



NHS England and NHS Improvement



## Target Architecture

### Got this ...



- Too many disjointed systems and solutions with limited integration and producing siloed data
- Difficult to manage & maintain, not conducive to Smart strategy

### Want this ...



- Fewer and 'best in class' solutions
- Integrated using open & interoperable standards enabling 'future-proofed' Digital roadmap and producing NHS 'owned' data

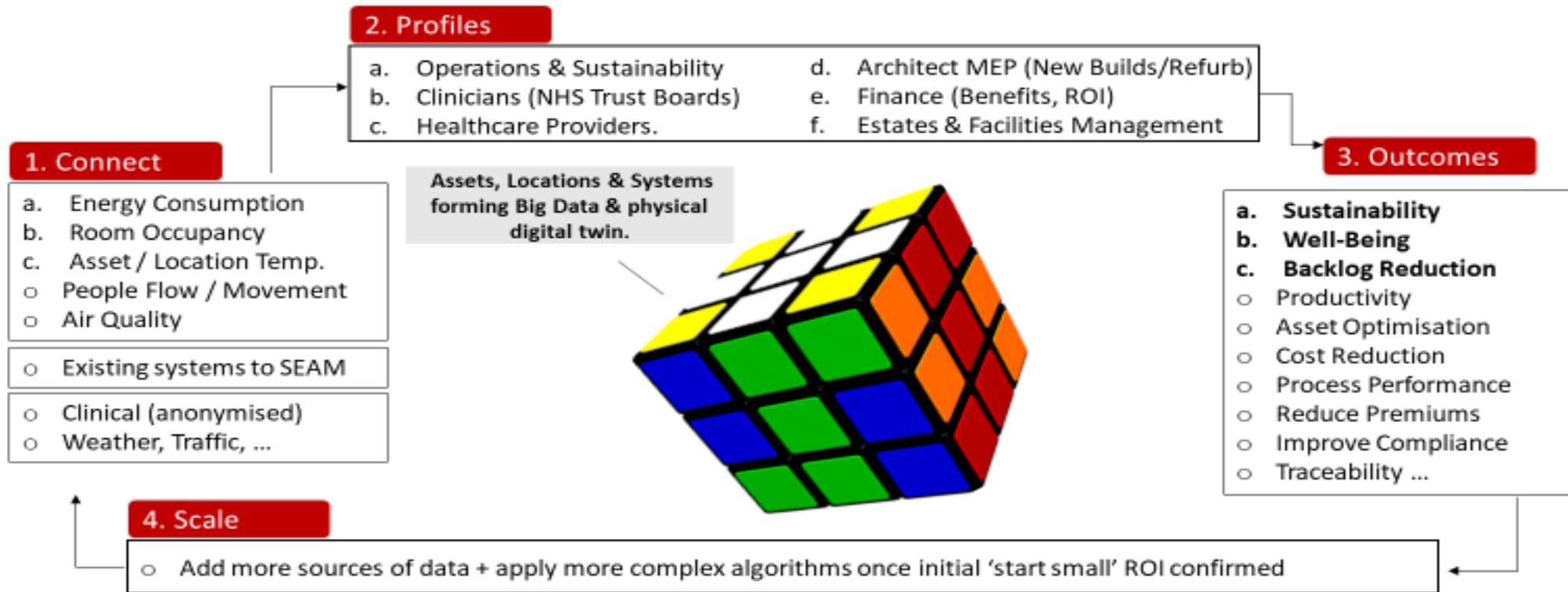
### And not this ...



- Proprietary, single supplier, 'walled garden' solutions
- Tied into long-term, 'house of cards' contracts that are complicated to terminate



## Re-usable and interoperable data available for different profiles & outcomes



**80% of Carbon footprint in Operations Phase vs c.20% for D&B – start 'smart' in Operations**



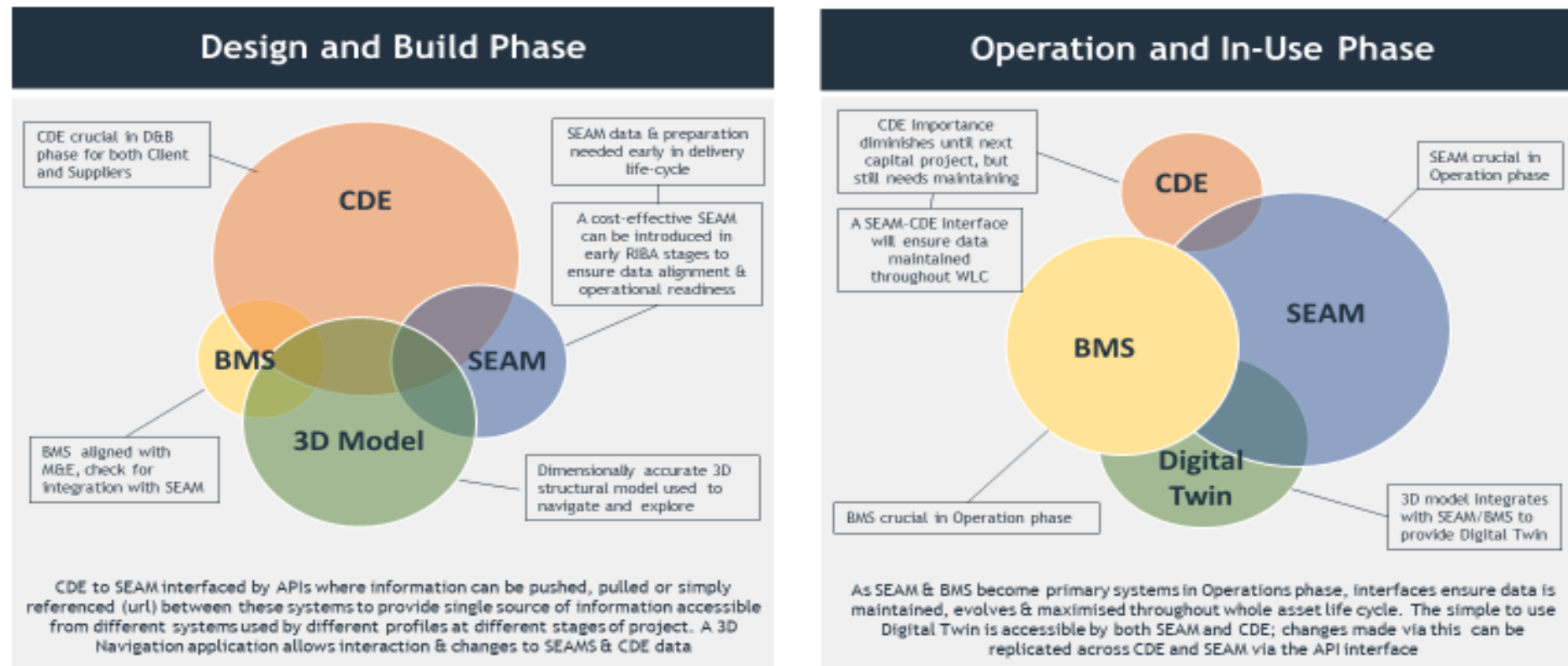
## Design to Operate: Capture and align DATA with desired business outcomes



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## Value of BIM, CDE & SEAM alignment



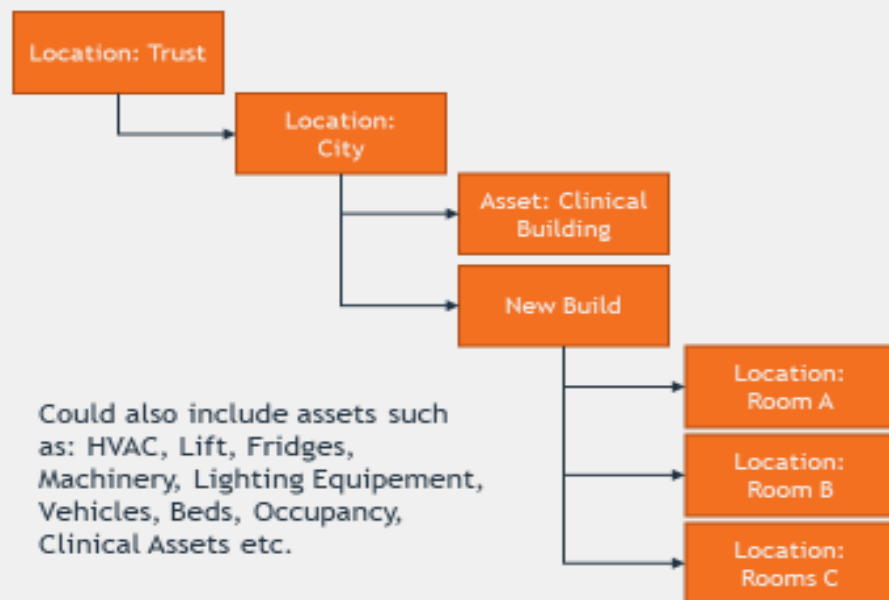
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Example: BIM to SEAM display data; trigger work-orders; manage / track projects.

### Example of heirarchy based on requirement



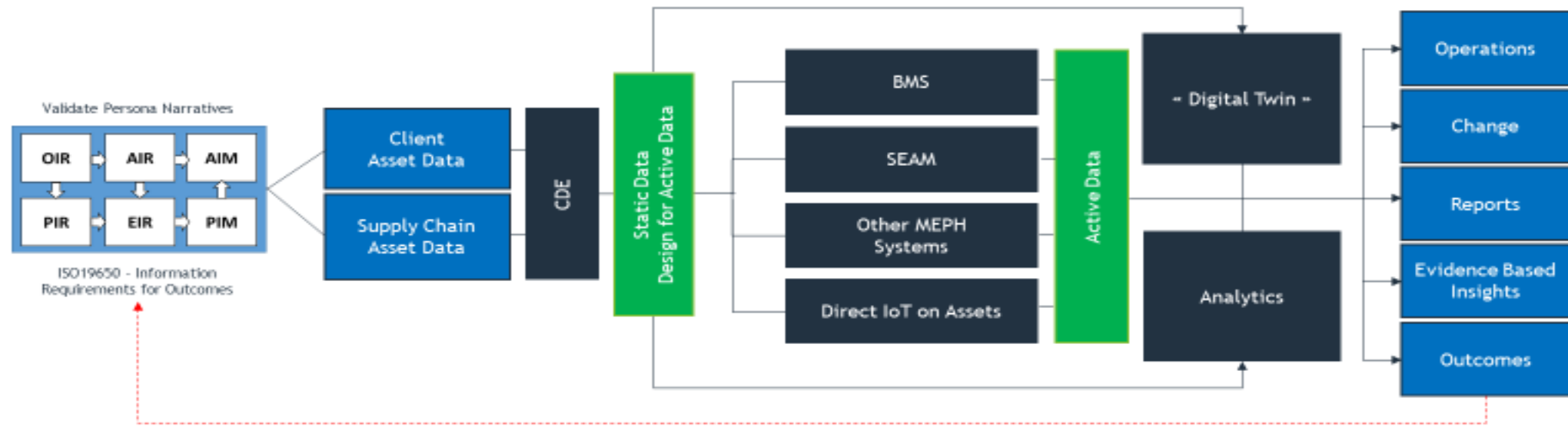
### Transactional + Operational Data

- Existing 'transactional' data capture may include:
  - Name, role, contact details, sector; n° employees, patients, customers; size, value, costs, associated contracts & SLAs; risks, checks, amendments, etc.
- Operational - digital data for locations & assets:
  - Plans; job plan; datasheets; contracts; materials (traceability); calibration & warranty dates / cycles
  - Potential IoT data: temp, humidity, air quality, occupancy, footfall, energy (electricity, water, gas) consumption; on/off run-time & asset usage, ...
  - ✓ Trigger work-orders (scheduled, unplanned or IoT driven) to alert NHS EFM and.....more.
  - ✓ Use data in next D&B / Refurb phase

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# High-level data flow throughout whole asset lifecycle



Ensure necessary static & active data to achieve desired business outcomes is created, structured and shared between systems early in D&B phase, and to ensure 'golden thread' of information kept across whole asset lifecycle

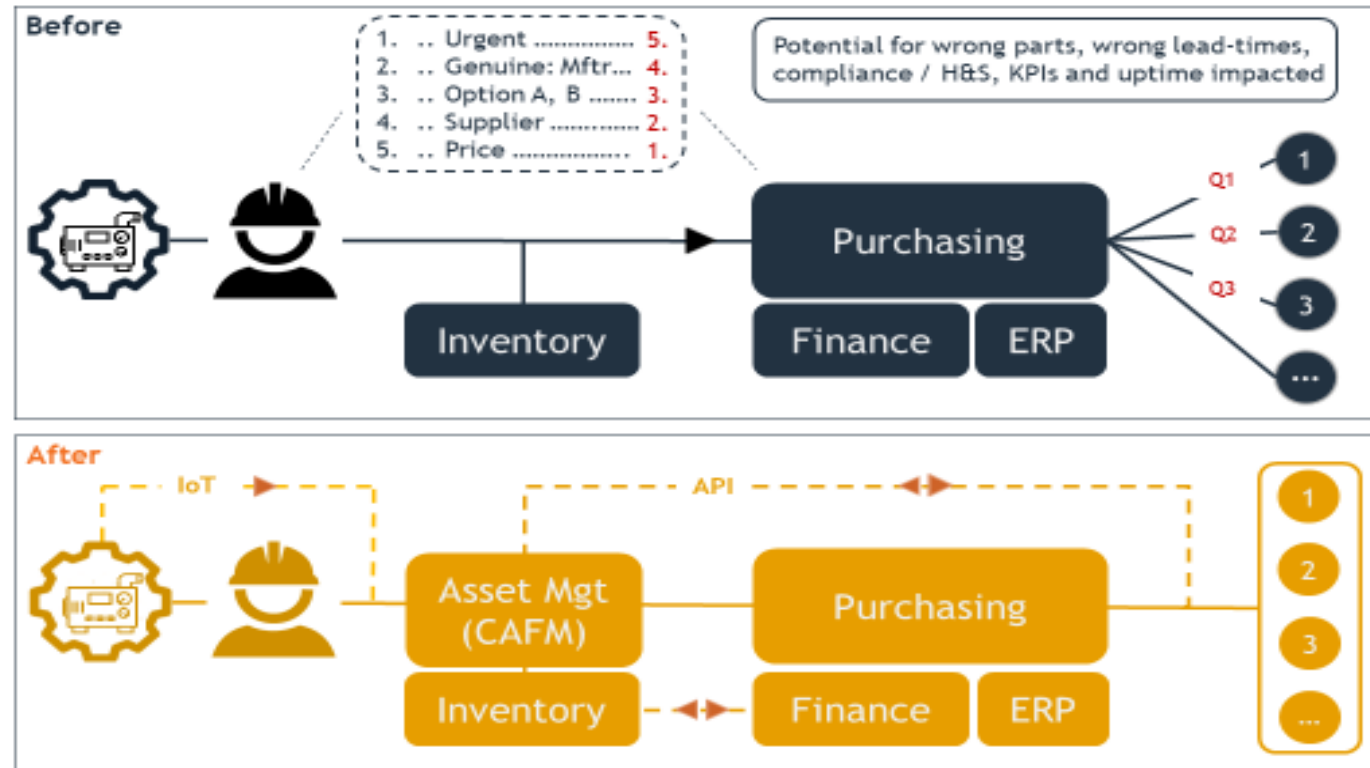
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# Supply Chain - Supplier E-procurement & Asset Management

## Benefits: Supply Chain

- Ensure right product, right price, right lead-time based on right criteria (criticality, genuine, energy consumption ...) - to ensure uptime, compliance, H&S, SLAs, target KPIs
- Just-in-Time Inventory - Planned & IoT enabled Predictive maintenance to ensure parts delivered on-time, in stores and reserved for jobs
- Improve Uptime: c.50% downtime due to parts not available
- Optimise Procure-to-Pay for materials, spares and consumables
- Improve Supplier Performance, Management and Consolidation



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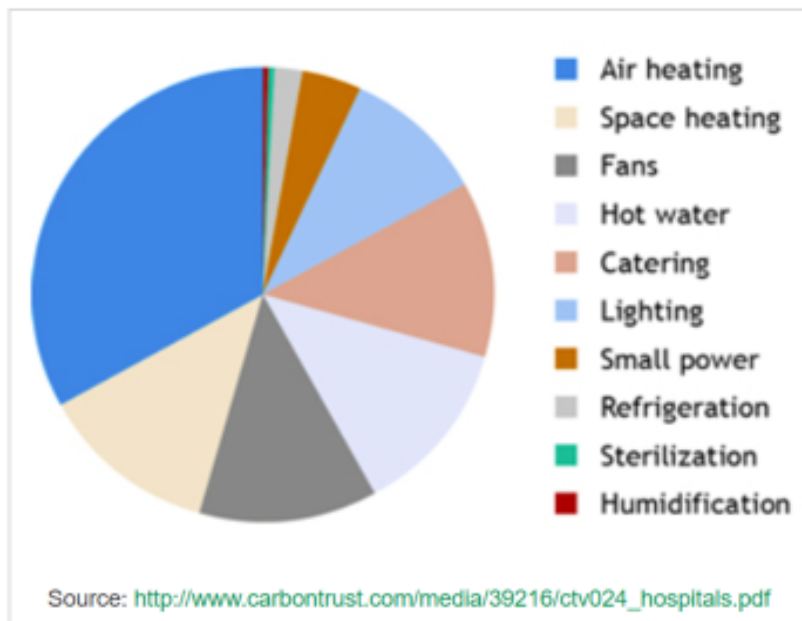
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## Sustainability & Digital: Measure & Manage

Energy consumption in a typical hospital by end use. Need Smart Assets + Smart Operations + Smart Facility Management + a Smart Approach



**If you can't measure it, you can't manage it**

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Agree on approach: LEED, BREEAM Excellent 2018 (D&B), BREEAM In-Use (Operations), then collect Data, Measure and improve Outcomes

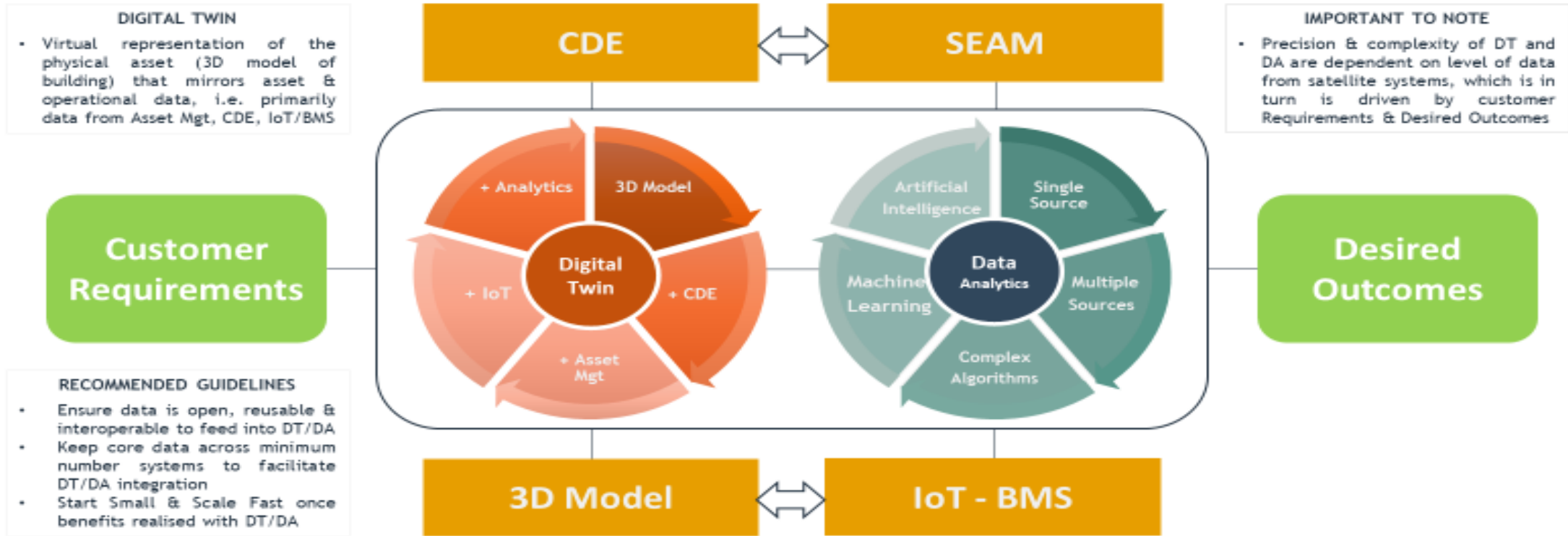


**Use insights for future D&B and refurb**

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# End-to-end offering driven by desired business outcomes & DATA



Karl Redmond



Thank you.

Questions?

E - [karl.redmond@nhs.net](mailto:karl.redmond@nhs.net)

M - 07923382823

