AUTODESK

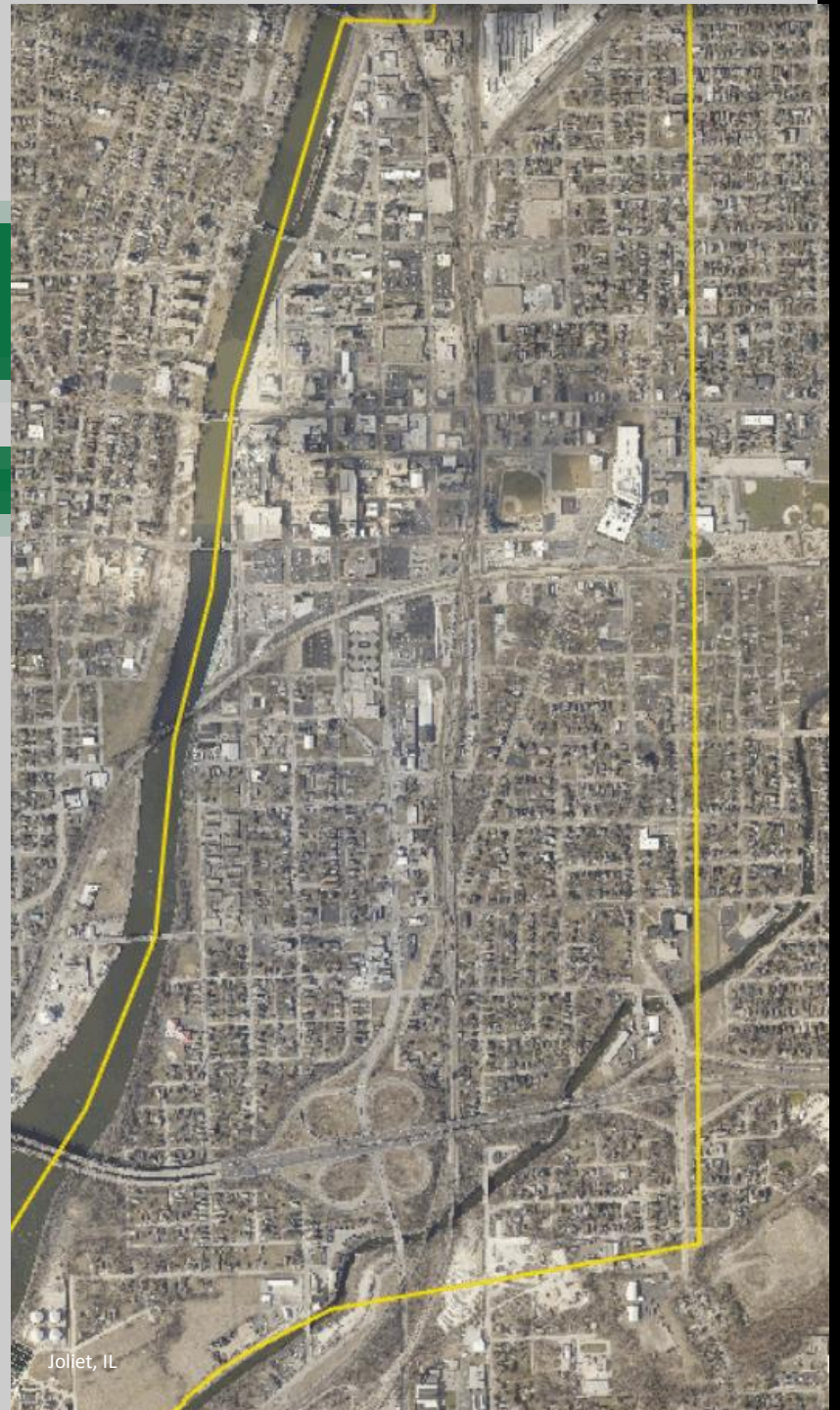
Project Controls EXPO Melbourne, Australia

Improving Quality in the Australian Building & Construction Industry

Weaving the golden thread into practice

Sumit Oberoi – Senior Industry Strategist
Autodesk Construction Solutions

© 2023 Autodesk. All rights reserved.



Agenda

1. Introductions
2. Industry challenges
3. Common Data Environment as the solution
4. Weaving the Golden Thread into practice

Sumit Oberoi

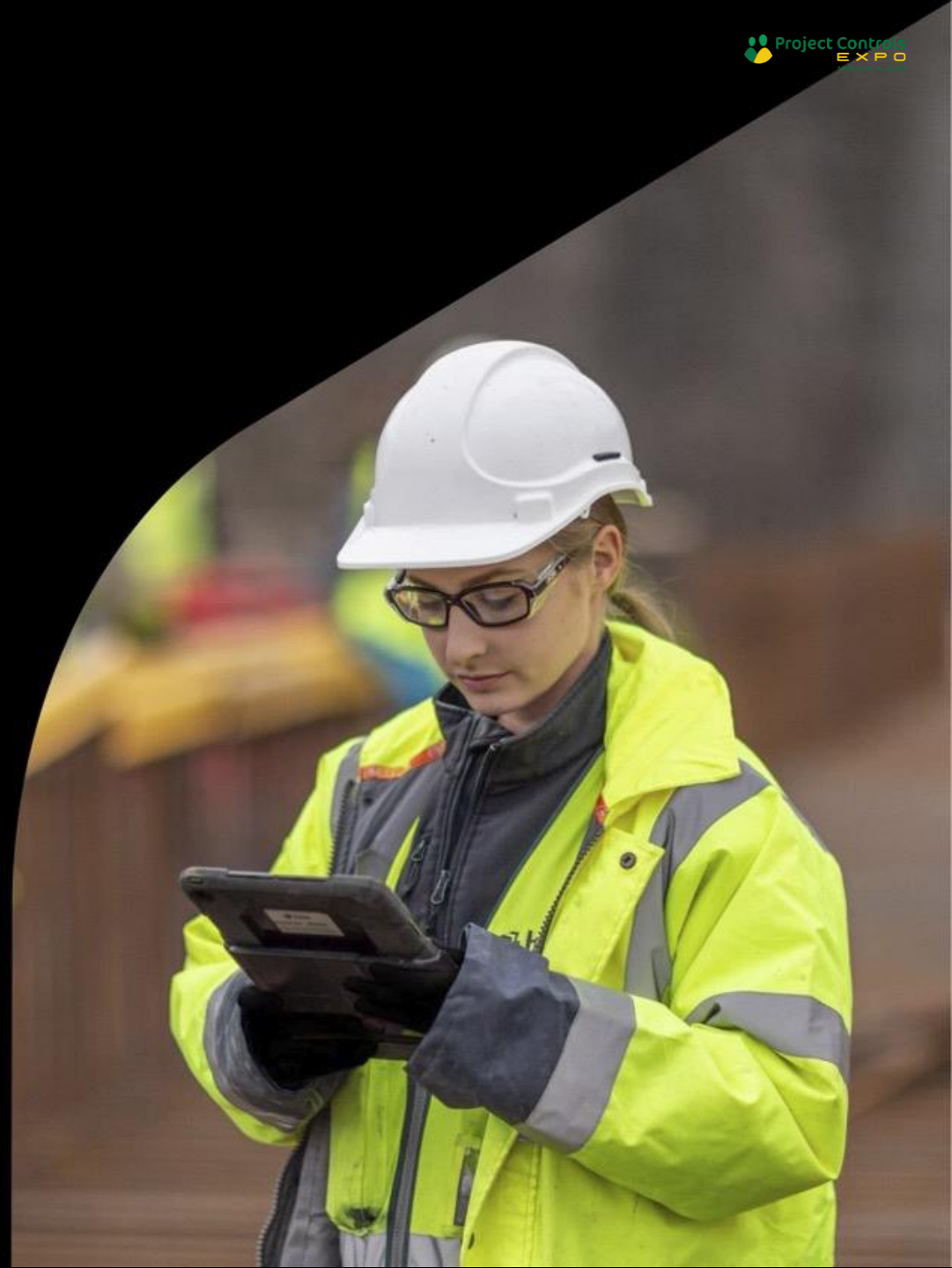
Senior Industry Strategist – APAC, Autodesk Construction Solutions

- Former National Director and Victorian Executive Director of Air Conditioning & Mechanical Contractors Association of Australia (AMCA)
- Over 20 years in the construction industry
- Long term experience representing employers and business owners in construction industry to support safer, sustainable and predictable outcomes with their project teams and industry

© 2020 Autodesk. All Rights Reserved. Confidential.

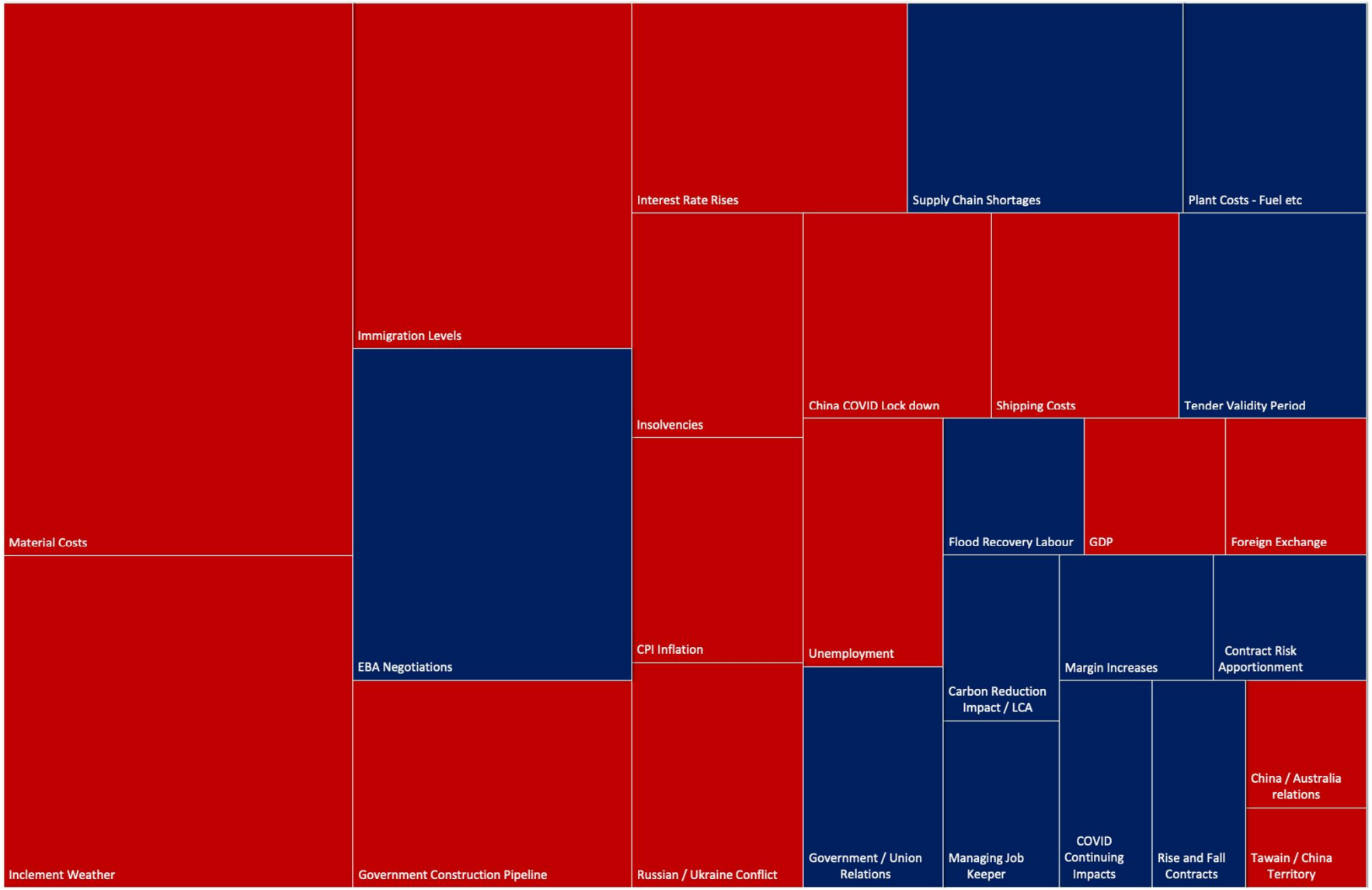
AUTODESK Construction Cloud

Industry Challenges



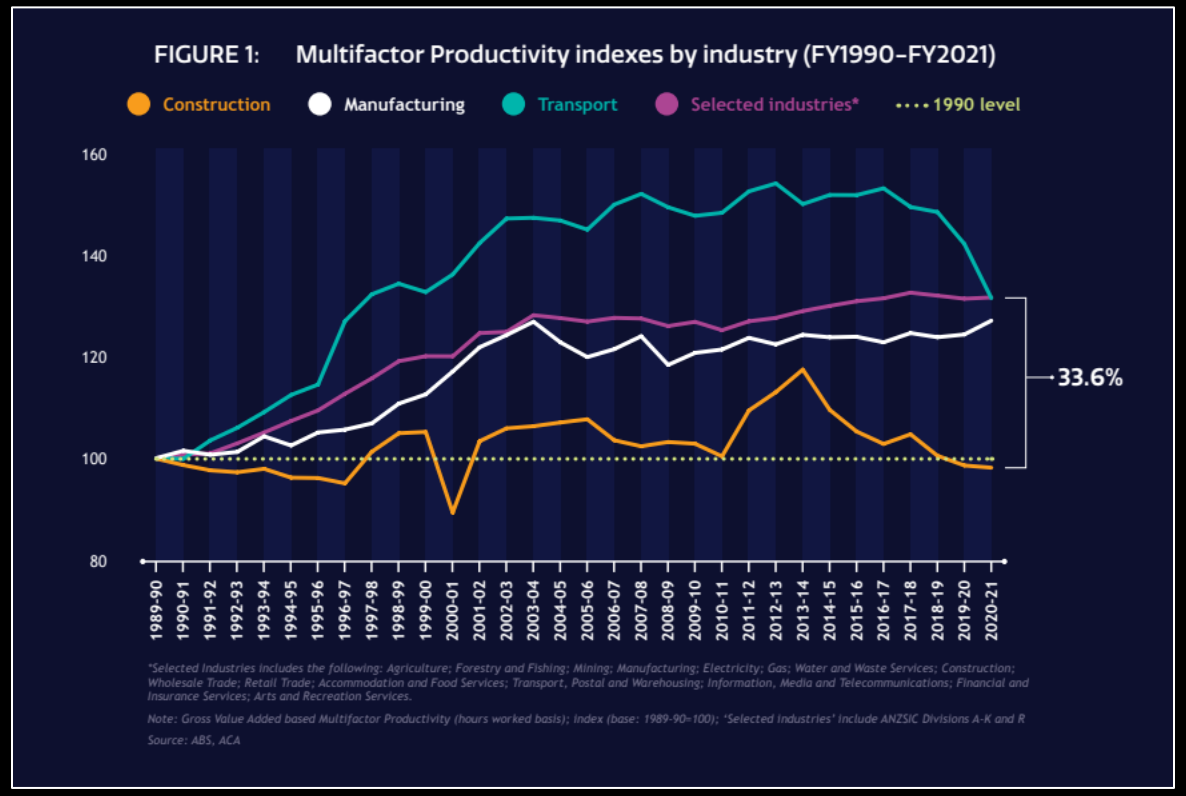
© 2023 Autodesk. All rights reserved.

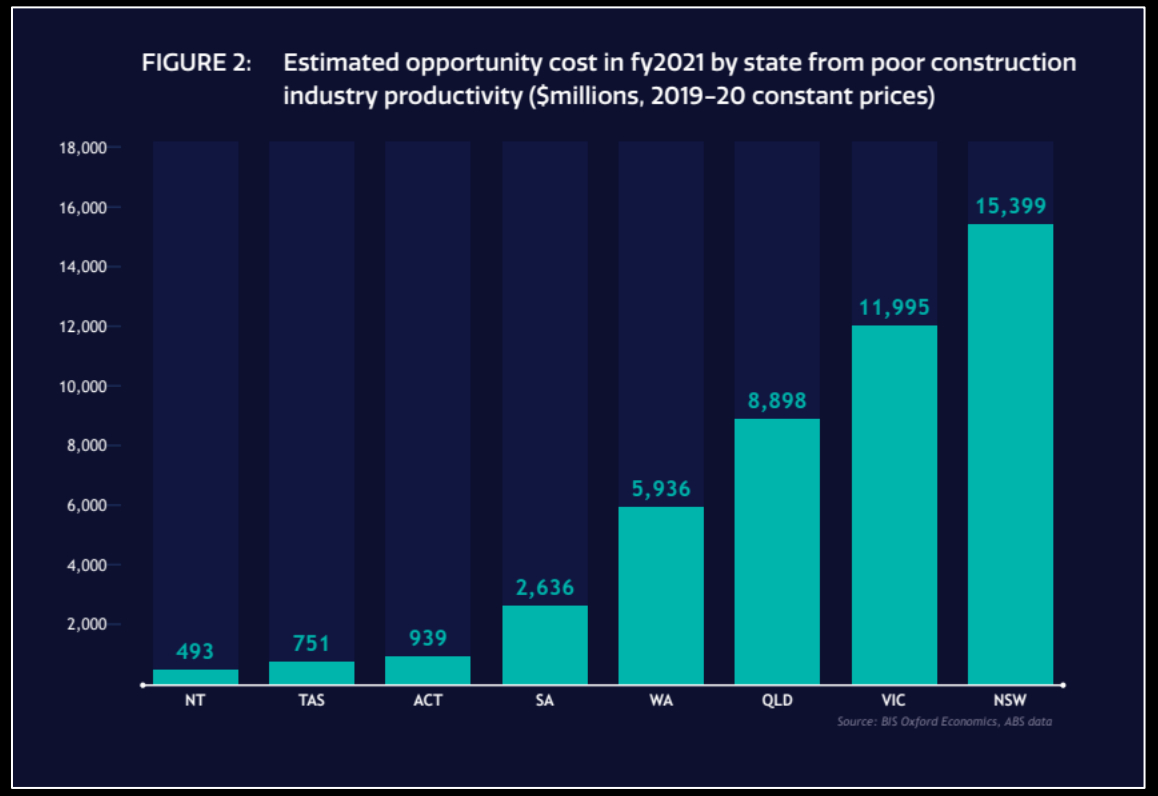
Internal and External Influences on Current Escalation Within the Australian Industry



red=external
blue=internal

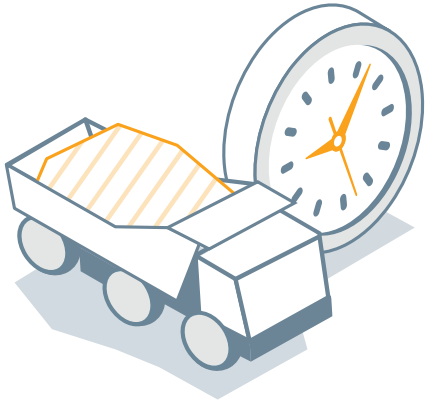
Productivity $ Estimated Opportunity Cost





Australian Constructors Association, November 2022

The Cost of a Fragmented Industry

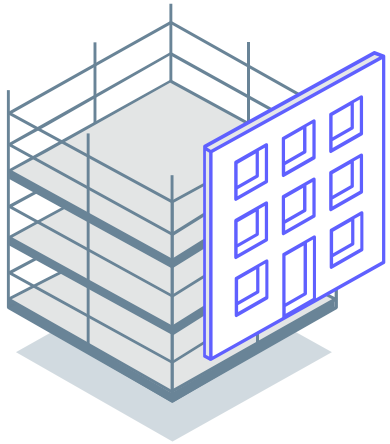


Teams

35%

of time is wasted on non-optimal activities (14+ hours/person/week)

Source: Construction Disconnected – FMI Report



Projects

$47B

cost of poor productivity performance in Australia annually

Source: Australian Constructors Association – November 2022 Report – "Disrupt or Die"

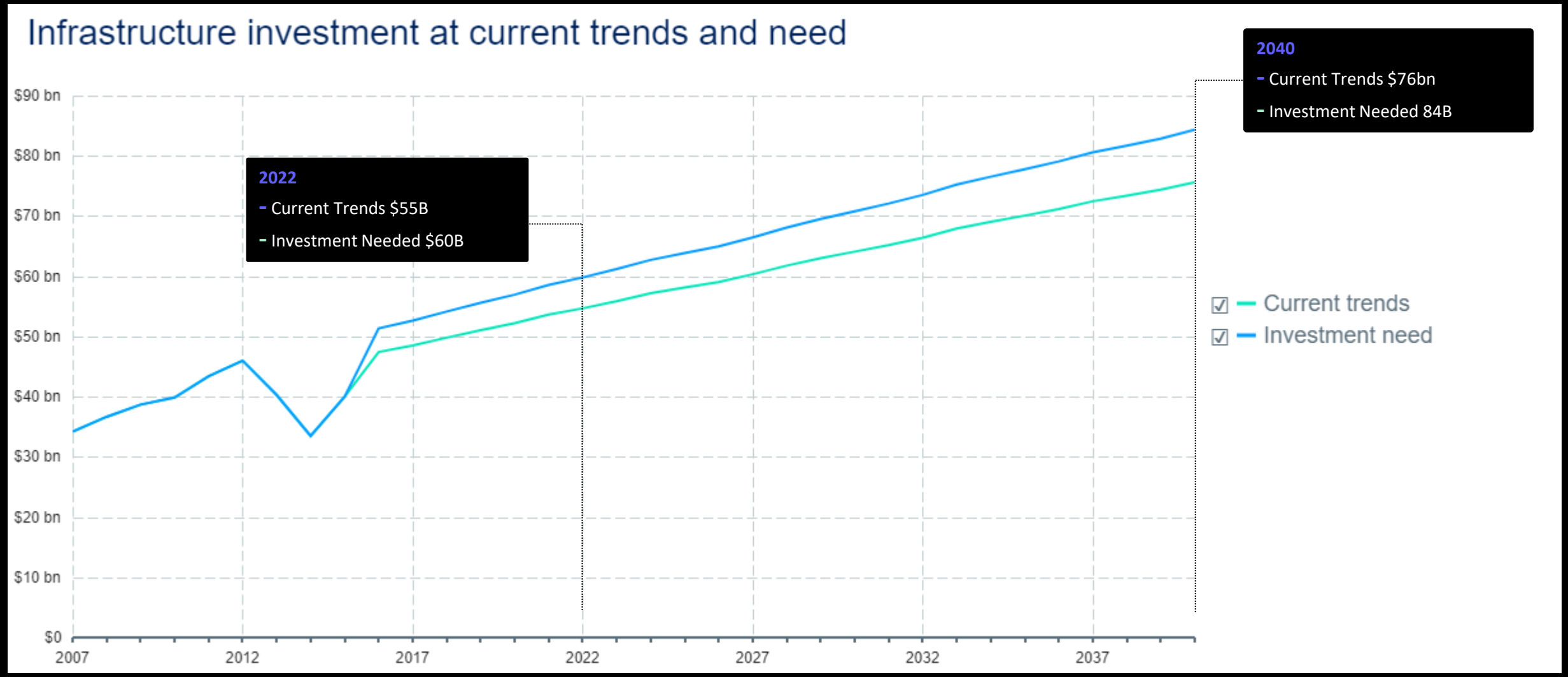
Business

95.5%

industry annual rework costs caused by poor project data and communication

Source: Big Data = Big Questions for the Engineering and Construction Industry – FMI Report

Investment Estimates Australia



Source: https:// outlook.gihub.org , https://sdgs.org.au/

Industry Risks

Bad news travels fast

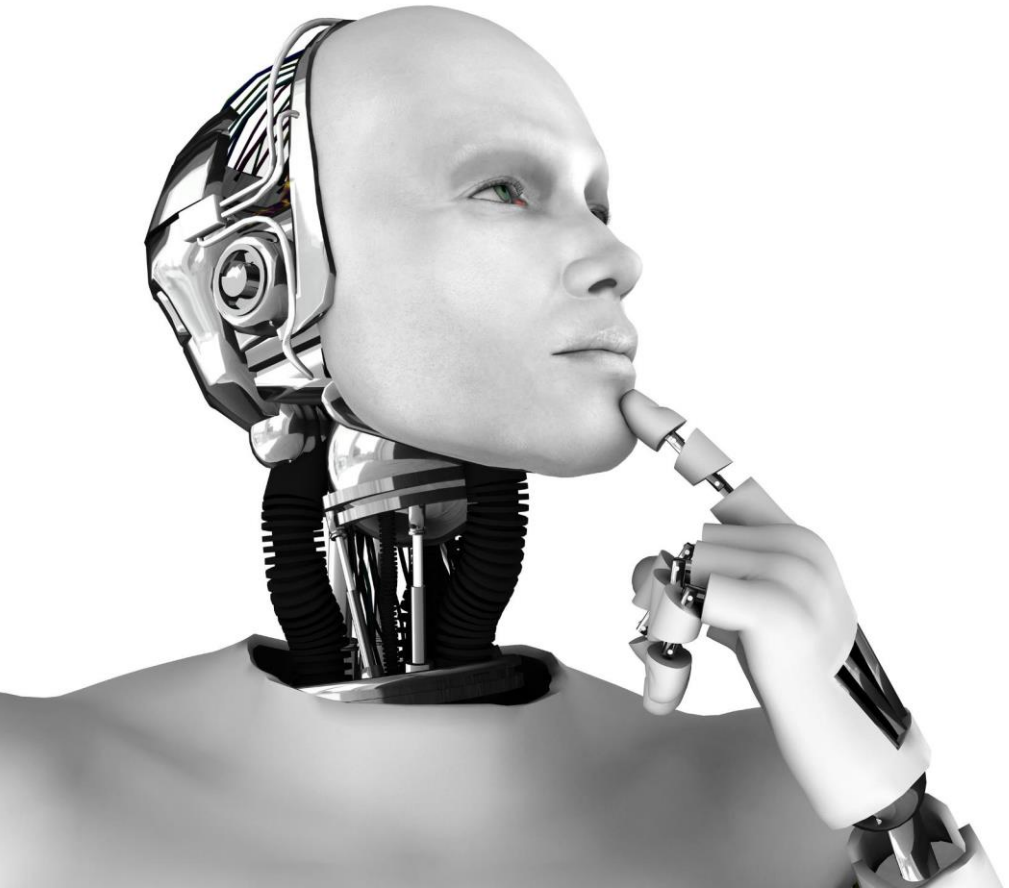
- Observing:
  - Challenges with Installation Practices
  - Flammable panels and non-conforming Products
- Construction firms are spending increasing amounts of time on legal disputes
- Rising costs challenge project delivery

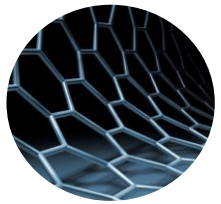
The Golden Thread of Information

Dame Judith Hackitt, DBE, FREng, FIChemE, FCGI

"There needs to be a golden thread for all complex and high-risk building projects so that the original design intent is preserved and recorded, and…any changes go through a formal review process involving people who are competent and who understand the key features of the design."

Construction Technology Evolution





Advanced Materials

AI/ML

AR/VR

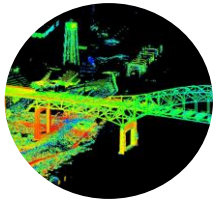
Autonomy

BIM

Digital Twins

Drones UAV

IoT



LiDAR

3D Printing

Mobile

Modular Prefab

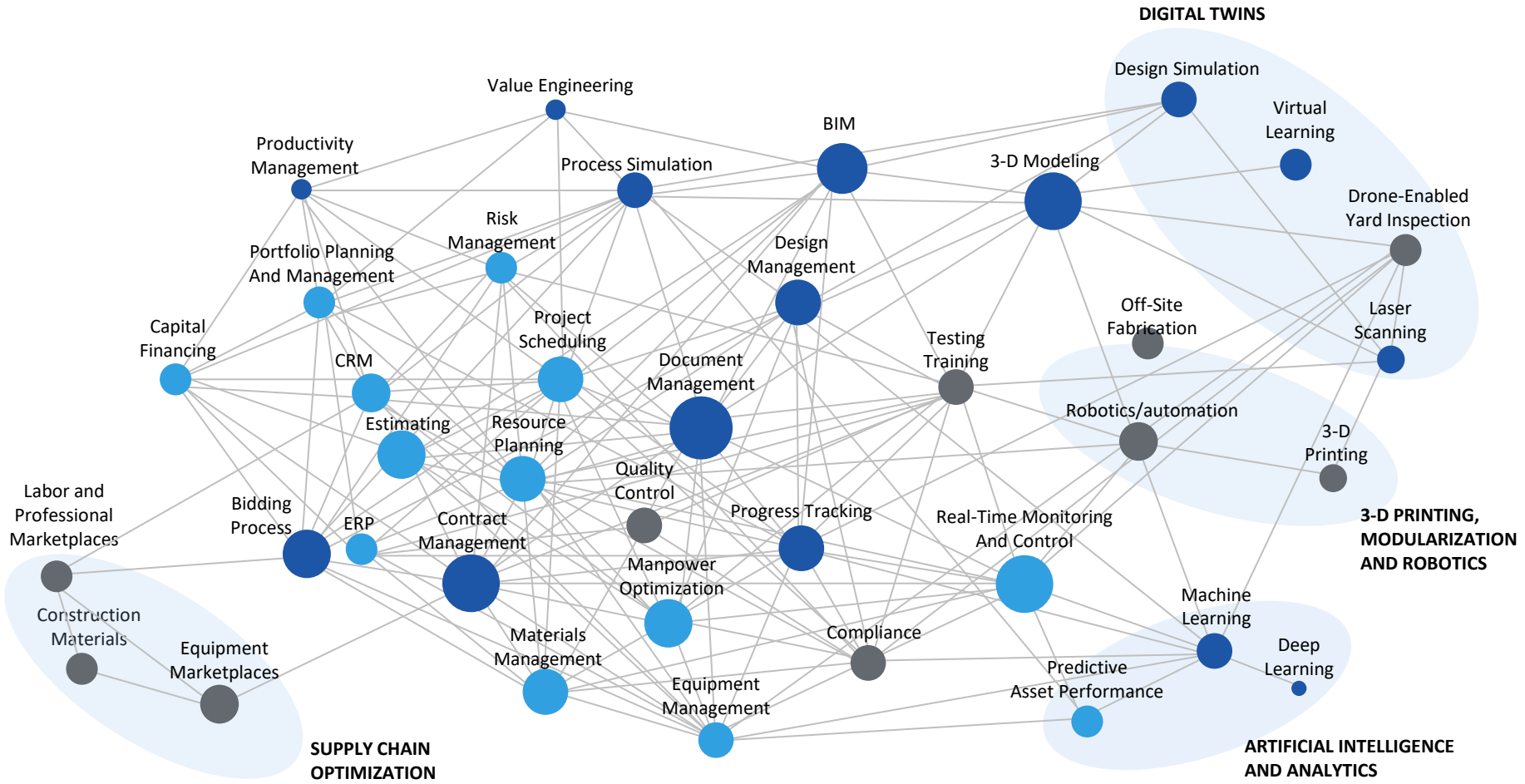
Photogrammetry

Robotics

Blockchain

© 2021 Autodesk, Inc. All rights reserved. Confidential.

Construction Technology Ecosystem



© 2020 Autodesk, Inc. All Rights Reserved. Confidential.

Source: McKinsey

95.5% of engineering & construction data unused

90% of cost overruns happen on the field

Project Controls EXPO Melbourne, Australia

OFFICE **PLANNING**

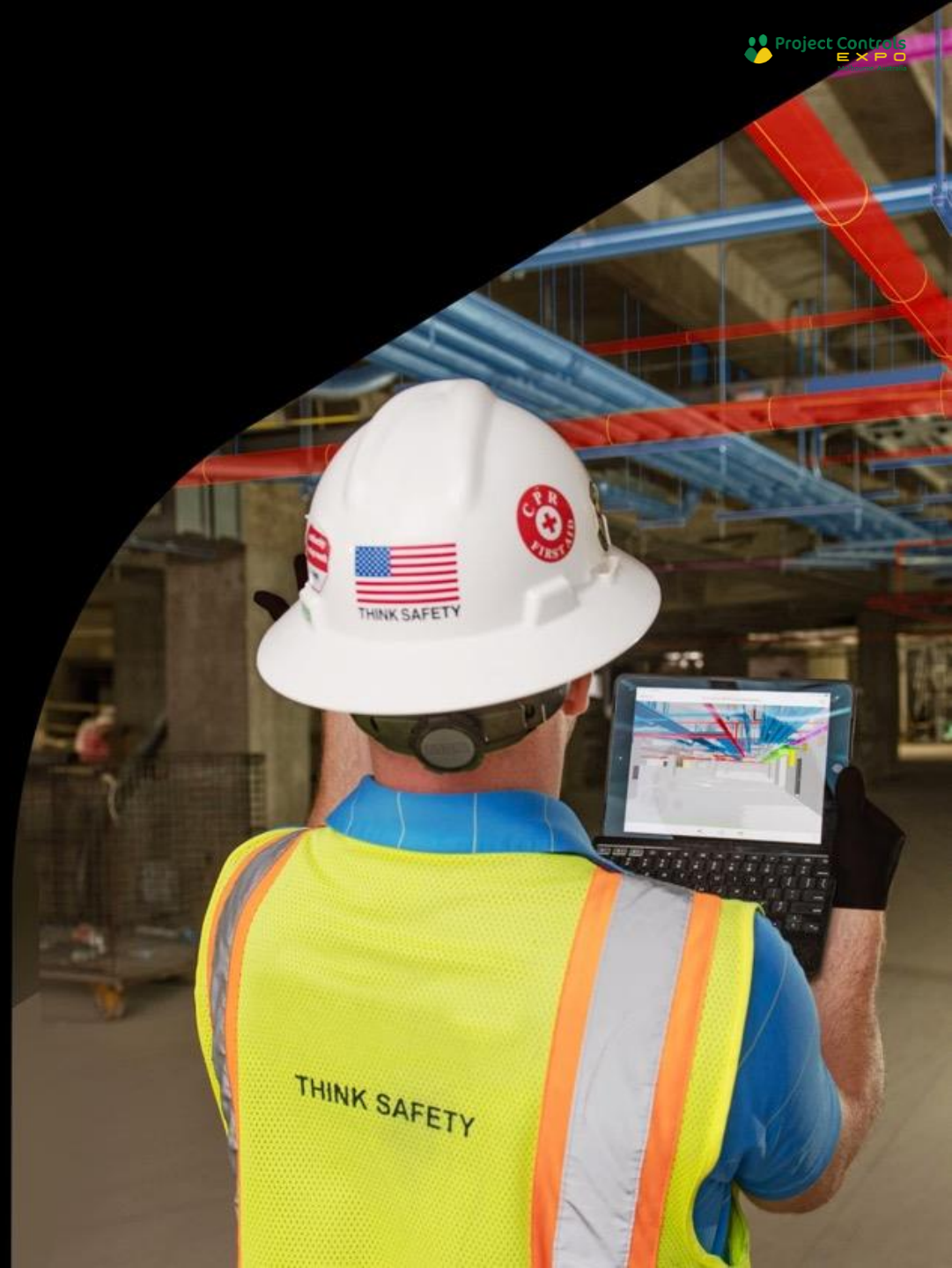
Docs. Project Management
D&C Approvals Drawings
PDF Approvals Drawings

Disconnected

FIELD **EXECUTION**

AUTODESK Construction Cloud

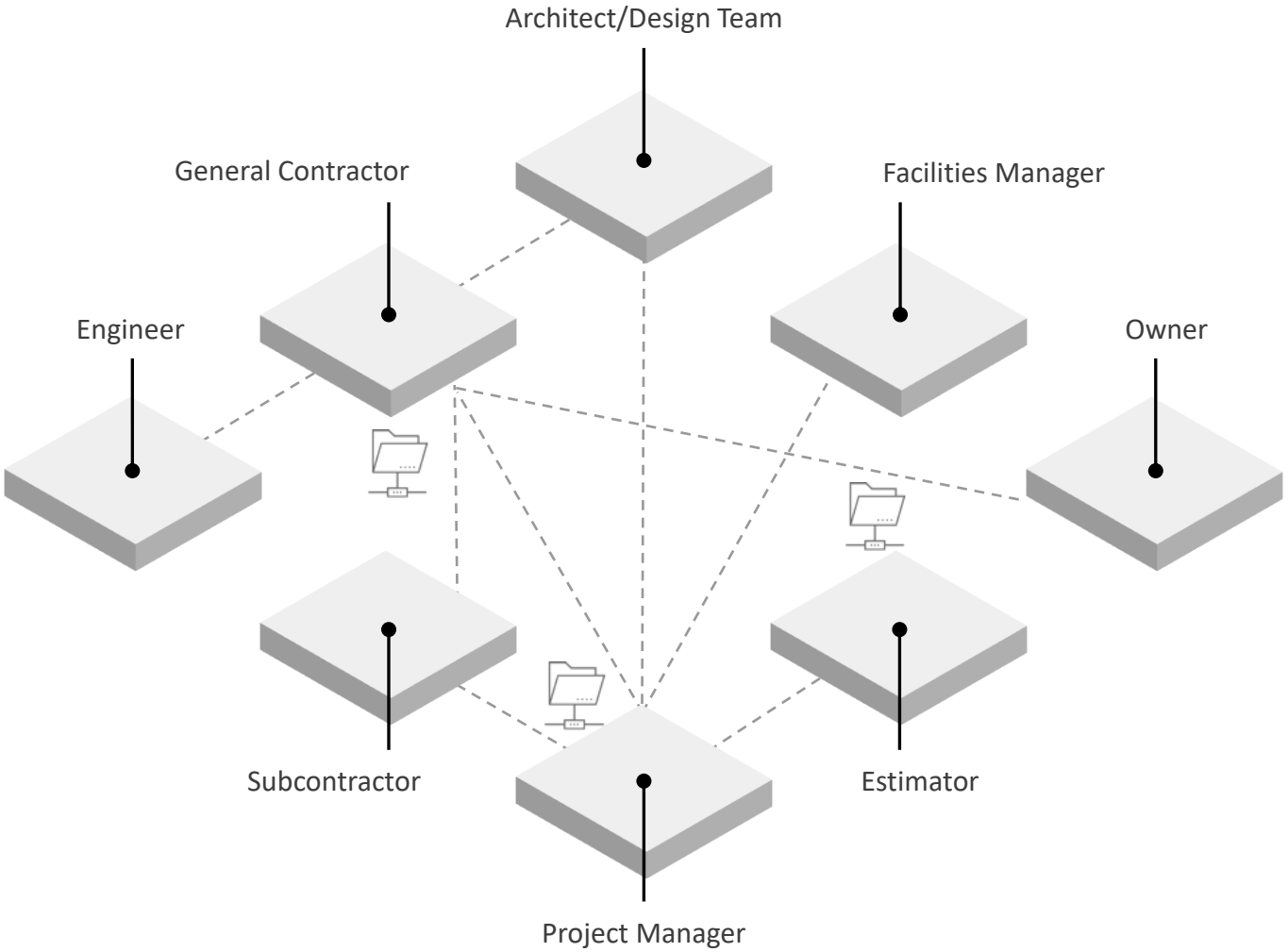
CDE as the Solution



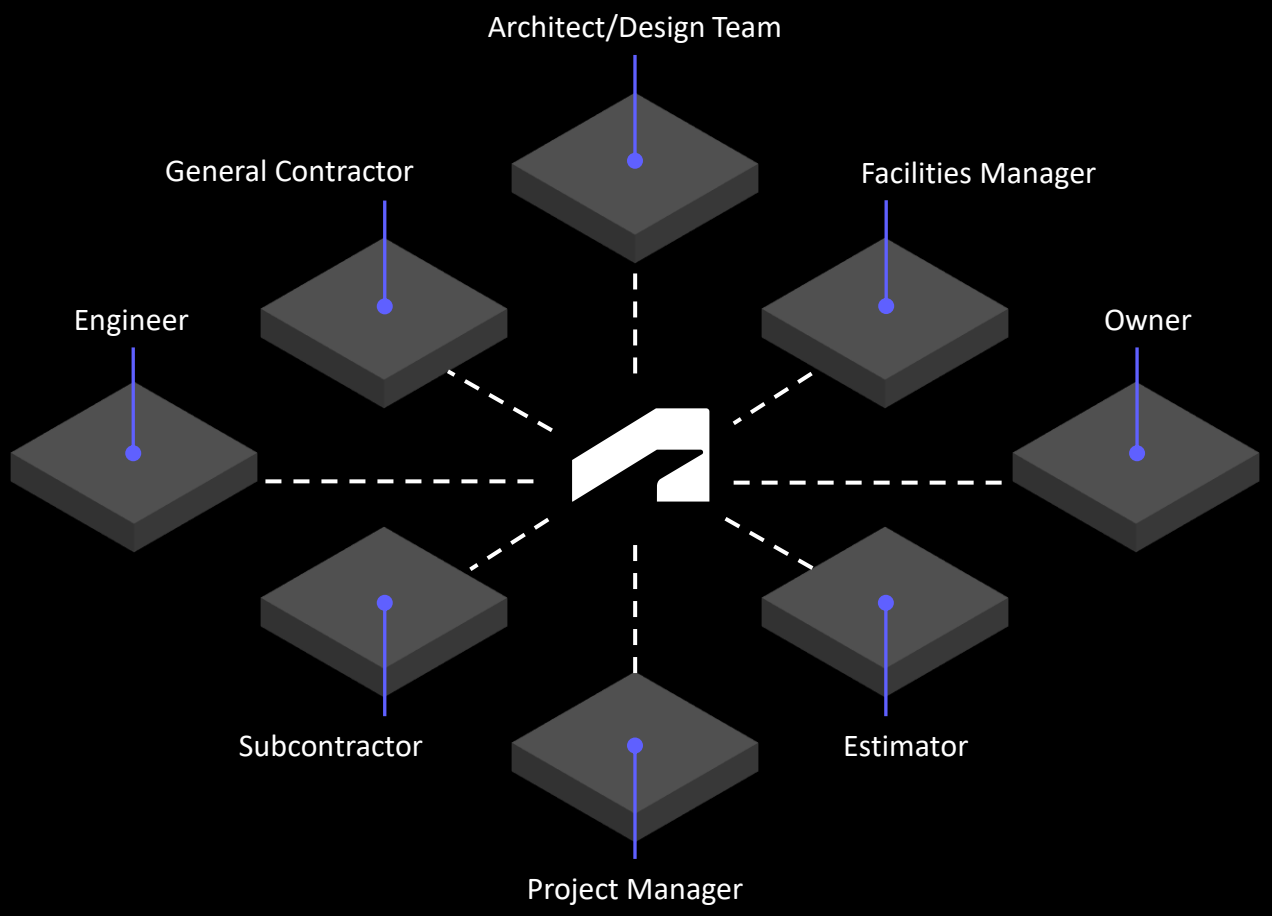
© 2023 Autodesk. All rights reserved.

Legacy Collaboration

Fragmented source of truth

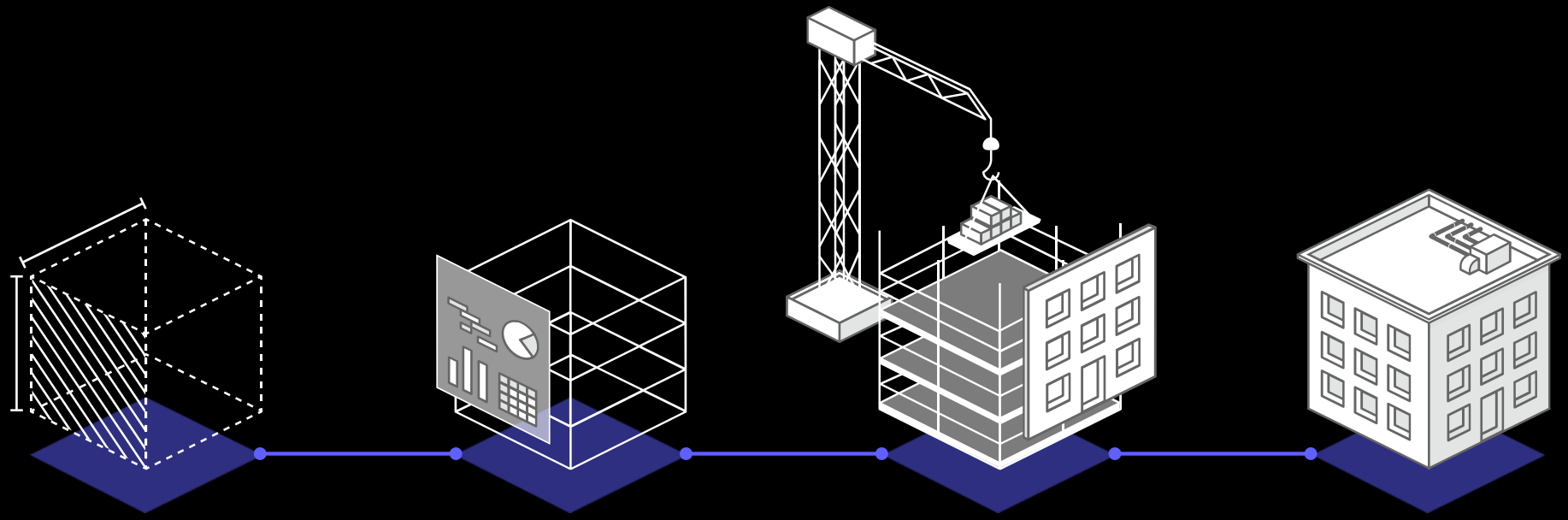


Common Data Environment



Project Controls
EXPO
Melbourne, Australia
PDF

Project Controls
EXPO
Melbourne, Australia
PDF



DESIGN

Design Authoring
Design Collaboration

PLAN

Coordination
Model Conditioning
Quantification
Estimating
Bid Management
Qualification

BUILD

Project Management
Schedule Management
Cost Management
Quality
Safety
Project Closeout

OPERATE

Facilities Maintenance
Asset Lifecycle

AUTODESK Construction Cloud

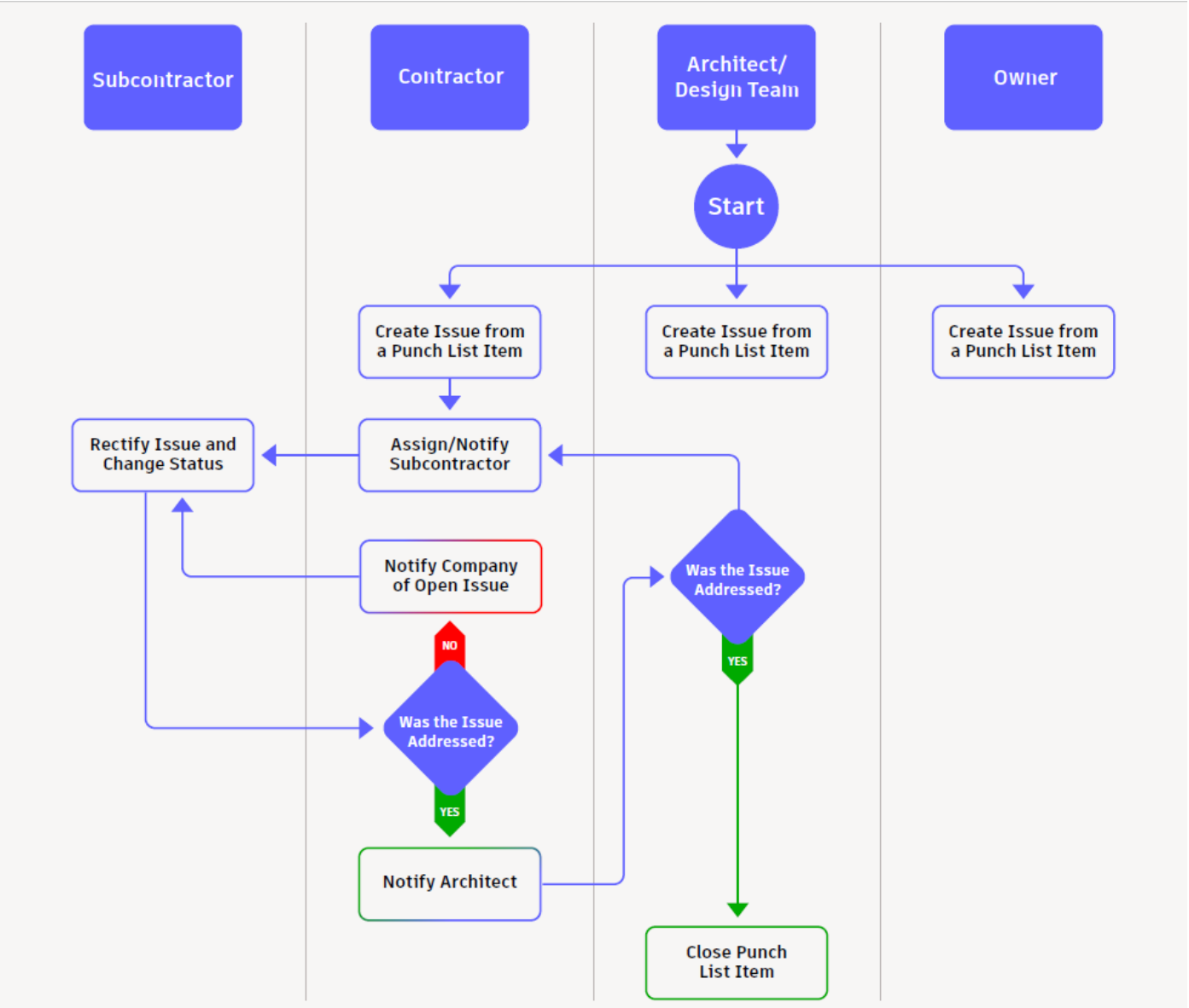
Project Controls EXPO Melbourne, Australia

AUTODESK BIM Collaborate | assemble | AUTODESK Takeoff | ProEst | BUILDINGCONNECTED | AUTODESK Build

Capabilities	Design Collaboration	Coordination	Model Conditioning	Quantification	Estimation	Tender Management	Project Management	Cost Management	Quality	Safety	Project Closeout
Workflows	• Constructability Review • Change Visualization • Revit Cloud Worksharing • Collaboration for Civil 3D / Plant 3D	• Model Coordination • Construct-ability Review	• Quantity Takeoff • 4D/5D simulations • WIP tracking • AWP	• Scope Analysis • Digital Takeoff	• Construction CRM • Cost Estimating • Proposal Generation • Construction Databased	• Sub-contractor network • Tender packages • Tender Leveling • Prequalification	• RFIs • Submittals • Meeting Minutes • Daily Reports	• Contract Creation / Admin • Change Orders • Payment Applications • Forecasting	• Quality Planning • Quality Checking • Punch lists • Issue Management	• Safety Planning • Safety Training • Safety Observations • Safety Inspections	• Commissioning • Turnover Documentation • Final Completion • As-Built Survey
Document Management	Document Control · Document Versioning · Document Approvals										
Unified Data	Models · Drawings · Documents · Cost Items · Assets · As-Builts · Photos · Videos										
Insight	Dashboards · Reports · Construction IQ · Data Connector										
Admin	Admin Console · Permissions · Project Setup · Templates · Notifications										

Leveraging a Platform at every stage

Issue Management



AUTODESK Construction Cloud

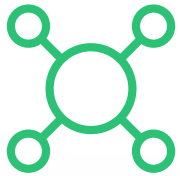
Project Controls EXPO Melbourne, Australia

Weaving the Golden Thread into Practice

© 2023 Autodesk. All rights reserved.

Overcoming the Challenges

Increased Collaboration



Single Source of Truth

Connected 2D & 3D Experience

Improved Data Accuracy

Standardization

Digitization

Proactive Quality Management

Manage quality from any device, anywhere

AUTODESK Construction Cloud

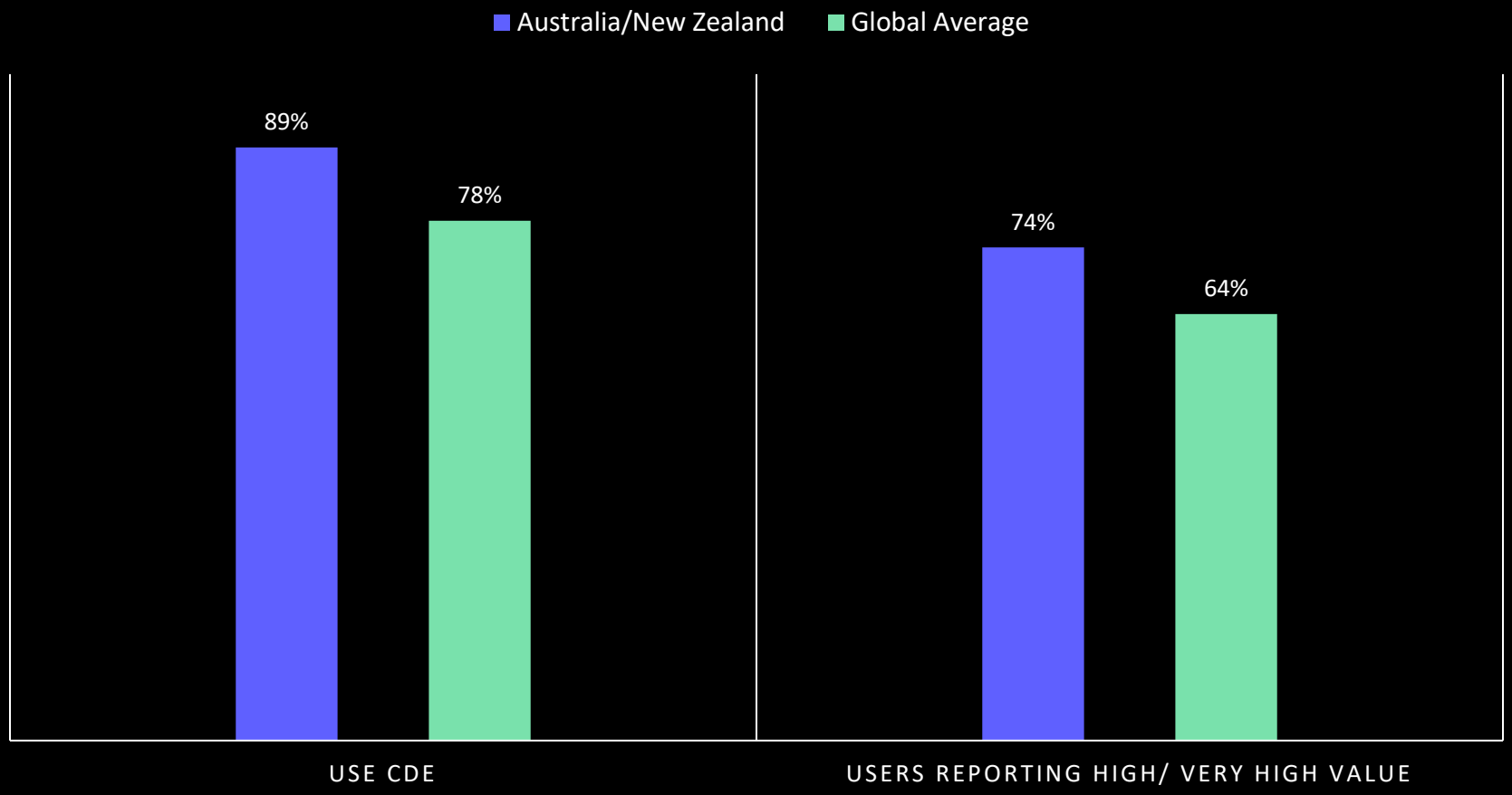
Project Controls EXPO Melbourne, Australia

Proof of Value

© 2023 Autodesk. All rights reserved.

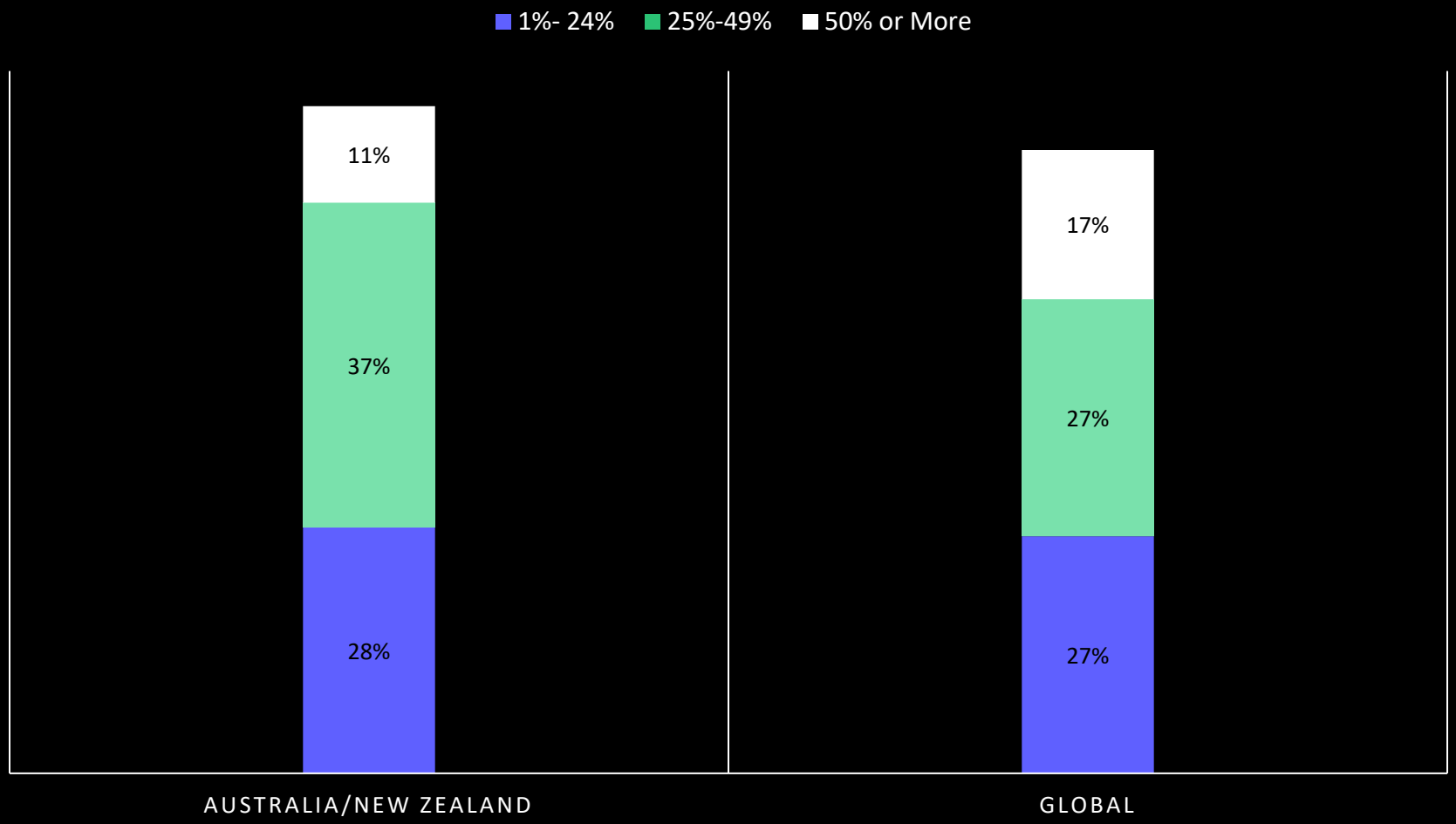
CONFIDENTIAL—DO NOT DISTRIBUTE

COMMON DATA ENVIRONMENT
VALUE IN IMPROVING PERFORMANCE OF PROJECT TEAM



Dodge Data & Analytics • www.construction.com

BIM USERS EXPERIENCING POSITIVE ROI FROM THEIR BIM INVESTMENTS



Dodge Data & Analytics • www.construction.com

TOP 10 BIM BENEFITS EXPERIENCED AT A HIGH LEVEL IN AUSTRALIA/ NEW ZEALAND

Dodge Data & Analytics • www.construction.com

Autodesk and the Autodesk logo are registered trademarks or trademarks of Autodesk, Inc., and/or its subsidiaries and/or affiliates in the USA and/or other countries. All other brand names, product names, or trademarks belong to their respective holders. Autodesk reserves the right to alter product and services offerings, and specifications and pricing at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

© 2023 Autodesk. All rights reserved.