Adequacy of business process modeling techniques and stability of models with respect to changes in business reality

Notes for Brainstorming Session at BPMDS'04

Prepared by Ilia Bider (IbisSoft, Stockholm)

Mission

To go through various modeling techniques and investigate their suitability for the task of creating and maintaining the fit between business processes (BP) and business process support (BPS) systems

Approach

We suggest splitting the investigation of suitability into two separate problem domains:

1. ADEQUACY, which concerns static properties of modeling techniques. Adequacy is important when creating a fit.
2. STABILITY, which considers dynamic properties of modeling techniques. Stability is important when maintaining a fit.

For each of the above, a list of properties/criteria needs to be established so that we can go through a number of known techniques and investigate their adequacy and stability.

Adequacy

As we deal with a fit between BP and BPS, we presume that a BP model is being designed to be incorporated into software (in one way or another). Therefore, the technique should be formal or at least formalizable to a certain extent, more exactly to the extent the system is aimed to help its users to run their BP.

An important topic for adequacy is the compatibility with the mission (nature) of a BPS system. Following missions, for example, could be considered (see details in [1])

- Integrate existing systems along process-flow
- Facilitate coordination / communication between process participants
- Introduce strict order in production-like processes

- Help to drive process instances to their goal without dictating the order

Another important issue in the adequacy domain is the adequacy of a modeling technique to the properties of business processes the system is aimed to support. The following parameters, for example, can be considered for analysis of BP properties (see details in [1]):

- Level of specialization of active process participants
- Degree of precision of operational goals
- Degree of autonomy
- Nature of external environment (collaborative / competitive)

Stability

Stability could be measured as a volume of changes in the model needed to reflect changes in the reality. If slight changes in the reality require total revision of the model, the modeling technique cannot be used for the task of "maintaining the fit". It is important to figure out a list of "predictable" changes that can be tested against each of the chosen modeling techniques. Examples of such changes can be as following:

- Changes in distribution of responsibilities. Such changes can occur on various levels, e.g. merging or splitting departments, or changing role definitions for particular positions.
- Changes in the order of activities, e.g. “from money first, goods after” to “goods first, money after”

Tasks

1. List criteria to check adequacy
2. List “predictable” changes to investigate stability
3. Choose a number of modeling techniques
4. Check each technique against adequacy criteria and predictable changes

References

1. Bider, I. "Evaluating Adequacy of Meta-models: A Practical Exercise in the Domain of Business Process Modeling", Research Report, IbisSoft AB, 2002. Available at: www.ibissoft.se/publications/Howto.pdf