts to ensure the long-term success and reliability of their solutions.

Integration and Interoperability
Mandating integration with other providers and the broader smart community ecosystem to enhance functionality and user experience, ensuring interoperability of smart technologies.

Knowledge Sharing and Upskilling
Share expertise and knowledge across the ecosystem to build trust and reputation, fostering long-term demand for their services and driving interest in Smarter Development.

> *"As a technology and supply company, our experience and intimate knowledge often get left too far behind in the project planning."*
>
> Technology Provider
> Industry Survey

Pathways to Opportunity: Technology Companies

Opportunity	Step Forward	Potential Challenges	Mitigating Action
Driving Market Expansion	Promote Smarter Development to expand market reach; engage with developers and governments early in the project design phase.	Late involvement in the development process.	Advocate for early engagement and collaboration with developers and governments to influence project design.
Encouraging Early Involvement	Participate in the design phase to leverage expertise and insight; balance early involvement with competitive procurement principles.	Balancing early involvement with unbiased strategy setting.	Develop transparent procurement processes that allow for early engagement while maintaining fairness and competition.
Enhancing Service Standards and Maintenance	Ensure contracts mandate service standards and ongoing maintenance; set outcome-based KPIs to deliver reliable and high-quality outcomes.	Ensuring long-term reliability and quality of smart technologies.	Collaborate with developers and governments to establish clear service standards and maintenance requirements.
Requiring Integration and Interoperability	Mandate integration with other providers and the broader smart community ecosystem; establish common expectations among all vendors in a development.	Integration challenges with other technologies and systems.	Work with industry associations to develop standards and guidelines for integration and interoperability.
Improving Knowledge Sharing and Upskilling	Contribute to upskilling and knowledge sharing across the ecosystem; develop training programs and resources for stakeholders.	Building trust and reputation in the market.	Engage in collaborative projects and pilot programs to demonstrate expertise and build trust with stakeholders.

Opportunity	Step Forward	Potential Challenges	Mitigating Action
Capitalise on Expanded Demand	Refine service and product offerings to be of high value to developers, governments, and communities.	Integration of products with other vendors, developments, and broader geographies.	Explore solutions and products in alignment with developer, community, and government requirements and strategies.
Communicate Expertise to Market	Engage with capability building programs with industry associations, academia, and government.	Varying service level expectations and agreements.	Develop dedicated service level agreements as a part of contracting and procurement processes.
Developing, Testing, and Piloting New Products	Develop test-bed relationships with developers and local governments.	Overcoming reputational barriers pertaining to private providers and the delivery of public value.	Prioritise public value delivery in concert with local government strategies, and communicate success stories to the market.

Industry Associations as Champions of Smarter Development

Industry associations in the development, planning, property, and smart community sectors have shown strong interest in smarter development and have been important contributors to this report.

They hold a unique position of influence and potential impact, making their involvement crucial. However, they face challenges in identifying value across diverse memberships and Smarter Development maturity, clarifying their role, and aligning Smarter Development activities with their mission.

Understanding how Smarter Development aligns with their member value proposition is essential. This relationship varies across sectors, but viewing Smarter Development as an enabler of value can help determine an appropriate role and level of involvement. Industry associations can deliver value to their members through training, upskilling, and knowledge sharing. Developing and distributing resources can be particularly impactful for smaller organisations.

Industry associations also play a highly influential leadership role, guiding members through the Smarter Development journey and fostering leadership within member organisations. This is especially valuable for those early in the Smarter Development process or with lower maturity levels. For more advanced members, identifying and celebrating these pioneering firms presents opportunities for showcasing the strength of the sector.

For developers, engaging with industry associations provides access to valuable resources, training, leadership and profiling opportunities, accelerating smarter development and enhancing project success.

> *"Let this be a call to action; for all stakeholders along the development timeline to partner more effectively, plan more ambitiously, and embrace innovation to deliver genuine value and superior outcomes for residents and cities alike."*
>
> Col Dutton
> President, UDIA National

Key Motivations and Drivers

Member Value
Deliver value to members through training, upskilling, and knowledge sharing, helping them stay competitive and informed about Smarter Development practices.

Leadership
Guide members through the Smarter Development journey, fostering leadership and helping them achieve prominent positions in the field.

Mission Alignment
Align Smarter Development activities with the association's mission, ensuring that these activities support the broader purpose and appropriate level of involvement.

Resource Development
Create and distribute resources to support members, especially smaller organisations, helping them implement Smarter Development practices effectively.

Influence and Advocacy
Leverage their unique position to influence policy and advocate for Smarter Development, shaping policy and promoting the benefits to a wider audience.

Pathways to Opportunity: Industry Associations

Opportunity	Step Forward	Potential Challenges	Mitigating Action
Improved Insights, Decision Making, and Planning	Collate and share data and insights relating to best practices for Smarter Development and distribute to members.	Collation of material and support for a diversity of users.	Advocate primarily for projects, concepts, and use cases that are proven and established across the development sector, demonstrating lower risk for diverse users.
Encourage Standardised Regulatory Approaches	Support the development and adoption of standards and guidelines for smart technology implementation.	Aligning frameworks across diverse jurisdictions.	Advocate for industry standards and rating tools. Support national approaches that outline minimum standards.
Fostering Leadership Amongst Members	Encourage members to explore smarter development and strategically pursue new and emerging ideas, and promote their accomplishments and achievements.	Balancing competing priorities and missions.	Identify areas of opportunity that approach Smarter Development as an enabler of broader objectives.
Increasing Value to Members	1. Promote smart technology as an avenue for members and stakeholders to augment their businesses and value delivery. 2. Coordinate training, upskilling, and knowledge sharing for members.	Sourcing capability and expertise amongst personnel and network.	1. Leverage partnerships with academia and industry to develop industry-wide capability and expertise. 2. Seek feedback from members to understand their Smarter Development needs and tailor resources accordingly.
Demonstrate Leadership	Play a leadership role in guiding members through the Smarter Development journey; foster leadership among member organisations.	Supporting members at different stages of the Smarter Development journey.	Support programs that cater to members at various levels of maturity and experience.
Ensure Mission Alignment	Align Smarter Development activities with the organisation's mission; communicate the value proposition of Smarter Development to members.	Clarifying the role of Smarter Development within the organisation's mission.	Engage with members to define the organisation's role in Smarter Development.
Provide Resources	Distribute resources to support members, especially smaller organisations; develop practical tools and guides for implementing Smarter Development practices.	Ensuring appropriate resources are accessible to diverse members with varying needs.	Collaborate with technology providers and experts to develop high-quality, user-friendly resources.
Expand Influence and Advocacy	Leverage the organisation's position to influence policy and advocate for Smarter Development; promote the benefits to a wider audience.	Balancing advocacy efforts with member interests.	Engage with members regularly to ensure advocacy efforts align with their needs and priorities.

Over to You

This is just the beginning of the journey; we want to hear from you.

The Accelerating Smarter Development project, developed by nbn and Urbis, provides a comprehensive overview of the current state of Smarter Development in Australia. It outlines a series of pathways for key stakeholder groups to play a more considered and coordinated role in seizing the smarter development opportunity.

Stakeholders across the smarter development ecosystem have demonstrated a strong interest and appetite for contributing to smarter development outcomes nationwide. The insights presented here are the result of extensive engagement and consultation, reflecting the collective expertise and aspirations of diverse stakeholders.

This report serves as a guide for developers, governments, utilities and infrastructure providers, technology companies, and industry associations. It should be leveraged as a first point-of-call for all stakeholders embarking on their Smarter Development journey.

In considering these insights, we hope stakeholders can more effectively contribute to and benefit from smarter development practices, leading to the creation of vibrant, resilient, and future-ready communities.

nbn and Urbis encourage further involvement from stakeholders, community members, and interested parties. Collaboration and continued dialogue are essential to achieving the vision of smarter development.

Together, we can accelerate smarter development and create a sustainable, innovative, and inclusive future for all Australians.

Acknowledgments

We extend our heartfelt thanks to all the project partners who have contributed to the Accelerating Smarter Development Project.

Your collaboration, expertise, and dedication have been invaluable in shaping this report. Special thanks to our contributing partners nbn, Urbis, and Delos Delta, as well as the City Future Research Centre for their expert advisory role.

We would also like to acknowledge the invaluable contributions of the peak associations in the Reference Group, including:

- Australian Smart Communities Association (ASCA)
- Planning Institute of Australia (PIA)
- Property Council of Australia
- Urban Development Institute of Australia (UDIA)

These partners, along with the broader industry stakeholders, have collectively contributed to the development of a comprehensive and actionable report and guidance material aimed at accelerating Smarter Development across Australia. Their collaboration and commitment have been essential in shaping the future of our cities and communities.

Industry Appreciation

We also wish to express our sincere gratitude to all members of the industry who provided their insights and expertise throughout this process. Your contributions have been instrumental in shaping the analysis and outcomes presented in this report. Your willingness to share knowledge and engage in meaningful dialogue has enriched this project and will help drive Smarter Development practices nationwide.

Further Information

nbn

If you need support on your smart solutions journey or can identify with the challenge space, contact your nbn account manager or reach out to us at: **smarterdevelopment@nbnco.com.au**

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Urbis

Get in touch to discuss your experiences, needs and challenges related to Smarter Development strategy, planning and design. We'd love to chat.

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