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Connected Everything: Asset lifecycle management

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Asset lifecycle management: Issues and enablers

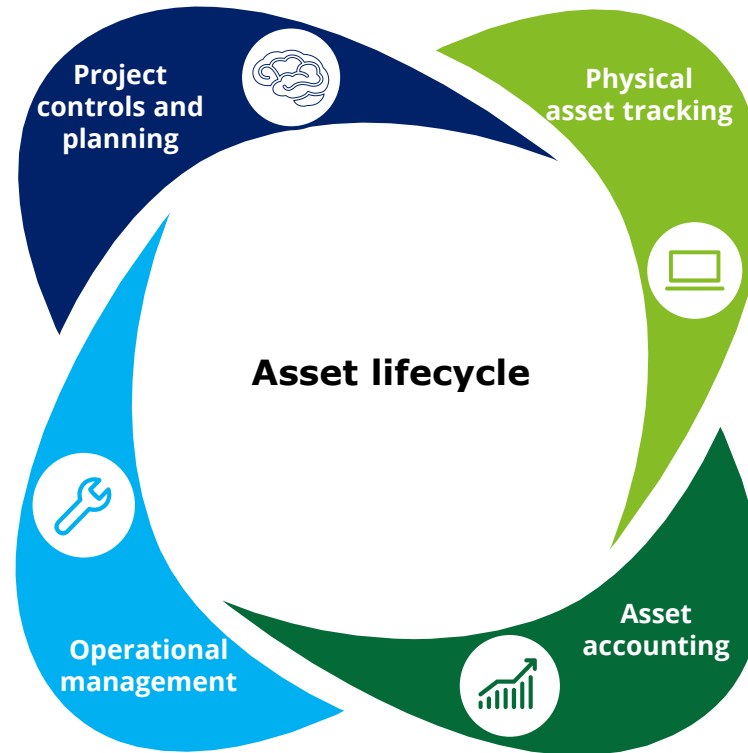|	Project controls and planning	Physical asset tracking	Asset accounting	Operational management
Typical issues	• Project definition not standardized • **Policies and processes do not define assets and related attributes to be managed across lifecycle (i.e., no asset taxonomy)** • No standards or decision tree established for capitalization of assets • Ability to track total cost of ownership (TCO) from budget to plan to actuals • **Ineffective project cost controls**	• **No common asset ID to track the items across systems and lifecycle** • Policies and processes do not define assets and related attributes to be managed across lifecycle (i.e., no asset taxonomy) • Assets booked incorrectly causing issues with asset tracking • **Difficulty tracking assets and inventory locations**	• **Misalignment between how assets are operationally managed vs. financially booked** • Lack of consistency in asset definition (S/L asset granularity/ componentization) • Lack of three-way match for goods receipt • **Missing key identifier (i.e., tagging/ serialization) on material assets**	• **Operational, physical, and financial systems not integrated** • Inconsistent updates on operation status • Downtime due to lack of properly scheduled maintenance • No process or accountability for asset reuse • **Misalignment between business segments due to inconsistent business processes** • Lack of data to enable the optimization of operations • Process not defined or adhered to for notification of disposals and repairs
Enablers	• CapEx eligibility via decision tree • Define standards and decrease confusion via glossary and FAQs • Standardized template for CapEx submissions • Standardized enablement tool for depreciation calculation	• Common identifier across systems • Master data standards and enforcement • Asset taxonomy	• Common identifier across systems • Master data • Asset taxonomy • Business asset tracking minimum requirements	• Common identifier across systems • Advanced analytics and reporting • Internet of Things (IoT) sensors to monitor operational metrics

Asset lifecycle management: Capabilities

We provide a wide-range of value throughout the entire asset lifecycle, advising clients on improvements to processes, controls, data, and systems across key functional capabilities.

Project controls and planning

- Project management and controls systems
- OBS/CBS/WBS
- Key performance indicators (KPIs)
- Project cost estimating, planning, and forecast analysis
- Enterprise reports and dashboards
- Schedule planning and development
- Scope and change management
- Risk analysis and contingency management
- Master data management and governance

Physical asset tracking

- Asset acquisition—procurement, receipt, and installation
- Materials and service procurement
- Asset location management
- Warehouse management—assets
- Master data management and governance

Operational management

- Quality management
- Product manufacturing
- Resource management
- Asset capability
- Demand analysis/production forecasting
- Inventory management
- Metric tracking
- Plant, equipment, and facilities management
- Asset shutdown and outage management
- Asset disposal
- Master data management and governance

Asset accounting

- Project accounting
- Fixed assets accounting
- Lease accounting
- Tax accounting—direct/indirect
- Vendor management
- Controllership
- Master data management and governance

Asset lifecycle

Project controls and planning

Physical asset tracking

Operational management

Asset accounting

Asset lifecycle management: Use cases

Real-time asset tracking

How is it possible to track my assets through a distributed network?
Slide 5

Remote sensing

How can we identify problems throughout our T&D lines?
Slide 6

Cameralytics

Is there a way to identify changes to an asset or an asset's proximate environment in real time?
Slide 7

Automated spend analytics

How can I track total cost of ownership (TCO) across projects, locations, and discrete assets?
Slide 8

Geospatial asset tracking

How do I visualize our distribution lines and manage network connectivity to the smart grid?
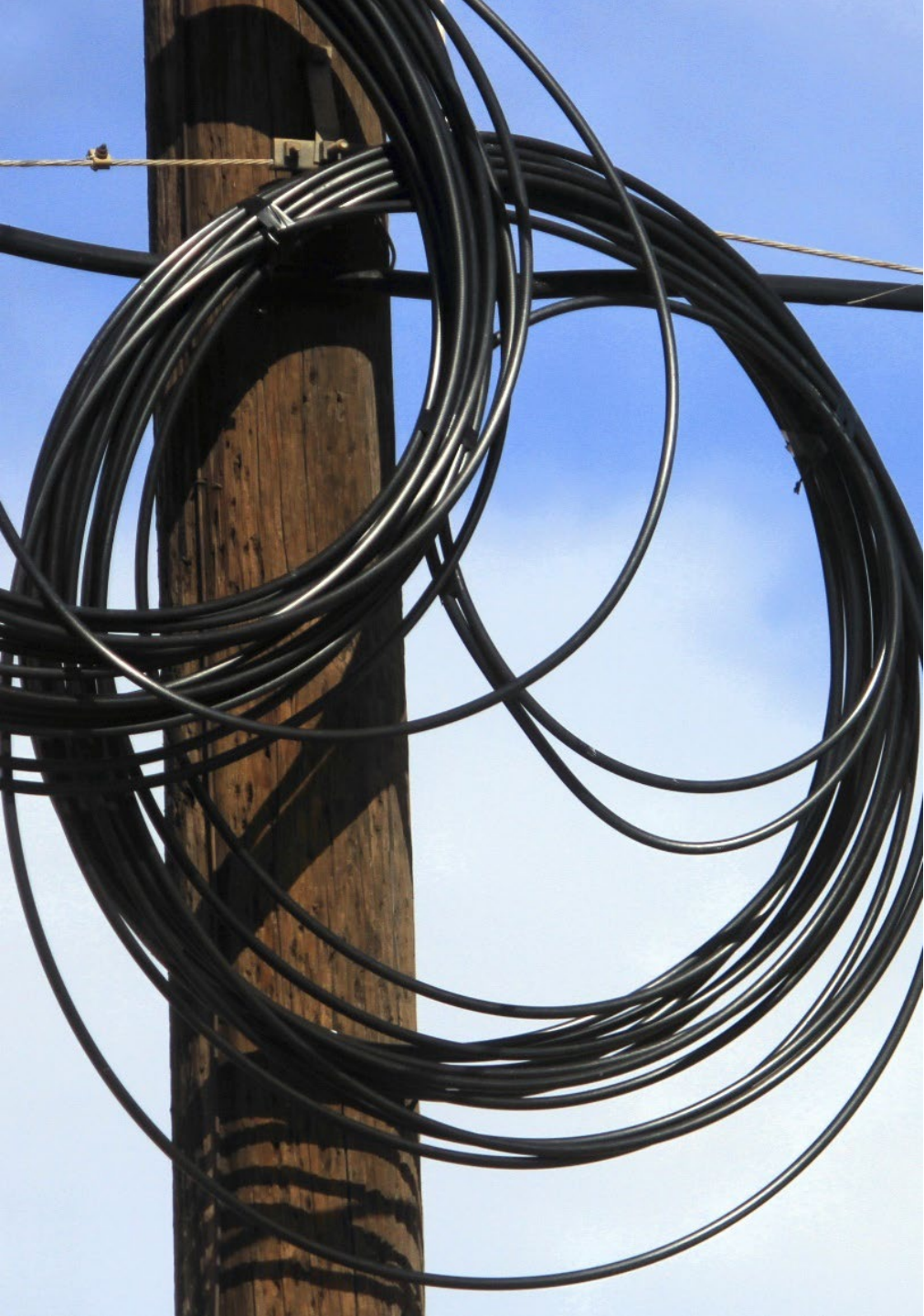***Slide 9***

Enhanced security

How do we protect customer data and business systems while implementing asset management use cases?
Slide 10

Real-time asset tracking

DEFINITION

The ability to track your organization's assets across a distributed footprint is important for engineering, operations, accounting, and security. It can provide location, status, and other vital operational metrics in real time.

REAL-WORLD APPLICATION

- **Telecom:** Tracking high-value radio/router cards as they are moved through the supply chain and across the network to different sites.
- **Manufacturing:** Tracking and optimizing operational metrics for both manned and autonomous assets, including real-time issue and quality notifications.

IMPACT

- Gain advanced operational insights in real time
- Automated updates on transfers, retirements, etc.
- Lessen data burden on operational teams

Remote sensing

DEFINITION

The use of sensors, such as smart grid devices, AMI, thermal sensors, vibration detection, etc., to enable real-time monitoring of infrastructure and other assets.

REAL-WORLD APPLICATION

- **Manufacturing:** Vibration detection to maximize asset life and optimize production.
- **Energy:** Line fault detection to prevent and reduce the threat of wildfires; temperature and gas density sensors; and leakage detection sensors.

IMPACT

- Optimized asset production
- Pre-warning for maintenance events
- Enhanced wildfire mitigation
- Additional operational metrics
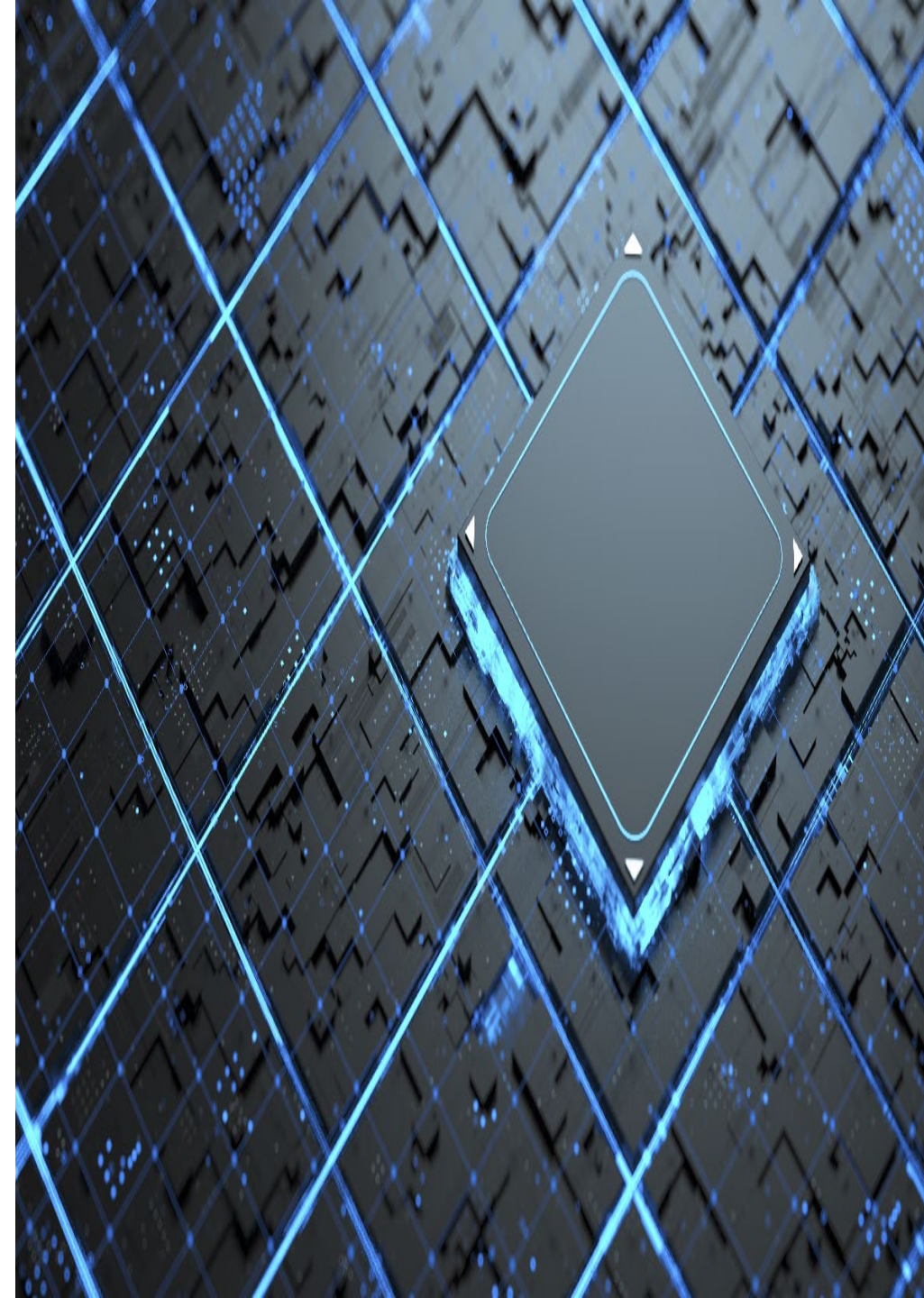
Cameralytics

DEFINITION

The use of embedded smart cameras, leveraging artificial intelligence and machine learning functions to capture, analyze, and interpret real-time footage. It can provide insight on a myriad of things from authorized/unauthorized personnel to new pieces of equipment being installed at a location.

REAL-WORLD APPLICATION

- **Manufacturing:** Detecting and analyzing changes on the manufacturing floor as they happen, such as asset movements, production workflow, and quality sensing.
- **Consumer:** Smart cameras can be used to facilitate cashier-less storefronts.
- **Telecom:** Automatically detect and update asset changes in near real time.

IMPACT

- Real-time quality sensing
- Increased forest fire mitigation
- Automated asset updates

Automated spend analytics

DEFINITION

The ability to track total cost of ownership (TCO) at a discrete level throughout the lifecycle, from planning through disposal. Automated analysis transforms aggregated spend data to enable accurate reporting and analytics that automatically update in near real time.

REAL-WORLD APPLICATION

- **All industries:** Tracking assets at a discrete level and updating them as changes happen enables a more accurate accounting of asset costs and associated labor.

IMPACT

- New analytical angles and cross sections to better manage and visualize the organizations spend
- Asset performance vs. asset cost comparisons to enable data- driven decisions
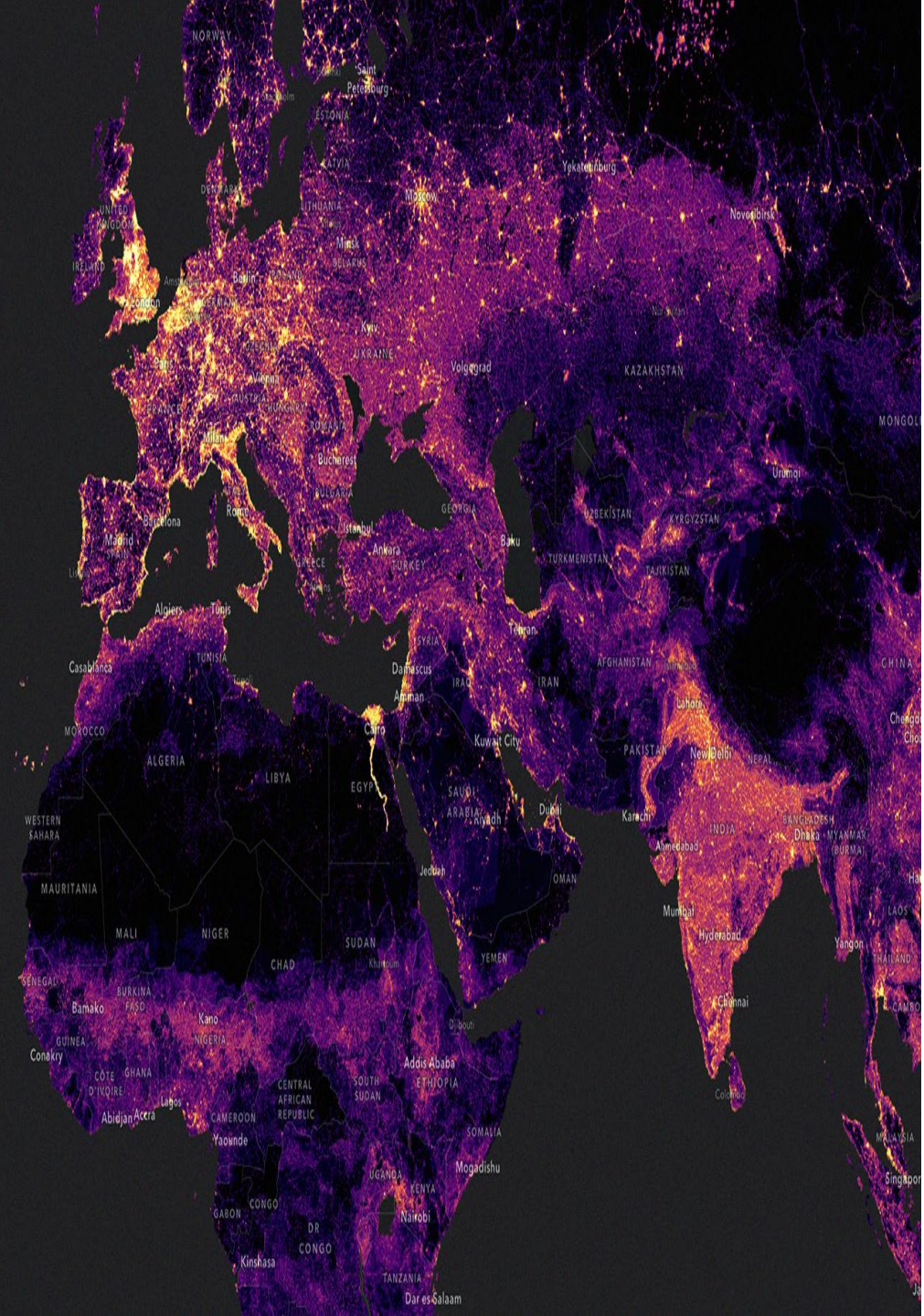
Geospatial asset tracking

DEFINITION

A geographic information system (GIS) is foundational to the development of any ALM solution with distributed assets. For example, a GIS-enabled digital twin empowers remote sensing and asset tracking through the illustration of the issue on a map or floor plan, providing critical location context.

REAL-WORLD APPLICATION

- **Telecom/Energy:** GIS is a core component of linear asset management to track assets across jurisdictions and help properly account for location and taxes.
- **Manufacturing:** Being able to track assets in real time on a virtual floor plan allows for precise management of autonomous assets.

IMPACT

- Make informed decisions based on real-time analytics
- Understand local jurisdictions and topography that impact asset performance and tax

Enhanced security

DEFINITION

5G and advanced wireless connectivity bring about enhanced security mechanisms (e.g., authentication, encryption) to enable secure edge deployments as organizations expand their IoT footprint.

REAL-WORLD APPLICATION

- **Mobile devices:** The private network will control the authentication of IoT devices regardless of where they are located.
- **Edge compute:** Data processing (e.g., personally identifiable information), enabled using the edge, will more often be done onsite, reducing risk of data being intercepted.

IMPACT

- The enterprise can have full, integrated control of the enterprise network assets and applications

Asset lifecycle management: Team members

Paul Chill

Principal

Connected Everything: 5G & Edge Computing Advisory Leader

Deloitte Transactions and Business Analytics LLP

RELEVANT EXPERIENCE

Paul is a principal located in Atlanta, GA, and is a specialist in fixed asset management. He has performed asset lifecycle management engagements, assisting clients with business processes, financial controls, ERP and asset tracking system, and data quality and migration issues. He has more than 25 years experience in valuation, construction, and asset management issues in the Technology, Media, and Telecommunications sector.

Paul specializes in helping clients address key fixed asset issues such as master data management, fixed asset tracking, complex parent-child relationships, change management, financial record cleanup, etc. He has performed fixed asset management engagements and valuations across numerous industries. Paul has valued assets in Europe, Australia, North America, South America, and Asia. He has testified as an expert witness related to fixed asset valuation issues and has also written and submitted numerous expert reports to federal bankruptcy and other courts.

J.R. Hoover

Manager

Connected Everything: Asset Lifecycle Management Leader

Deloitte Transactions and Business Analytics LLP

RELEVANT EXPERIENCE

J.R. is a manager in infrastructure and capital projects leading the Asset Lifecycle Management practice, helping companies enhance their business processes, establish controls and governance structures, and improve data integrity across the end-to-end lifecycle, from planning through disposal. His primary experience ranges across telecom, technology, and manufacturing, where he assists our clients with revolutionizing their asset base from basic processes through automation, including 5G and edge computing.

J.R. has nearly 20 years of previous experience including RF engineering; leading major financial transformation projects; and building custom applications on a custom platform to help clients address their needs across engineering, fixed assets, supply chain, and FP&A.

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