Focus Paper:

Applying Business-Centric Methodology Event Template to Financial Management

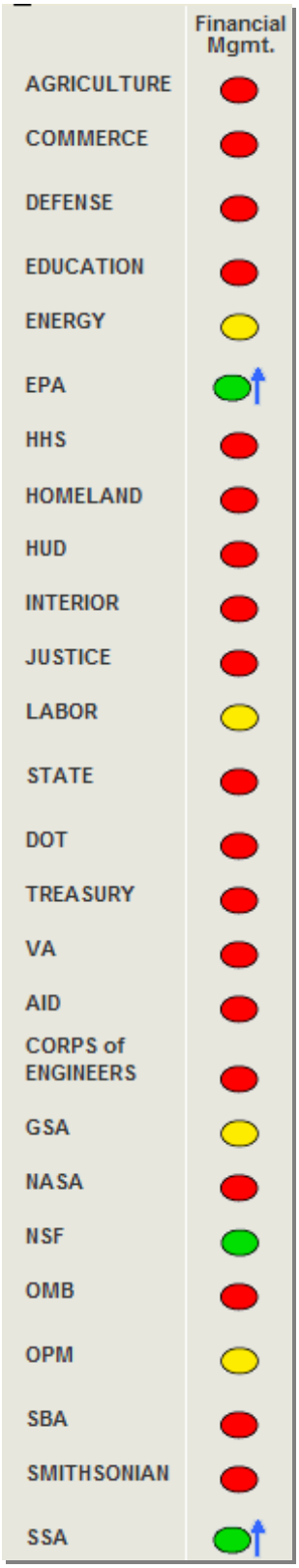
Business-Centric Methodology

For Enterprise Agility and Interoperability

INTRODUCTION

This whitepaper introduces the application of the *OASIS Business-Centric Methodology (BCM) Event Template*[1] for use within the financial management domain. The *BCM* offers an approach for managers facing the problem of tying together disparate systems and services. *BCM* is a roadmap which can be used for new development, providing guidance in defining requirements for the procurement and deployment of information solutions and products. This includes techniques for providing the interface structure that extends legacy applications and services.

The *BCM Event Template* is used to capture information concerning any activity that management wants to plan, control, or evaluate. The methodology promotes the 'Event' as a critical metadata artifact which makes loosely-coupled interoperability solutions possible. The business need is to provide enhanced robust financial management services. The *BCM Event Template* supports a publish-and-subscribe metaphor which builds from a strong metadata strategy base. The key need is to address the interoperability of exchanged information between the various stakeholders of the value-chain. To achieve this need the *BCM* supports Service-Oriented Architectures (SOA) for loosely-coupled solutions that are agnostic to platform and application environments. So though the whitepaper doesn't cover the entire scope, one should begin to understand how *BCM Templates* enable business personnel to understand, account for, and manage the operations.



CHALLENGE

Herculean efforts have been made by organizations, both commercial and government, to reduce their cost of accounting and finance activities by making them optimally effective. The effort to date has led to visible

[1]OASIS – Non-profit standards organization for advancement of structured markup technologies – http://www.oasis-open.org

payoffs in modernizing financial management practices. A large part of the cost reduction has been due to eliminating the redundancy of stovepipe systems.
Responsible organizations are generally on track to financial management modernization, and developing target architectures of their integrated financial management services. Going forward to ensure maximum benefits, organizations are maintaining their accounting systems with the highest standards of reliability and accuracy while enhancing financial reporting capabilities for timeliness and transparency. There are also new regulatory demands on accounting systems of public companies (Sarbanes-Oxley 2002). In addition, applicable accounting principles and standards; internal control standards; and operating policies and related requirements are being implemented.

Today, an accurate assessment is that the battles are being won, but the war is not over. And it is a long war! For instance, as depicted in our Government's June 30th 2003 President's Scorecard on Financial Management[2], we can do better. The "stoplight" scoring system employs a simple grading system where:

- **Green** for success,
- Yellow for mixed results, and
- **Red** for unsatisfactory

In financial management, an agency is "red" if its books are such a mess that auditors cannot express an opinion on the agency's financial statements or if an agency has a history of spending more money than has been given to it in law by the Congress. Work still needs to be done on fragmented financial environments that require more interfaces and reconciliation procedures, thus extending the time required to close the books. Such an environment also increases the risk of material errors in consolidating financial results.

ASSURING THE VALUE-CHAIN

In the past administrators looked internally to keep their financial house in order and it was therefore a time for introspection. This internal viewpoint came to a pinnacle in the 90's with the acquisition of large monolithic vendor-based products. The cost justification for such widespread adoption was perhaps led in part by the millennium date issue and the European Monetary Union (EMU) imperative. Those who did successfully adopt the vendor-based solutions were in part willing to change the way they did business to align

[2] President's Scorecard on Financial Management: http://www.results.gov/agenda/scorecard.html

with that vendor's internal software application model. Those who strayed farthest from the vendor's model, and for various business reasons could not adopt the whole model, had a harder time of implementation. In either case, focus was on internal processes, where end-to-end literally meant door-to-door of the organization.

Evaluations of the projects revealed that though a good first step was taken, to maintain or gain the status of a world-class service or product provider, the organizations needed to collaborate more with their trading partners. In short, there was still room for improvement. The awakening for the immediacy to establishing key partnerships and looking past the door has come only recently. Entire industries were hit hard financially as the economy was switching to low gear. Without visibility into the value-chains (and for procurement aspects their supply-chains), corrections could not be made expediently, and costs rose needlessly to even bankrupt many companies.

Visibility had organizations turning to the Internet to find ways to reach beyond their own enterprises and automate their processes, reduce administrative overhead, and perhaps more importantly reduce their risk. Organizations today are leveraging the pervasive nature of the Internet to communicate effectively with their partners. This pattern of collaboration has moved organizations to embrace distributed computing as a necessity to become competitive. This migration to a network computing-based architecture has afforded those dealing with financial management across organizational boundaries with many options. One such example of crossing of organizational lines is the government funding process where formulation, tracking and reporting of Federal monies requires many organizations to be included in the value-chain.

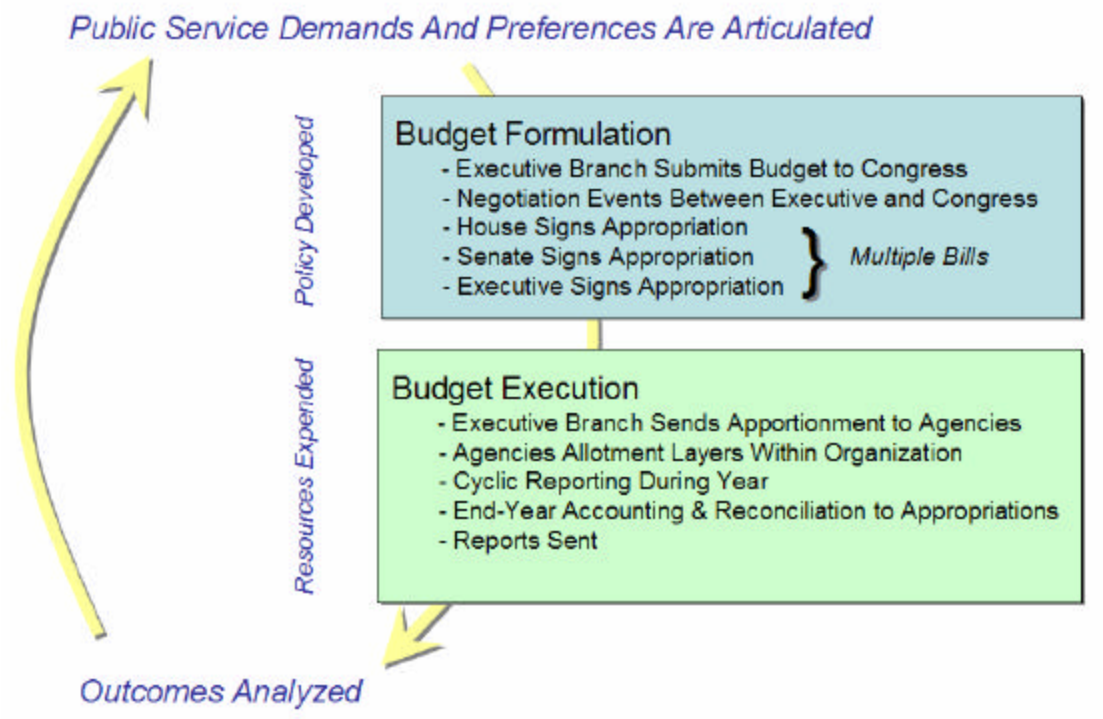


Figure 1 – Government cycle of accounting

The *BCM* specifically addresses these types of processes, making the value-chain a coherent collection of systems. From feeder organizations managing and supplying financial information through to headquarters (or in the case of the Federal government, the US Department of Treasury) the need is the same - providing the correct and timely information for intelligent decisions (see figure 1).

BCM

The *BCM* provides organizations with guidance on being more opportunistic with their information as they address the challenges and complexities of their value-chains. The *BCM* provides a layered view of enterprise information. Each *BCM layer* is designed to encompass a complete and discreet set of semantics and to enable the business implementer to segment their understanding of the problem. By focusing on one layer at a time this provides critical organization and structure to solving the complexity of e-Business information integration.

There are four layers of the *BCM*; the *Conceptual*, *Business*, *Extension*, and *Implementation*[3].

For this whitepaper, discussion will be around the *Conceptual Layer*. This layer provides the foundation and provides a high level view of the solution requirements. In this layer the business managers determine the solution requirements and classify the business area that is the appropriate owner within the enterprise.

The *BCM* provides templates that acquire the necessary business collaboration information within this layer. The *BCM Template* approach is designed to provide business managers and users the ability to create the template content in business terms they can readily understand. These include such items as the business goals, the project boundaries, the participants, the *Community of Interest*, usage case, business events and the classification of the domain and any associated ontology.

Particular benefits and goals of this template approach include improving communication between the business domain experts ('what') and the technologist views ('how') to maximize a coherent and consistent understanding of the requirements and semantics. This avoids the need to learn software application modeling tools and similar technologies that are founded primarily in computer-centric philosophies that business users cannot assimilate easily. The approach also allows implementers to use familiar desktop tools such as word processing and spreadsheet software to manage the actual template content. Also dynamic wizard based Web interfaces or handheld content editing allow for lightweight clients that can be applied easily to business application desktop environments.

SCOPE & USE

Many projects and products though technically feasible simply are not business successes. This is because they don't meet the business user's need, and are typically created with insufficient customer input along the way – much like starting the car without first deciding where to go. An organization needs to ask, "What are our objectives and what do we measure to achieve our goals?" They also need to know that they are doing the right thing at

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[3] For a complete listing of whitepapers, presentations, posters and more information on *BCM* can be found at http://BusinessCentricMethodology.com, and at OASIS at http://www.oasis-open.org/apps/org/workgroup/bcm for the specification.

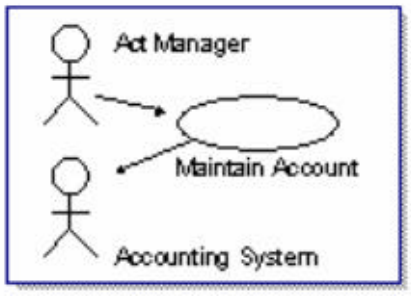
the right time. If the object of the implementation is to address deficiencies, have these deficiencies been collected from all stakeholders? Have they been analyzed from an impact, dependency, and risk standpoint, assuring the root causes are to be addressed and not simply the symptoms?

One needs to accurately define scope and transactions between stakeholders.
Perhaps more importantly is how the following items link within the organization and its collaboration community. Understanding the context of the project or interface, its size, and its complexity, is as important to know as how to apply the *BCM Templates* themselves.
Also knowing what is not in context is just as important, and should not be underestimated.

One needs essentially to go *From* Business Goals *To* concepts, constructs, and communication by performing the following tasks:

- Business Case Analysis (BCA)
  - Align with Balanced Scorecard – ensure we are addressing the enterprise's needs
  - Identify overall issues - prepare problem statement(s)
  - Feasibility, Risk, Cost Benefit
  - Understand organizational drivers (pain, opportunity) from each stakeholders' perspective
- Define what is in and out of scope – prepare scope statement
- Research pattern/capabilities base for leveraging prior efforts
- Coordinate with other project planning tasks
- Timeline Decision?: 'Link Now' vs 'Link Later'
  - Link Now = Use BCM Templates as best practice guidance throughout development
  - Link Later = *"Fast Track"* where time overrides costs, expedite & align information UIDs after the fact
- Begin *iterative* process…

The use cases become the storyteller for the project; coordinating and identifying all (1) stakeholders, (2) identified dependencies, (3) identified contingencies, and (4) success metrics into specific scenarios (see diagram at right). The use cases, or conceptual operations (CONOPS) prevent the team from being blind-sided later; by increasing scope and controlling costs and by assuring small but critical items are not overlooked, (such as the need to use business transaction acknowledgements in information exchanges).



EVENTS

In an iterative step, through feed-forward and feedback, the methodology promotes the 'Event' as a critical metadata artifact that directs the information solutions. A business event is any activity that management wants to plan, control, or evaluate. The information systems then respond to and are controlled by these rules. This solution offers enterprise wide decision making and facilitates continual improvement of business and information processes. Today's web service based architectures offer the promise of being capable of supporting this publish and subscribe based approach and techniques (figure 2 below).

This coincides with the accounting domain very nicely, as one definition for the domain has been stated as:

Accounting is the analysis, classification, and recording of financial events and the reporting of the results of such events for the organization. This field includes among its many facets: financial planning, budgeting, accounting systems, financial management controls, financial analysis of performance, financial reporting, internal and external auditing, and taxation.

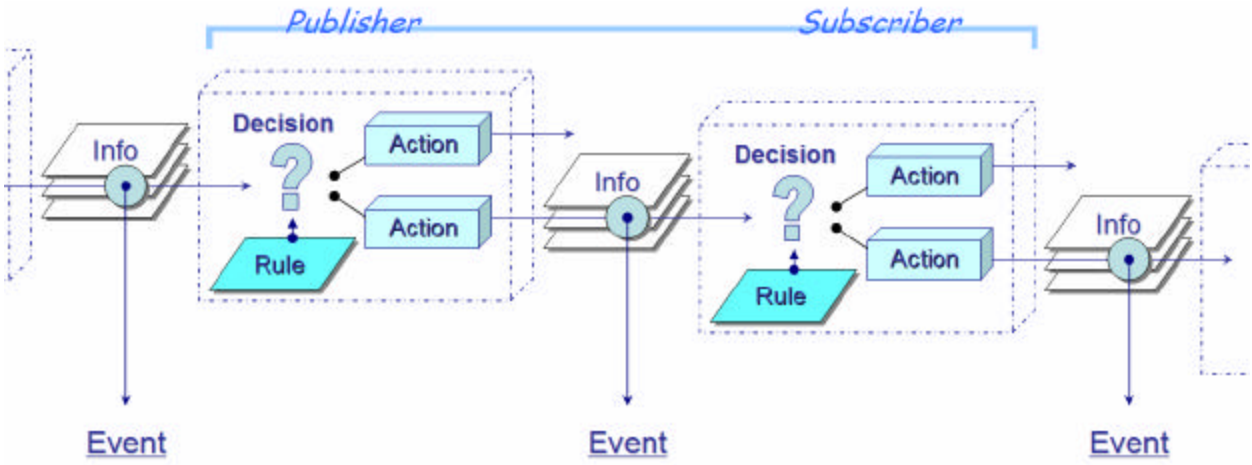


Figure 2 – Event interaction model

Managing domain events as an enterprise asset isn't something new that the *BCM* brings to the table. As early as 1962, W.J. Schrader focused on the recording and storing of the details of events in his article, "An inductive approach to accounting theory" in *The Accounting Review*. He emphasized the need for accountants to focus on the objects given and received and to record the "who, what, when, and where" for each relevant event. Relevant events were defined as exchanges. This notion has been expanded over the years. One approach on systems development is called "Resources-Events-Agents (REA) modeling" where one

begins with identification of the events to be recorded, the entities in the business, and the relationships between them. The business events involve resources and they are performed by and affect various agents. Emphasis on Events continues today; for example, the Governmental Accounting Standards Board (GASB) has recently published a draft report requiring governments to evaluate major events affecting capital assets to determine whether they are impaired. Why? Because, Capital assets represent the largest category of assets on the statement of net assets of most governments, and the event is the trigger for evaluation. There exists a real need to manage (plan, control, or evaluate) this business activity.

EVENT MODEL

The *BCM* defines an event generically as a process that triggers changes in another process or processes, such as 'receive purchase order' or 'receive payment.' The trigger occurs at the publisher to signal that an internal state of information has changed. The subscribers then respond to the input to change their internal state and information is then processed accordingly. In a *netCentric*[4] environment these events are used in a publish/subscribe collaboration mechanism where the initiating process need not know the processing details of the downstream subscribers. The events are processed in this manner for all collaborations in the value-chain. In developing the *BCM Templates* this event-driven approach divides the information required for development into manageable pieces. At the conceptual layer this removes the need to be concerned with the minutiae of implementation exchanges; instead they can be specified at an overall business process level.

As applied then to financial management, Events are central in the model, as they are with the *BCM*, and must be captured at a resolution with high enough fidelity to report accurately the state of the organization. This model provides a significantly different approach where the model can be as different as being inside out, where reporting is central to the methodology (the converse of figure 3, where the reporting is at the outside ring and not the inside with the Event central to model). Here the Event, including transactions are

[4] See white paper on emerging netCentric environments: http://BusinessCentricMethodology.com/navigation/content.asp?document/CMS/documents/BCM.BecomingNetCentric.2003-06-18a.pdf

characterized by its summary information and then reported per downstream as viewpoints within the *community of interest*.

In addition for organizations to be more agile and responsive to information request the events managed must include those outside of the traditional accounting systems. Conversely, accounting transactions represent a subset of business events; therefore focusing on all business events redefines the scope of accounting to include non-financial activities. Rather than selecting only business events that change the company's assets, liabilities, or owner's equity, i.e., financial events, the *BCM* promotes the capture of those select business events that management wants to plan, control, and evaluate. With the *BCM* the events aren't limited narrowly to accounting, but to the answers to questions as to the Scope of the project or service. The answer is dependent on what is important to the organization and the business goals (i.e. define what event information is needed, for each customer, each report, etc).

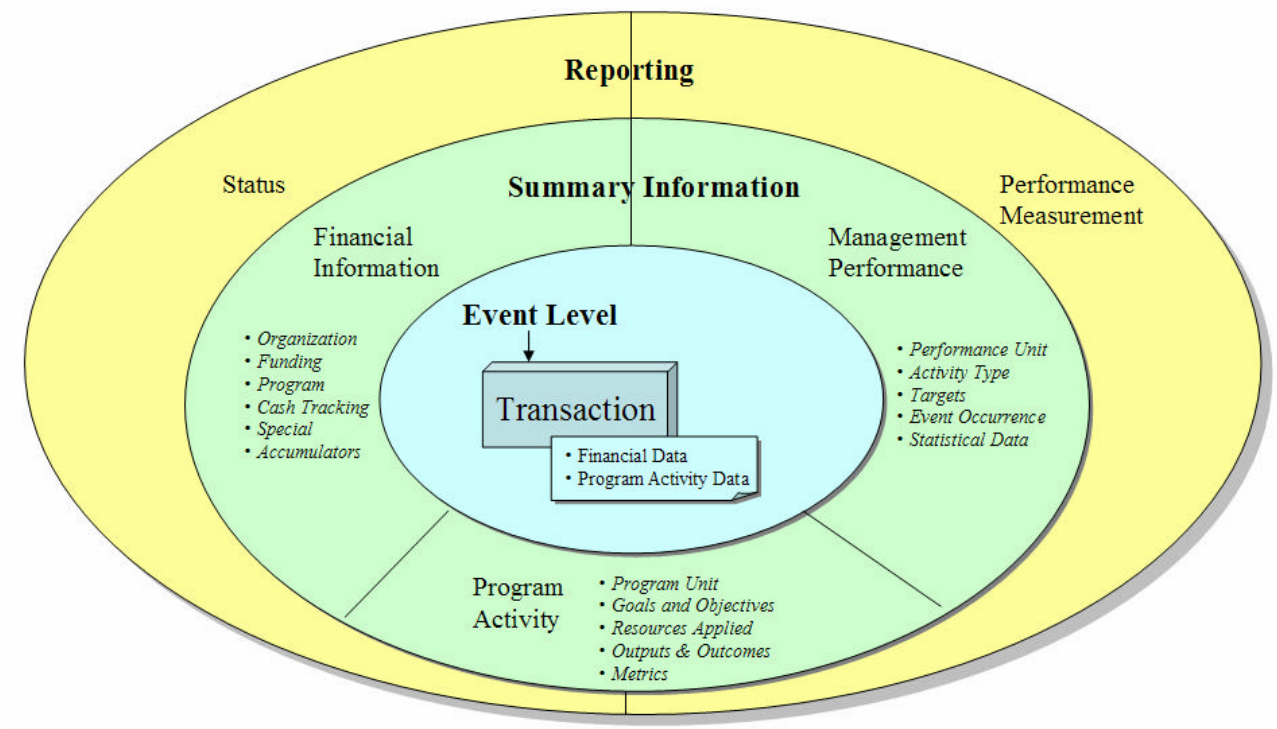
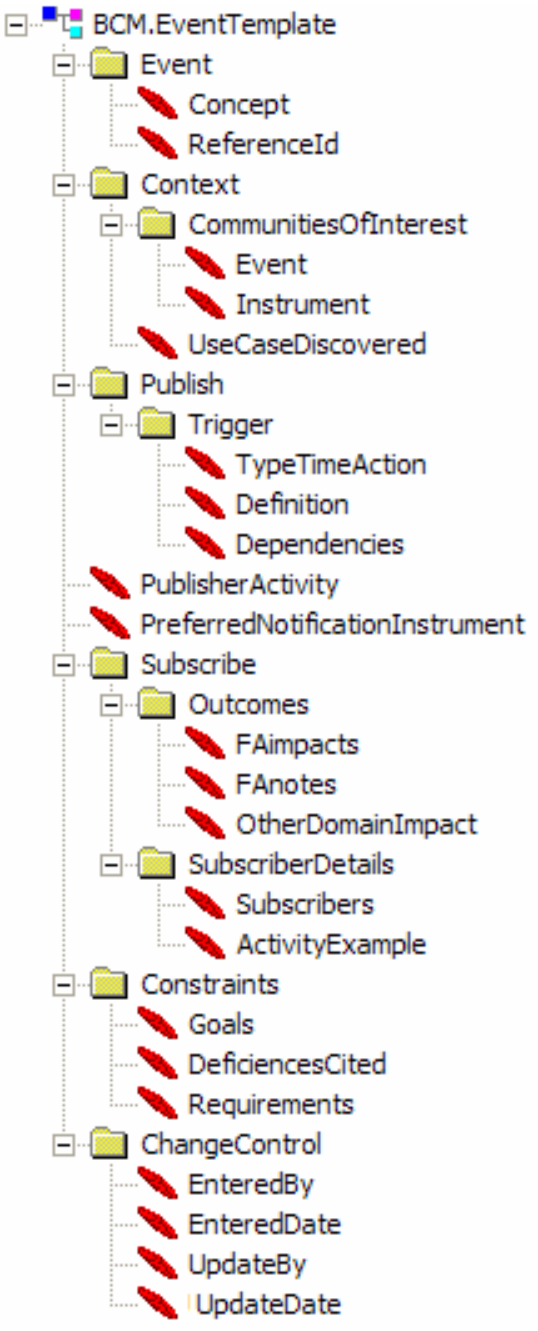


Figure 3 – Viewing the layers of the information problem space

BCM EVENT TEMPLATE

The *BCM Event Template* provides the focal point for event construction (or reconstruction) allowing for the determination of what one needs to manage. This includes identifying the sources for all events, and beginning the determination of the flow of events (business process). The template supports the optimization analysis by providing for organizing the events into groups. Then these can be analyzed for the elimination of unnecessary events, and to accelerate critical information flow. Event management provides the framework for further tasks in fully understanding the domain processes. The Event template allows for determining the impact of business events and defining how processes interact with the information flowing through the organization and identify critical issues to each event.



The BCM Template is comprised of six prime groups:

- Event
- Context
- Publish
- Subscribe
- Constraints
- Change Control

Information concerning the *Event* group is the concept. This could be the preferred term to be carried forward; an adopted term from one community; a name given from an authoritative source applicable to the project; or a new term altogether if developing new capabilities.

It should be noted that during this determination of terms that: (1) the business users should name an event based on their familiar business nomenclature, and this should be communicated to the designers and developers through use of the *BCM Event Template*, and (2) the team should not dwell too much on the specific term used, as

often this can be resolved by understanding and maintaining the Context and usage. It is important for the team not to slow to a grinding halt because this term or that term isn't used, but likewise it is important that at a minimum all terms be captured and cataloged. To manage this analysis a controlling index value or 'Reference Id' can be assigned to each term, which is then used to clarify the context when exact communication is required (synonyms can be mitigated by using Reference Id to provide the context).

The *Context* group is where specific information concerning the various communities of interest resides, providing an initial thesaurus of terms for the business. It also allows someone from a new community to quickly identify within the structure of a project. Another instrument is the particular forms (or electronic transactions) a community implements for carrying the type of information exchanges required, e.g. EDI, XML, and CSV.

The *Publish* group describes the signal or triggers which kicks off the business event itself. Such as if the trigger is based on Time (such as a calendar date) relationship or action in response to another process upstream. Along with the definition, any dependencies should be noted to give greater context, such that a proper choreography is understood (for example: for this process does a purchase order have to be provided before beginning this event?)

It is also important to focus on typical event patterns, rather than obscure unlikely events. This greatly simplifies the total understanding and provides consistency. Otherwise one can have literally thousands of publishers, such as in the case of vendors sending items into the organization. Again an example is the "PreferredNotificationInstrument" that is the transaction information to be used in the F&A process. Typically this information is a subset of information found in the *community of interest's* document, form, transaction, or message (see the OASIS CAM TC work on providing mechanisms to manage thousands of transaction formats through a single consistent context driven mechanism – http://cam.swiki.net).

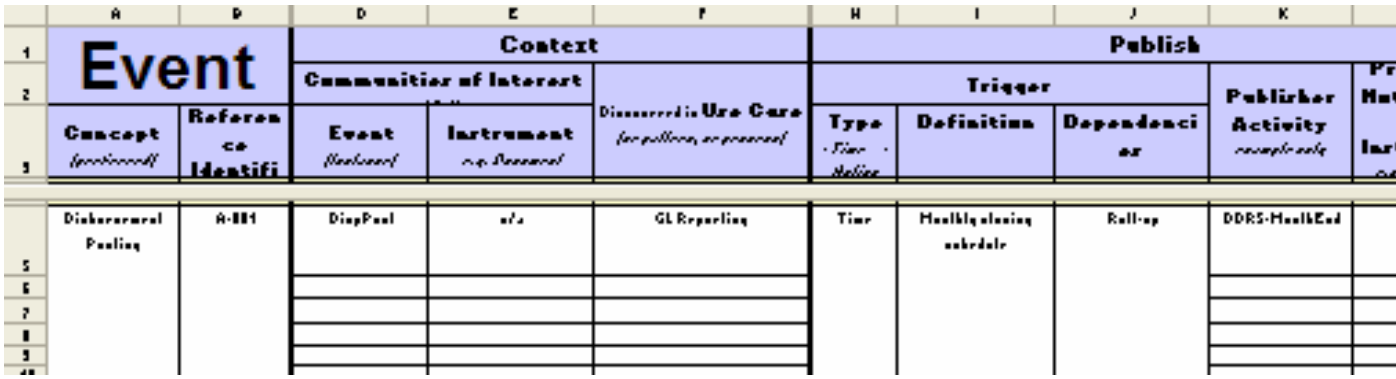
Information collected for the *Subscribe* group is based on outcomes and subscribers. Here is where the event is described in terms of its influence on the accounting equation. So for example it is in this group that the impact on the F&A domain and other domains can be assessed. To determine this you would list the typical subscriber types, and for context, what activity they will perform when receiving the *community of interest's* document, forms, transaction, or message.

The *Constraints* group provides the rationale for pragmatic alignment to the scope and other business drivers, such as goals, and deficiencies cited during audits, or the meeting of requirements as previously noted. If a line can't be drawn here to one of these business drivers, perhaps the event shouldn't be included? Or through iterative design perhaps an area has been exposed that needs to be more thoroughly investigated during the scoping phase?

The purpose of the *ChangeControl* group is self-explanatory and manages releases within the community to ensure forward and backward compatibility.

In summary when completing the event template (figure 4) great care must be taken that the business experts are trained in understanding the scope of the events to be collected, and the difference between events, conditions, and states. In addition the events must be controlled to only those decided during the scope definition phase. For example, events collected per project scope might be limited to those events which are specific to a particular business entity (concept), measurable in monetary terms as the cash or cash equivalent at the time of the event; this is referred to as historical cost, and must result in the create of or change in assets, liabilities, or owner's equity.

Figure 4 – Example of a spreadsheet *BCM Event Template.*



MOVING FORWARD

From our President writing to his Secretary of Treasury:

We might hope to see the finances of the Union as clear and intelligible as a merchant's book, so that every member of Congress and every man of any mind in the Union should be able to comprehend them… I hope… that by our honest and judicious reformations, we may be able… to bring things back to simple and intelligible system on which they should have been organized at first.

The quote was written in 1802, by President Thomas Jefferson shortly after the financial control battle had begun for our new government. So what can be learned, over the intervening 200 years, separate from the barriers to reform which have been identified and documented? Clearly today we face these continuing challenges such as system weaknesses and lack of agility, weakness of financial statements, inability to successfully implement performance measurement, political pressures to avoid identification of full program costs, and so forth.

For the U.S. Federal government, there is no doubt we will continue to struggle with various financial management and budget reforms, learning from our pasts. We will continue to cope with the range of management activities, reacting positively to criticisms, implementing reforms in varying degrees based on results, and having an optimistic outlook on the future. Our optimism is valid, based on the current and past efforts with such reforms as Chief Financial Officers Act (CFOA) and Government Performance and Results Act (GPRA), and such moves to broaden reform. Leadership is moving forward with its programs to address broad business lines as well as just financial processing reform.

Commercial organizations are also changing due to the regulatory environment. As accounting and financial reporting receives increased attention in the wake of several corporate accounting debacles, public companies must ensure that their financial systems are up to the task. In reaction to the accounting scandals, the Sarbanes-Oxley Act of 2002 will impact:

- corporate financial reporting
- disclosure requirements, including correcting adjustments,
- additional information on related entities,
- CEO certification of financial results,
- rapid disclosures of material changes in financial condition
- reduced filing windows for annual and quarterly reports.

Corporations are looking to consolidate and update their systems as well. Companies with legacy and disparate accounting systems will be more at risk than organizations with recently installed mainstream accounting products for failure to meet these evolving requirements.

Financial management is complex, intricate, and tends to be highly differentiated as implemented throughout medium and large organizations. The landscape is shifting as change is the norm as stakeholders re-evaluate their needs and go forward options. There is no silver bullet that exists to provide organizations with the answer. Instead there is a spectrum of solutions which need to be applied for modernization of which the *BCM* is one – and the *BCM* is a complementary solution that enhances rather than displaces the existing resources.

Financial transformation needs to be evolutionary and build upon the existing infrastructure. Ideally, organizations will establish 1, 2, 5, and 10-year plans in order to monitor and guide this evolution. Parts of the organization will move faster than others, but the master plan for the organization needs to be working off the same single vision. The evolution will not take place overnight, as the problem was not created overnight. But the potential return on investment is high and worth the effort. Proper and trusted workplans, metadata plans, knowledge management plans and transition plans need to be agreed to and worked.

The *Business-Centric Methodology (BCM)*, and the *BCM Event Template* approach outlined here, are therefore key tools required to address the complexity of the situation and at the same time take advantage of technology innovations that complement and enhance the information architecture.

Addendum – Example Event Template XML rendering

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