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→ **I've Never Metamodel I Didn't Like**

Yes, this is a cringeworthy pun. But behind this lurks a serious discussion about levels of modeling, a discipline that has gained a strong following since the advent of model-driven architecture (circa 2000), model-based systems engineering, and more.

In modeling standards such as the Unified Modeling Language (UML) and the Meta-Object Facility (MOF), both from the Object Management Group (OMG), one talks about M0, M1, M2 and M3 models. Each model is an *instance* of a model at the next higher level:

- level M0 describes an instance. For example, the execution of a specific purchase order issued by your company.
- an M1 model describes all such instances. For example, the purchasing workflow of your enterprise, modeled using BPMN, is a model.
- M2 is the metamodel level: BPMN itself, as a language that can describe all business processes, is therefore a "model of models," i.e. a metamodel. So is UML.
- an M3 model describes all such modeling languages: it says that there are some entities, relations between them, attributes, cardinalities, etc. -- it is generic enough to have the power to describe UML, BPMN, SysML, ArchiMate, domain-specific languages, etc. Hence it is a meta-metamodel. Since it can describe all modeling languages *including itself*, there is no need for any higher levels. MOF is a meta-metamodel.

This is the rigorous definition, but the reality is messier. For example, OMG has just issued a Request for Proposals for a *Standard Business Report Model* (SBRM). In fact, this is not asking for a model (it will be up to each regulator or organization to model what they want a certain type of report to contain) but truly a metamodel. Yet the "meta" prefix was omitted, mostly to avoid scaring people. In other circumstances, we've seen people gratuitously add "meta-", perhaps simply to impress others with their capability to handle abstract concepts. Don't be fooled -- but know your levels!

→ **Speaking of Models: Proceeding of MBE Summit**

The National Institute of Standards and Technology (NIST) held the 10th Model-Based Enterprise Summit in April of this year, and a [report on the event](#) was just published a month ago.

The goal of the event was "to identify challenges, research, implementation issues, and lessons learned in design, manufacturing, quality assurance, and sustainment of products and processes where a digital 3D model of the product serves as the authoritative information source for all activities in a product's lifecycle." As such, the organizers should really be talking about "model-based product lifecycle management," not about "model-based enterprise" in all its generality.

A list of all the presentations given during the four-day event, with links to the slides, can be found [here](#).

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→ BPM+ Health Industry Workshop

Under the auspices of OMG, there have been a number of workshops over the last two years about the use of business process and case modeling techniques to improve the consistency of healthcare delivery. The famously chaotic U.S. Veterans Administration (VA) has been a key player, as it badly needs to harmonize clinical practices among its hospitals and with private contractors.

This work has now led to the formation of the Business Process Management Plus (BPM+) Health community, with a two-day kickoff event in Nashville, Tenn., on Sep. 24-25.

→ Microsoft Bets on General AI

Microsoft just announced a \$1 billion investment in what some people now call AGI, for "artificial general intelligence" (confusingly, "AGI" means "adjusted gross income" to U.S. taxpayers). "General AI" might be easier to say and equally correct, but logic rarely stands successfully in the way of marketing...

Microsoft's bet is being placed through OpenAI, whose CEO is Sam Altman, a Stanford drop-out who was President of Y Combinator, the well-known startup investment company. Does Microsoft really believe that generalized AI is on the cusp of success, or do they want to "make a splash" and attract AI developers and users to their Azure cloud platform, just as they are doing with IoT? Or do they share the motives of some of the OpenAI founders, namely that work is urgently needed to prevent AI from posing an existential threat to humanity? Or all of the above? Stay tuned...

→ Seen Recently...

"Change without improvement is pointless."

-- Bernard Golden, commenting on the updated Twitter interface

"Silence is pervasive in organizations due to the widely shared belief that speaking up about sensitive issues is futile or even dangerous."

-- Francesca Gino, writing in the Harvard Business Review on "Why It's So Hard to Speak Up Against a Toxic Culture"