Taxonomy Service

__Taxonomy__ is the practice and science of classification. The word comes from the Greek τάξις, taxis (meaning 'order', 'arrangement') and νόμος, nomos ('law' or 'science'). Taxonomies, or taxonomic schemes, are composed of __taxonomic units__ known as __taxa__ (singular __taxon__), or kinds of things that are arranged frequently in a hierarchical structure. Typically they are related by subtype-supertype relationships, also called parent-child relationships.

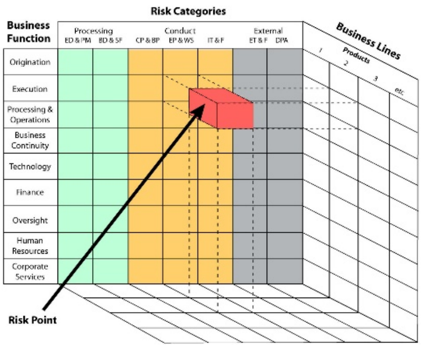
Financial services firms have traditionally focused a majority of their operational risk efforts on developing *program initiatives*: loss data collection, scenario analysis, self-assessment, capital estimation, etc. These programs comprise, in effect, the muscle of a firm's risk management effort. By the same token, however, the taxonomic framework supporting each initiative makes up the skeleton—a subtler component, yet likewise essential in creating structure and value. Firms vary in the extent to which they have focused on taxonomy as a key element of value generation. Many use unmodified, high-level Basel categories, while some have adopted different hierarchies for specific initiatives. It is possible to "make do" with a quick formulation early on. Yet, in the long term, a program with ill-designed taxonomy is likely to fare little better in practice than an athlete entering the Olympics with a strong set of muscles — but connected to rubbery bones.

An effective taxonomy framework may contain a variety of specific data elements. The ideal number and composition of these elements depends on the organisation's specific business needs and management culture. Some components are *core data elements*, likely to be included by virtually all organisations (risk category, line of business, etc.). Others are best described as supplemental, or specialised, variables that a firm may use to its advantage, but only if suitable. Lastly, in some topic areas, alternate hierarchy selections are available in the same "space" from which a firm may select.

The Risk*Business* Taxonomy Service consists of a number of pre-defined libraries of *core data hierarchy elements*, with full definitional content, including libraries of Risk Types, Risk Categories, Business Lines, Products Types, Process Types (Business Functions), Causal Types, Control Classes, Control Types and various Impact Types. These *taxonomy elements* are supported by *taxonomy attributes*, that is, various common classification mechanisms in the public domain, such as industry types, geographic segmentations, etc. and *taxonomy dimensions*, low-level sub-classification structures. The Taxonomy Service is delivered as an online encyclopaedia which can be used as-is or where unique internal taxonomies can be customized to meet users' individual needs and strategies. Taxonomy Service subscribers can modify the contents of any hierarchy to suit their needs. Specifically, they may (1) add, delete or rename individual elements in a standard hierarchy, (2) edit definitions and other content associated with specific hierarchy elements, and (3) add entirely new hierarchies.

As an example of a Taxonomy Element, consider a Risk Category (or Basel II Loss Event Type) structure. Risk*Business* has devised a multi-layer, unambiguous method of classifying operational risks, which can be used to uniquely classify loss events, undertake risk assessments and correlate against indicator and loss information. This use of *detailed risk categories* has immense power when used within a firm, which increases exponentially when used across an industry.

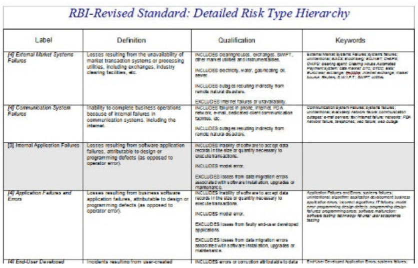
The Risk*Business* Taxonomy Service allows you to query the encyclopaedia using key words – for example, if a business unit has suffered some event such as a system failure, a user can enter the term "system failure" and be provided with a structure representing the potential classification for that event – the qualifiers then assist in ensuring a single, unambiguous classification for that event, as illustrated alongside. The user may then browse the possible detailed risk categories and, based on the qualifiers, select the most appropriate way to classify that event. The option is also available to query paragraphs of text in the same manner, retrieving all possible classification instances across all taxonomy elements, thus reducing loss classification time and improving consistency.



Three dimensions within the Risk*Business* Taxonomy Service

However, the Risk*Business* Taxonomy Service is much more than just risk categories, covering product/service structures, business functions and processes, control types, scenario types, event impact types and business activities. A single taxonomic element, in isolation, has limited utility. Instead, individual elements take on meaning as part of an integrated data framework, supporting applied operational risk initiatives.

The connections among taxonomic elements in an operational risk framework can be demonstrated using a *functional model* of operational risk. The outlines of this model are quite straightforward: a firm attempts to execute an operational process, with certain expected outcomes in mind. But causal factors intervene, triggering an operational risk event. If not intercepted, the event leads to impacts (i.e., outcomes different than those originally expected). All of the intricacies of loss data definition and recording can be generated from this concise view. The schema just described also has the advantage of taking a *behavioural perspective* on operational risk; such an approach is well-positioned, over time, to capture key process dynamics needed for successful analysis.



RBI-Revised Standard: Detailed Risk Type Hierarchy

Label	Definition	Qualification	Keywords
[4] External Market Systems Failures	Losses resulting from the unavailability of market transaction systems or processing utilities, including exchanges, industry clearing facilities, etc.	INCLUDES clearinghouses, exchanges, SWIFT, other market utilities and instrumentalities. INCLUDES electricity, water, gas/heating oil, sewer. INCLUDES outages resulting indirectly from remote natural disasters. EXCLUDES internet failures or unavailability.	[illegible]
[4] Communication System Failures	Inability to complete business operations because of internal failures in communication systems, including the internet.	INCLUDES failures in phone, internet, PDA network, e-mail, dedicated client communication facilities, etc. INCLUDES outages resulting indirectly from remote natural disasters.	[illegible]
[3] Internal Application Failures	Losses resulting from software application failures, attributable to design or programming defects (as opposed to operator error).	INCLUDES inability of software to accept data records in the size or quantity necessary to execute transactions. INCLUDES model error. EXCLUDES losses from data migration errors associated with software installation, upgrades or maintenance.	
[4] Application Failures and Errors	Losses resulting from business software application failures, attributable to design or programming defects (as opposed to operator error).	INCLUDES inability of software to accept data records in the size or quantity necessary to execute transactions. INCLUDES model error. EXCLUDES losses from faulty end-user developed applications. EXCLUDES losses from data migration errors associated with software installation, upgrades or maintenance.	[illegible]
[4] End-User Developed	Incidents resulting from user-created	INCLUDES errors or corruption attributable to data	End-User Developed Application Errors; systems failures;

In reviewing the taxonomy elements associated with each "stage" of the functional model described in the last paragraph, a number of data elements can be associated with each, some core data elements, others supplemental or optional. The Risk*Business* Taxonomy Service thus includes the rules necessary to deploy and use these within a business context, with user definable rules and multi-language support.

The Risk*Business* Taxonomy Service has also been mapped to a range of industry standard taxonomies, including Basel II, ORX, bbaGOLD, ORIC International, the KRI Framework, standard insurance contracts and various others. Facility is available to specify your own taxonomy and to map it to any of the other taxonomies supported.

For further information on the Risk*Business* Taxonomy Service and how it can be employed within your company, please contact Risk*Business* Services Limited through our website or e-mail info@Risk*Business*.com.

Risk*Business* Services Limited
www.Risk*Business*.com
2 Claremont Way, Halesowen
West Midlands B63 4UR, UNITED KINGDOM