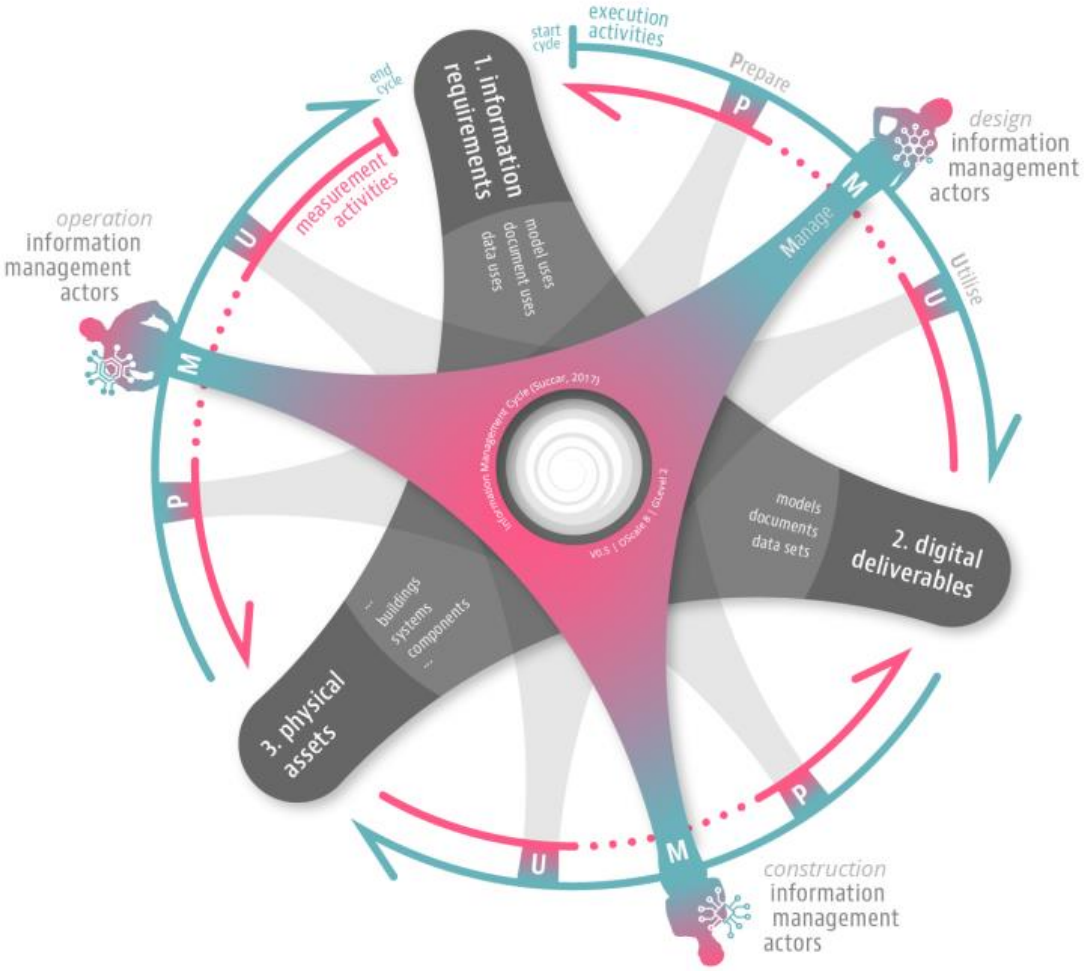

Information Management Cycle v0.5 (Full-size Image - Older version)

Updated Jan 21, 2018: This high-level *conceptual model* describes the **Information Management Cycles** that Structured Project Information pass through [1]. Each Cycle includes three **Information Management States**, separated by varied **Information Management Activities** conducted by specialised **Information Management Actors**:

Information Management States

The three states describe how Structured Project Information can be *experienced as either:*

[1] Information Requirements: project specifications, protocols or similar that identify what needs to be generated by project stakeholders. Information Requirements can be represented as a set of Document Uses, Model Uses and Data Uses.

[2] Digital Deliverables: digital simulations of physical objects and how/when they'll be constructed or fabricated. Digital Deliverables can either be documents (in digital format -e.g. CAD drawings or a PDF furniture lists), models and/or data sets.

[3] Physical Assets: information embodied within real world objects similar to whole facilities, a building, mechanical system, heating unit, or a single pump.

Information Management Activities

The transitions between these Information Management States are represented as either *forward* or *reverse* activities. **Forward Cycle Activities** refer to the *actions executed* to cross from one state to the next; while **Reverse Cycle Activities** refer to the *measurements made* to examine one state against its preceding one. Sample activities [2] are provided below:

- **Forward Execution Activities** from [**1**] to [**2**]: the activities typically conducted during a project's Design Phase which includes the planning and specifications sub-phases (e.g. drafting, drawing, detailing, and modelling); and
- **Reverse Measurement Activities** from [**2**] to [**1**]: the activities necessary to verify or validate digital deliverables against information requirements (e.g. checking floor areas in a BIModel against a client's spatial requirements).
- **Forward Execution Activities** from [**2**] to [**3**]: all the activities typically conducted during the Construction Phase which includes construction planning and commissioning (e.g. laying floors, mounting ceilings, and painting walls); and
- **Reverse Measurement Activities** from [**3**] to [**2**]: the activities necessary to test and confirm physical outputs against digital deliverables (e.g. checking the placement of duct hangers on site against relevant models or mechanical shop drawings).
- **Forward Execution Activities** from [**3**] to [**1**]: all the activities typically conducted during the Operation Phase which includes management, maintenance and decommissioning (e.g. cleaning rooms, repairing down-pipes, replacing roof tiles); and
- **Reverse Measurement Activities** from [**1**] to [**3**]: the activities necessary to capture data pertaining to a physical asset or to monitor the performance of a physical system (e.g. data capture through laser scanning and data monitoring through sensors).

Note: the three Key Information Activities (Prepare [P], Manage [M], and Utilise [U]) will be explained in a future model.

Information Management Actors

The Information Management Activities separating Information Management States are conducted by actors which are *either humans and/or computers*. There are three main actors who operate throughout the Information Management Cycle:

- **Design Information Management Actors**: *executing* the transition from Information Requirements to Digital Deliverables and *measuring* (e.g. verifying or validating) how well Digital Deliverables match with Information Requirements;
- **Construction Information Management Actors**: *executing* the transition from Digital Deliverables to Physical Assets and *measuring* (e.g. testing or confirming) how well Physical Assets match with Digital Deliverables; and

- **Operation Information Management Actors**: *executing* actions applied to Physical Assets (e.g. operating, maintaining and decommissioning). Also these actors can either (a) *measure* - e.g. capture or monitor - how well a Physical Asset matches with the Information Requirements covering the asset (within the same Information Management Cycle), or (b) *measure* one or more Physical Assets in order to generate new Information Requirements within a new Information Management Cycle.

Actors may overlap and replace each other. Depending on the current state of technologies, processes and policies within a market, *two* or even *one* Information Management Actor may be able to complete all execution and measurement activities across an Information Management Cycle [3].

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Endnotes

[1] Each Information Management Cycle has a *nominal start* (e.g. information covering the design of a new physical asset) and a *nominal end* (e.g. information decimated through the demolition of an asset). However, it is possible and even probable that the same information would persist over a number of Cycles (e.g. through iterative renovation of the same physical asset).

[2] Activities are a subset of 'Relations' within the Conceptual BIM Ontology.

[3] This model is part of the BIMe Initiative Integrated Information Platform project