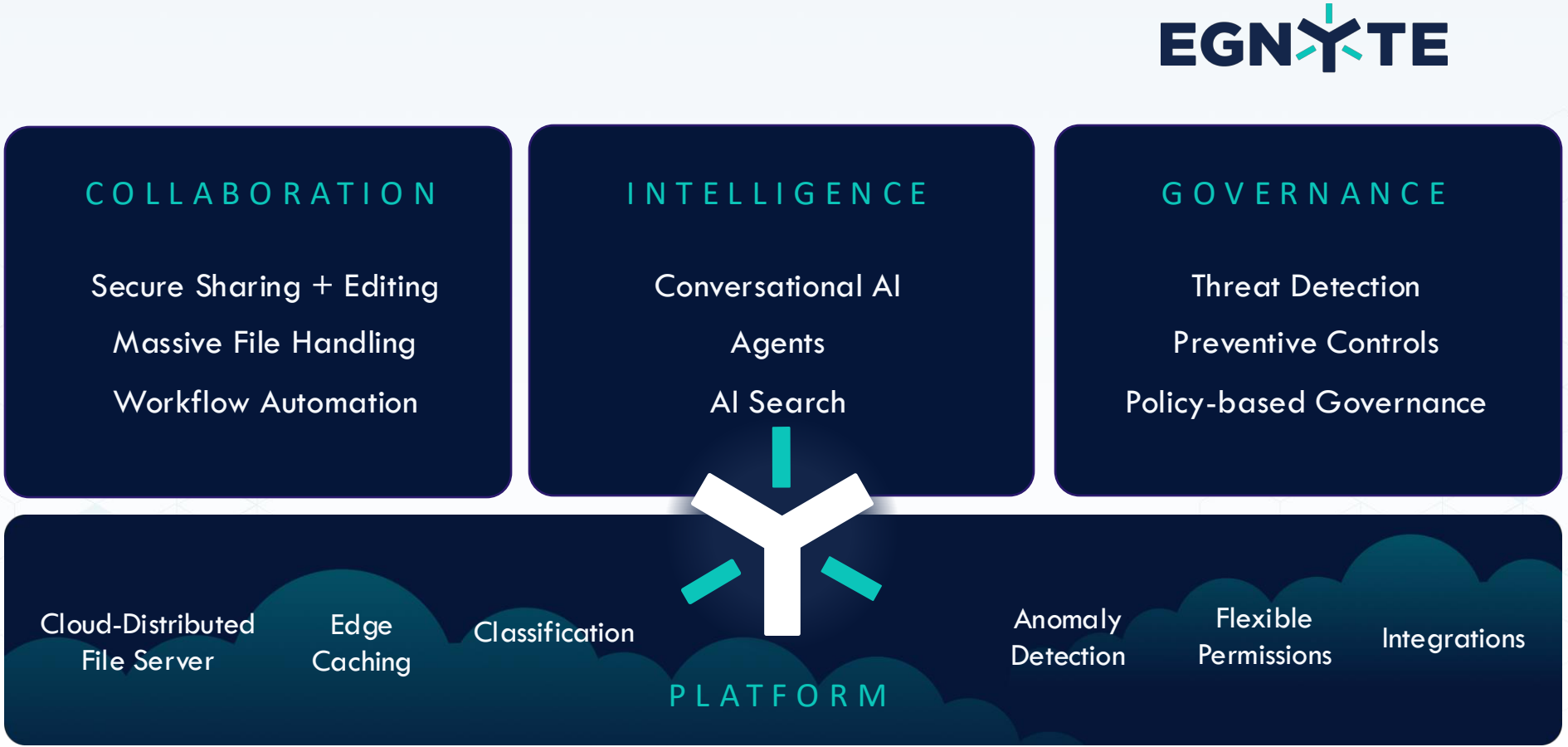
A Practical, Purposeful + Private Approach to AI Adoption

Aaron Vorwerk, AIA, NCARB, EIT, LEED AP BD+C
Architecture Practice Leader, Egnyte

Niknaz Aftahi
Founder and CEO, aec+tech


EGNYTE
COLLABORATION
Secure Sharing + Editing
Massive File Handling
Workflow Automation
INTELLIGENCE
Conversational AI
Agents
AI Search
GOVERNANCE
Threat Detection
Preventive Controls
Policy-based Governance
Cloud-Distributed File Server
Edge Caching
Classification
PLATFORM
Anomaly Detection
Flexible Permissions
Integrations

aec+ tech

FILLING THE GAP

Introducing Latest Tech

Showcasing Applications

Categorizing with Filters

COMMUNITY-DRIVEN

Growing Database

Knowledge Sharing

Designated Product & AEC Firms Pages

ACCESSIBILITY

Case Studies Library

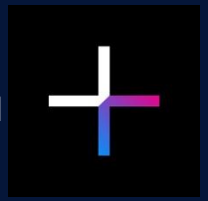
Comparing Tools

Tracking Similar Tech

Visibility to Latest Tools

Customer Profiles

Personal Dashboard



Articles & Reviews

Virtual Events

Partnerships

This program is registered with the AIA/CES for continuing professional education. As such, it does not include content that may be deemed or construed to constitute approval, sponsorship or endorsement by AIA of any method, product, service, enterprise or organization.

The statements expressed by speakers, panelists, and other participants reflect their own views and do not necessarily reflect the views or positions of The American Institute of Architects, or of AIA components, or those of their respective officers, directors, members, employees, or other organizations, groups or individuals associated with them.

Questions related to specific products and services may be addressed at the conclusion of this presentation.

Course / learning objectives

- Understand the **business risks** associated with your data when exposed to unfettered cloud and AI use.
- Determine whether your **digital infrastructure** supports appropriate data access for AI.
- Assess your **data preparation** needs and capabilities for AI.
- Describe the **key value props** to look for in digital platforms to enable successful AI use.

Agenda

01 AEC's AI Moment is Here

02 AI Needs a Digital Foundation

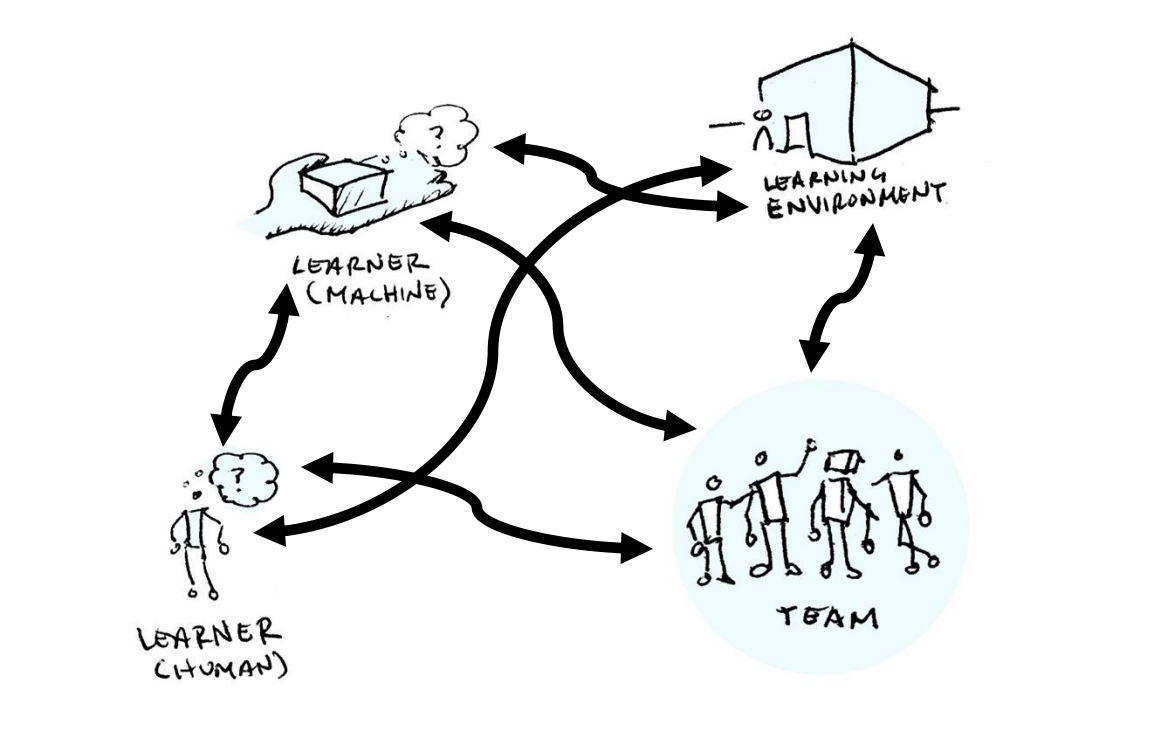
03 Practical, Purposeful, and Private

04 Application

05 Conclusion and Discussion

AEC’s AI Moment is Here

We are entering the “jazz age” of AI



Mickey McManus

AI in Planning and SD

(Pre-design, site analysis, generative layouts, feasibility)

Tool	Function
ARK	Multifamily, mixed-use design automation
Hypar	Generative space planning
Skema	Design automation, BIM knowledge reuse
Qbiq	AI-powered workplace layout generation
Forma	Climate/environmental analysis at urban scale
One Click LCA	Embodied carbon, LCA automation
TestFit	Real estate feasibility automation

AI in DD and CD

(Design detailing, BIM refinement, drawing production)

Tool	Function
D5 Render	Real-time photorealistic rendering + visualization
SWAPP	Automated construction documentation
Augmenta	AI-based MEP and systems layout directly from BIM
Aurivus	Converts point clouds to structured BIM models
Document Crunch	Reviews project-related legal and contract docs

AI in the Field

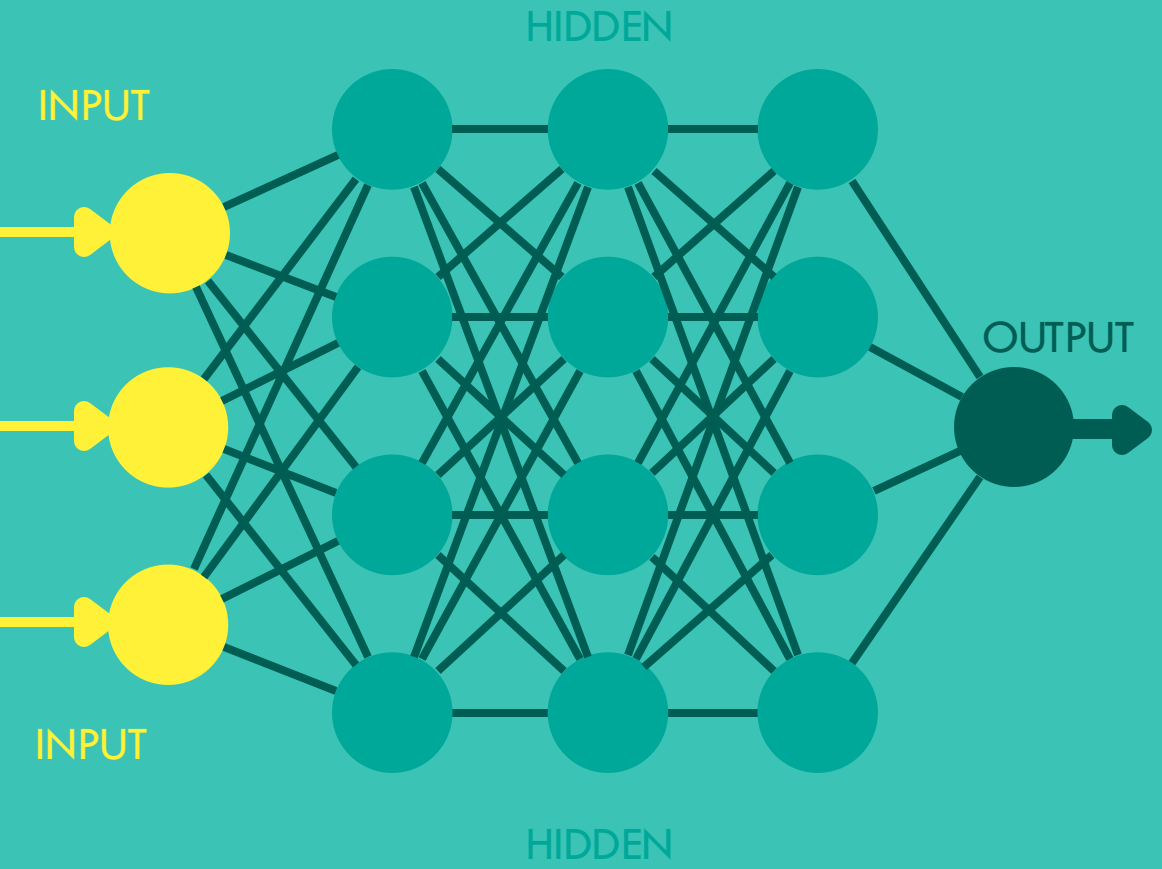
(Construction jobsites and beyond)

Tool	Function
InspectMIND	Site inspection with issue detection
OpenSpace	Construction progress capture, visual tracking
Trunk Tools	Project data management and knowledge sharing

OPENSPACE

trunk. tools

AI Needs a Digital Foundation



LEVERAGING AI

- Neural Network
- Input: image, text etc.
- Sees Patterns/ Connections
- Makes predictions
- Generates insights

THE SOLUTION IS
DATA LITERACY

"Data literacy in AEC means the ability to read, understand, create, and communicate data as meaningful information."

DATA LITERACY

WHY DOES IT MATTER?

Knowledge Preservation

preserving valuable info beyond project lifecycle

Design Intelligence

Solutions to common design problems have to be continually redesigned

Risk Management

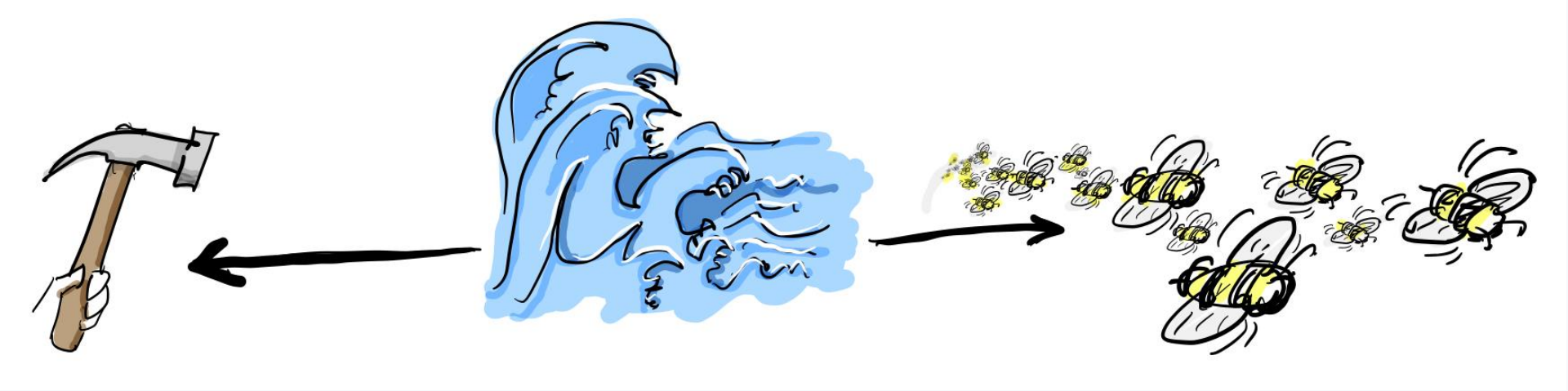
critical design decisions and their rationale become hidden when not documented as accessible, structured data

Future-Ready Practice

companies that plan and prepare their data for use will have a competitive edge

Amy Beckenham

“Generative AI is somewhere between a hammer and an ocean and a swarm of bees.” - Kate Compton, LEGO Director of Play



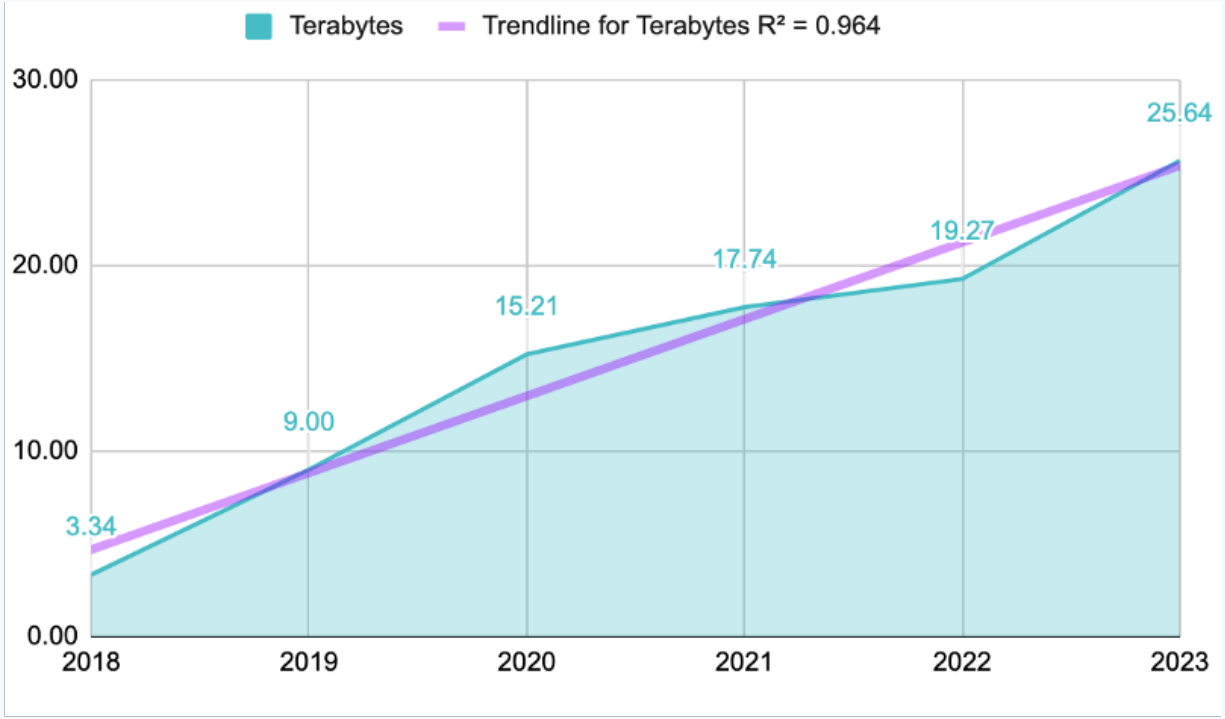
Acknowledgements/credits

This presentation created with the assistance of

- Niknaz Aftahi (human)
- Pavlina Nikolova (human)
- Amy Beckenham (human)
- Mickey McManus (human)
- Google Gemini **(AI)**
- Pitchgrade **(AI)**
- Gamma Pro **(AI)**
- OpenAI ChatGPT Plus **(AI)**

Cloud data growth is exploding

- 800% increase in 5 years
- Amplifies the risk of ”ROTs” and data sprawl
- All this data needs to be cleaned, labeled, and governed **before** we use it on projects!



Egnyte AEC Data Insights Report

And our industry is already a target

59%

of AEC firms experienced a cyberattack in the past 2 years

226

incidents per construction firm annually, on average

44%

of breaches on AEC firms involve ransomware

AI adoption without governance

new threats, more risk, less…truth?

“Even the best AI tools will amplify your worst data if you’re not prepared.” – ChatGPT

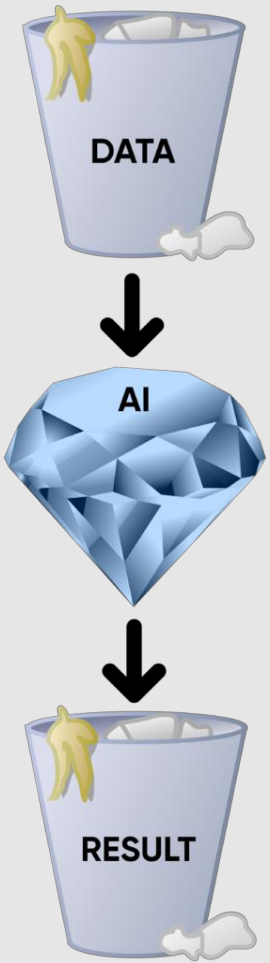
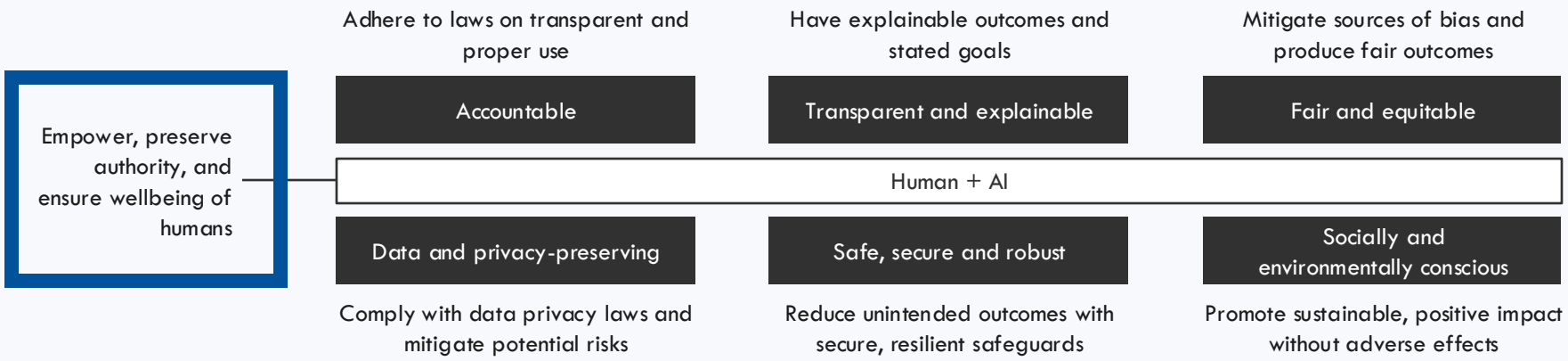


Image courtesy www.pbiai

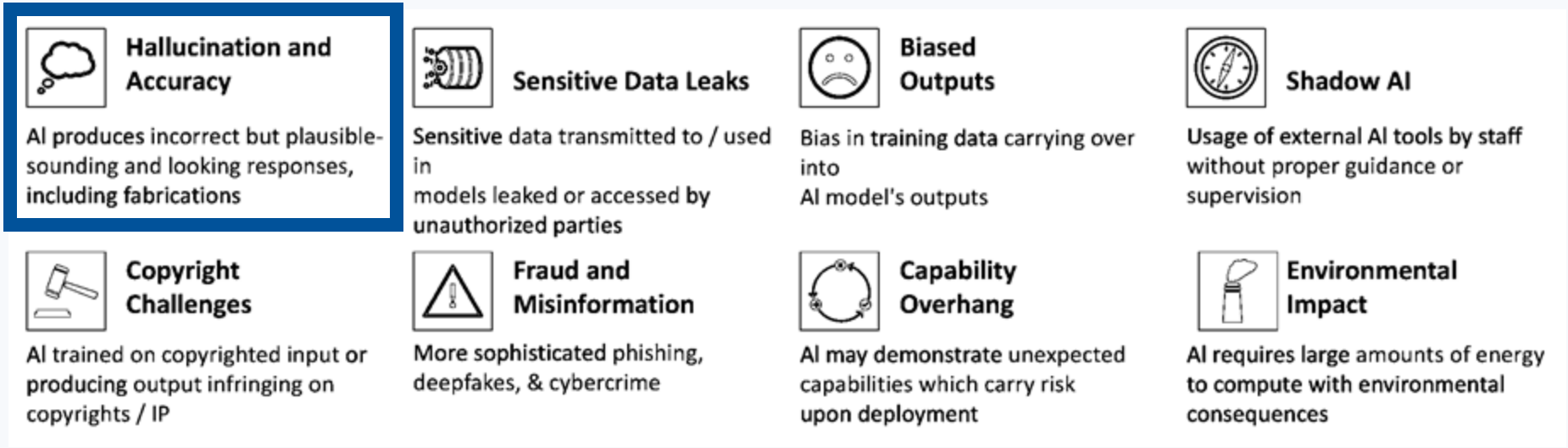
Practical, Purposeful, and Private

To define a Responsible AI policy, develop principles aligned to company purpose and along a common set of themes

An AI system should…



Companies must be wary of critical tasks of Generative AI today before adopting the technology



Risks are exacerbated in that, in many cases, vendors' models are utilized, bringing additional third-party risks

AI guiding principles: the “3Ps”

Practical

- ✓ Integrates naturally into the flow of everyday work
- ✓ Easily “self-serve” setup and deployment

Purposeful

- ✓ Provides unique and tangible business value
- ✓ Answers always grounded in your data and traceable

Private

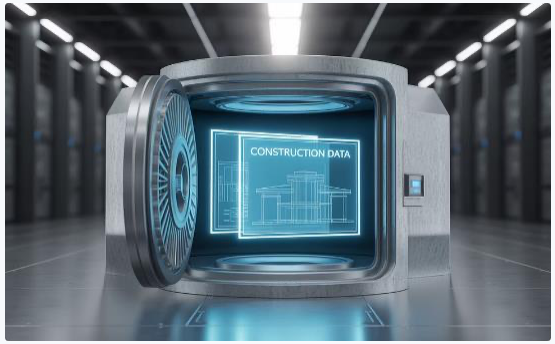
- ✓ Your data always resides within your domain
- ✓ Privacy, compliance, and security are assured

Practical

Your **toolbox** – AI enhances your everyday workflows seamlessly

Purposeful

Your **compass** – AI provides insights to improve outcomes



Private

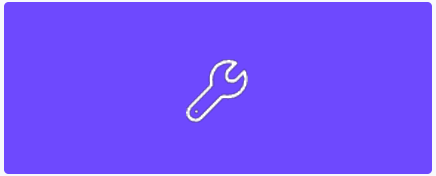
Your **vault** – AI operates only on data secured within your environment

Application

Applying the “3Ps”

Select an AI use case for evaluation

Apply this framework on a case-by-case basis



Practical?

Is this easy to deploy in support of existing tools or workflows?

Purposeful?

Does this tool leverage your own data and provide meaningful results?

Private?

Does the application run securely within your domain?

Remember: Good Data Matters!

Planning and Programming

AI-generated layouts based on **stale or incomplete information**

…and are you properly leveraging historic data?

Design Ideation

Visuals may be compelling but **infeasible or misleading**

…and are you unintentionally incorporating external sources?

Documentation

Poorly structured BIM data leads to **errors, inconsistencies, and omissions**

…and are you ensuring your client's data privacy?

Planning and Programming

(Pre-design, site analysis, generative layouts, early feasibility)

Risks: Outdated and/or incomplete information limits output quality

Tool	Use Case	Sensitivity	Notes	"3Ps"
ARK	Generative design automation	High	Needs structured requirements, zoning, spatial logic; poor inputs produce unusable results	?
Skema	Automation with BIM knowledge	Moderate	Needs program info, constraints, and spatial relationships; bad inputs skew space planning	?
Qbiq	Workplace layout generation	Moderate	Requires clean floor plans or programmatic inputs; errors affect layout usability	?
Forma	Design insights and analysis	Moderate	Uses early-stage massing models; results depend on geometry and context accuracy	?

Design Ideation

(Visualization, Rendering, Concept Communication)

Risks: Strong visuals may overpromise feasibility; IP concerns

Tool	Use case	Sensitivity	Notes	"3Ps"
D5 Render	Real-time visualization	Minimal	Uses existing models (e.g., SketchUp, Revit) and syncs visually—no critical model dependencies	?
Augmenta	MEP layout automation	High	Requires robust BIM models + spec info; inaccurate input = incorrect MEP layouts	?
Aurivus	Point cloud to BIM conversion	High	Point cloud data must be clean and complete; outputs depend on scan quality and noise filtering	?

Documentation

(Construction Documentation, BIM automation, Data Extraction/Validation)

Risks: Low-quality inputs may lead to low-trust outputs

Tool	Use case	Sensitivity	Notes	"3Ps"
SWAPP	CD production automation	High	Requires well-structured models with metadata; output heavily depends on input	?
Document Crunch	Contract review automation	Medium	Requires readable contract text; outputs depend on clarity of documents and language	?
Inspect MIND	Visual inspection reporting	Minimal	Uses images and simple forms—very low data prep needed; risk is mostly in missed automation	?
OpenSpace	Site documentation, visual updates	Minimal	Works via 360° cameras and computer vision; minimal user input, as data is auto-processed	?

Conclusion and Discussion

Don’t let AI hype outrun your readiness!

Build a strong data foundation

Successful AI requires structured, clean data and the infrastructure to support it

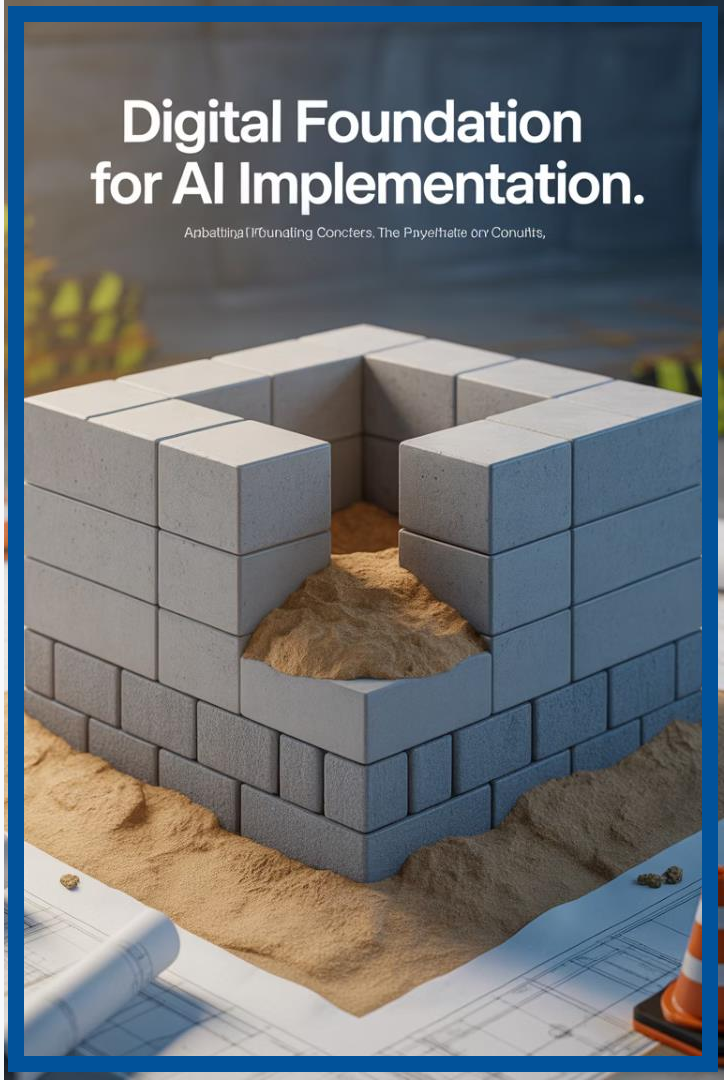
Consider the “3Ps”

Evaluate AI initiatives and tools in the context of a Practical, Purposeful, and Private data strategy

Get started today

Begin with one AI use case in your firm

AI without a foundation is like building on sand!



For Further Discussion

Awareness

What “grassroots” or “shadow” AI tools are being used at your firm?

Leadership

Who guides AI implementation and oversight in your firm?

Collaboration

Are your DT and IT teams (if applicable) aligned in your AI rollout efforts?

Let’s Continue the Conversation!

Aaron Vorwerk
avorwerk@egnyte.com
linkedin.com/in/aaronvorwerk
egnyte.com/solutions/aec

EGNYTE

AIA Collaboration Partner

Niknaz Aftahi
niknaz@aecplustech.com
linkedin.com/in/niknazaftahi
www.aecplustech.com

aec+tech