Annotated Glossary

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The glossary in this document has been generated with RuleXpress, a General Rulebook System. Visit http://www.rulearts.com for more information about this tool.

Reference Sources	
[BMM]	*The Business Motivation Model (BMM) ~ Business Governance in a Volatile World*. [May 2010]. Originally published Nov. 2000. Now an adopted standard of the Object Management Group (OMG).
[MWUD]	Merriam-Webster Unabridged Dictionary (Version 2.5). [2000]. Merriam-Webster Inc.
[SBVR]	*Semantics of Business Vocabulary and Business Rules (SBVR)* (Version 1.0). [January 2008]. Object Management Group.
[Wikipedia]	http://en.wikipedia.org

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ability statement an expression of a business requirement in business analysis with business rules

action that which someone or something does; the process of doing : exertion of energy : PERFORMANCE

actor some person or organization taking part in day-to-day business activity

actor event an event in which some person or organization does something

ad hoc business activity some activity in day-to-day business operations that either:
(a) is for some scenario not modeled for any business process, or
(b) does not follow the scenario that has been prescribed by some business process model

Notes

Like all business activity, ad hoc business activity must conform to all relevant business rules.

advice an element of guidance that something is permissible or possible, that there is no rule against it

Notes

A real-world rule always tends to remove a degree of freedom. If some guidance is given but does not tend to remove some degree of freedom, it still might be useful, but it is not a rule per se. Consider the statement: A bank account may be held by a person of any age. Although the statement certainly gives business guidance, it does not directly place any obligation or prohibition on business conduct. Therefore it does not express a behavioral rule. Nor does it establish any necessity or impossibility for know-how about business operations. Therefore it does not express a definitional rule. Because the statement removes no degree of freedom, it does not express a business rule at all. Rather, it expresses something that is a non-rule - a.k.a. an advice. A statement of advice that specifically refutes obligation and prohibition (as does the one above) is called a permission statement.

Is it important then to write the advice down (i.e., capture and manage it)? Maybe. Suppose the statement reflects the final resolution of a long-standing debate in the company about how old a person must be to hold a bank account. Some say 21, others 18, some 12, and some say there should be no age restriction at all. Finally the issue is resolved in favor of no age restriction. It's definitely worth writing that down!

	Now consider this statement: An order $1,000 or less may be accepted on credit without a credit check. This advice is different. It suggests a business rule that possibly hasn't been captured yet: An order over $1,000 must not be accepted on credit without a credit check. Let's assume the business does need this business rule and considers it valid. In that case you should write the business rule down - not the advice - because only the business rule actually removes any degree of freedom. Just because the advice says an order $1,000 or less may be accepted on credit without a credit check, that does not necessarily mean an order over $1,000 must not. A statement of advice only says just what it says.
Reference Source	[SBVR]

agile see business agility

anomaly something irregular or abnormal

Notes	The prevention, detection, and elimination of anomalies among business rules, including but by no means limited to conflicts , are extremely important for high-quality business models and business operation systems. If undetected, anomalies can lead directly to inconsistent actions or decisions. Anomalies among business rules generally fall into well-known categories. Certain anomalies can be detected among business rules by software available today; SBVR envisions expanded detection of anomalies by an order of magnitude or more. It is important to note that declarative representation of business rules does not somehow cause anomalies. Just the opposite, it makes them far easier to detect (and to detect very early) compared to procedural representations.
Reference Source	[MWUD 3]

architectural scope what is included in a business model

Notes	A business capability has architectural scope whose boundaries are established by what business items are deemed to fall within scope (scope items) and what business items are not. Scope items fall into six categories (scope lists) based on the Zachman Architecture Framework: core business concepts, central business processes, business locations, principal business actors, operational business events, and business goals. Creating these six lists establishes an initial or ballpark view [architectural scope] of architectural scope. A complete business model is self-defining with respect to architectural scope.

ballpark view [of architectural scope] first-cut architectural scope based on scope lists

basic engineering question see primitive

behavioral rule a business rule that there is an obligation concerning conduct, action, practice, or procedure; a business rule whose purpose is to shape (govern) day-to-day business activity and prevent undesirable situations (states) that could occur at any of various points in time

Notes

Consider the business rule: A gold customer must be allowed access to the warehouse. Clearly this business rule can be violated. If a gold customer is denied access to the warehouse, then a violation has occurred. Presumably, some sanction is associated with such violation - for example, the security guard might be called on the carpet. (Such reaction is called a violation response.) Any business rule that can be violated directly is a behavioral rule. It doesn't matter whether the behavioral rule is automatable or not, although a great many are.

Contrast with definitional rule. Definitional rules and behavioral rules are fundamentally different. Definitional rules are about how the business organizes (i.e., structures) the operational business concepts basic to its know-how. In SBVR, definitional rules always carry the sense of necessity or impossibility; behavioral rules always carry the sense of obligation or prohibition. In contrast to definitional rules, behavioral rules (also called operative rules in SBVR) are really people rules. Behavioral rules enable the business to run (i.e., to operate) its day-to-day activity in a manner deemed suitable, optimal, or best aligned with business goals. Behavioral rules deliberately preclude specific states that are deemed undesirable, less effective, or potentially harmful. Behavioral rules remove those degrees of freedom. Often, sanction is real and immediate if a behavioral rule is broken. Day-to-day business activity typically involves a great many behavioral rules.

Also, contrast with decision rule. Unlike decision rules, behavioral rules do not pertain directly to determining the best or optimal answer (outcome) for an operational business decision, nor are they applied at only at a single point of determination for individual cases. Behavioral rules generally arise as interpretations of some law, act, statute, regulation, contract, agreement, business deal, business policy, license, certification, service level agreement, etc. Since behavioral rules generally fit no particular pattern, they cannot be effectively managed in decision tables. Instead, they usually need to be expressed as individual statements (e.g., using RuleSpeak). A business capability of any size usually has hundreds of behavioral rules, sometimes a great many more.

Reference Source [SBVR]

binary fact type a fact type that involves exactly two noun concepts

business action an action taken in day-to-day business activity

business agility being able to deploy change in business policies and business rules into day-to-day business activity as fast as business people and Business Analysts can determine the full business impact of the change and assess whether the change makes good business sense

Notes

Business agility results when the IT aspect of change in business policies and business rules disappears into the plumbing. All artificial (IT-based) production-freeze dates for deployment disappear and the software release cycle becomes irrelevant. The only constraint is how long it takes business leads and Business Analysts to think through the change as thoroughly as they feel they need to.

Agile in software development is an IT development method featuring rapid iteration and prototyping. Agile methods and business agility have nothing to do with each other. Agile in software development leaves off exactly where business agility picks up - at deployment.

In working with clients we frequently come across systems that feature a very 'open' environment with few enterprise controls. Typically, this 'flexibility' resulted from diligent efforts by IT to satisfy many stakeholders individually. But the 'flexibility' is just an illusion. The failure of business-side stakeholders to come together and develop a collective business solution before 'agile' software development commences can plague the company for years to come. It reduces overall productivity, lowers customer satisfaction, and diminishes the capacity to make sound operational business decisions. It makes apple-to-apple financial comparisons virtually impossible. And it always costs a lot in 'maintenance'. There are simply *no magic bullets* in building business solutions.

business alignment alignment of business capabilities with business strategy

Notes

Business alignment is like motherhood and apple pie, no one will argue much against it. But for all the hand waving, questions remain. What are you aligning? How do you align? Answers generally center on aligning IT with the business. But shouldn't that be a given?! Methodologies recommend a great many touch points with individual users and good interpersonal relationships. But do those things ensure good business practices - or just good GUIs? And why just IT? Aren't there other kinds of projects in the business too?

True business alignment results from engineering real business solutions for real business problems based on deliberate strategy (a Policy Charter). The approach should be exactly the same whether the business solution involves comprehensive automation, just partial automation - or none at all. True business alignment is also something you can demonstrate quantitatively. How fully are business goals being achieved? What is the failure rate of business policies? How quickly can emerging risks and opportunities be spotted? Only metrics (key performance indicators) based on the strategy for the business solution (a Policy Charter) can reliably answer make-or-break business questions like these.

business capability what the business must know and be able to do to execute business strategy

Notes

When you create a business solution to an operational business problem business you're not simply creating an application or system or database or GUIs or even a rulebook, although any or all of those things might ultimately emerge. Instead, we say you are creating a business capability based on a business model. A business capability should have a well-defined architectural scope and produce operational business results that satisfy business goals.

As defined by MWUD, capability means ability, and ability means being able. Able in turn means having the power to perform a task or achieve an end. That definition neatly implies two basic ways by which a business can prepare itself to get things done: (1) To perform business tasks, the business can develop business process models. A business process model will almost always include operational business decisions. (2) To achieve an end, the business can develop a strategy for the business solution (Policy Charter). A Policy Charter inevitably leads to business policies, business rules, and know-how.

business communication one or more written statements concerning day-to-day business activity

Notes

Operational business communications include agreements, contracts, deals, licenses, certifications, service level agreements, procedure manuals, schedules, training materials, instructions, and so on. Requirements for IT systems, non-technical documentation, 'help' in operational IT systems, and guidance messages are additional forms of business communication. So are business policies and business rules. All operational business communications should be based on a structured business vocabulary (fact model) since in one way or another they're all about know-how.

business goal an effect a business capability is tasked with achieving on an on-going basis in day-to-day activity

business governance a process, organizational function, set of techniques, and systematic approach for creating and deploying business policies and business rules into day-to-day business activity

Notes

Business governance and business rules are directly linked. Note the high-profile roles of business policies and business rules in the definition above, which is based on MWUD definitions for governance 1, 2a, 4a, and 5. And have a look at the MWUD definition of govern [1a]: to exercise arbitrarily or by established rules continuous sovereign authority over; especially: to control and direct the making and administration of policy in. So 'governing' a business involves coordinating how business policies and business rules are created (the making … of) and deployed (managed, distributed and monitored) within day-to-day business operations (administration). Why haven't more people recognized the direct link between business governance and business rules? It's simply hard to see the elephant.

The original decision to create a business policy or business rule is an example of a governance decision. Governance decisions should be part of a special business process, the governance process, which also coordinates deployment and retirement of business rules. To support business governance you need a systematic approach, which is provided by a rulebook and general rulebook system (GRBS). These tools also provide the traceability needed to support compliance.

business lead an operational business manager or subject matter expert who participates directly and actively in creation of a business model

business location a physical or logical place where some principal business actor is located, some operational business event occurs, or some central business process takes place

business milestone a milestone representing the initial or beginning point of a recognized state in the life of some operational business thing

Notes

A business milestone implies a business action that completed successfully (e.g., an order has been shipped). The important thing about the business action completing successfully is that all business rules applicable to the state must be satisfied at that given point in time. So a business milestone also generally implies a flash point for one or more business rules, often many.

business mission what a business capability is responsible for doing in day-to-day operation

business model a blueprint for a business capability based directly on real-world things and ideas strictly named and represented using words natural to business people

Notes

Contrast with system model. Even the words used for the building blocks of business models (e.g., the vocabulary used to develop structured business vocabularies) must be natural for business people - again, real-world. Business people talk about real-world things! A business model enables business people and Business Analysts to engage in discussion about what needs to be created, managed, operated, changed, and discontinued in the business in business terms. Developing a business solution using a future-form business model does not necessarily imply software development, but if software development does ensue (as it usually does) the business model provides a solid grounding. Examples of business models include strategies for business solutions (Policy Charters), business process models, structured business vocabulary (fact models), business milestone models, and Q-Charts (for decision analysis). The term business model is also used collectively to designate all the business models for a particular business capability. A business model is always subject both individually and collectively to the business rules specified for it.

Business Motivation Model ***(BMM)*** the standard for organizing business strategy first released in 2000 by the Business Rules Group (BRG) and subsequently by the Object Management Group (OMG) for UML in 2007

Notes

The BMM was created in the form of a structured business vocabulary (fact model). For a readable (free) copy see www.BusinessRulesGroup.org. The OMG's version for UML is available at: www.omg.org/technology/documents/br_pm_spec_catalog.htm.

business operation system ***(BOS)*** a business system for a business capability that supports full business agility and built-in business governance

Notes

See also know-how economy. Table AG1 outlines three generations of business application systems. This book is about building third-generation application systems. Information systems alone, even highly interactive ones, are no longer adequate.

Table AG1. Generations of Business Application Systems

characteristic	1st Generation Data Processing Systems	2nd Generation Information Systems	3rd Generation Business Operation Systems
fundamental purpose	automate clerical processes	put business processes online and make them interactive	create smart business processes
focal point of design	master file	database	rulebook
level of traceability / logging	batch of updates	individual transaction	business rules used to make individual judgments and operational business decisions
key operational feature	transaction files	queries	flash points
source language	COBOL	SQL, HTML	structured natural language (e.g., RuleSpeak)

Distinctive features of Business Operation Systems (BOS):

- No special computer languages required
- Structured business vocabularies (fact models)
- Externalized semantics
- Business-level rulebooks
- Know-how and know-how retention
- Manageable customization on a massive scale

business people talk about real world things the natural language of business people being about things in the real world, not surrogates for those things as represented in a system model

Notes

Business Analysts should always encourage business people to talk directly about real-world things. That's what the business people know, that's what they do. So when business people say "employee" they should mean employee in the real world, not employee as a bundle of data about the employee in the real world. When they say "process" they should mean business process in the real world, not process as managed within a machine. When they say "interaction" they should mean business interaction in the real world, not a use case. When they say rule they should mean business rule, not production rule or other representation for machine purposes.

Unfortunately, some business people are so indoctrinated by years and years of IT-oriented requirements development that they themselves have a hard time talking directly about real-world things. They fall back on ITspeak instead. This distortion of language is neither productive nor necessary; it's a case of the cart leading the horse. The purpose of a business model is to get business people back in touch with the real world so they can deal with business complexity in its own terms.

business policy a means that limits or establishes a degree of freedom for day-to-day business activity

Notes

Business managers create business policies to control, guide, and shape day-to-day business activity. Business policies are an important element of business strategy (e.g., Policy Charters) and the source of core business rules. A business policy is not a business rule per se. To become some business rule(s) first the business policy must be interpreted into a practicable form. The Business Motivation Model [BMM] contrasts business policies and business rules this way: "Compared to a business rule, a business policy tends to be less structured, less discrete, less atomic, less compliant with standard business vocabulary, and less formally articulated." In general, business policies can address any of the concerns in Table AG2, often in combinations (e.g., how many people are needed to produce a desired yield in the desired cycle time). Business policies can also address exceptions.

Table AG2. Concerns that Business Policies Can Address

Question Word	General Focus of Concern	More Selective Examples
What	what things should (or should not) be available	required kinds, quantities, states, or configurations
How	how things should (or should not) be done	required outputs or yields
Where	where things that should (or should not) be done	required facilities, locations or transfer rates
Who	who should (or should not) do things	required responsibilities, interactions, or work products
When	when things should (or should not) be done	required scheduling or cycle times
Why	why certain choices should (or should not) be made	required priorities

business process the business tasks required for an enterprise to satisfy a planned response to an operational business event from beginning to end with a focus on the roles of actors, rather than the actors' day-to-day job

Notes

This definition for business process was presented by Janey Conkey Frazier at the very first Business Rule Forum conference in 1997. We haven't found one better. A business process takes operational business things as inputs and transforms them into outputs. These outputs might be the same operational business things in some new state, or altogether new operational business thing(s). For example, a business process might take raw materials and transform them into finished goods. A successful transform creates or adds value, though not always in a direct way. Collectively, the boxes and arrows in a business process model represent management's blueprint for understanding, coordinating and revising how operational work in the organization gets done.

business requirement something called for or demanded by a business model that a system model must support

Notes

Contrast with functional requirement. A business can have many kinds of business requirements (e.g., about staffing, working capital, insurance, communications, marketing, etc.). Use of the term "business requirement" in this book is always taken to mean "business requirement for a system model."

business risk an exposure arising in day-to-day business activity that can preclude or complicate satisfaction of some business goal(s) or imperil or subvert some business tactic(s) or some business policy(ies)

Notes

Noted strategy expert Richard Rumelt [Rumelt 2011, p. 42] says the following about business risks: "If you fail to identify and analyze the obstacles, you don't have a strategy. Instead, you have either a stretch goal, a budget, or a list of things you wish would happen."

business rule a rule that is under business jurisdiction

Notes

A business rule is a criterion used to guide day-to-day business activity, shape operational business judgments, or make operational business decisions. Some people think of business rules as loosely formed, very general requirements. Wrong. Business rules have definite form, and are very specific. Here are a few simple examples expressed in RuleSpeak: A customer that has ordered a product must have an assigned agent. The sales tax for a purchase must be 6.25% if the purchase is made in Texas. A customer may be considered preferred only if the customer has placed more than $10,000 worth of orders during the most recent calendar year.

Each business rule gives well-formed, practicable guidance. Each uses terms and wordings about operational business things that should based on a structured business vocabulary (fact model). Each expression is declarative, rather than procedural. Your company's business rules need to be managed and single-sourced, so we strongly recommend rulebook management.

A number of years ago, a colleague of ours, Mark Myers, came up with a highly pragmatic test to determine whether some statement represents a business rule or a system rule. Except for eCommerce, it almost always works. Imagine you threw out all the systems running your business and did it all by hand (somehow). If you still need the statement, it's a business rule. If you don't, it's not. A colleague on the SBVR standardization team, Don Baisley, puts it another way: "Business people don't set variables and they don't call functions."

Business rules represent a form of business communication and must make sense (communicate) to business people. If some statement doesn't communicate, it's not a business rule. Consider this example: If ACT-BL LT 0 then set OD-Flag to 'yes'. Not a business rule. Consider another example: An account must be considered overdrawn if the account balance is less than $0. This statement communicates and therefore is a business rule. Business rules can be technical, but only in terms of the company's know-how or specialized product/service, not in terms of IT designs or platforms.

SBVR provides the semantics for business rules. In SBVR a business rule can be either a behavioral rule or a definitional rule. Incidentally, SBVR does not standardize notation. We use RuleSpeak to express business rules (including 'exceptions') in structured natural language. In SBVR, a real-world rule always tends to remove some degree of freedom. If it does not, it's not a rule, but rather an advice. A business rule is always under business jurisdiction of your organization. The point with respect to external regulation and law is that your organization has a choice about how to interpret the regulations and laws for deployment into its day-to-day business activity - and even whether to follow them at all.

Business rules are not about mimicking intelligent behavior, they are about running a business. Mimicking intelligent behavior in a generalized way is far harder (an order of magnitude or more) than capturing the business rules of an organization. Unfortunately, expert systems have generally focused on the former problem, causing considerable confusion among business practitioners.

Reference Source [SBVR]

Business Rules Manifesto the 2003 work product of the Business Rules Group (BRG) laying out the basic principles of the business rules paradigm

Notes The Manifesto (free) is only two pages and has been translated into more than a dozen languages. See www.BusinessRulesGroup.org.

business strategy the ends a business seeks to achieve and the means it elects to achieve them

Notes How do you distinguish between good business strategy and bad business strategy? Noted strategy expert Richard Rumelt [Rumelt 2011, p. 20] says "good strategy requires leaders who are willing and able to say no to a wide variety of actions and interests. Strategy is at least as much about what an organization does not do as it is about what it does." He also explains [Rumelt 2011, p. 243] that "good strategy is, in the end, a hypothesis about what will work. Not a wild theory, but an educated judgment. And there isn't anyone more educated about your [business] than the group in [the] room." Bad strategy [Rumelt 2011, p. 32] "... is not simply the absence of good strategy. It grows out of specific misconceptions and leadership dysfunctions. To detect a bad strategy, look for … Failure to face the challenge. … When you cannot define the challenge, you cannot evaluate a strategy or improve it. Mistaking goals for strategy. Many bad strategies are just statements of desire rather than plans for overcoming obstacles." Bad strategy "… is long on goals and short on policy or action. … It uses high-sounding words and phrases to hide [its] failings." He means (and says) fluff.

What do you need to be successful with strategy? Rumelt [Rumelt 2011, p. 268] says, "you must cultivate three essential skills or habits. First, you must have a variety of tools for fighting your own myopia and for guiding your own attention. Second, you must develop the ability to question your own judgment. If your reasoning cannot withstand a vigorous attack, your strategy cannot be expected to stand in the face of real competition. Third, you must cultivate the habit of making and recording judgments so that you can improve."

business tactic a means that identifies some needed characteristic(s), feature(s) or use(s) for some scope item(s)

business task something that has to be done or needs to be done and usually involves some difficulty or problem

Reference Source [MWUD 1b]

business vocabulary see structured business vocabulary

case a particular situation; [MWUD 1b]: a set of circumstances constituting a problem: a matter for consideration or decision: as (1): a circumstance or situation

Notes Example of a case: John Smith, an ordinary applicant in terms of income, employment, and experience, applies for auto insurance. For operational business decisions, the relation of consideration to case is generally class to instance. A consideration is a kind of circumstance that some decision logic addresses. A case is some particular circumstance(s) the decision logic addresses. For example, suppose state/province is a consideration for an operational business decision. Then the particular instances Texas and British Columbia are cases of that consideration for that operational business decision.

Reference Source [MWUD 1b]

case in scope [decision analysis] any case that satisfies the considerations used to establish decision scope for an operational business decision

Comment Word - check if context should disappear for some items

Notes Decision logic should be able to give outcomes for all cases provably within the specified scope of an operational business decision. Any case not in scope must be handed off (to some expert, manager, business process, or other decision logic). Cases in scope include both standard cases and exceptional cases (if any). They may also include general cases and specific cases.

categorization a special kind of fact that indicates one class of things to be a category of some other class of things

categorization scheme a scheme used to categorize things into two or more categories

Notes — For example, 'gender' is the categorization scheme for categorizing people as 'male' and 'female'.

category a class of things whose meaning is more restrictive, but otherwise compliant with, some other class of things

Notes — For example, person and organization are categories of party.

central business process a business process that produces results of foremost importance, complexity, or value

classification a special kind of fact that indicates a thing to be an instance of a class of things

concept something conceived in the mind : THOUGHT, IDEA, NOTION

Reference Source — [MWUD]

concept system a set of concepts structured according to the relations among them

Notes — SBVR was based in part on the existing terminology standards from the International Standards Organization (ISO), specifically 1087-1 and 704 (quite good). These standards are the source for the term concept system and its definition above. Although the ISO notion of a concept system did have structural elements representing certain kinds of connections (relations) between noun concepts, it does not include the fundamental notion of fact types (verb concepts) as do fact models. At the risk of greatly oversimplifying, SBVR added fact types (verb concepts) such that the full semantics of business rules and business communications can be captured, encoded, and transferred between machines.

conditional event see spontaneous event

conflict clash, competition, or mutual interference of opposing or incompatible forces or qualities

Reference Source — [MWUD 1a]

conflict [business rule] an anomaly within or among some business rule(s) such that multiple states or outcomes are required that cannot all be satisfied simultaneously

Notes

A conflict arises for one or more business rules (usually two or more) if the same circumstances or cases require mutually-exclusive states or outcomes. Consider the operational business decision, What is the right delivery method for an order? The potential outcome picked up by customer is mutually exclusive with the potential outcome shipped by normal service. (If an order is picked up it can't be shipped, and if it's shipped it can't be picked up.) If some business rule(s) require(s) both outcomes for the very same circumstances or case, a conflict arises. In general, only business people or Business Analysts can resolve conflicts.

conflict [business strategy] a clash between business goals such that the likelihood of full or consistent achievement of one business goal is diminished or pre-empted by business tactics and business policies that intentionally or necessarily favor or provide support for the achievement of some other business goal(s)

Notes

Based on conflict [MWUD 1a]. At some level of drill-down in business strategy, business goals always conflict [business strategy]. Finding optimal trade-offs is key to the art.

connection cycle [fact model] a circular series of facts for a recursive structure, one fact per fact type

consideration a factor in making an operational business decision; something that can be resolved into two or more cases

Notes

Consideration is to case as class is to instance. A consideration, sometimes called a condition, can always be posed as a question to be answered.

consideration dependency one operational business decision being dependent on the outcome of another operational business decision such that the outcome of the latter decision provides or supports one of the considerations for the former (dependent) decision

Notes

For example, for the decision What should be worn today? the appropriate outcome depends on the consideration Is it cold? That consideration can be resolved only by evaluating the decision logic for another decision What is the weather? Deciding whether the weather is cold (based on appropriate considerations) is prerequisite for determining what to wear.

core business concept a concept representing a base thing, resource, or construct in a future-form business capability that is relevant to satisfying business goals, coordinating day-to-day business activity, or expressing necessary know-how

core business rule a business rule that is a practicable interpretation of a business policy

corporate memory the ability to recall governance decisions made in the past, understand their motivation (know-why), and trace their impacts

data rule a system rule that depends on the form in which data about the real world is received

decision a determination requiring know-how; the resolving of a question by reasoning

Notes

Decisions may either be ones an individual makes pertaining to that person's own activity or ones the organization makes pertaining to the day-to-day business activity in which the organization engages. Only the latter kind, operational business decisions, is of interest to business rules and decision analysis. The clear distinction between individual and organizational decisions has not generally been recognized by expert systems.

decision analysis identifying and analyzing key questions arising in day-to-day business activity (operational business decisions) and capturing the decision logic used to answer the questions

Notes

Does decision analysis enable you to capture every relevant business rule? No. Does every business rule fit into some decision table? No. A great many business rules cannot be captured effectively using decision analysis or decision tables. Many other techniques are needed.

decision dependency one operational business decision being dependent on another

Notes

Three kinds of decision dependency are recognized for Q-Charts in decision analysis: relevance dependency, consideration dependency, and outcome dependency.

decision logic the set of all decision rules for cases in decision scope

Notes

Decision logic is captured and expressed in the form of decision structures, decision tables, and business rule statements. Decision analysis might also be suitable where the end-products are statistical models, neural nets, or similar forms of non-verbal representation, but these other forms are outside the scope of this book. We assume decision logic is always to be encoded in a verbal form that can be understood, managed, and traced-back by business people and Business Analysts.

Decision logic includes decision rules for both standard cases and exceptional cases (if any), as well as general rules and specific rules (as appropriate). Decision logic should be rendered in a form that is practicable, enterprise-robust, and business-friendly. Externalizing decision logic from business processes (a form of rule independence) can reduce the complexity of business process models dramatically. It also results in decision logic that is highly accessible, adaptable (easy to change), and re-usable (e.g., in other business processes). Overall, externalizing and single-sourcing decision logic is essential in achieving business agility.

decision rule a definitional rule that links a case to some appropriate outcome

Notes

Contrast with behavioral rule. Decision rules are the target of decision analysis. Groups of decision rules, usually represented as decision tables, provide the correct or optimal answer to some business question (operational business decision) that arises at a particular point of determination for individual cases in day-to-day business activity. Decision rules are always definitional rules. By no means all definitional rules, however, are decision rules.

decision scope see case in scope [decision analysis]

decision structure how one or more operational business decisions are formally organized

Notes

Operational business decisions often have natural dependencies that can be formally organized and diagrammed. These dependencies are always logical rather than sequential, distinguishing decision structures clearly and cleanly from business process models. Q-Charts serve to visualize and analyze decision structures and provide a starting point for developing decision logic.

decision table a structured means of visualizing decision rules in rows and columns

Notes

A decision table is a representation technique used to organize and visualize decision rules for an operational business decision in rows and columns without having to write a business rule statement for each decision rule individually. A decision table identifies the appropriate outcome from among all potential outcomes for each case it covers based on the specified considerations. Decision tables are an important means to develop and deploy decision logic.

decision task a business task centered on making an operational business decision - that is, on deciding something rather than on doing something

declarative (statement) constituting a statement that can be either true or false

Notes	Contrast with procedural (statement). Declarative expression of business rules is based on logical dependencies. In graduate school in the early 1970s, I learned the following highly pragmatic test for determining whether specifications are declarative: (1) Take each statement of the specification and type it on an individual punch card. (It's really hard to find punch cards these days, but for the sake of discussion, let's ignore that.) (2) Assemble the deck. (3) Test it to make sure it works. (4) Throw the whole deck up in the air. (5) Pick up all the cards in random order. (6) Re-test it. If the logic still works, the statements are declarative. If not, they are procedural. The point is that in declarative specifications no logic is lost 'between the lines' - i.e., none is intrinsic to the sequence of presentation. There is no hidden meaning (semantics). Declarative expression is a key idea for business rules. It provides the best guarantee that they remain platform-independent, highly re-usable, and most easily understood by business people.
Reference Source	[MWUD]

definition a word or phrase expressing the essential nature of a person or thing or class of persons or of things : an answer to the question "what is x?" or "what is an x?"

Notes	Good business definitions are front-and-center for business models, structured business vocabularies (fact models), and business rules. A great many things in today's business world and its know-how are intangible (e.g., insurance coverages, financial products, reservations, assignments, etc.). Often there's nothing in the real world you can point to (like a bird or a tree or a building) and say, "There, that's what I mean!" You have only the definitions to go by. We say definitions are for people and for human communication (not semantic computation). We focus on the core meaning of a concept to the business, its very essence. Why? That core essence will remain relatively constant. Stability is crucial in facilitating over-time and at-a-distance communication, maintaining continuity of know-how, training newcomers, and talking with outsiders. To take a highly publicized example, consider the celestial body Pluto. Why should our ability to talk about planets be impacted because a majority of astronomers no longer considers Pluto a planet?! If definitions are a bit fuzzy around the edges, so be it. (But read on! There's more to a concept than just its definition.)

Compare to definitional rule. To define a concept fully at any given point in time you also need definitional rules. They indicate exact lines of demarcation - that is, the precise 'edges' of the concept. Consider this 'essence' definition of 'gold customer': a customer that does a significant amount of business over a sustained period of time. Informative and stable, but fuzzy around the edges. Compare that with the associated definitional rule: A customer is always considered a gold customer if the customer places more than 12 orders during a calendar year. The definitional rule makes up for what the definition lacks - precise criteria at the given point in time for determining whether a customer is or is not gold.

In summary, three key points: (1) Definitions are for people, not computation. (2) Conveying the full meaning of a concept sometimes (but not always) requires both a definition and some definitional rule(s). (3) Any aspect of business practices subject to change should be treated as some business rule(s), not embedded in definitions.

Reference Source [MWUD 2]

definitional rule a rule that is intended as a definitional criterion

Notes

Compare to definition. Evaluation of a definitional rule (also called structural rule in SBVR) always classifies or computes something using known facts, shaping what the business knows about itself and the world. Consider the example: A customer must be considered a gold customer if the customer places more than 12 orders during a calendar year. Evaluation of this definitional rule for any given customer indicates whether the customer is or is not gold given known facts. Consider another example: The total price of an order item must be computed as the product unit price times its quantity. Given any order item, evaluation of this definitional rule indicates the one result for total price that the known facts justify.

Although SBVR does not require it, we prefer to treat definitional rules separately from definitions. During day-to-day business activity, definitional rules are used to evaluate 'where you are' - that is, the current state of affairs - as the need arises. The result reached in each evaluation is only as good as the definitional rules themselves. Poor or misapplied definitional rules yield poor or inconsistent results. In that case, some aspect of the know-how 'breaks down' - it simply does not 'work' properly.

Contrast with behavioral rule. Definitional rules and behavioral rules are fundamentally different. Definitional rules are about how the business organizes (i.e., structures) the operational business concepts basic to its know-how. They give shape - i.e., structure - to core operational concepts of the business. In SBVR, definitional rules always carry the sense of necessity or impossibility; behavioral rules always carry the sense of obligation or prohibition. Disregard for behavioral rules leads to violations and possible sanctions; misapplication of definitional rules leads to miscalculations and off-base conclusions - but only indirectly, if at all, to violations.

Reference Source [SBVR]

deployed business rule a business rule currently being applied in day-to-day business activity

Notes A business rule might have been deployed by one or both of the following means: (1) Publishing it to workers and others with a need to know. Enforcing the business rule might have been given to some workers(s) as a job responsibility. (2) Automating it in a suitable platform - e.g., a business rule engine (BRE).

element of guidance a business policy, business rule, or an advice

Reference Source [SBVR]

elementary fact type a fact type that cannot be broken down into two or more other fact types, each with fewer noun concepts, without losing knowledge

end an outcome worked toward especially with forethought, deliberate planning, and organized effort : PURPOSE; something that is to be accomplished

Notes In a Policy Charter the ends are business goals.

Reference Source [BMM]; [MWUD 4a]

enforcement level how strictly a behavioral rule is to be enforced

enterprise goal an effect an organization as a whole is tasked with achieving on an on-going basis in day-to-day activity

enterprise mission what the organization as a whole is responsible for doing in day-to-day operation

error message see guidance message

event something that happens

Notes At the risk of stating the obvious, events and business rules are not the same thing. A flash point for a business rule, on the other hand, is an event.

Reference Source [MWUD]

exception one that is excepted or taken out from others *almost every general rule has its exceptions*

Reference Source [MWUD 2]

exception [business rule] a business rule that addresses some set of circumstances viewed as an exception or exceptional case in day-to-day business activity

Notes

Are there really any such things as exceptions to business rules? Consider the following two warehouse business rules: (1) A gold customer must be allowed access to the warehouse. (2) A customer may have access to the warehouse only during regular business hours. Suppose some gold customer seeks access after regular business hours. In those circumstances we have a conflict.

A basic SBVR principle is that any guidance statement whose meaning conflicts with some other guidance statement(s) (or even some other part of the same statement) must be taken that way. In other words, if by taking some expression(s) literally you find that a potential conflict could arise, you are right - it can. You need to fix it. The principle is really about being able to fully trust what you read in front of you. If guidance statements don't mean literally what they say, then can you really ever be sure what they do say!? Remember, guidance statements are often read out of context, separated in time and distance from the author(s). So guidance statements should always be taken to mean exactly what they actually say - no more, no less. Potential conflicts such as the above must be resolved explicitly, within the actual statement(s).

Several approaches that don't work in that regard: (1) Setting up some priority scheme to determine which 'wins'. (2) Expressing some separate guidance statement(s) to determine which 'wins'. (3) Deferring to some level of categorization to determine which 'wins'. (Example: a gold customer is a category of customer; therefore 'customer' rules 'win' over 'gold customer' rules.) To apply each business rule correctly under any of these approaches, sometimes you need to know more than just what a statement says. In other words, sometimes semantics are hidden or absent. Never good. The only viable solution is that once a potential conflict is discovered, the guidance statement(s) that produce(s) that conflict need to be restated to avoid it. In other words, the statement(s) must accommodate the problematic circumstances. This guiding SBVR principle - the correct one for business communications - is called Accommodation.

So one of the warehouse business rules needs to be re-written. Which one? The answer depends entirely on business practice. Which of the following reworded versions might represent the correct or desired business practice? (1) A customer must be given access to the warehouse if the customer is a gold customer and the access is during business hours. (2) A customer that is not a gold customer may have access to the warehouse only during business hours. Let's say the desired business practice is given by the second statement. So the two business rules jointly representing the correct business practices for warehouse access are: (1) A gold customer must be allowed access to the warehouse. (2) A customer that is not a gold customer may have access to the warehouse only during business hours. Looking at the two resulting warehouse-access business rules ask yourself: Which is an exception?! Both? Neither? The formal answer is, once you accommodate, there really are no exceptions(!). There are just well-stated, fully-trustworthy guidance statements.

In conversation and other informal business communication, we often do talk about "exceptions" to business rules. For example we might say: A customer may have access to the warehouse only during regular business hours. Then later in the same conversation or message we might add: By the way, none of what I've said applies to gold customers. Guidance statements, however, should not be informal in that sense.

You can never be sure when or where a statement might be read or what the context might be. So a guidance statement needs to express its full meaning. David Crystal, a noted world authority on language, explains things this way [Crystal 2005, p. 465]:

"When someone consults a reference book … [in which] information is stored for future use, it is impossible to predict who is likely to use it … There is no 'dialogue' element in the communication. The information has to be as self-contained as possible, for it is impossible to predict the demands which may one day be made on it, and in most cases there is no way in which the user can respond so as to influence the writer. Accordingly, when language is used for [such] purposes … it is very different from that used in everyday conversation - in particular, it displays a much greater degree of organization, impersonality, and explicitness."

Now I've never met or talked to David Crystal, but I'm confident I get his meaning. This SBVR principle of expressing the full meaning of each guidance statement is called Wholeness. Suppose your rulebook is deemed free of conflicts and you understand the business vocabulary correctly (two big if's of course). If your guidance statements are all expressed wholly then: (a) Every statement is always self-explanatory. No need to appeal to any other statement should ever arise in understanding the full meaning. (b) Every statement can always be taken at face value. Take it out of conversational context and you can still trust exactly what it says. By the way, there's a great deal a general rulebook system (GRBS) could do to simplify and condense whole statements for easier consumption - if it knew each worker's preferred conversational context. Such support would give you friendly and formal business communication.

exceptional case a case in scope [decision analysis] of an operational business decision that does not use the considerations of a standard case; i.e., a case in scope [decision analysis] that is based on some consideration(s) that is/are not among the considerations for a standard case

Notes — The decision logic for an exceptional case might be as simple as a single decision rule (e.g., The boss's daughter must be accepted for auto insurance.), or decidedly more complex.

expert system software that uses a knowledge base of human expertise for problem solving, or to clarify uncertainties where normally one or more human experts would need to be consulted … a traditional application and/or subfield of artificial intelligence (AI)

Notes — Bob Whyte, a practitioner for a major insurance company, makes the following observation about the difference between business rules and expert systems (which are usually based on production rules):
"What makes the real-world challenge of managing business rules so much more tractable than it appeared to academics and researchers in the1980s, the heyday of knowledge engineering and expert systems, is that in the day-to-day business world the institution plays role of 'god'. In other words, the business has the often unrecognized advantage that it gets to invent and define the rules for how it operates. So for business rules the problem is not one of having to discover and define hidden, unknown or unexpressed rules, which takes you into byzantine solution spaces, but rather one of documenting known rules invented overtly and explicitly by actual historical person(s). With business rules you are generally not discovering rules no one has ever consciously considered, but rather uncovering rules that some manager, lawyer or other expert decided on one day, but probably did not record simply for lack of an appropriate infrastructure for rulebook management."

Reference Source — [Wikipedia]

externalizing semantics developing and managing a structured business vocabulary (fact model) and definitional business rules apart from business processes (and other procedural models or specifications)

Notes — Externalizing semantics in declarative form allows them to be understood and evolved directly by business people and Business Analysts. Procedural approaches, in contrast, are token-based and are essentially black-box with respect to semantics.

fact model a semantic blueprint for the operational business concepts basic to know-how as expressed by a structured business vocabulary

fact type something specific that can be known about one or more noun concepts(s) important to day-to-day business activity

Notes — The fact type worded "customer places order" indicates that some customer placing some order probably happens repetitively in day-to-day business activity. The fact type therefore represents something that can be known about that activity (e.g., that a customer can place an order).

fall-back position see remedy

flash point an event when a business rule needs to be evaluated

fluff something essentially trivial and lacking importance or solid worth

Notes — As described by strategy expert Richard Rumelt [Rumelt 2011, p. 32], "fluff is a form of gibberish masquerading as strategic concepts or arguments. It uses 'Sunday' words (words that are inflated and unnecessarily abstruse) and apparently esoteric concepts to create the illusion of high-level thinking." Fluff is one of Gladys' favorite words. She is very good at detecting it.

Reference Source — [MWUD 2b]

functional requirement a requirement that defines a function of a software system … what a system is supposed to accomplish

Notes — Contrast with business requirement.

Reference Source — [Wikipedia]

future form [business model] a business model delineating the form a business capability is to operate in the future

Notes — Also called a to-be business model.

GAS see general ability statement

general ability statement an ability statement that holds for every system model resulting from business analysis with business rules; a guiding principle for developing business requirements

general case a case that could be treated as more than one case if some additional instance(s) were specified for the considerations

Notes

A case considered by an operational business decision can be as simple as a single instance for just one of multiple considerations. Such a case is very general. For example, suppose state/province is one of several considerations for an operational business decision that also involves the considerations driving history, evidence of insurance, insurance risk score, and credit rating. The instance Texas on its own represents a very general case. Contrast with specific case.

general rulebook system an automated, specialized, business-level platform for rulebook management

Notes

Key features of a general rulebook system (GRBS) include rich, interactive support for structured business vocabularies (fact models) and comprehensive traceability for business rules (not software requirements). Unlike a business rule engine (BRE) a GRBS is not run-time. Think of a GRBS as more or less like a general ledger system, except for Business Analysts. Because of the potential of GRBS to support compliance and accountability, a GRBS is indispensable for improved business governance.

goal monitor a key performance indicator (metric) for determining whether business goals are being satisfied

governance see business governance

governance decision a decision in business governance

Notes

The original decision to create a business policy or business rule is an example of a governance decision. A governance decision is not an operational business decision because it is not real-time with respect to day-to-day business activity.

governance process a series of business actions and checkpoints indicating who should be doing what (business roles), and when, with respect to deploying business policy and business rules

GRBS See general rulebook system

guidance message a message given to someone at a flash point for a behavioral business rule when a violation is detected

Notes

What should happen when someone violates a behavioral rule? Assuming the person is authorized and knowledgeable, some explanation should be provided about what caused the problem. You might call that explanation an error message or violation message, but we prefer guidance message. The intent should be to inform and to shape appropriate business behavior, rather than simply reprimand or inhibit it. After all, business rules represent encoded know-how. What should the guidance message say? As a default, the guidance message should say exactly what the business rule says. In other words, the business rule statement is the guidance/error message. Obviously, additional or customized text can be provided to explain the relevance of the business rule for the particular flash point, to suggest corrective measures, to give examples, and so on. The main point is this: The guidance messages that business workers see once a business operation system is deployed should be the very same business rules developed during business analysis for the business model. Guidance messages (error messages about business things being done incorrectly) and business rule statements - literally one and the same.

guidance statement a statement of a business rule or an advice

guideline a behavioral rule that is active but not enforced

Notes

Consider the behavioral rule: An order over $1,000 must not be accepted on credit without a credit check. Suppose this behavioral rule is restated with a should instead of a must (not recommended in RuleSpeak): An order over $1,000 should not be accepted on credit without a credit check. Is it still a business rule? Yes, still a business rule, only with a lighter sense of prohibition. What actually changed was the business rule's enforcement level. Rather than strictly enforced, now the business rule has the sense: It's a good thing to try to do this, but if you can't there's no sanction. In other words, now it's simply a guideline (or suggestion, if you prefer).

happy life a life for an operational business thing (e.g., order) consisting of the states (e.g., received, credit-checked, filled, etc.) through which instances progress that complete successfully from the business's point of view

happy path a scenario that works out in the easiest and best way possible for the business

Notes

A happy path is generally free of exceptions and features a normal progression of events, high-frequency infrastructure, and the 'usual cast' of actors.

implicit business rule a business rule not expressed anywhere

Notes

There is no such thing as an implicit business rule! A business rule must be explicit, otherwise it is assumed not to exist (Business Rules Manifesto 3.3). In other words there are no business rules until you say there are - i.e., until you specify them explicitly. This assumption is key for rule independence. It's a common-sense view of the business world with important implications. One is that there are never 'buried' (assumed) business rules in any form of business model, including business process models.

incremental design developing a system through repeated cycles (iteratively) and in smaller portions at a time (incrementally)

Notes

Business rules are unsurpassed for step-by-step enhancement of deployed know-how in business capabilities over time (incremental design). The Business Rules Manifesto puts it this way: "An effective system can be based on a small number of rules. Additional, more discriminating rules can be subsequently added, so that over time the system becomes smarter." That's exactly what you need for know-how retention and to move pragmatically toward the know-how economy. Support for incremental design with business rules is quite straightforward. A decision task might start off manual (performed by humans). As time and resources permit, decision rules for handling the simplest cases can be captured and encoded, removing these cases from the manual workload. Perhaps you start with a modest 20% of all cases. The only required changes to the system are to specify:
(1) What cases are covered (by providing selection criteria). (2) What outcome is no longer manual for the cases covered. (3) What decision logic should be used. At a subsequent time, you ramp up to 50%, then perhaps 80%. You may never get to 100% - nobody is talking about taking humans completely out of the loop for every operational business decision(!). The net result is simply applying human resources where best suited, the really hard cases.

independent subdecision an operational business decision in a collection of two or more operational business decisions such that another operational business decision has a consideration dependency on each decision in the collection

Notes

Important - independent subdecisions may be evaluated separately and either (a) in parallel or (b) in any sequence. Each subdecision has a distinct outcome and a different set of considerations (usually non-overlapping) from its peers in the collection.

initiation event an event that does not result from some other event(s)

integration relationships how the primitives are tied together (configured) at any point in time to create a complete and workable solution for an engineering problem

key performance indicator a metric for assessing the business performance of a business capability

Notes

The BMM (Business Motivation Model) describes key performance indicators as follows (pp. 40-41):
"In almost all organizations there are 'things of interest' that are heavily measured and tracked. These metrics govern, control, and influence a wide range of important aspects of the organization. The very fact these 'things' are so heavily measured makes them important. Some of the most important metrics of an enterprise are established by its [business] goals. Each [business] goal can have one or more measures of performance. For example, a metric of the [business] goal "to be profitable" is the measure of performance 'annual net revenue.' Another measure of performance of this [business] goal might be 'monthly net revenue.' … If a metric is particularly important, it may attain a special status and be called a key performance indicator (KPI) or a critical success factor (CSF) - or something else. The choice of signifier is unimportant."

know-how accumulated practical skill or expertness ... especially: technical knowledge, ability, skill, or expertness of this sort

Notes

Know-how that you can encode and retain is represented by business rules and the structured business vocabularies (fact models) on which the business rules are based. Know-how is a subset, a small one probably, of knowledge. Briefly, knowledge can range from practical to theoretical, from certain to probabilistic, and from frequently applicable to infrequently applicable. At the risk of saying the obvious, you can't run the day-to-day operations of a business on knowledge that is theoretical, probabilistic, or infrequently applicable. In short, business rules are about know-how management, not about knowledge management except in a strictly limited sense. Contrast with know-why.

Reference Source

[MWUD]

know-how economy the use of techniques for creating and managing know-how to produce economic benefits as well as job creation

Notes	See also business operation system (BOS). Ask yourself: Why should every business define its own business vocabulary even though almost everybody operates in some larger community of practice? Why should every business invent its own business rules even though perhaps only 20% of its business rules directly impact competitive advantage? Why should regulatory bodies issue regulations without adequate definitions and provably correct (anomaly-free) business rules? Why should contracts, agreements, and deals be signed with terms of agreement and definitions already spelled out, only to have IT implement them essentially from the ground-up? Welcome to the idea of a know-how economy! According to Wikipedia ['knowledge economy']: "Various observers describe today's global economy as one in transition to a 'knowledge economy,' as an extension of an 'information society.' The transition requires that the rules and practices that determined success in the industrial economy need rewriting in an interconnected, globalized economy where knowledge resources such as know-how and expertise are as critical as other economic resources."

know-how retention expressing know-how explicitly in a form understandable by business people and Business Analysts, and managing the know-how, such that it is always available for future reference or use (by those capable and authorized)

Notes	Like knowledge, know-how can be either tacit (in people's heads) or explicit. The classic test for when knowledge is tacit is 'lose the person, lose the knowledge'. Know-how is made explicit via structured business vocabularies (fact models) and business rules. The over-time infrastructure needed to retain know-how is provided by a general rulebook system. As a senior manager recently put it, "No organization should depend on absent brains."

know-why understanding of the reasons underlying something (as a course of action)

Notes	Contrast with know-how.
Reference Source	[MWUD]

life something resembling animate life: as continued active existence and development

Notes	The instances of many operational business things have a life in that they can change state in some manner important to the business. Remember that to business people and customers, even intangible business things (e.g., insurance policies, financial products, etc.) are quite real. They too can have a life.
Reference Source	[MWUD 20]

life pattern a regulated sequence for how an operational business thing is permitted to move through two or more states during its life

Notes

A life pattern is established by specifying the right combination of business rules. The Business Rule Book (1997) introduced the convenient short hands in Table AG3.

Table AG3. Shorthand Specifications for Governing a Life Pattern

Specification	Effect on the Life of Each Instance of the Operational Business Thing	Note
initializing (IZ)	It must start off at the first state, not beyond it.	-
forward (FW)	It must not retrograde (return to any earlier state).	-
progressive (PRO)	It must not skip any state moving forward.	-
retrogressive (RET)	It must not skip any state in retrograding (returning to an earlier state).	Meaningless if forward.
re-initializing (RIZ)	It must return to the first state each time any retrograding occurs before it can ever move forward again.	Meaningless if forward.
cyclical (CYCL)	Both of the following must be true: - It must return to the first state each time any retrograding occurs before it can ever move forward again. - It must reach the last state any time any forward movement occurs before it can ever retrograde again.	Meaningless if forward. Stronger then re-initializing.
frozen (FIX)	It must not change from its current state.	Used to discontinue any more life changes.

logical dependency one expression using some term or wording computed or derived by another expression

Notes

Declarative expression of business rules precludes only sequential dependencies, not logical dependencies. In fact, declarative expression depends on logical dependencies. Use of logical dependencies is a highly effective means of single-sourcing business rules at an atomic level of granularity and ensuring reusability at that level.

means a device, capability, regime, technique, restriction, agency, instrument, or method that may be called upon, activated, or enforced to achieve ends

Notes

A Policy Charter features two kinds of means: business tactics and business policies.

Reference Source [BMM]

milestone a significant point in any progress or development

Reference Source [MWUD2]

milestone imperative a business rule that must be satisfied for an instance of an operational business thing to achieve a business milestone

motivation the consideration or object influencing a choice or prompting an action; motivating force or influence

Reference Source [MWUD 'motivation' 2a]; [MWUD 'motive' 1b]

n-ary fact type a fact type that involves more than two noun concepts

never say user a business model being about real people filling real business roles in real business processes subject to real business rules with real business motivation

Notes There are no 'users' until you start to develop a system model to support the business solution embodied by a business model. (Anyway, these days everybody is a user of some system, so calling someone a 'user' just doesn't really say very much.)

non-functional requirement a constraint imposed on the design or implementation of a system (such as performance requirements, security, or reliability)

Reference Source [Wikipedia]

noun concept the concept that a term represents

objectification the noun concept that results from objectifying a fact type

objectify to cause a fact type (verb concept) to become or to assume the character of a noun concept

Notes For example, the fact type 'student enrolls in course offering' could be objectified as 'enrollment'.

operational business decision a decision arising in day-to-day business activity

Notes

Decisions appropriate for decision analysis share five essential characteristics in common, collectively called 'DOORS' for short. Such decisions are: Deterministic, rather than intuitive or ad hoc; Operational, rather than tactical or strategic; Objective (encodable as explicit decision rules), rather than subjective; Repetitive, rather than one-off or infrequent; and Single-point (of determination), rather than multi-point. Examples: Should an insurance claim be accepted, rejected, or examined for fraud?, Which resource should be assigned to a task?, Which service should be used to ship this package?

Typical kinds or patterns of operational business decisions include classification, evaluation, selection, approval, assessment, assignment, allocation, diagnosis, and prediction. As these kinds or patterns suggest, operational business decisions involve some significant determination for individual cases at a particular point in a business process. Such determination always involves a question arising in day-to-day business activity whose answers need to be determined, inferred or concluded. The operational business decision seeks to identify the best or optimal answer (outcome) whose kind is known in advance for cases in scope.

operational business event an event produced or recognized as a result of day-to-day business activity

Notes

An operational business event is an event that requires the business to respond, usually in a non-trivial way and often following some pattern of activity developed in advance, for example, a business process model. If important to the business, an operational business event generally moves some operational business thing to a new business milestone. In doing so, the operational business event should cause all relevant business rules to be tested.

operative rule see behavioral rule

Reference Source [SBVR]

outcome a potential outcome that is deemed appropriate for some case

Notes

Sometimes called a conclusion.

outcome dependency one operational business decision being dependent on the outcome of another operational business decision such that the outcome of the latter decision dictates some outcome(s) of the former (dependent) decision

Notes

In an outcome dependency, kinds of outcome for the respective decisions must align.

participle a word having the characteristics of both verb and adjective

Notes	See also past participle and present participle. In English, participles are made from verbs by adding any of the endings: -ing, -ed, -d, -t, -en, or -n, and are frequently used to refer to state.
Reference Source	[MWUD]

partitive structure see whole-part structure

past participle a participle that typically expresses completed action … as arrived in: the ship, arrived at last, signals for a tug.

Notes	In English, past participles are formed with any of the participle endings except -ing.
Reference Source	[MWUD]

pattern question a thinking tool that assists Business Analysts in developing business rules from business models

Notes	Over the past decade we have developed a series of well-structured pattern questions in Proteus (Pro-BA) to help Business Analysts with harvesting business rules from different kinds of business model (e.g., business process models, fact models, etc.). Each pattern question focuses on a particular topical concern and some particular construct (pattern) found frequently in models of a given kind. Each pattern question typically leads to many business rules for the same model. The questions are designed to assist Business Analysts in learning how to ask the right kinds of questions in the right ways to capture business rules. The pattern questions also prove quite useful in validating and refining the underlying models. In applying the pattern questions reflect carefully on each response. Answers typically lead to more questions - and to more business rules.

permission statement a statement of advice that specifically refutes obligation and prohibition

Notes	Examples: A person of any age may hold a bank account. A government vehicle with siren and lights flashing may exceed the posted speed limit.

policy see business policy

Policy Charter a deliverable in business analysis with business rules that lays-out the strategy for a business solution

Notes	A conversation about strategy for the business solution, which in Proteus (Pro-BA) is organized as a Policy Charter, is exactly the one business leads are looking to have. A Policy Charter addresses fundamental questions in shaping a business solution: What are the best means (business tactics and business policies) to achieve the ends (business goals) desired for a future-form business capability? How are the associated business risks addressed? What is the business motivation (know-why) for each of the business tactics and business policies? Why are those means most appropriate? Basing your approach to business requirements on a strategy for the business solution - i.e., a Policy Charter - is the surest way to achieve true business alignment. The Policy Charter is a form of business model and also an important source of core business rules.

policy monitor a key performance indicator (metric) for determining whether the business intent of a business policy is being satisfied

potential outcome some result, conclusion, or answer that might be deemed appropriate for some case

practicable possible to practice or perform : capable of being put into practice, done, or accomplished; capable of being used : USABLE

Reference Source	[MWUD 1]

practicable [element of guidance]an element of guidance sufficiently detailed and precise that a person who knows the element of guidance can apply it effectively and consistently in relevant circumstances to know what behavior is acceptable or not, or how something is understood

Notes	A practicable business rule (or advice) is one ready to become a deployed business rule (applied in day-to-day business activity). Whether the guidance is to be deployed to staff or ultimately to machines is immaterial - you should get the same results either way! Business policies are generally not practicable; business rules and advices always are.
Reference Source	[SBVR]

present participle a participle that typically expresses present action

Reference Source	[MWUD]

primitive not derived from or reducible to something else

Notes: In the Zachman Architecture Framework, the columns represent the primitives of engineering problems and correspond to the six interrogatives what, how, where, when, who, when, and why. If an artifact is not primitive, then it's a composite and inevitably more complex and resistant to change.

Reference Source: [MWUD - adjective 1a]

principal business actor a real-world person or organization of primary importance in achieving business goals

Procedural (statement) a statement included in a series of other statements to specify a procedure

Notes: Contrast with declarative (statement).

procedure a series of steps followed in a regular orderly definite way

Reference Source: [MWUD 1b3]

production rule the form of rule used in production rule systems

Notes: Production rules (also called productions) can be used to implement business rules, but are not business rules per se. Production rules typically provide support for action selection, which results in non-declarative statements.

production rule system a computer program typically used to provide some form of artificial intelligence, which consists primarily of a set of rules about behavior

Notes: Production rule systems are a class of platform whose rule format and operation are aimed toward developers. See also expert system. According to Wikipedia:
"A production system provides the mechanism necessary to execute productions in order to achieve some goal for the system. Productions consist of two parts: a sensory precondition (or 'IF' statement) and an action (or 'THEN').
If a production's precondition matches the current state of the world, then the production is said to be triggered. If a production's action is executed, it is said to have fired."

Reference Source: [Wikipedia]

prohibited antecedent a state of an operational business thing that if achieved by an instance precludes some other state being achieved by that same instance

Notes: Consider the business rule "A cancelled order must not have been shipped". The state shipped is a prohibited antecedent for the state cancelled.

project objective a specific, measurable target that a project is tasked with attaining, often but not always time-based, which disappears when the project terminates

property a quality or trait belonging to a person or thing

Reference Source [MWUD 1a]

Proteus® the top-down, step-by-step methodology for business analysis, business rules, and decision analysis offered by Business Rule Solutions, LLC (BRS)

Notes

In Greek mythology Proteus was a god that could take many forms, hence the English word protean meaning versatile, mutable, capable of assuming many forms. Protean business capabilities are exactly what you need for business agility, a central goal of Proteus.

Proteus for Business Analysis (Pro-BA™) provides a hands-on, intuitive approach to engage business people and subject matter experts (SMEs) most productively, with minimal demands on their time. Distinctive deliverables from Pro-BA include: (1) a strategy for the business solution (Policy Charter), and (2) behavioral rules. A key Pro-BA technique is to walk the walls when building a business model.

Proteus for Decision Analysis (Pro-DA) provides a business-based approach for undertaking decision analysis, capturing decision rules, and organizing decision tables. Distinctive deliverables of Pro-DA include Q-COEs and Q-Charts. Pro-DA can be applied in either of two ways: (1) Stand-alone - i.e., undertaken on its own for some specific operational business decision(s). (2) Embedded - undertaken as part of another initiative (e.g., business process re-engineering, web-based eCommerce, legacy system modernization, etc.).

Q-chart™ a visualization or diagramming technique for representing and analyzing decision structures, including Q-COEs and their logical dependencies

Notes

A Question Chart (Q-Chart for short) organizes Q-COEs based on logical (not sequential) dependencies. A Q-Chart is purely declarative, in contrast to business process models, which are always procedural.

Q-COE a graphic representation of a single operational business decision indicating what question ('Q') is being asked, and possibly one or more of the following: considerations ('C'), outcomes ('O'), and exceptions ('E')

Notes

Q-COEs can be used on their own for brainstorming, or included with other Q-COEs in Q-Charts.

Question Chart see Q-chart™

recursive structure a circular series of two or more fact types, each fact type connected to the next by some term in common, such the last fact type connects to the same term at which the first fact type began

relevance dependency one operational business decision being dependent on the outcome of another operational business decision such that the outcome of the latter (less dependent) decision may eliminate the need for any outcome from the former (dependent) decision

Notes	For example, if a company decides not to ship to Alaska, then it doesn't need to determine the cost of shipping there. The former decision "Can an order be shipped to a location?" pre-empts the latter decision "How much does it cost to ship to a location?" The latter decision is simply meaningless in the case of Alaska.

remedy something that corrects or counteracts an evil : CORRECTIVE, COUNTERACTIVE, REPARATION

Reference Source	[MWUD2]

requirement see business requirement

risk see business risk

risk bracket a section of a continuously numbered or graded series in calibrating business risk

Notes	Based on [MWUD 6] 'bracket'.

role [business] [MWUD 'role' 1b1]: a part played by an actor;
[MWUD 'role' 2]: a function performed by someone or something in a particular situation, process, or operation

Reference Source	[MWUD 1b1]; [MWUD 2];

role [fact type] a noun concept that reflects how another noun concept is viewed in the context of a fact type

Notes	For example, 'owner' is how 'person' is viewed in the fact type worded 'person [owner] owns vehicle'.

rule guide for conduct or action; one of a set of usually official regulations by which an activity (as a sport) is governed [e.g.,] *the infield fly rule* *the rules of professional basketball*; a standard on which a decision or judgment may be based

Reference Source	[MWUD 'criteria' 2]; [MWUD 'rule' 1a]; [MWUD 'rule' 1f]

rule independence the externalization, unification, and management of rules separately from processes

Notes

As expressed by the Business Rules Manifesto, basic ideas of rule independence include these: Business rules should be treated as a first-class citizen of the requirements world. They should never be embedded in process models. Instead, they should be expressed independently of process (or other) models in a declarative form that business people and Business Analysts can understand and validate. Business rules are key to business agility and therefore need to be managed as a business asset.

rulebook the collection of elements of guidance for a business capability, along with the terms, definitions, and wordings that support them

Notes

The rulebook of a game enumerates all the do's and don'ts (rules) of that game along with the terms and definitions (vocabulary) needed to understand the rules. Each participant in the game, whether player, coach, referee or umpire, scout, spectator, or media person, is presumed to understand and adhere to the rules to the extent his or her role in the activity requires. The rulebook sometimes suggests how to play the game to maximum advantage, but never dictates playing strategy.

Similarly, a rulebook in business includes the business rules (and advices) needed to perform day-to-day operational business activity correctly or optimally, along with the structured business vocabulary (fact model) needed to understand the business rules correctly. Each participant in the business activity must adhere to the business rules to the extent his or her role requires. The rulebook never dictates business strategy, but should reflect, enforce, and measure it. Unlike the rules for a game, however, business rules change, often quite rapidly. Therefore knowing the original source of each business rule, its know-why, and its full history of modifications, as well as how and where the business rule
is currently deployed, is essential in effective rulebook management.

rulebook management the skills, techniques and processes needed to express, analyze, trace, retain, and manage the business rules needed for day-to-day business activity

RuleSpeak® a set of guidelines for expressing business rules in concise, business-friendly fashion using structured natural language

Notes

Emily Springer, business architect at a major insurance company, says: "Before we started using RuleSpeak to express business rules, business people had no idea what they were signing off on. Introducing RuleSpeak to express business rules was fundamental to getting business people really engaged up-front in truly understanding the business side of requirements."

RuleSpeak (free on www.RuleSpeak.com) is not a formal language or syntax per se, but a set of best practices. Its purpose is to bring greater clarity and consistency in communicating business rules among business people, Business Analysts, and IT, especially behavioral rules and those many definitional rules that cannot be handled by decision tables. RuleSpeak was developed by BRS starting in 1996. Since that time RuleSpeak has been applied in many hundreds of projects. It is the premier approach for expressing business rules worldwide. It was one of three reference notations used in the creation of SBVR and is fully consistent with that standard. (SBVR does not standardize notation.) Originally for English, parallel versions for Dutch, Spanish, and German were released in 2009. Versions for other natural languages are under development. RuleSpeak and SBVR recognize that business rules need to be expressed declaratively as complete sentences. If sentences aren't the best way to communicate many kinds of know-how, we sure do waste a lot of money on all those years of grade-school and university education!

SBVR see Semantics of Business Vocabularies and Business Rules

scenario a sequence of events especially when imagined

Notes

In business analysis, scenario generally refers to the handling appropriate for a specific case (or kind of case) that arises when an operational business event occurs under specific circumstances. The handling can be modeled as business tasks and flows in a business process model, specified as one or more business rules, or more likely, combination of both.

Reference Source

[MWUD]

scope item a core business concept, a central business process, a business location, a principal business actor, an operational business event, the business mission, or a business goal

scope list a list of scope items falling into one of six categories based on the primitives what, how, where, who, when, and why

see the elephant perceive the true shape of a large, pervasive problem as the essential first step in solving it

Notes	Some problems are simply so big you can't see them because they're all around you, everywhere you look. Up-close, like an ant crawling up a leg of the elephant, they're impossible to see. To understand the beast you have to stand back. Often as not, once you finally see the problem for what it is, the solution isn't nearly as hard as you might have imagined. Refer to the Preface for the traditional sources of the metaphor.

semantic of or relating to meaning in language

Notes	In general, when you say semantic you are referring simply to what words mean. A structured business vocabulary (fact model) provides a semantic blueprint for verbalizing operational business know-how. A goal in business analysis with business rules is externalizing semantics from business process models and other artifacts.
Reference Source	[MWUD]

semantics a system or theory of meaning (see semantic)

Reference Source	[MWUD]

Semantics of Business Vocabularies and Business Rules the standard initially released in December, 2007 by the Object Management Group (OMG) whose central goal is to enable the full semantics of business rules and other forms of business communication to be captured, encoded, analyzed (for anomalies), and transferred between machines (thereby achieving semantic interoperability)

Notes	SBVR seeks to enable machines to directly 'speak' the language of the business (e.g., as in RuleSpeak), thereby eliminating the need for interpretation of business meanings into ITspeak and special-purpose languages (e.g., C++, SQL, production rules, etc.). SBVR represents an exciting frontier that will revolutionize how know-how is managed. At its heart, SBVR is a literally a vocabulary for developing structured business vocabularies (fact models). Much of the SBVR, however, is arcane. It's for logicians, linguists, and software engineers. For more digestible background on SBVR, refer to the SBVR Insider section on www.BRCommunity.com.

single-sourcing specifying business rules for a business capability only once no matter how many places deployed

Notes

A central goal for rulebook management is specify once, use everywhere. Making change(s) to business rules, including decision logic, should always be intentional and traceable, not accidental or haphazard. To maintain consistency and avoid duplication every business rule should be officially specified in a single place (the rulebook) and sourced from there, even if deployed to many places (across both IT infrastructures and non-automated procedures and role responsibilities). Single-sourcing makes individual business rules easier to find and to change quickly and reliably, which is essential for business agility. One important caveat: We mean single-sourcing only within architectural scope. Single-sourcing business rules at the enterprise level might be desirable, but for organizations of any size or complexity, smaller steps are usually prudent.

smart business process a business process that externalizes (1) semantics, (2) business rules, including decision logic, and (3) violation responses for behavioral rules

specific case a case for which a specific instance is specified for every consideration

Notes

Contrast with general case. Cases addressed by an operational business decision often represent combined instances of all of its considerations. Such a case is specific. For example, the following instances might combine to represent one specific case addressed by an operational business decision:

Consideration	Instance	
driving history	*good*	
evidence of insurance	*acceptable*	
insurance risk score	*154*	*one specific case*
credit rating	*poor*	
state	*Texas*	

spontaneous event an event based on some condition(s) becoming true, but not based on any timing criterion

stage a state in a happy life

Notes

Based on MWUD: 5a: a period or step in a process, activity, or development.

standard case a case in decision scope that is regular or common, and unlike an exceptional case, cannot be excluded from normal treatment or rejected out of hand

Notes — Standard cases generally make up the bulk of cases in scope.

state a mode or condition of being; a condition or state of being : a manifestation, form, or manner of arrangement

Notes — A state implies a business action that completed successfully (e.g., an order has been shipped). All business rules applicable to the state must be satisfied at the business milestone for the state and generally for so long as the state exists. Among MWUD examples for state are: the unsanitary state of the building, the married state. Note the use of an adjective ("unsanitary") in the former example, and a past participle ("married") in the latter example. In natural language, adjectives and participles are the principle means of communicating the states of things. Expressing states is this fashion is a semantic alternative to tokens.

Past participles (e.g., married, shipped, etc.) are almost always used to designate states in our approach since their use implies (a) that some business action completed successfully, and (b) that all relevant business rules have been satisfied from that point on. A state can also represent an on-going business action - e.g., an order is shipping. Note use of a present participle, rather than a past participle, to indicate the business action as on-going, not completed. On-going states of this kind are occasionally needed to constrain concurrent activity (e.g., no smoking while filling a gas tank), but by and large do not play a major role in business operation systems.

Reference Source — [MWUD - mode 6]; [MWUD 1a]

strategy see business strategy

strategy diagram a diagram that depicts the elements of strategy for a business solution (Policy Charter) and how they relate

Notes — A strategy diagram depicts only connections having to do with motivation.

structural rule see definitional rule

Reference Source — [SBVR]

structured business vocabulary the set of terms and their definitions, along with all wordings, that organizes operational business know-how for a business capability

Notes

A fact model is represented by a structured business vocabulary that includes both terms for noun concepts and wordings for fact types (verb concepts). Its role in a business model is to provide a standard, shared basis for expressing know-how including business rules. Although a fact model can (and should) serve as the basis for creating a data model or class diagram, its central business purpose is to support business communications.

Fact models have a long pedigree that extends back to the 1970s. Refer to Nijssen, Sjir [July 1981] and Halpin, Terry [2008]. Until the early 2000s fact modeling was usually associated with data modeling. The grounding of fact models in formal logic, however, is far deeper than for most such techniques. A watershed for fact models came with SBVR, which took them squarely into semantics and the modeling of real-world business concepts and business rules. Much of the SBVR is arcane to say the least. It's for logicians, linguists, and software engineers. One critical subset, however, is business-facing, the actual vocabulary that business people and Business Analysts should use in developing structured business vocabularies for their companies. Only that subset of SBVR is discussed in this book. Incidentally, SBVR does not standardize notation for fact models. The diagramming conventions used in this book, specially developed to be as business-friendly as possible, are those of Proteus.

There are theoretical reasons why fact model as used by some proponents doesn't convey quite the right sense for business rules. For example, in some schemes, behavioral rules are simply viewed themselves as facts (true propositions). That might make sense to logicians, but it makes no sense whatsoever in the real world (no knock on logicians intended). Better names for fact models might be concept systems or verbalization models.

surrogate something that replaces or serves as a substitute for another

Reference Source [MWUD 2a]

suspense criterion a timing threshold for how long an instance of an operational business thing may remain in a given state

Notes

Consider the business rule An order may be shipped but not invoiced for only a week. 'A week' is a suspense criterion.

system model a model that provides a design for an automatable system that is computationally competent

Notes

For many years John Zachman, creator of the Zachman Architecture Framework, has explained that a business model is always about real-world things. These real-world things are as the business leads see or define them. A system model in contrast comprises "… surrogates for the real-world things so that the real-world things can be managed on a scale and at a distance that is not possible in the real world." Surrogates include data entities in place of real-world things; GUIs and use cases in place of face-to-face, real-world communication; network nodes in place of real-world locations; system events rather than operational business events; and so on.

Does the separation between business model and system model blur in eCommerce? No. If business leads see or define ePersons (for example) as real-world, then real-world they are. To ensure you have a winning business solution, the ePersons should be defined and shaped within a business model. Afterwards comes design of a computationally-competent system model so you can conduct actual business with the ePersons. [John Zachman, informal communication, June 2011]

system rule a rule that is dependent on, or aimed at, the manner in which data is received, stored or displayed in a system model

task see business task

temporal event an event based exclusively on a timing criterion

term a word or expression that has a precisely-limited meaning in some uses or is peculiar to a science, art, profession, trade, or special subject

Reference Source [MWUD 8a]

thin process a process from which business rules are externalized

token a pointer for a thread in a process or computer program serving to indicate current position

Notes

Don Baisley, a colleague in the SBVR standards group, explains:
"A token in BPMN [OMG's Business Process Model and Notation standard] is what moves through a process. A token begins its existence at a start event and then flows through activities, one by one, until it arrives at an end event where it terminates. In computer programming terms, it is the current code pointer for a thread. It is a programming view, but not just for computer programming. It could be television programming for one channel, which goes sequentially along from one thing to the next.

When business people are defining or describing business activity, the 'token' concept tends to be poorly suited. A better approach is to write business rules about what is obligatory, appropriate, permitted, or prohibited in response to events or in certain states. 'Process state' in business activity is best understood in terms of some operational business thing that business people know about and that is affected by the process (e.g., an application for insurance or a purchase order). It is easier for a business person to think of an operational business thing going through different states than to think of a token moving through a flow chart. Also, 'token' thinking tends toward overly linear processes with unnecessary inefficiencies."

unary fact type a fact type that involves exactly one noun concept

Notes

Example - 'account is inactive'. This fact type includes only one noun concept, account.

under business jurisdiction (rule) a rule that the business can opt to change or discard

Notes

SBVR explains: *"The laws of physics may be relevant to a company … ; legislation and regulations may be imposed on it; external standards and best practices may be adopted. These things are not business rules from the company's perspective, since it does not have the authority to change them. The company will decide how to react to laws and regulations, and will create business rules to ensure compliance with them. Similarly, it will create business rules to ensure that standards or best practices are implemented as intended."*

use case a description of a system's behavior as it responds to a request from the outside … [which is] used to capture a system's behavioral requirements

Reference Source

[Wikipedia]

verb concept see fact type

verbalization model see structured business vocabulary

Notes

A structured business vocabulary (fact model) provides standard words (nouns and verbs, including participles to represent states) to verbalize business rules and other kinds of business communications with precision and consistency. Since verbalization is the ultimate purpose of a fact model as we use it, verbalization model would be a better name than fact model. Also, a fact model should be viewed as independent of natural languages, but that idea (native concepts without words) is a bit hard for anyone but a computer scientist or linguist. Nonetheless, since fact model is the best known term for a vocabulary-oriented approach to business rules and know-how, we use it in this book.

violation message see guidance message

violation response a response deemed appropriate when a behavioral rule is violated

Notes

A violation response might be a behavioral rule, business process, sanction, business communication, business rule, etc.

walk the walls managing complexity in developing a business model by figuratively, and as much as possible literally, addressing each primitive as a separate concern (i.e., on a different wall)

Notes

In running facilitated sessions, we like to create each kind of business model on a different wall. We find that the physical act of walking or shifting focus from one wall to another helps participants rapidly grasp and remember what each wall represents. It also helps business leads and Business Analysts identify disconnects and gaps in the business solution more readily.

In physically walking the walks, we usually put business process models on the left wall and the structured business vocabulary (fact model) on the right wall. On the front wall we put reminders about the strategy for the business solution (Policy Charter) and on the back wall we capture business rules. (Business rules go on the back wall to help resist the temptation of wordsmithing, which is better done offline.) In an ideal world, there would be one surface for each of the six primitives of the Zachman Architecture Framework. (Alas the ceiling and floor are hard to use.) Business rules, serving as integration relationships, would occupy the 3D space between the six surfaces (even harder to use!). Our approach approximates the notions well enough in practice.

whole-part structure a special collection of one or more binary fact types that together describe how an instance of one class of things (the whole) is composed of instances of (typically) two or more other classes of things (the parts)

wording an expression including one or more terms and a verb or verb phrase organized appropriately to represent a fact type

Notes — Example - 'customer places order'.

work product something created to support a particular interaction between people, roles, or organizations in business activity

Notes — Examples - notifications, requests, sign-offs, analyses, position papers, legal agreements, licenses, certifications, service level agreements, etc.

Zachman Architecture Framework the classification scheme or ontology created by John Zachman for engineering anything of complexity

Notes — Widely misunderstood and misrepresented, the Zachman Architecture Framework ("Framework") is simply a thinking tool, not a methodology of any kind. Its being fundamentally neutral with respect to methodology, in fact, is the secret to its power and the reason it has proven so enduring. It can, of course, be applied to create a methodology (as we have done in Proteus Pro-BA), but that's a different matter. Zachman's basic premise is that whenever you engineer anything of complexity, no matter what - a complex machine, a skyscraper, a microchip, a spacecraft, a product, a business (an enterprise), or some part of a business (a business capability) - there are two basic aspects that need to be addressed. These two aspects correspond to the columns and rows of the Framework.

The columns represent the primitives of engineering problems and correspond to the six interrogatives (business engineering questions) what, how, where, when, who, when, and why. (The order doesn't matter.) If an artifact is not primitive, then it's a composite and inevitably more complex and resistant to change.

The rows represent reifications in the sense of MWUD [reify]: convert mentally into something concrete or objective : give definite content and form to : MATERIALIZE. In engineering, an object is created for a particular audience with a certain perspective, set of needs, and agenda. The Framework recognizes six such reifications or audiences. (Their order does matter.)

Notes

Six primitives times six reifications (audiences) equals 36 cells in the Framework. You can think of those 36 cells as covering the universe of discourse for engineering things of complexity, a fundamental scheme for understanding and assessing completeness. Tables AG4 and AG5 provide additional insights about the columns and rows of the Framework, respectively.

Graphic depictions of the Framework naturally focus on primitives. A key question, however, is how the primitives are 'tied together' (configured) at any point in time to create a complete and workable solution. Tying together (configuring) primitives is the purpose of integration relationships. The effectiveness of their configuration determines the degree of business agility you achieve. Two basic choices to support integration relationships are procedural (processes) and declarative (business rules). Traditional processes with their hidden semantics are a poor choice (think business rules being hard-coded into software). Business rules, in contrast, support direct, business-friendly configuration, as well as rapid, traceable, continuous re-configuration

Notes

Common myths about the Framework:

- The Framework requires you to create an artifact for each and every cell. Wrong. It's not a methodology, it's a classification scheme. Different methodologies emphasize problems of different kinds, so in practice some cells are likely to play a less prominent role than others.

- The Framework can be applied only at the enterprise level. Wrong. It can be applied for an engineering problem of any size (scope) deemed meaningful (e.g., for a business capability).

- The rows in the Framework are about increasing level of detail. Wrong. Each successive row represents a transform of the previous reification into a new reification. The new reification serves a new purpose for a distinct audience. Any artifact in any row can be pursued to excruciating level of detail (as Zachman puts it) if deemed useful and productive. The idea is to make the next audience's job in creating the next reification that much easier.

- The Framework discourages or precludes prototyping. Wrong. Again, the Framework isn't a methodology. Much can be learned about the best solution for any given audience by prototyping alternative approaches.

- The Framework somehow produces complexity. Wrong. Engineering problems are inherently complex, with business engineering being perhaps the most complex of all (as Zachman contends.) In other words the complexity already exists, the trick is to engage with it most effectively.

- The Framework slows you down. Wrong. That's not our experience at all. Asking the right questions of the right audiences at the right times in the right ways doesn't slow you down, it speeds you up (or avoids costly dead ends). That's especially true for the business model, which most IT methodologies neglect almost entirely (even if they say otherwise). Remember, the cost and time needed for rework does not rise linearly for each subsequent reification, it balloons. Overall acceleration is what you want, and not just for the build activity. You also want it for the inevitable, myriad changes to business rules you can expect after the business rules are deployed. Such solutions don't happen by accident, they require deliberate engineering. Zachman simply points out, like it or not, what such 'deliberate engineering' necessarily involves.

Table AG4. About the Six Columns in the Zachman Architecture Framework

Question Word	Key Descriptive Word	Zachman's Generic Model	Topical Concern for Engineering	Examples of Artifacts
what	structure	thing - relationship - thing	Organizing the inventory, the things to be dealt with, and understanding how they relate	fact model ; data model; database
how	transform	input - transform - output	Organizing the processes, how they work, what inputs they take, and what outputs they produce	business process; computer program; object code
where	geography	location - link - location	Organizing logistics, distribution or interconnection in three dimensional space	network
who	interaction	party - work product -party	Organizing interactions between roles and how work products and presentation forms enable them	GUI
when	time	cycle - event - cycle	Organizing the scheduling of events and inter-event periods of time (cycles or states)	business milestones; schedule; state transition diagram
why	motivation	end - means - end	Organizing what goals and objectives are to be achieved and identifying what means best achieve them	business strategy; constraint model

Table AG5. About the Six Rows in the Zachman Architecture Framework

Reification	Target Audience	Common Name	OMG Term	Purpose
identification	planners	scope	-	Establish a ballpark view for the engineering effort and first-cut boundaries
definition	business leads	business model	computation-independent model (CIM)	Create a business solution
representation	architects	design logic	platform-independent model (PIM)	Design a computationally-competent system model that supports the business solution
specification	engineers	technology model	platform-specific model (PSM)	Translate the design logic into technical designs that take into account the classes of platforms that will support it
configuration	technicians	tool specifications	-	"Create a ready-to-use solution (e.g., writing software code)
instantiation	workers	operational instances	-	Operate the actual functioning solution