Why study SeeMe? Or any graphic notation in general?

- Research or Inquiry (into the physical, social, or mathematical worlds — or any combination) relies on abstraction.
- Abstraction allows us to look at the bigger picture.
- Modeling (at least the definition we’re using) builds on abstraction by identifying the relationships between the abstractions.

What are the Advantages of a Graphic Format?!

- Pictures are worth a thousand words
- Can talk about it / point to it (with yourself and with others)
- Can convey abstractions easier (and, potentially, with more precision)
- Helps squeeze out — or at least identify — ambiguity
- Helps people play with concepts and hypotheses
- Can help link knowledge

Methodology

A formalized approach (and, like technology, is not the "study of" something)
SeeMe is one approach

SeeMe (semi-structured, socio-technical modeling method) sees / portrays the world in terms of

Roles (presented as ovals)
Activities (rounded rectangles)
Entities (rectangles)

These elements are connected via relations, represented with arrows

For example, Students (shown as ovals) Write (shown as a rounded rectangle) Moodle Postings (shown as rectangles).

Basic elements

Roles which represent a set of rights and duties as they can be assigned to persons, teams, or organizations. Eventually, the characteristics of a role are based on the expectations of other roles. These kind of reciprocal relationships are typical for social systems – roles are a means to introduce social aspects into the models.

Activities which are (usually) carried out by roles and stand for the dynamic aspects which represent change, such as completing of tasks, functions etc.

Entities representing passive phenomena; e.g. resources being used or modified by activities, such as documents, tools, programs, items of the physical world. They can represent containers (e.g. box, a warehouse) or ephemeral phenomena (e.g. an utterance).

Relations tie elements together

Three types:

1. Relative importance is shown by size or location (top, left)
2. Subsets are shown with the graphic depiction within another one
3. Arrows connect (or relate) elements (and have somewhat precise

SeeMe offers nine standard relations depending on the types of elements being connected and on the relation's direction. Relations are depicted with directed arcs. They have a starting- and an ending-point which are anchored in basic elements. The "reading-direction" mirrors the direction of the arcs in the following definitions:

The role (programmer) carries out the activity (programming);
The activity influences the role (user);
An entity (computer) is used by the activity, which produces or modifies an entity (interface).

Elements of the same type can be related to each other:
A role (programmer) can have expectations towards another role (user) – the content of the expectation can be expressed with an attribute (cf. section 6, description-on-relation);
an activity is followed by another one;
and an entity can belong to another one. Belonging to is a very abstract term which covers more concrete relationships such as that one entity is the pre-requisite of another one (like computer! user interface or original! copy).

Furthermore,
a role can be described by an entity (CV, curriculum vitae) to which the arrow points; this relation is relevant to express privacy issues; for instance, it can be used to indicate all kinds of traces which are left by a user in a computer system.
An entity (credit card) points to a role with an arc, if this entity is possessed by the role. This relation can especially be used to express access rights. (Attention: this relation does never mean that the entity triggers the behavior of a role, this needs always an activity).

As the examples with the relations of type (8) and (9) show, a relation does not need to be presented by a straight line. The arcs contain waypoints where they change their direction. It should be noticed that relations can connect an element with itself and they can maximally connect two elements – the waypoints must never be used to connect three or more elements.

It is possible to use double arrows e.g. if two activities or if roles have expectations towards each other.

From SeeMe in a nutshell – the semi-structured, sociotechnical Modeling Method by Thomas Herrmann
The Nine SeeMe Relationships

Example: A true story from 1874

Mary Ellen McCormack (1874), as quoted in New York Times

"Mamma has been in the habit of whipping and beating me almost every day," the little girl testified. "She used to whip me with a twisted whip — a rawhide.

"I have now on my head two black-and-blue marks which were made by Mamma with the whip, and a cut on the left side of my forehead which was made by a pair of scissors in Mamma's hand; she struck me with the scissors and cut me. ... I never dared speak to anybody, because if I did I would get whipped."
SeeMe model, starting with Cultural Mores of the times when Mary Ellen was being mistreated. The Treatment of Children is a part of the Cultural Mores of the times and is, hence, a smaller role within the larger role. (Roles are signified by ovals with SeeMe.)

Another SeeMe model, this one showing a Revised Cultural Mores (with Better Treatment of Children) that represents the situation that existed sometime after the one on the left. What happened between the two is on the next slide.

In this SeeMe model, we see a chain of activities (shown as rounded rectangles) culminating in the NY Times article.

This SeeMe model shows what happened next: New organizations were established to help promote, maintain, and strength the newly established concept of Childrens' Rights.
(Towards) Annotations
• What original cultural mores? *Spare the rod and spoil the child?*
• What was required for the trial to happen?
• What was required for the publicity to occur?

Hard Question(s) Glossed Over by Model:
• Why (and How) did the publicity (or ?) change the cultural mores of the time?

Lesson: Models can be useful — but still inadequate

It depends on what the purpose is.

Each element can certainly be examined more closely. They help raise additional questions!

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Final Thoughts

• SeeMe is not the only graphic notation out there! But it does attempt to enforce or promote a type of rigor that is not present (or is implicit) in most figures.

• Sometimes local modifications are necessary -- and this is generally an OK thing to do.

• As a modeler, you have the choice of what to include. Include the items that you believe are important. Remember: You can’t include everything! *(The map is not the territory! Korzybski)*

• You can supply annotations to the elements; provide a legend etc.