Minibudget
Why an Enterprise Hires a Chief Executive Officer (CEO)

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A note for the reviewers: We are especially interested in feedback how the e3-value ontology describes *expected economic consequences of actions,* or in alternative solutions within the REA model.

Abstract

REA duality relationship has been considered a primary representation of causality between economic events (McCarthy 2008), i.e. economic events occur because of other events related by the duality relationship. However, business decision makers usually initiate economic events because of expectations, which are not always limited to the dual economic events. Minibudget allows to model expectations explicitly in the REA model. Minibudget is a budget estimating economic consequences of an economic event. Expectation could be another causality relationship in the REA model, in addition to duality.

Introduction

Budget in the REA ontology is modeled as a group of economic events, see Fig.1. Budget contains two types of information, described by (Geerts and McCarthy 2006): "(1) static estimates done in advance (the budget amount), and (2) derived attributes representing arithmetic roll-ups (the actual amount). The budget amount defines the estimated total sales amount for the specified time period; thus, it applies to all sales transactions that will occur during that period. Actual amount is a derived attribute calculated from the Sales amount attribute, and it is used for discrepancy analysis. The actual amount represents a running total that will increase over time".
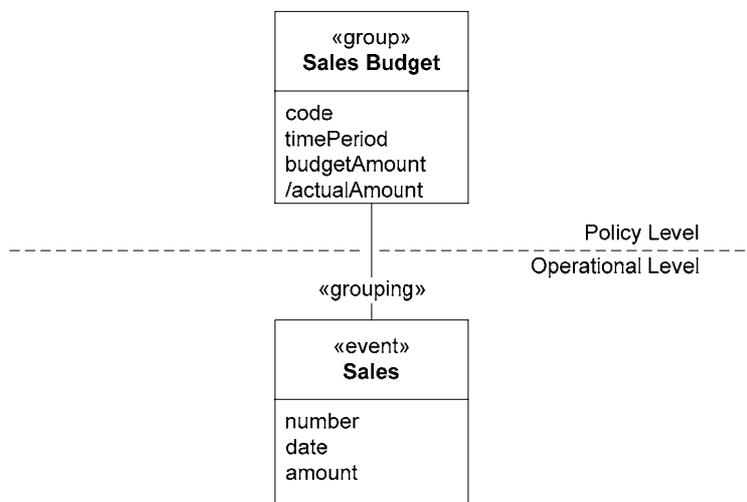

Fig. 1 *Budget definition, adapted from Geerts, McCarthy (2006), Figure 17.*

In addition to the «grouping» relationship, a budget can be related to REA entities at both policy level and at operational level. For example, a budget can be related by «budgeted stockflow» to a resource type, and by «budgeted participation» to an actual sales agent (Geerts, McCarthy, 2006, p.61). Such budget can specify how many items of a resource type a specific salesperson should sell in a time period.

Problem

Fig. 2 illustrates two REA processes: a labor acquisition process where an enterprise receives labor of Chief Executive Officer (CEO) in exchange for his salary, and a Sales process where the enterprise sells Product and receives Money in return.
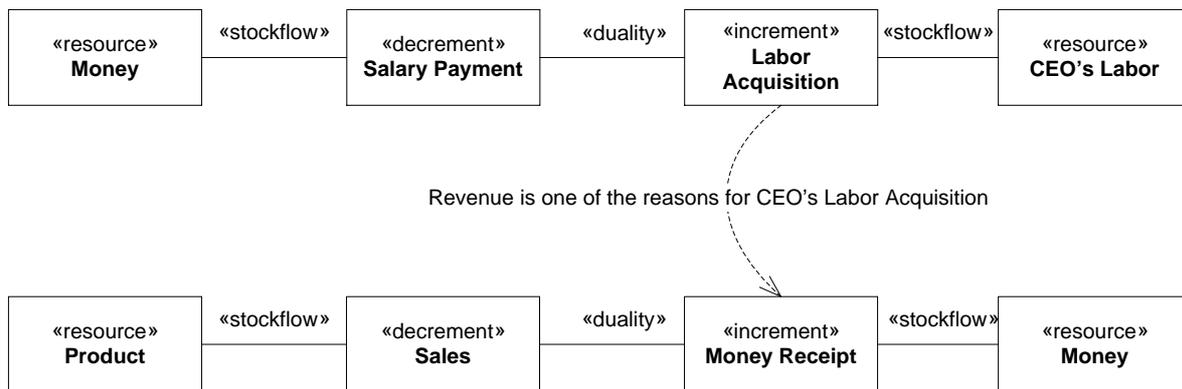

Fig.2 *Sales process and CEO's labor acquisition process*

Let's for simplicity assume that certain revenue (i.e. sum of *Money Receipt* events) is one of the performance indicators of CEO's work, indicated by dashed line in Fig. 2. However, in the REA model in Fig. 2 there is no direct relationship between these two processes, allowing quantifying the expected outcome of CEO's work. That relationship exists in theory but is complex. In theory, CEO's labor is consumed in a "management" process that creates resources such as "managed labor", which, after transformations in several processes is finally transformed to the product sold, for which the money is received.

In accounting information systems, it is useful to explicitly specify and quantify the reason for performing certain economic events. Although the theoretical model (a chain of value-adding processes) can explain that CEO's labor is transformed to the sold product, **the theoretical model does not allow quantifying the expectation from acquiring CEO's labor and expressing it explicitly.**

Solution

The expected result of CEO's labor acquisition is modeled as a Minibudget linked to the *Labor Acquisition* Event. The Minibudget is a budget; it is a group of *Money Receipt* events. In addition to budgets described in Geerts, McCarthy (2006), see Fig. 1, Minibudget is linked to a cause economic event and specifies the expected consequence of this event.

Minibudget in Fig. 3 specifies an estimate of the results of Labor Acquisition of the CEO. In the case that CEO has several performance indicators there will be several Minibudgets related to the Labor Acquisition event.
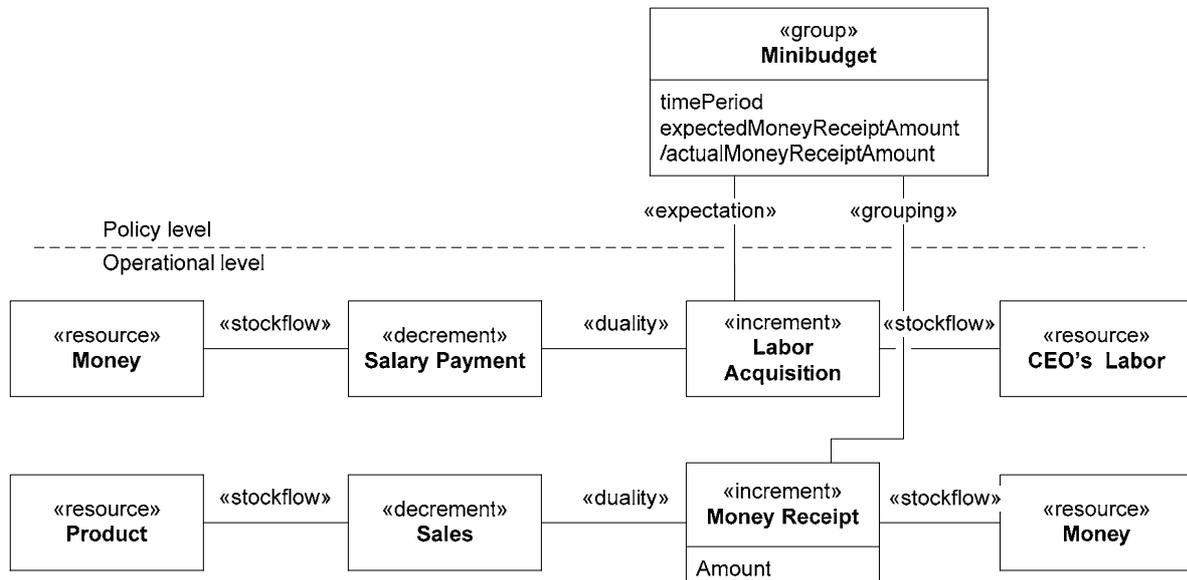

Fig.3 *Minibudget quantifies the reason for Labor Acquisition of CEO's Labor.*

Fig. 4 illustrates a generic Minibudget pattern. An economic event, **possibly every event** in the model, has associated a Minibudget, representing the reason why the event occurs. Minibudget is a group of economic events typically in different processes than the event associated with the Minibudget. Minibudget has an attribute *expectedQuantity* estimating the expectation, and *actualQuantity* which is the sum of the quantity attributes of the budgeted events that already occurred.
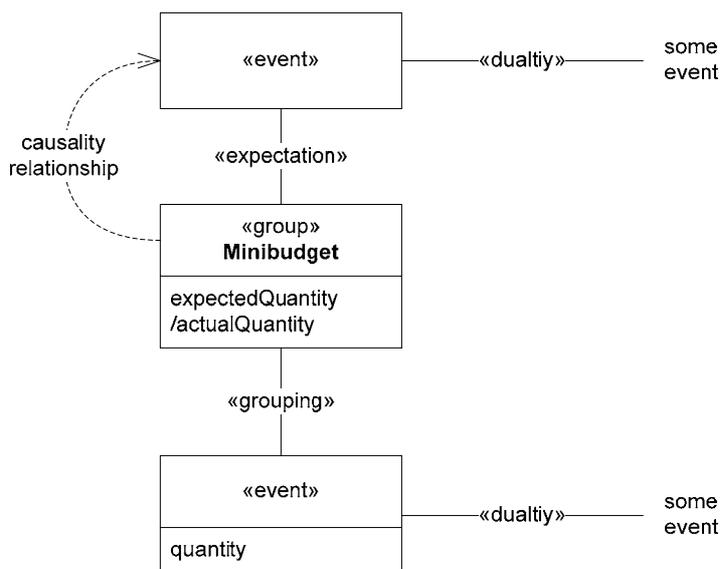

Fig.4 *Minibudget pattern*

Discussion

Economic agents initiate economic events for a reason, and Minibudget models this reason explicitly in the REA model. Therefore, Minibudgets quantify and record business decisions that otherwise would only be manifested as a mental process.

Duality relationship cannot be used to model the economic reason for economic events in all cases, because the reason is sometimes a number of economic events in other business processes. Commitment cannot be used to model the reason in all cases either, because the commitment is an obligation to perform an economic event, which is stronger than a mere expectation.

There is a causality relationship between the Minibudget and the event, in this paper called «expectation»; an economic event occurs because of the estimate provided by the Minibudget. It is not clear whether this relationship can be mapped to some of the existing REA ontological categories, or whether it represents a new concept.

It seems that **all events** in the REA model can potentially have associated Minibudgets, specifying the event's expected consequences and the economic reason why the event occurs. Minibudgets are not limited to "overhead" processes. For example, when a distributor acquires a product it may create a Minibudget estimating its target sales price. When buying shares at a stock exchange it is usual to estimate the target price of the share.

Minibudget allows modeling target prices and similar indicators explicitly in the accounting information system.

References

Geerts, G, McCarthy, EW, 2006: Policy-Level Specifications in REA Enterprise Information Systems, Journal of Information Systems, Vol. 20, No. 2, Fall 2006, pp. 37–63

McCarthy, EW, 2008, ISO-IEC 15944-4 – The Open-edi Accounting & Economic Ontology, Presentation at a joint REA and XBRL workshop, May 12-13, 2008, Washinton DC, USA, sonsored by National Science Foundation. (**for the reviewer:** do you know an earlier reference to duality as causality relationship?).