



How Model Curation Influences Model Duration

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models enrich our thinking



working out a
problem



model curation

*....the lifecycle management, control, preservation and **active enhancement** of models and associated information to **ensure value** for **current and future use**, as well as **repurposing** beyond initial purpose and context*

A word cloud of design principles is centered on a black background. The words are arranged in a roughly circular pattern, with a dense, green wireframe grid overlaid on the text. The word "duration" is highlighted in yellow, while all other words are in white. The words include: integrity, credibility, modularity, duration, composability, trust, elegance, and value.

integrity

credibility

modularity

duration

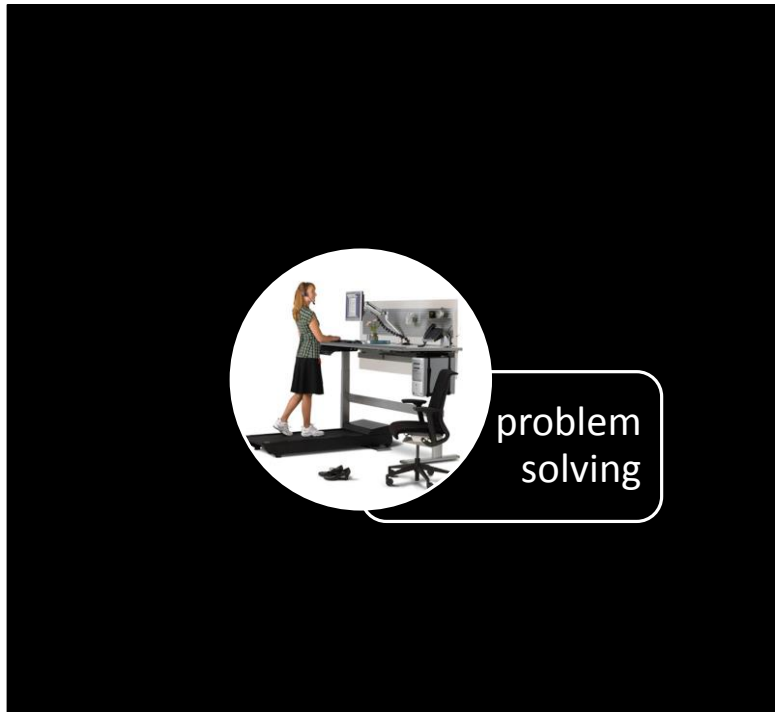
composability

trust

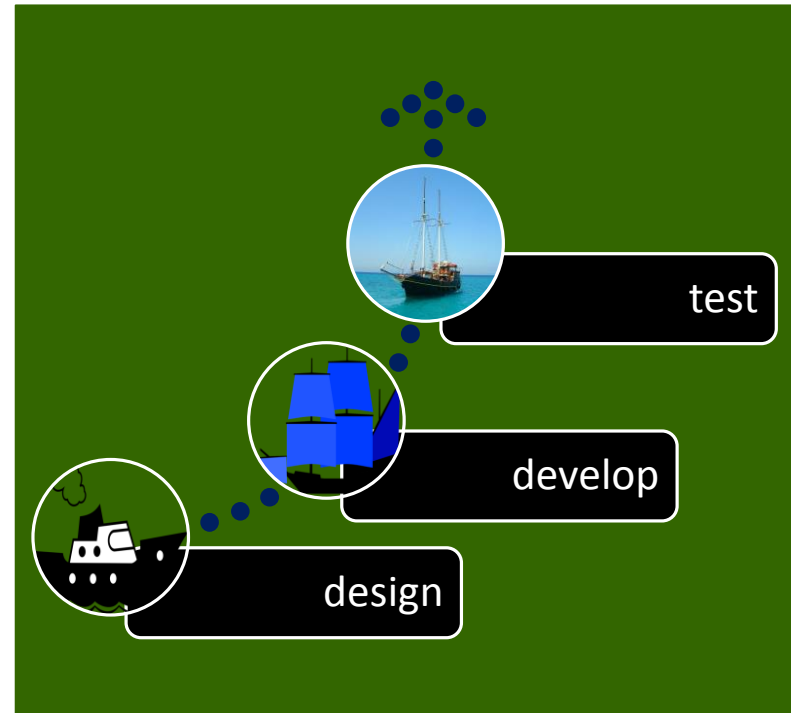
elegance

value

SHORTER DURATION



LONGER DURATION



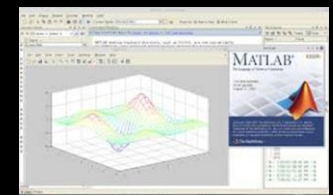
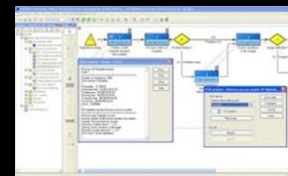
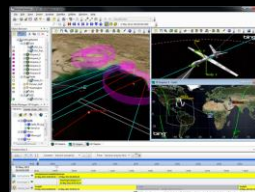
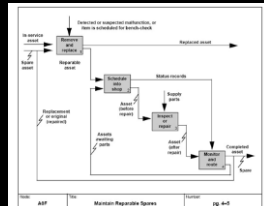
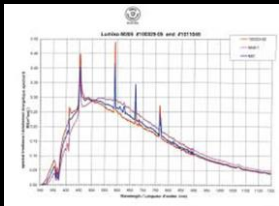
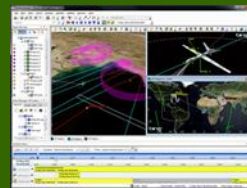
Curation necessitates differentiation of shorter duration models from longer duration models.

model accessioning

Formal process of accepting models (sets of models) into enterprise level model collection

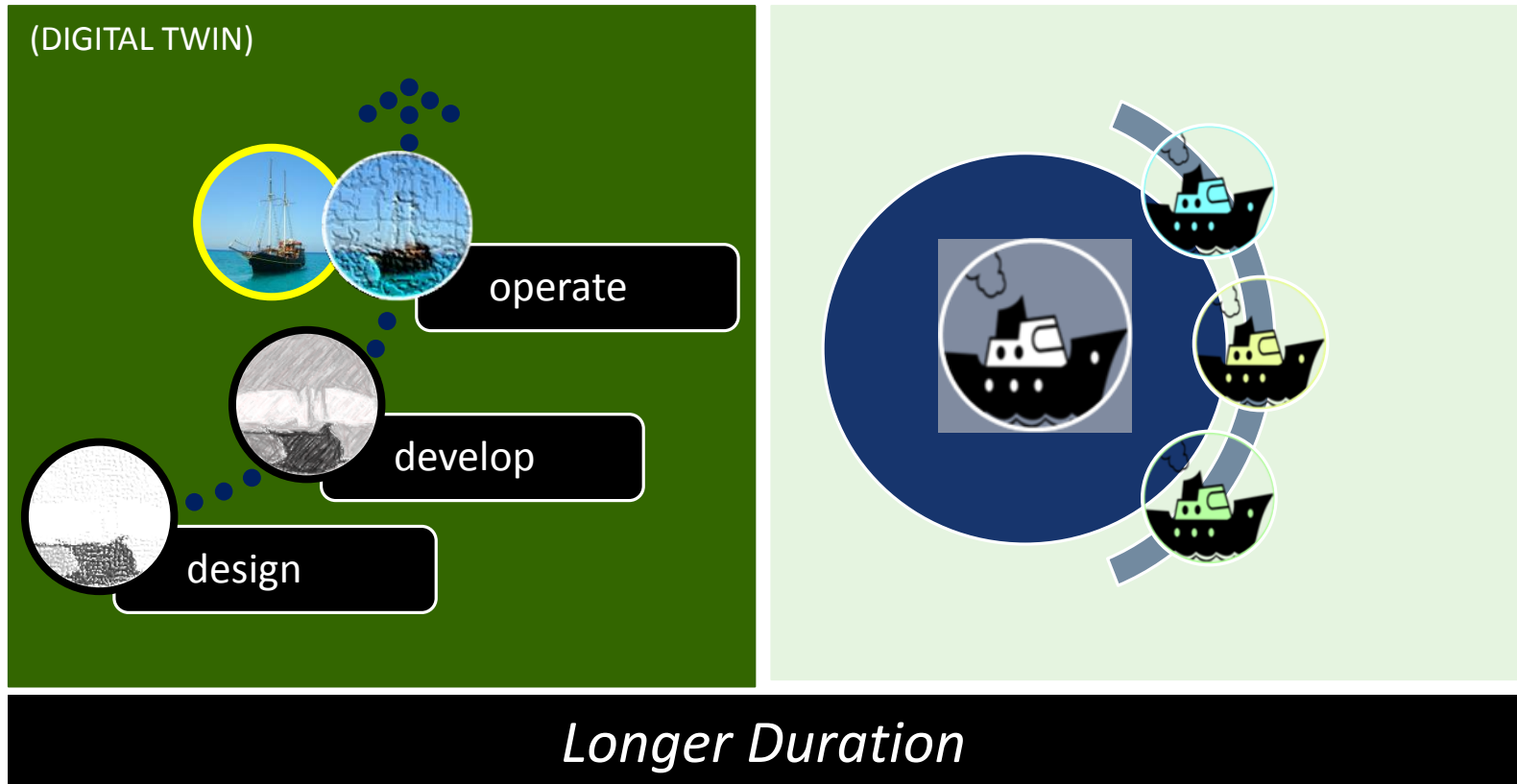
- establish legal ownership, IP, verifies integrity, validates pedigree, etc.
- de-accessioning is equally important formal process

enterprise collection



THROUGH LIFESPAN

MODEL REUSE



a benefit of model curation

.... increases the potential for effective reuse of a model on a future program, as the model and associated information (**metadata, technical data, and pedigree**) will be available to assess its fitness for purpose and context

model pedigree

A model pedigree contains all of the information about a model, its origins and use over time

PURPOSE

...enable the decision maker to determine the model's status with respect to past achievements, theoretical and methodological state of the art, and the expert advice that went into its development

Gass & Joel (1980)



across the enterprise

Modeling competency across individuals and programs, but **not strategically managed at enterprise level**

Models exist at all levels of enterprise (individual, program, business unit) but **seldom managed as enterprise collection**

Reymondet, L., Rhodes, D.H., and Ross, A.M., "Considerations for Model Curation in Model-Centric Systems Engineering," 10th Annual IEEE Systems Conference, Orlando, FL, April 2016

a new leadership role

model curator

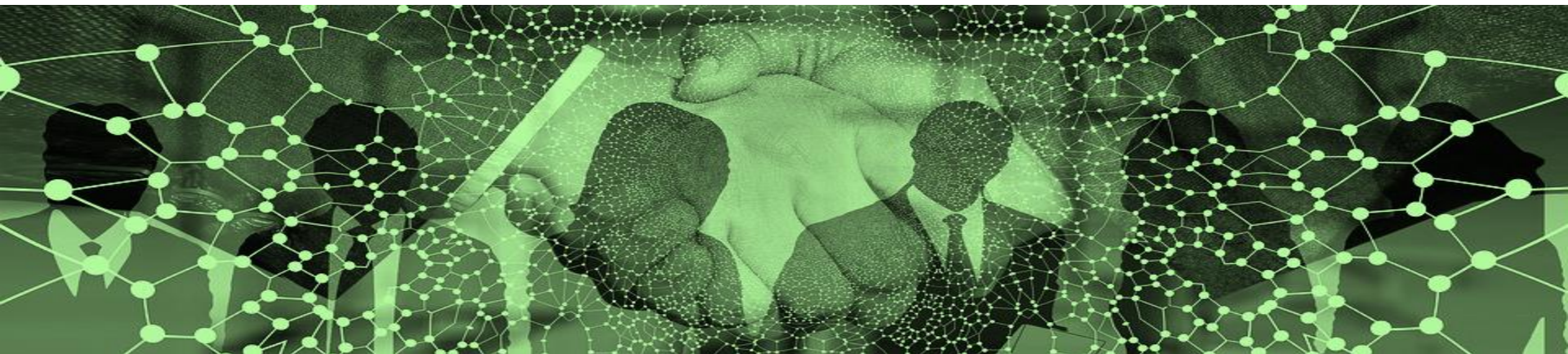
- enterprise model accessions
- valuation of model and digital artifacts
- strategic loan/acq of models
- oversight of model collection activities
- set model collection policy/practices
- strategies for model-centric future
- leadership for model demonstrators



Image Credit: DNV GL Annual Report, 2015

model curation research priorities (2019)

1. Model curation implementation practices
2. Precursors, enablers and barriers to model curation
3. Innovation through new technologies and methods
4. Competencies, roles and responsibilities





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