



TBM  
COUNCIL

# TBM Taxonomy

## Version 4.0 DRAFT

December 15, 2020

This paper provides a detailed description of the Technology Business Management (TBM) taxonomy. This document is made available via the TBM Council's community site ([www.TBMConnect.org](http://www.TBMConnect.org)) for all members to read and use the information. For more information on the Standards Committee, see last page of this document or refer to the TBM Council Standards Committee Charter, also available on the TBM Council web site or by reaching out to [standards@tbmcouncil.org](mailto:standards@tbmcouncil.org).

**IMPORTANT NOTICE:** This document is in draft form and is shared for community review and feedback. It is subject to change without notice. Please contact us at [standards@tbmcouncil.org](mailto:standards@tbmcouncil.org) with any feedback. We anticipate approving and publishing the final v4.0 taxonomy in December 2020.

### Revision History

Date	Reason for Changes	Version
10/31/2016	Final revision for TBMC endorsement	V2.0
03/18/2018	Final revision for TBMC endorsement	V2.1
11/02/2018	Final revision for TBMC endorsement	V3.0
04/19/2019	Added missing High Performance Computing	V3.0.1
07/18/2019	Added missing "Foundation Platform," "Order Management" and "Facility & Equipment Maintenance & Repair" definitions.	V3.0.2
12/15/2020	Various changes made through 2020 open forums and other feedback mechanisms. Included definitions for <i>Development Platform</i> (Platform Solution > Application), <i>Migration &amp; Modernization</i> (Delivery Solution > Development), <i>Container Orchestration</i> (Platform sub-tower) and <i>Big Data</i> (Platform sub-tower)	V4.0 DRAFT FOR APPROVAL

Note: A complete document history is maintained in the Standards Committee on TBM Connect.



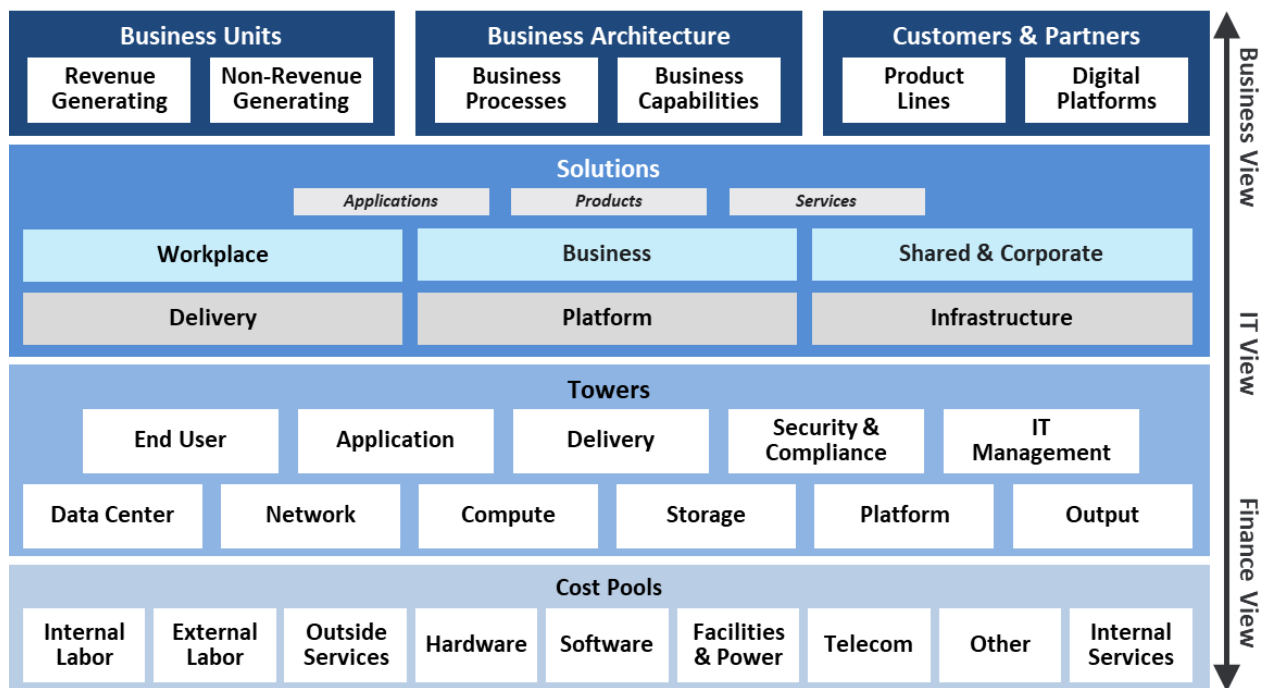
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## Introduction to the TBM Taxonomy

Technology Business Management (TBM) is a value-management framework instituted by CIOs, CTOs, and other technology leaders. Founded on transparency of costs, consumption, and performance, TBM gives technology leaders and their business partners the facts they need to collaborate on business aligned decisions. Those decisions span supply and demand to enable the financial and performance tradeoffs that are necessary to optimize run-the-business spending and accelerate business change. The framework is backed by a community of CIOs, CTOs, and other business leaders on the Technology Business Management Council.

To gain alignment between IT, Finance, and Business Unit leaders, TBM provides a standard taxonomy to describe cost sources, technologies, IT resources (towers), and solutions. The TBM taxonomy provides the ability to compare technologies, towers, and solutions to peers and third-party options (e.g., public cloud). Just as businesses rely on generally accepted accounting principles (GAAP) or International Financial Reports Standards (IFRS) as their standard practices for financial reporting — thus providing comparability of the financial statements between periods and between different firms — the TBM taxonomy provides a generally accepted way of reporting IT costs and other metrics. A simple view of the TBM taxonomy is shown below.

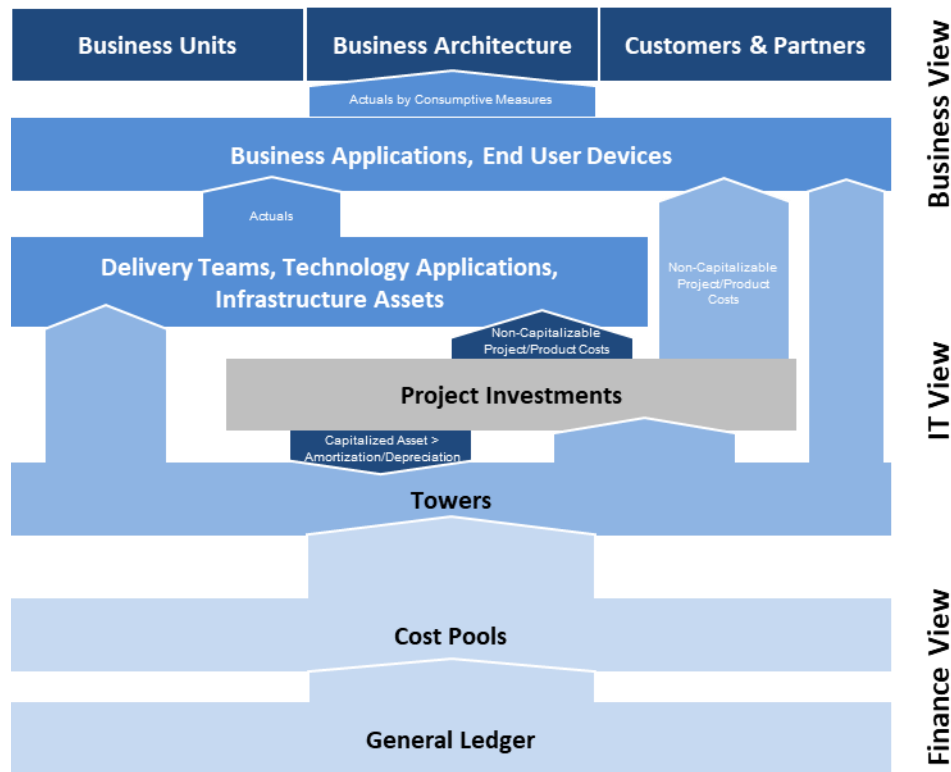


**Figure 1: The TBM Taxonomy (Summary View)**

The TBM taxonomy is needed to support the modeling of costs and other metrics. A TBM model is software that maps and allocates costs and resource consumption from their sources to their uses, from the hardware, software, labor, outside services, and facilities that tech leaders procure to the solutions they develop, deliver, and support. In essence, the model is what translates between the layers of the taxonomy (e.g., Towers to Solutions). The TBM model itself includes the taxonomy objects and layers plus the data, allocation rules, reporting and metrics needed to create transparency needed for the value conversations of TBM.

The TBM model software relies on the TBM taxonomy to bring into agreement often disparate and contentious definitions of IT cost components and object classes. This creates a common language so that the terms *server* and *compute*, for example, are understood by everyone (IT and non-IT

stakeholders alike) to mean the same thing and to include the same types of underlying costs calculated using the same methods.



**Figure 2: Conceptual TBM Model**

By using the TBM taxonomy and model, CIOs can illustrate, for example, how user demand shapes the cost of applications, services, products, and other technology architectures they maintain. And non-IT leaders can use the same data and insights to guide their consumption (demand).

Perhaps more importantly, these TBM tools allow for benchmarking and trend analysis of IT costs. This includes comparing the unit costs of technologies, such as a virtual Windows server or a terabyte of tier 1 storage, from one business unit, vendor, or data center to another. It also includes comparing unit costs over time, or even looking at ratios such as the IT cost per employee or the storage cost as a percentage of total IT spending.

These are powerful tools used more extensively in the private and public sectors including a diverse array of thousands of organizations across all vertical industries, including both private, public, and not-for-profit sectors, and around the globe.

The focus of this document is the TBM taxonomy. However, it is important to understand how the TBM taxonomy and the TBM model work together to create the views (i.e., reporting and metrics) that are needed for decision making.

## Views and Layers of the TBM Taxonomy Explained

Three views are imparted by the four layers of the taxonomy: Finance, IT and Business. These views are enabled by the TBM model (software) through reporting and metrics that are meaningful for decision makers. For example, using the TBM model, financial managers receive reports and metrics that make sense to them in financial terms (i.e., those that link to their financial reporting systems such as the general ledger).

The model starts with the Finance view as the foundation of the taxonomy:

- **Finance:** The lowest layer begins with the firm's general ledger as the financial source of truth, but may include other cost sources (e.g., fixed assets register, payroll system). This provides for a standard set of **cost pools**: hardware, software, internal labor, external labor, outside services, facilities and power, telecom, internal services and other. Cost pools not only make cost allocations easier, they enhance reporting because they can be traced through the model to reveal the composition of costs and allow comparability of composition (e.g., how much internal labor is in this service versus that one?).
- **IT:** The middle layer includes a standard set of **towers and sub-towers**, such as servers, storage, voice and data networks, application development and support. These are common amongst nearly all companies and can be viewed as the resources or basic building blocks of **solutions**. While the tower definitions are standard, in practice they come in many forms. They may be sourced internally (i.e., via hardware, software, internal labor, and facilities & power), largely sourced externally (e.g., outside service, external labor), or as a hybrid of the two. Regardless, this view enables IT leaders to assess the cost-effectiveness of IT technology and service delivery.
- Also at the IT view for most firms are **technical solutions**, often delivered in the form of technical services such as infrastructure services and platform services.
- **Business:** At the highest layer, the taxonomy provides a standard but generic set of **solution** categories along with higher-layer **business units, business architecture, and customers and partners**. It is at this layer of the model where TBM Council workgroups have created industry-specific elements extending this standard taxonomy, following the same general principles present. This allows for more meaningful reporting and comparisons within covered industries, without losing the cross industry comparisons that are possible at the other layers via common apps, services, and capabilities.

Because the taxonomy enables IT and financial leaders to bucket infrastructure, applications, services, and products into standard categories, it enables discussion of these buckets in terms that make sense — and *matter* — to business leaders.

The following sections describe and define the finance, IT, and business layers of the TBM taxonomy.

### **Finance Layer: Cost Pool and Sub-Pools**

Cost pools are low-level categories that are often aligned easily to general ledger accounts. Not only do cost pools make cost allocations easier, they enhance reporting because they can be traced through the model to reveal the composition of costs. For example, application total cost of ownership (TCO) can be broken down into hardware, software, internal and external labor, outside services, facilities, and telecom costs.

The following graphic defines the cost pools and sub-pools in the TBM taxonomy.

COST POOLS (v4.0)								
	INTERNAL LABOR	EXTERNAL LABOR	OUTSIDE SERVICES	HARDWARE	SOFTWARE	FACILITIES & POWER	TELECOM	INTERNAL SERVICES
Operating Expenditures	Expense	Expense	Consulting	Expense	Expense	Expense	Expense	Other
			Managed Service Provider	Lease	Licensing	Lease	Lease	
			Cloud Service Provider	Maintenance & Support	Maintenance & Support	Maintenance & Support	Maintenance & Support	
				Depreciation & Amortization	Depreciation & Amortization	Depreciation & Amortization	Depreciation & Amortization	
CapEx	Capital	Capital	Capital	Capital	Capital	Capital	Capital	

**Figure 3: TBM Taxonomy Cost Pools and Sub-Pools**

The cost pools include both operating expenditures and capital expenditures. These two types of spending are clearly divided in the taxonomy and, as a best practice, should not be intermingled in a TBM model or its reporting. To clarify, their definitions are:

- **Operating Expenditure (OpEx):** A cost of continuing operations of the business such as payroll costs, utilities, insurance, taxes, lease payments and more. Includes the depreciation of tangible assets and the amortization of intangible assets over their useful lives. Does not include expenditures that are capitalized, including salaries and benefits associated with software development for applications that meet capitalization requirements or construction labor for new buildings or building enhancements. Shows up as expenses in the enterprise's income statement that's part of its annual and quarterly financial reports and therefore reduces the net income (or equivalent) of the enterprise.
- **Capital Expenditure (CapEx):** Funds used by a company to acquire, build, develop, enhance, or upgrade assets such as buildings, leaseholds, equipment, software, and data. Also made by companies to maintain or increase the scope of their operations. Must result in a new asset, improve the useful life of an existing asset, and/or significantly enhance an existing asset. Realized as an operating expense through depreciation (for tangible assets) or amortization (for intangible assets) over the accounting life of the asset. Does not reduce the net income of the enterprise.

Some enterprises may focus on cash-based reporting with a TBM model. This represents a challenge in that capital cash outlays often vary significantly from period to period and poorly represent a firm's overall financial results or position over time. Reporting based on cash outlays may appear "lumpy" and may be difficult to compare from period to period.

Cost Pool	Cost Sub-Pool	Description
<b>Operating Expenditures (OpEx)</b>		
<b>Internal Labor</b>	<b>Includes the full range of personnel costs and activities required for delivering or supporting the IT services – including direct operational activities, support and management and administration activities.</b>	
	Expense	Employee wages, benefits, expenses & occupancy.
<b>External Labor</b>	<b>Includes the costs of external personnel required for delivering or supporting the IT services – including direct operational activities, support, management, and administration activities.</b>	
	Expense	External contractor fees, travel, and expenses.
<b>Outside Services</b>	<b>Includes IT services purchased from external service providers including consulting services, managed services, and public cloud services. Specific examples of outside services include managed network services, cloud storage for end user backup, and externally provided email services.</b>	
	Consulting	External consulting project-based services.
	Managed Service Provider	External managed service providers.
	Cloud Service Provider	External public cloud service providers including IaaS, PaaS, and SaaS.
<b>Hardware</b>	<b>Includes all physical technology assets excluding property, office space or raised floor facilities. The range of assets varies by IT Resource Tower; examples include servers, PCs, storage arrays, network appliances, printers and so on. Where a device contains embedded software (firmware), for example in a network firewall, the cost should be reported as hardware even if the software can be upgraded for a separate fee.</b>	
	Expense	Hardware expense of non-capitalized purchases (e.g., spare parts, consumables, or equipment below capitalization threshold).
	Lease	Hardware lease expenditures (e.g., hardware purchased through a supplier or financial services leasing arrangement).
	Maintenance & Support	Hardware maintenance and support expenditures.
	Depreciation & Amortization	Hardware depreciation of capitalized purchases.



Cost Pool	Cost Sub-Pool	Description
<b>Software</b>	<b>Includes the licensing, maintenance and support costs for all software including operating system, middleware, databases, system management and administration tools, desktop applications and utilities and business applications. Software costs include enterprise or per instance licenses, client-access licenses, maintenance/update costs, customization fees.</b>	
	Expense	Software expense of non-capitalized software purchases.
	Licensing	Software license expenditures for the use of non-SaaS provided software. SaaS subscriptions belong under Outside Services > Cloud Service Providers.
	Maintenance & Support	Software maintenance and support expenditures.
	Depreciation & Amortization	Software depreciation of capitalized software license purchases & software development efforts.
<b>Facilities &amp; Power</b>	<b>Includes the floor space as well as the power, cooling, and other utilities costs, environmental control (fire suppression), power distribution, rack infrastructure, outside services and personnel costs related to managing the data center environment.</b>	
	Expense	Data center space, power, security, and other operating expenses (e.g., co-location facility services, electricity, water, etc.).
	Lease	Data center lease expenditures.
	Maintenance & Support	Data center maintenance & support expenditures.
	Depreciation & Amortization	Data center depreciation of facility build and leasehold improvements (e.g., raised floor investments, power/PDU infrastructure, and rack build-out).
<b>Telecom</b>	<b>Includes all telecommunications charges, including leased line, domestic and international voice (including mobile), MPLS, ISP and other charges. Telecom costs include the circuits and any associated usage fees for providing voice and/or data telecommunication services between data centers, office locations, the internet and any customer, supplier, or partner. This is typically transmission across the wide area network (WAN).</b>	
	Expense	Voice and data network connectivity expenses including circuit and usage expenditures.



Cost Pool	Cost Sub-Pool	Description
	Lease	Telecom lease expenditures.
	Maintenance & Support	Telecom maintenance & support expenditures.
	Depreciation & Amortization	Depreciation/amortization of any capitalized telecom expenditures; typically, this will show up under Hardware or Facilities depreciation/amortization.
<b>Other</b>	Other	Miscellaneous or non-standard expenses.
<b>Internal Services</b>	By Shared Service	Miscellaneous charges received from other internal shared services groups (e.g., HR service fees from the HR department). Real estate management fees for space and power should be included in the <i>Facilities and Power</i> cost pool.
<b>Capital Expenditures (CapEx)</b>		
<b>Internal Labor</b>	Capital	Capitalized labor (internal employees)
<b>External Labor</b>	Capital	Capitalized labor (external contractors)
<b>Hardware</b>	Capital	Hardware purchases above the capitalization threshold
<b>Software</b>	Capital	Perpetual software license purchases above the capitalization threshold
<b>Outside Services</b>	Capital	Capitalized service expenditures
<b>Facilities &amp; Power</b>	Capital	Purchased land and facilities and capitalized improvements
<b>Telecom</b>	Capital	Capitalized telecom expenditures

### IT Layer: Tower and Sub-Tower Definitions

Towers and sub-towers are the basic building blocks of solutions. Examples include compute (e.g., servers, Unix, mainframe), network, application (e.g., application development, application support and operations) and IT management. In actual practice, their equivalents are sometimes called domains or functions. Many IT shops have dedicated departments or cost centers for towers that are then delivered as shared resources for product and service owners.

Towers and sub-towers often reflect the direct costs of solution teams, while the consumed and indirect costs are included at the solution layer of the model. For example, the direct costs of applications are found in the application tower and sub-towers. These are expenditures such as application developers, support contracts, support staff directly assigned to an application, and the purchased software. However, consumed costs such as underlying servers and storage are found in their own towers and are only included in application costs at the solutions level of the model.

Below are the standard towers and sub-towers of the TBM taxonomy.

TOWERS (v4.0)										
DATA CENTER	COMPUTE	STORAGE	NETWORK	PLATFORM	OUTPUT	END USER	APPLICATION	DELIVERY	SECURITY & COMPLIANCE	IT MANAGEMENT
Enterprise Data Center	Servers <i>(Windows/Linux)</i>	Online Storage	LAN/WAN	Database	Central Print	Workspace	Application Development	IT Service Management	Security	IT Management & Strategic Planning
Other Facilities	Unix	Offline Storage	Voice	Middleware		Mobile Devices	Application Support & Operations	Operations Center	Compliance	Enterprise Architecture
	Midrange	Mainframe Online Storage	Transport	Mainframe Database		End User Software	Business Software	Program, Product & Project Management	Disaster Recovery	IT Finance
	Converged Infrastructure	Mainframe Offline Storage		Mainframe Middleware		Network Printers		Client Management		IT Vendor Management
	Mainframe			Container Orchestration		Conferencing & AV				
	High Performance Computing			Big Data		IT Help Desk				
						Deskside Support				

Figure 4: TBM Taxonomy Tower and Sub-Towers

The towers hierarchy is grouped by tower (e.g., data center, compute, storage, application), sub-tower (e.g., servers, Unix, midrange) and sub-tower element. Sub-tower elements are specific to the organization and are often used to represent mode of delivery, such as public cloud, private cloud, and physical. Sub-tower elements are important for many reporting purposes.

Hierarchy		Example
1. Tower	}	➤ Compute
2. Sub-Tower		➤ Servers
3. Sub-Tower Element	}	➤ Windows ➤ Linux

Figure 5: TBM Taxonomy Towers Hierarchy

The following table defines the IT towers and sub-towers in the TBM taxonomy.

Tower	Sub-Tower	Description
Data Center		<b>Purpose-built facilities to securely house computer equipment. Data Centers provide racks/cabinets &amp; cabling, clean &amp; redundant power, data connectivity, environmental controls including temperature, humidity and fire suppression, physical security, and the people to run and operate the facility and its infrastructure.</b>

Tower	Sub-Tower	Description
	Enterprise Data Center	Purpose-built data center facilities that house and protect critical IT equipment including the space, power, environment controls, racks, cabling and "smart hand" support.
	Other Facilities	Computer rooms and MDF/IDF/telco closets that house IT equipment in corporate headquarters, call centers or other general purpose office buildings.
Compute	<b>Both general and special-purpose devices and software that are programmed to carry out a set of arithmetic or logical operations. In essence, it provides the “brains” to process application and user requests. Compute includes a wide range of physical and virtual servers differentiated by platform and operating system. The Compute tower should include all direct hardware, software, labor, and outside service costs.</b>	
	Servers	Physical and virtual servers running a version of Microsoft's Windows Server or the Linux operating system; includes hardware, software, labor, and support services. Optional Level 3 categories include: Windows, Linux, and Public Cloud Compute.
	Unix	Servers running vendor-specific, proprietary Unix operating systems (e.g., IBM AIX, Sun Solaris, HP UX); includes hardware, software, labor, and support services.
	Midrange	Servers running IBM AS/400 platform including hardware, software, labor, and support services.
	Converged Infrastructure	Purpose-built appliances that provide compute, storage, and network capabilities in one box.
	Mainframe	Traditional mainframe computers and operations running legacy operating systems.

Tower	Sub-Tower	Description
	High Performance Computing (HPC)	The use of massive concurrent computing resources and parallel processing techniques for solving complex computational problems. HPC technology is applied in areas such as scientific and industrial research, product engineering and development, and complex business modeling, simulation, and analysis. HPC hardware and software technologies are specialized and optimized for massively parallel computing and processing vast amounts of data.
Storage	<b>Centralized data storage for application programs and code, databases, files, media, email, and many other forms of information. Excludes internal storage included with a typical server configuration or end-user device such as a laptop, desktop or mobile phone, or tablet.</b>	
	Online Storage	Central storage such as SAN, NAS and similar technologies for the distributed compute infrastructure; includes the equipment, software, and labor to run and operate. Optional Level 3 categories include: On-Premises, Public Cloud Storage.
	Offline Storage	Offline storage resources used for archive, backup & recovery to support data loss, data corruption, disaster recovery and compliance requirements of the distributed storage.
	Mainframe Online Storage	Mainframe attached storage arrays and the associated equipment, software, and labor to run and operate.
	Mainframe Offline Storage	Any storage resources used for archive, backup & recovery to support data loss, data corruption, disaster recovery and compliance requirements of the mainframe storage.
Network	<b>Data and voice equipment along with the transport methods to connect systems and people and to enable people to converse. Provides core connectivity within the enterprise data centers as well as connectivity to and access within office building and remote locations.</b>	

Tower	Sub-Tower	Description
	LAN/WAN	Physical and wireless local area network connecting equipment within the core data centers and connecting end users in office working areas to the organization's broader networks. Wide area network equipment, labor and support services directly connecting data centers, offices and third parties (excludes telecom and communication services). Optional Level 3 categories include: LAN, WAN.
	Voice	Voice resources which enable or distribute voice services through on premise equipment including PBX, VoIP, voicemail, and handsets (excludes telecom and communication services).
	Transport	<p>Data network circuits and associated access facilities and services; includes dedicated and virtual data networks and internet access. Also includes usage associated with mobility and other data transit based on usage billing. Voice network circuits and associated access facilities and services. Also includes usage associated with standard telephone calls and 800 number service.</p> <p>Both voice and data transport may include terrestrial and non-terrestrial (e.g., satellite) technologies.</p> <p>Optional Level 3 categories include: Data, Voice.</p>
<b>Platform</b>	<b>Includes distributed and mainframe databases and middleware systems as well as include DBMS software and tools, labor, and outside services.</b>	
	Database	Distributed database services focused on the physical database (versus the logical design) including DBAs, DBMS, tools, and operational support.
	Middleware	Distributed platform, application and system integration resources enabling cross application development, communications, and information sharing.
	Mainframe Database	Mainframe database services focused on the physical database (versus the logical design) including the DBAs, DBMS, tools, and operational support.
	Mainframe Middleware	Mainframe platform, application and system integration resources enabling cross application development, communications, and information sharing.

Tower	Sub-Tower	Description
	Container Orchestration	Tools and resources for managing the lifecycles of containers. Includes the control and automation of tasks such as provisioning and deployment of containers, maintaining availability, scaling up or removing containers to manage application loads, relocating containers, allocating resources for containers, and monitoring container and host health.
	Big Data	Systems and resources for integrating, managing and analyzing high volumes of low density, unstructured data that is received at high rates of velocity.
Output	<b>Central print services to provide high-volume printing of customer bills, checks, product documentation or other customer support materials. Includes additional post print processing support (e.g. fold, stuff, apply postage, bundle).</b>	
	Central Print	Central print services; often provided to support customer billing or customer documentation support processes.
End User	<b>End User includes end user computing devices and support for end users. The scope includes costs to build, manage and run end user computing devices for the enterprise and deliver centralized support to end users.</b>	
	Workspace	Client compute physical desktops, portable laptops, thin client machines, peripherals (including monitors, pointer devices and attached personal printers) used by individuals to perform work.
	Mobile Devices	Client compute tablets, smart phones (iOS, Android, Windows Mobile) and apps used by individuals to perform work.
	End User Software	Client related software used to author, create, collaborate, and share documents and other content. Examples include email, communications, messaging, word processing, spreadsheets, presentations, desktop publishing, graphics, and others. Optional Level 3 categories include Productivity; Communications; Collaboration.

Tower	Sub-Tower	Description
	Network Printers	Printers located on or near users' desktops. Examples include network connected personal printers, ink-jet printers, laser printers, departmental or copy-room printers. Only include network connected printers. Do not include printers connected to an end user computer.
	Conferencing & AV	Audio and video conferencing equipment typically used in conference rooms and dedicated telepresence rooms to enable workforce communications.
	IT Help Desk	Centralized Tier 1 help desk resources that handle user requests, answer questions, and resolve issues.
	Deskside Support	Local support resources that provide on-site support for moves, adds, changes and hands on issue resolution.
<b>Application</b>	<b>Software application development, testing, release, support, operations, and licenses.</b>	
	Application Development	Resources involved with the analysis, design, development, code, test, and release packaging services associated with application development projects. Optional Level 3 categories include: Development, QA
	Application Support & Operations	The operations, support, fix, and minor enhancements associated with existing applications.
	Business Software	Software expenditures including licensing, maintenance and support related to off-the-shelf software purchases.
<b>Delivery</b>	<b>Monitoring, support, management, and IT operations for the enterprise, including the IT Service Management (ITSM) functions.</b>	
	IT Service Management	Resources involved with the incident, problem, and change management activities as part of the IT Service Management process (excludes the Tier 1 help desk).
	Program, Product & Project Management	Resources involved with managing and supporting IT related projects and/or continuous product development (e.g. Agile) across business and IT-driven initiatives.



Tower	Sub-Tower	Description
	Client Management	Resources or “account managers” aligned with the lines of business to understand business needs, communicate IT products, services, and status of IT projects.
	Operations Center	Centralized IT Operations Center resources including monitoring and intervention e.g., NOC (network operations center), GOC (global operations center).
<b>Security &amp; Compliance</b>	<b>IT security compliance and disaster recovery functions that define, establish, enforce, and measure security, compliance, and disaster recovery readiness for the enterprise.</b>	
	Security	<p>Resources for setting policy, establishing process and means, measuring compliance and responding to security breaches and providing real-time operational security such as vulnerability scanning, managing firewalls, intrusion prevention systems, and security information and event management (SIEM). Optional Level 3 categories include: Cyber Security.</p> <p>NOTE: The implementation actions defined by security policies (e.g. mitigating security breaches by applying patches) are not included in the Security sub-tower and are part of the respective towers where the actions take place (e.g. Compute, Storage, Network).</p>
	Compliance	<p>Resources for setting policy, establishing controls, and measuring compliance to relevant legal and compliance requirements. Optional Level 3 categories include: Data Privacy.</p> <p>NOTE: The implementation actions defined by Compliance policy (e.g. implementing controls like multi-factor authentication) are not included in the Compliance sub-tower and are part of the respective towers where the actions take place (e.g. Compute, Storage, Network, Application, End User).</p>

Tower	Sub-Tower	Description
	Disaster Recovery	Resources for setting disaster recovery (DR) policy, establishing processes and means, dedicated failover facilities, and performing DR testing.  NOTE: DR designated equipment is included directly in its own sub-tower (e.g., extra servers for DR are included in Compute tower, etc.). Furthermore, The implementation actions defined by DR policy (e.g. building DR servers) are not included in the Disaster Recovery sub-tower and are part of the respective towers where the actions take place (e.g. Compute, Storage, Network).
IT Management	<b>Overall management, strategy, and planning of enterprise IT.</b>	
	IT Management & Strategic Planning	Management and administration resources; typically includes CIO, senior IT leaders and administrative support including centralized IT strategy and planning.
	Enterprise Architecture	Resources for specifying and managing business, information, application, and technical architecture to drive standardization, integration, and efficiency among business technology solutions.
	IT Finance	Resources involved in the planning, budgeting, spend management and chargeback of IT expenditures and the costing of IT products and services.
	IT Vendor Management	Resources involved in the selection, contract management, oversight, performance management and general delivery of services by 3rd party vendors and external service providers.

### Business Layer: Solutions Definitions

Solutions are what IT delivers to end consumers: business leaders, end users and often external parties such as customers and partners. Solutions are delivered in three possible classes:

- **Applications:** Applications are software tools used by IT, the lines of business, external business customers and/or external business partners to complete a task, execute a process, or deliver an outcome. Sometimes called apps, they are often the primary underpinning technology used to deliver a service to the business.
- **Services:** Services are work performed on behalf of a business or technology consumer using a combination of labor, software-based automation, and/or third-party providers (e.g., cloud services) to execute a process or otherwise facilitate a business or technical outcome. Services

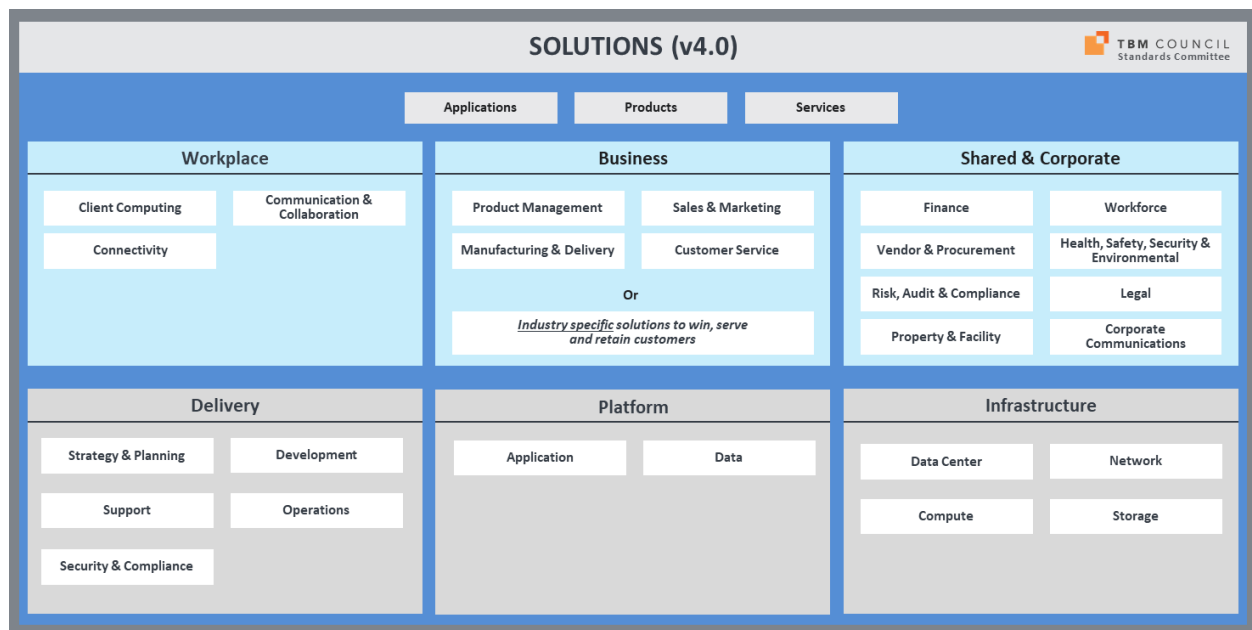
should be well defined, with an agreed upon level of service, risk, and cost. They should be advertised to the appropriate consumers using a service catalog or similar mechanism. They may be priced internally so that consumers understand what they will be charged for consumption. Services are often defined in the context of delivering value to business partners and consumers internal to the enterprise.

- **Products:** Products are services. The term product is often used where an organization has adopted agile development methodologies or has otherwise made a “project-to-product” shift in the way they develop, enhance, and deliver software and software-enabled business capabilities. Products are often defined in the context of customers and partners that are external to the business entity itself and products often directly drive revenue, serve customers, or satisfy the entity’s mission.

There may be portfolios defined for each class of solution. An application portfolio may be structured using a governance scheme such as Gartner’s TIME (tolerate, invest, migrate, eliminate) model. A service portfolio includes the service pipeline (those in development), service catalog (those available to be provisioned and consumed) and retired service catalog (those no longer available for consumption or are in the process of being retired). The products portfolio may be governed according to a lean portfolio management model and aligned to investment horizons (e.g., evaluating, emerging, investing, extracting, and retiring). What’s common among these portfolio models is that each recognizes the lifecycle of their components and that costs are incurred at each stage of the lifecycle.

Regardless of class, your solution definitions should convey business value to business leaders, users, or other stakeholders. Furthermore, organizations often employ all these terms when describing their solutions. For example, you may have both IT services that are provided to internal consumers for things like infrastructure and platform services or even corporate applications such as finance and workforce systems as well as products such as your mobile app used by your customers to browse and order your products and services.

Throughout this document, the term Solutions is used rather than calling out a distinction between Applications, Products or Services. The following graphic represents the service hierarchy including service types, services categories and services defined in the TBM taxonomy.



**Figure 6: TBM Taxonomy Business Layer (Solutions View)**

The solution hierarchy is grouped by type (e.g., workplace, business, platform, infrastructure), category (e.g., client computing, communication & collaboration) and name. Solution offerings are specific to the organization and are included in the TBM taxonomy as representative examples. Offerings often include different service level packages or product packages, whereby a similar service or product is offered in different configurations representing different service levels and price points.

Hierarchy		Example
1. Type	} Standardized TBM Taxonomy	➤ Infrastructure
2. Category		➤ Compute
3. Name		➤ Virtual Compute & Containers
4. Offering	} Organization-specific modifications	➤ Xen, OpenStack, VMware (on-prem) ➤ AWS/Azure/GCP offerings

**Figure 7: TBM Taxonomy Solutions Hierarchy**

The six Solution Types defined in the standard TBM taxonomy include **Workplace, Business, Shared & Corporate, Delivery, Platform, and Infrastructure**. Many solutions can be delivered using traditional delivery models (e.g., on premise data centers) or via different cloud delivery models (i.e., public cloud, private cloud, hybrid cloud). These are not specifically reflected in the taxonomy categories below as they can apply to many types of services. Furthermore, the standard cloud service models (i.e., Infrastructure-as-a-Service, Platform-as-a-Service, and Software-as-a-Service) are not included specifically. However, TBM models should incorporate those as classifications (e.g., labels or metadata) of the service offerings where needed for reporting and decision making.

The following sections and tables define the solutions in the standard TBM taxonomy.

## Delivery

**Delivery** solutions are those to build, deploy, support, and operate the Workplace solutions, Business solutions, and Shared & Corporate solutions. Development services create and change business-facing services, typically through projects. Additional support and operations services assist users and ensure the availability of the business-facing services.

Category	Name	Description
<b>Strategy &amp; Planning</b>	<b>Enable the CIO and IT leadership team to efficiently plan and manage the enterprise technology environment. Supported activities include planning, architecture, consulting, innovation and R&amp;D, project and agile management, and vendor management. Many of the ITSM strategy services are included in this service category.</b>	
	Enterprise Architecture	Guides organizations through the business, information, process, and technology changes necessary to execute their business and IT strategies.
	Business Solution Consulting	Helps the enterprise improve their performance, primarily through the analysis of existing business problems and development of plans for improvement. This includes business relationship management, demand management, business process analysis as well as technology selection.
	Technology Business Management	Enables the disciplines and value conversations for improving the business outcomes enabled by the technology portfolio. Enables technology leaders and their business partners to collaborate on business-aligned decisions. Includes IT management, IT finance and costing, IT billing, business value, metrics, benchmarking, service portfolio management, service catalog management, service level management and availability management.
	Innovation & Ideation	The investment, development, and incubation of new technologies to create new or better solutions which meet unarticulated or existing market needs. Includes new technology solutions and new product incubation services.
	IT Vendor Management	The management of technology suppliers who provide, deliver and support technology products and services. Includes services across the life cycle of a vendor including selection, negotiation, contracting, procurement, maintenance and subscription renewals, and performance management.

Category	Name	Description
	Program, Product & Project Management	<p>The process of managing software development-focused projects, programs, and products with the intention of improving an organization's performance.</p> <p>NOTE: Product Management refers to a more collaborative and continuous planning, prioritization, and delivery process (e.g., Agile methodologies) to provide frequent releases of small packages of new functionality in an iterative approach. Project Management is a traditional method of discrete planning, budgeting, and execution of projects to deliver new capabilities, enhance existing capabilities or retire applications or services. Project Management initiates, plans, executes, controls, and closes the work of a team to achieve specific goals and meet specific success criteria.</p>
Development	<b>Plan, design, build, test and release new solutions.</b>	
	Design & Development	Provides the planning, design, programming, documenting, testing, and fixing involved in creating and maintaining a software product.
	System Integration	Links together different computing systems and software applications physically or functionally, to act as a coordinated whole. This can be accomplished across systems that reside within the enterprise's data centers as well as with SaaS services that reside in the provider's facilities.
	Modernization & Migration	Provides the planning, design, and architecture for moving from older, often legacy systems and platforms to newer, more modern systems and platforms. Includes the migration of data, including user accounts, user data, configuration data and other datasets needed for operations in the new environment.
	Testing	Executes programs or applications with the intent of finding errors or other defects. The investigations are conducted to provide stakeholders with information about the quality of the product or service and allow the business to understand the risks of software implementation. Testing may take multiple forms including functional, system, integration, performance, and usability.
Operations	<b>Monitor, support, manage, and run the enterprise technology systems for the enterprise. Typically provided behind the scenes and not directly user-facing.</b>	

Category	Name	Description
	Deployment & Administration	Includes release management and software distribution to deploy new and/or the most recent software version to the host servers or client computing devices. Also includes ongoing operating system (OS) support and patch management.
	IT Service Management	Provides the incident, problem, and change management capabilities necessary for IT to plan, deliver, operate, and control the IT services offered to its customers.  Software tools and services for assessing, recording, and managing asset configurations, such as server settings or network router tables.
	Capacity Management	Ensures IT resources are right-sized to meet current and future business requirements in a cost-effective manner. Considers the expected demand from the business or consumer along with the availability and performance of existing capacity and projects future requirements. Capacity management occurs across data center, compute, storage, network, and other IT resources.
	Event Management	Monitors resources and applications. Records API calls and delivers logs and insights. Provides log data consolidation, reporting and analysis to enable IT administrators and security personnel to understand asset utilization, user logins, and information access.
	Scheduling	Executes the tasks required to operate an IT solution and using software tools that run batch or online tasks at specific times of the day, week, month, or year.
Support	<b>Support the end user community with training, application support, service desk and central print services.</b>	
	Application Support	Provides the ongoing operational activities required to keep the application or service up and running, provide Tier 2 and Tier 3 technical support to more complex or difficulty user questions and requests. May also include minor development and validation of smaller application enhancements (e.g., minor changes, new reports).



Category	Name	Description
	Central Print	Provides high-volume and advanced printing for invoices, product literature or other complex documents for mass distribution. May also include folding, envelope stuffing, postage and bundling to expedite distribution.
	IT Training	Provides educational services to the organization's users on how to access and effectively use the organization's business application services, as well as common productivity software and tools.
	Service Desk	Provides a single point of contact to meet the support needs of users and the IT organization. Provides end users with information and support related to IT products and services, usually to troubleshoot problems or provide guidance about products such as computers, electronic equipment, or software. Help desk support may be delivered through various channels such as phone, website, instant messaging, or email. Additional service delivery offerings include IT knowledge management, request fulfillment, desk-side and "tech bar" service offerings.
<b>Security &amp; Compliance</b>	<b>Ensure the integrity, protection and proper use of the enterprises technology systems and data.</b>	
	Identity & Access Management	Sets policy, business processes, establishes controls, and provide technologies to facilitate the management of digital identities by ensuring individuals have the appropriate access to necessary systems at the right times. Specific areas include authentication, identity management and identity governance and administration.  Specific areas included: Authentication/Authorization, Identity Management, Identity Governance & Administration, Privileged Access Management, and Certificate Management.
	Security Awareness	Sets policy, procedures and provides corporate knowledge training to members of an organization to promote an understanding for all individuals regarding the protection of an organizations physical and digital assets.  Specific areas included: Security Training, Security Advisory, and Security Policies and procedures.

Category	Name	Description
	Cyber Security & Incident Response	Provides policies, procedures, and technologies to recognize existing and emerging threats as well as determine associated risk to ensure the organization has the appropriate defense and responses to each incident. Specific areas included: Cyber Security Monitoring and Security Incident Response.
	Threat & Vulnerability Management	Ensures an organization's applications and infrastructure vulnerabilities are proactively identified, classified, and corrected or mitigated to ensure they are not exploited by unauthorized individuals or parties. Specific areas included: Application Vulnerability Management, Infrastructure Vulnerability Management, and Network / Endpoint Security.
	Data Privacy & Security	Ensures corporate and user data is not used or accessed by unauthorized individuals or entities by ensuring data and identities are classified appropriately, the correct controls are in place to prevent data loss and data is appropriately secured. Specific areas included: Data Classification & Identification, Data Loss Prevention, Data Encryption, Data Access, and Database Security.
	Governance, Risk & Compliance	Provides strategy, policies, and processes for managing an overall governance, enterprise risk management and compliance with regulations, with regards to IT. Provides structured approach for aligning IT with business goals and objectives, while managing risk and meeting compliance requirements.
	Business Continuity & Disaster Recovery	Ensures the continuous operation of the enterprise. Includes business impact assessments, business resiliency plans, disaster recovery capabilities and the associated exercise, testing, training, and awareness to support people, process, and technology recoveries in case of an incident.

## Infrastructure

**Infrastructure** solutions include the core infrastructure — facilities, compute, storage, and network services — that are required to deliver any technology automation. Typically, these are not directly consumed by users. However, for some IT operating models, a shared “infrastructure and operations group” may directly provide these Infrastructure Services to their customers.

Category	Name	Description
<b>Compute</b>	<b>Provide the physical and virtual computing systems that run business applications, software tools and system services. Can be dedicated or on-demand and may be provided on-premises or through external managed services or public cloud offerings.</b>	
	Compute on Demand	Transient compute services that are executed automatically, either on a schedule or triggered by a predefined event or set of events.
	Mainframe	Transactional and batch-oriented compute services supported by a mainframe infrastructure.
	Physical Compute	Variety of compute configurations comprised of physical servers. These are typically distributed compute services based on the Windows, Linux, or Unix operating systems for pre-defined configurations of memory, CPU, and storage. Standard operational support includes security hardening, backup, updates, patches, and centralized monitoring.
	Virtual Compute & Containers	Variety of compute configurations delivered through the virtualization of physical compute resources. May include on-demand provisioning and de-provisioning based on user interaction or the performance of the application itself. These virtual instances are typically running Windows or Linux operating systems and have pre-defined configurations of virtually allocated memory, CPU, and storage. Standard operational support includes security hardening, back-up, updates and patches and centralized monitoring.
<b>Data Center</b>	<b>Provide a secure and controlled environment for housing compute, storage, network, and other technology equipment.</b>	
	Enterprise Data Center	Purpose-built facilities to securely house computer equipment providing physical security, clean and redundant power, data connectivity and environmental controls – temperature, humidity, fire suppression. Includes data centers owned and operated by the enterprise, as well as co-location or point-of-presence services operated by other service providers. Additional services may include shipping and receiving, assembly, rack and stack and maintenance.
	Other Data Center	Other data center services that may be delivered through dedicated secure rooms or telecom closets with a facility.

Category	Name	Description
Network	<b>Provide the voice and data network and supporting services such as load balancing, domain services, virtual private network, and the internet to enable communications within and outside the enterprise.</b>	
	Domain Services	Lookup capabilities to convert domain names (e.g., www.acme.com) into the associated IP address to enable communication between hosts.
	Internet	Telecommunications using the public internet to enable communications across the organization including its data centers, office buildings, remote locations, partners, and service providers. Virtual Private Networks may be created to limit access and provide security.
	Load Balancing	Optimizes incoming application/workload requests through load balancing and traffic management to deliver high availability and network performance to applications.
	Virtual Private Network	Offers a secure method to authenticate users and enable access to corporate systems and information. May also isolate and secure environments in the data center across physical and virtual machines and applications.
	Data Network	A selection of network connection offerings that enable direct data communications across the organization including its data centers, office buildings, remote locations as well as partners and service providers (including public cloud service providers) without traversing the public internet. Typically provides a greater level of performance, security, and control. The available service offerings may include terrestrial and non-terrestrial (e.g., satellite) technologies as well as field networks or special-use networks.
	Voice Network	Voice circuits to deliver "plain old telephone service" and other advanced features including 800-services, automatic call distribution, voicemail and more. May include terrestrial and non-terrestrial (e.g., satellite) voice communication technologies.
Storage	<b>Persist information, data, files, and other object types ranging from real-time, high-performance data storage to long-term archive storage. Different offerings also provide recovery point objectives to meet the business needs of an application based on a business impact assessment.</b>	

Category	Name	Description
	File & Object Storage	Secure and durable object storage where an object can be unstructured data such as documents and media files or structured data like tables.
	Backup & Archive	Secure, durable, and lower-cost storage service offerings for data backup and archiving. May include disk backup, tape backup, optical backup, and off-site storage services.
	Networked Storage	Provides a pool of storage to a server for the purposes of hosting data and applications, or to a virtualization environment for the purposes of hosting servers. Networked Storage services enable redundancy, ease of management, rapid move/add/change/delete capabilities, and economies of scale. Storage array network (SAN), network attached storage (NAS) and solid state drives (SSD) storage are example technologies.
	Distributed Storage (CDN)	Stores and serves high-bandwidth content at the edge network to reduce latency and improve application performance.

## Platform

**Platform** solutions include the application infrastructure (database, middleware, etc.) that enables business-facing applications and services. Typically, these are not directly consumed by users. They are components required by the end user, business application and shared application services (see below for the latter two types). However, for some IT operating models, the shared “infrastructure and operations group” may directly provide these Platform Services to their customers.

Category	Name	Description
<b>Application</b>	<b>Provide a range of application-based services that run on top of the compute platform to enable specific business applications.</b>	
	Application Hosting	Fully managed application and web hosting services including the general computing server, database server, web, and application server services. Includes standalone Web Service and App Service platform services.
	Development Platform	Providing an environment and toolset for the efficient development, integration, and testing of applications or application services, including microservices. May include an integrated development environment (IDE) for source code editing, version control, build automation and debugging. May include low-code development platforms to support less

Category	Name	Description
		technical developers to create working software or software features.
	Foundation Platform	Includes the core foundation capabilities provided by large ERP systems as well as the “platform as a service” provided by many SaaS applications. ERP foundation platforms (like SAP R/3 Basis or SAP S/4 HANA) are the technical underpinning that enables the ERP application to function. Typically consists of programs and tools that support the interoperability and portability of ERP applications across systems and databases. Many SaaS applications also provide a platform capability to enable integration and development of additional applications or modules that complement the primary application suite. Examples include Salesforce’s Force.com product, ServiceNow’s Now Platform and Appian.
	Message Bus & Integration	Allows different systems to communicate through a shared set of interfaces. Includes event streaming to multiple applications, subscribe and publish notification service for enterprise and mobile messaging, task completion alerts and threshold alerts.
	Content Management	Supports the creation and modification of digital content from supporting multiple users in a collaborative environment. Includes records management and digital asset management.
	Search	Provides keyword search functions for web and mobile applications.
	Streaming	Delivers live and on-demand media streams including audio and video.
	Decision Intelligence & Automation	Allows software and devices to utilizing large datasets to become more accurate in predicting outcomes without being explicitly programmed. Natural language processing, facial recognition, object recognition, intelligent personal assistants and robotic process automation are offerings that utilize these technologies to augment the human thought process.
<b>Data</b>	<b>Provide a variety of data-related services that capture and retrieve transactional activities in a database, store the data in a centralized data warehouse, provide analytical and visualization tools to explore the data and caching technology to distribute information to the edge to improve performance and response times.</b>	

Category	Name	Description
	Database	<p>A relational database service for applications to access transactional data.</p> <p>A No-SQL database service for applications that need consistent, low-latency scaled out document/key-value store models.</p>
	Distributed Cache	An in-memory cache service that helps improve web application performance.
	Data Management	A set of data analytic services that automate the movement and transformation of data including extract, transform and load (ETL) processes, data quality management and master data management.
	Data Warehouse	Provides a central repository or set of repositories of integrated data from one or more disparate sources. Stores current and historical data and are used for creating analytical reports for knowledge workers throughout the enterprise.
	Data Analytics & Visualizations	Provides software services and BI tools to analyze and communicate information clearly and efficiently to users via graphs, charts and other visual representations including geospatial analytics. Also includes real-time streaming analysis of data by providing low latency, highly available, scalable complex event processing over streaming data in the cloud.

## Workplace

**Workplace** solutions include the client computing devices, software, and connectivity to enable the workforce to access business applications; to communicate with other employees, partners, and customers; and to create content using productivity software. These are always “user-facing” solutions.

Category	Name	Description
Client Computing	Provide physical and virtual devices and associated software and connectivity that enable users to interact with the enterprise’s technology systems and third-party systems.	



Category	Name	Description
	Bring Your Own Device	Enables users to bring in their own personal computing devices (laptop, tablet, smartphone) and connect to the organization's corporate network in accordance with the organization's security and other standards. Standard support may include connectivity to access business applications, information, and other technology resources, as well as other security, back-up, updates and patches, remote access, and centralized service desk.
	Computer	A selection of IT-provided computers, workstations, laptop, or tablet configurations. Each type may be ordered with additional memory and storage. Standard corporate image will be loaded on each device. Requestor may order optional software through the Productivity services. Includes network and remote network access. Standard support package including security, back-up, antivirus, updates and patches, remote access, centralized service desk.
	Mobile	A selection of IT-provided smartphone configurations. Includes network access. Standard support package including security, encryption, back-up, updates and patches, remote access, and centralized service desk.
	Virtual Client	The virtualization of desktop and application software enables PC and tablet functionality to be separate from the physical device used to access those functions – whether a fixed or mobile workspace environment. Virtual Workspaces may have different, pre-configured packages of software application and enable access from multiple devices. Advanced desktop management provides higher levels of flexibility, security, backup, and disaster recover capabilities.
Communication & Collaboration	<b>Allow end users to communicate with other people via email or chat, to collaborate through shared workspaces, and to create and print content such as documents, presentations, videos, and other forms.</b>	
	Collaboration	A selection of collaborative software offerings that enable people to work together to achieve common goals across locations and time zones. Enables the sharing of documents and deliverables across distributed users.

Category	Name	Description
	Communication	Enables users to communicate with other users, partners, or customers. This communication may occur via electronic mail, calendaring, messaging, social communities, audio conferencing, video conferencing and voice calls. More robust, unified messaging service offerings provide file transfer, file sync and share, embedded images, clickable hyperlinks, Voice over IP (VoIP) and video chat.
	Print	A variety of peripheral devices that enable the distribution of information. Specialized devices may offer one or all these services - print, copy, and fax. Printing output creates a “hard copy” of digital documents, presentations, spreadsheets, etc. Scan inputs a hardcopy document into a digital format for a computer to use.
	Productivity	End user application software enabling the creation and distribution of information in a variety of formats including: documents, presentations, spreadsheet, modeling tools, project management, databases, desktop publishing, web design, graphics and image editing, audio/video editing and CD/DVD recording.
<b>Connectivity</b>	<b>Provide users with access to the enterprise’s technology systems. This includes wired and wireless access while on premise and remote access while away from the enterprise.</b>	
	Network Access	A set of connection services which enable users to access a private or public network from their client computing device. Once connected, as part of the network they can access business applications and information; and can communicate and collaborate with other users on the network. Often, this may be bundled with a Client Computing service.
	Remote Access	A set of connection services which enable users to access the organization’s internal private network from their client computing device when away from the corporate facilities. Once connected, the user can access the organization’s business applications and information. Often, this may be bundled with a Client Computing service.

## Business

**Business** solutions are delivered by IT to enable product and external customer focused business capabilities that enable the business to win, serve, and retain customers. The TBM taxonomy includes a generic set of capabilities that most enterprises provide including Product Management, Sales &

Marketing, Manufacturing & Delivery and Customer Service. Additional technology extensions may be developed which provide specific business application services unique to an industry. Industry-specific extensions that have been endorsed are published in a separate addendum.

Category	Name	Description
<b>Product Management</b>	Product Development	Enables product design and development including innovation management, computer aided design, simulation visualization, enterprise feedback, and social product feedback and crowdsourcing.
	Product Planning	Enables product life-cycle management including requirements management, product data management, change and configuration management, manufacturing process management, quality management, product analytics, and risk and compliance management.
<b>Sales &amp; Marketing</b>	Customer Analytics	Enables customer and product analytics and voice of the customer input.
	Customer Sales	Enables B2C commerce platforms, B2B commerce platforms, product configurations, POS platforms and payments.
	Marketing & Advertising	Enables marketing automation, online marketing, mobile marketing, and ad technologies.
	Sales Force & Channel Management	Enables sales force automation, sales enablement and training, partner relationship management and pricing management.
<b>Manufacturing &amp; Delivery</b>	Inventory & Warehousing	Enables inventory management, supply chain scheduling, warehouse management and returns management.
	Manufacturing	Enables prototyping, production scheduling, fabrication and manufacturing of tangible products, equipment maintenance, software development of digital products and quality testing.
	Product Delivery	Enables the logistics and delivery of physical products including supply-demand matching, fleet/ transportation management, tracking systems and GIS/routing optimization.
	Service Delivery	Enables the delivery of nontangible services including resource scheduling, engagement management, professional services, education, and service quality.

Category	Name	Description
	Resource Planning	Enables demand forecasting, demand planning, and partner sourcing.
<b>Customer Service</b>	Order Management	Enables order management, contract management, pricing optimization, billing, and payment processing.
	Customer Care	Enables multi-channel customer communication (ACD, CTI, IVR, speech recognition, predictive dialing, email response, change, co-browse), knowledge management, customer service workforce automation, and field service.

### Shared & Corporate

**Shared & Corporate** solutions are delivered by IT to enable internally focused corporate services which automate and support the organization's internal operations. These are often referred to as business support or shared services which enable the core operating capabilities of an enterprise or organization (e.g. Finance, Human Resources, Legal, etc.).

Category	Name	Description
<b>Finance</b>	<b>Enable the financial management of the enterprise.</b>	
	Planning & Management Accounting	Enables the strategic allocation of funds in support of established future and current business goals, including planning, budgeting and forecasting, ad-hoc analysis and reporting to inform and guide leadership in the ongoing determination and understanding of business strategy related financial goals, incentives, progress and impact. Specific service offerings may include: planning/budgeting/forecasting, cost accounting & control, cost management and financial performance.
	Revenue Accounting	Enables the comparison of revenue targets to actual achievement. Supervisory responsibility over all transactions and entries (receivables, payables, intercompany movements) that pass into the final periodic accounts of an entity, and support int./ext. analysis and communication of profit on a monthly, quarterly, or annual basis. (Determination of whether this includes the actual lifecycle processing of payments due from customers, is based on entity type, sector, and scale - see Accounts Receivable). Specific service offerings may include: customer credit, invoicing, accounts receivable, and collections.

Category	Name	Description
	Accounts Receivable	Enables the complete lifecycle of invoicing and receipts processing to ensure the business is paid by its customers, including Invoicing, payment receipt, processing, error handling, PO setup (as a supplier) reconciliation, reporting and collections.
	General Accounting & Reporting	Enables financial statement preparation (balance sheet, statements of income, cash flows, shareholders' equity etc.) in accordance with accepted accounting principles. Also includes responsibilities to classify, determine, analyze, interpret, consolidate, and communicate financial information to support up-to-date business decisions for better management & control, and regulatory/legislative compliance (in conjunction with Management Accounting) of costs, assets & equipment. In certain contexts, can include grant activities related to the funding and reporting of non-repayable funds provided to corporate, academic or agency entities. Specific service offerings may include: general accounting, fixed asset accounting, grant management, and financial reporting including regulatory and compliance reporting.
	Project Accounting	Enables managing accounts for large investment projects, often requiring significant capital outlays over multiple years. Managing investment against major milestone, product, or activity expenditures during a project, supporting project, portfolio, and program leadership with insight to understand their progress & efficiency toward target. Specific service offerings may include: capital planning, capital project accounting & analysis.
	Payroll & Time Reporting	Enables the handling of reported time, and the ongoing processing and payment of wages, salaries, and benefits, including quality assurance and error handling (but excl. benefits management). Also inclusive of time keeping, and the capture, aggregation, measurement, validation, and transmission of staff time. Specific service offerings may include: time reporting payroll, and payroll taxes.
	Accounts Payables & Expense Reimbursement	Enables the processing of payments due to suppliers, lenders, and other operating expenses, including those related to employees. Supports the development of policies and procedures around processing of accounts payable & employee expense reimbursement across the entity. This process often includes the receipt & review of invoices and reimbursement requests, payment processing, PO & payment issuance via check, wire transfer or other forms of payment

Category	Name	Description
		transfer. Specific service offerings may include: accounts payable, expense reimbursement, corporate credit cards.
	Treasury	Enables the management and optimization of daily liquidity, excess cash, and financial risk via investment activities (e.g. hedging, debt instrument purchase/sale, overnight and short term institutional investments, and funds transfers) focused on supporting ongoing business operations across the entire company, or regionally. Also includes the governance, control, assessment, and risk management activities required to ensure effectiveness. Specific service offerings may include: Treasury policies & procedures, cash management, in-house bank accounts, debt & investment, hedge transactions.
	Tax	Enables managing the organization's financial accounts specific to the world-wide management, optimization and payment of tax, and related evidence & documentation. This includes, planning, estimations & analysis of the tax position and impact, related transfer pricing strategies, tax return preparation, timely payment, and required authorizations. It also encompasses the orchestration of record retention in support of regulatory requirements and internal policy. Specific service offerings may include: tax strategy, tax planning & analysis, transfer pricing, and tax processing.
Workforce	<b>Enables management of the employees and contractors of the business or organization. In the broadest terms, it includes the activities to select, recruit, develop, reward, retain, counsel, and retire employees. Includes the management of employee information including workforce analytics.</b>	
	Recruitment	Enables determining and handling employee recruiting, sourcing, and selection, including requirements gathering; advertising; order creation; agency placement; application receipt, review, filtering; candidate & agency contact; applicant screening & investigations; offering & negotiations; records management. Can also include prior employees.
	Employee Transitions & Separation	Enables managing employee (and less commonly vendor staff) transitions of a vertical, horizontal, geographic, mission, or structural nature, including management & administration of programs for: foreign assignment, reassignment, re-deployment, promotion/demotion, separation, outplacement, leave of absence, repatriation, and retirement.

Category	Name	Description
	Workforce Management	Enables managing employee focused processes and information for workforce analysis & reporting; inquiry & resolution; employment verification; HR data / information; refreshing / updating indicators of employee retention and motivation, working with time & attendance systems (excluding items like actual survey or assessment delivery).
	Performance, Retention & Rewards Management	Enables creating frameworks for, and performing the management & administration of, programs for rewarding, motivating, and recognizing employees with the objective of retaining them and enabling career path growth (incl. distributions).
	Benefits Management	Enables the management, administration & processing of employee benefits, benefit plans, staff enrollment, claims, funding & entitlements; and includes analysis and planning, provider selection, employee communications & education, and regulatory compliance.
	Policy Management	Enables creating strategies, standards, and supporting policy, for purposes of setting and managing standards of conduct, corporate and legal HR compliance and breaches, skills and competencies, and resource Performance, Rewards & Transitions. Includes planning, supervising and implementation of workforce policy inclusive of modeling, analysis, and reporting.
	Employee Development	Enables employees (and less commonly contractors/providers), with skills, knowledge, and/or capability development, and education. This extends to new hire onboarding / orientation; technical or business skills training; safety, security, conduct, ethics & compliance training; procedural and other legal or organizational aspects. (Excludes education as part of employee Transitions). Also includes program & course creation, delivery, management, and reporting.
	Employee Communications & Relations	Enables crafting and execution of employee communications plans, its supporting messages, distribution channels and formats, to initiate interaction for: promoting horizontal or vertical employee engagement across the organization; creating awareness (e.g. of new policy, practices, or other internal / external events or actions of relevance); assessing satisfaction and engagement levels and drivers.



Category	Name	Description
<b>Vendor &amp; Procurement</b>	<b>Enable the procurement of goods and services required for a business to enable its activity including development of sourcing strategies, vendor selection, contract negotiations, ordering of materials &amp; services and ongoing vendor and contract management.</b>	
	Sourcing and Procurement	Enables creating strategies, standards, and processes for procuring goods and services from approved sources. Establishes a procurement process that describes the approach, policy, and guidelines for purchasing activities including evaluation & sourcing of suppliers. Creates sourcing relationships to continuously improve price performance. Re-evaluates and assesses of purchasing activities, standards, pricing and impact across the value chain and supplier landscape.
	Supplier Management	Enables evaluating supplier options to select the most effective, efficient, and low risk suppliers. Validates selected suppliers. Use internal/external data, analysis, and feedback to rank and manage strategic and non-strategic suppliers to optimize vendor spend and output, including the ongoing management and reporting of supplier performance (e.g. output quality, delivery cycle times). May also include survey and research activities.
	Contract Management	Enables the intake and management of vendor contracts. Keeping contracts current with routine evaluation. Ensure proactive dissemination of knowledge to key stakeholders regarding renewals, expirations, price changes, volume thresholds or other contract aspects, to provide adequate lead times and avoid lapses in service, or surprise / unplanned expenditures.
<b>Health, Safety, Security &amp; Environmental</b>	<b>Enables management to provide a safe environment for the organization, environment and local residents including policy, oversight, healthcare, occupational safety, and threat assessment.</b>	
	Policy & Governance	Enables determining the desired outcomes, obligations, conduct, and impacts related to personal and environmental health and safety. Creating and implementing the HSSE program. Train and educate employees of the on the HSSE program. Oversee and manage the HSSE program.
	Oversight & Enforcement	Enables monitoring and oversight of policy adherence and enforcement activities (including investigations) related to

Category	Name	Description
		environmental, health and safety standards, should activity fall outside of defined processes, regulations, or legislation.
	Healthcare Services	Enables the definition and structuring of health services provided to/by the workforce, to promote preventative health and basic treatment, including the provision of on-site health services.
	Occupational Safety	Enables the programmatic evaluation and management of risks & opportunities that may affect industry-specific or role-related personal health and safety of employees, contractors, or other third parties. Provide required compliance and reporting as required by local and national governing bodies.
<b>Risk, Audit &amp; Compliance</b>	<b>Enables management to proactively measure and mitigate the risk of the business and ensure adherence to regulatory requirements.</b>	
	Risk Management	Enables establishing umbrella frameworks, management activities, policy and related procedures and requirements for the entire organization, to defend against risks that may negatively impact the viability, growth, performance, health, stability, competitiveness, preparedness, or reputation of an ongoing concern, state, product or service. Ensures the identification, detection, assessment, monitoring and communication of risk and the execution of risk management activities across all levels of the organization, including all risk facets, including but not limited to sector, organization, operations, compliance, data, personal privacy, cyber, espionage, geo-political, etc.
	Breach Management & Remediation	Enables administering the efforts and activities for breach assessment / estimation of impact and causality, as well as containment and remediation efforts. This may require the creation of plans for corrective action, even in collaboration with government agencies and pertinent professional services firms specialized in remediation efforts relevant to the organization's operations. Includes generation of new recommendations for implementation by Risk Management to be embedded as part of the ongoing capability/process.
	Business Continuity Planning & Management	Enables the plans, processes and resources required to rapidly adapt and respond to any internal or external disruption, threat or event that may present an opportunity or result in degradation or catastrophic failure of business operations.

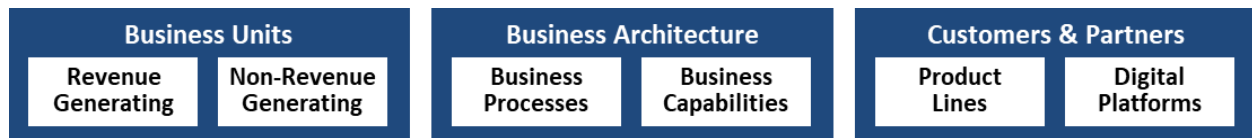
Category	Name	Description
	Auditing	Enables the internal or external planning, preparation, execution and review of internal control mechanisms, policies, and procedures in order to manage internal controls. Includes observation, reviews, interviews, fact-finding and the generation of recommendations and designs of control activities to be implemented. Monitor and review control effectiveness, remediate control deficiencies, and enable compliance functions. Can also include the implementation and maintenance of technologies and tools to enable internal controls-related activities.
	Investigations	Enables following up on a breach of standard operating procedures to identify, locate and understand the impact of the breach. An investigation can include searching, research, interviews, evidence collection, data preservation and various methods of investigation, as well as the gathering and documentation of findings & observations, and reporting of them.
	Records Management	Enables managing codified information in an organization throughout its life cycle and state/form, from the time of creation or inscription to its access and eventual disposition. This includes identifying, classifying, storing, securing, retrieving, tracking, and destroying or permanently preserving records, including digital and physical.
Legal	<b>Enables legal counsel to support the organization's governance and operations including discovery, litigation, contract reviews and intellectual property protection.</b>	
	Legal Counsel	Enables providing guidance and legal practices to abide by the law involving the practical application of legal theories, laws, regulations, and knowledge to govern the organization's messaging, product, and business operations. This includes the safeguarding (incl. litigation) and defense of intellectual property, brand value, confidential information, corporate and personal exposure to liability (physical or environment injury, cyber etc.) and many other forms and applications of law.
	Case Management	Enables managing the (mostly) administrative lifecycle of legal cases, including matter management, time and billing, document completion and submittal, monitoring case status, scheduling hearings and meetings, time and billing, orchestration of litigation support, collaboration and communications, record storage and search.

Category	Name	Description
	Contract Review	Enables reviewing and negotiating terms to reach a final draft of a contract that is acceptable to all parties. Contracts may include non-disclosure agreements, master service agreements, statements of work and other types of contracts.
Property & Facility	<b>Enables management to provide the facilities for the organization including development &amp; space planning, physical security, workplace services, fleet management (non-logistics), food services and the maintenance of facilities and equipment.</b>	
	Development & Space Planning	Enables planning the use, services, acquisition, and construction or build out, of non-performing or performing real property (whether owned or leased) for the organization. Execution of the planning, approvals, and acquisition of a site, for the build out or installation of real property or assets that may or may not yield direct income or house staff, equipment, or inventory. Creation of long-term vision, strategies, and standards for acquiring, developing, and managing purchased / leased / retained property and improvements.
	Workspace Services	Enables provisioning workspaces and related assets, and management of that provisioning effort. The orchestration and/or installation of office, shared community or light industrial spaces according to requirements (e.g. tables, chairs, couches, monitors, AV equipment, privacy screens, cubicles, doors, appliances, lighting, cabling, shelving, racks etc.). <i>Not intended for large scale industrial/plant construction.</i> Excludes Physical Security.
	Physical Security	Enables managing the physical safety of property, facilities, equipment, and people through the presence of physical barriers, workforce authentication and authorization, and visible or unseen manned or unmanned security services.
	Operations, Maintenance, Repair & Improvements	Enables preserving and improving productive assets through the planning, managing, and performance of preventative, routine, and critical maintenance work, and occasional improvements to those existing facilities or equipment.
	Fleet Management (non-logistics)	Enables managing vehicles used to support the transportation of the workforce and may include vehicle financing, maintenance, telematics, and scheduling. Vehicles may include cars, vans, trucks, motorized carts, bicycles, and other forms of transportation. Does not include transportation

Category	Name	Description
		associated with the shipment of the organization's products or service delivery.
	Food & Beverage	Enables providing and managing on-site food and beverage services for consumption by the organization's workforce.
Corporate Communications	<b>Enables management to orchestrate internal and external communications aimed at creating a favorable view among stakeholders including public relations, stakeholder relations, government relations, external relations, and community outreach.</b>	
	Stakeholder Relations	Enables fostering external relationships with stakeholders of the entity, including investors, government and industry, the board of directors, and the general public. This is not related to customer management.
	Government Relations	Enables creating and maintaining relationships with government and industry representatives. Persuading public and government policy at the local, regional, national, and global level (subject to government regulations).
	External Communications	Enables developing and managing relations with media. Develop connections with journalists to solicit critical, third-party endorsements for a product, issue, service, or organization.
	Community Outreach	Enables developing and administering community relations. Establish business connections with the people constituting the environment the organization operates in and draws resources from to foster mutual understanding, trust, and support. Create programs that promote the organization's image in a positive and community-oriented way.

### Business Layer: Business Units and Business Capabilities

At the top of the standard taxonomy hierarchy, we have three distinct types of objects representing either the consumers of solutions, the business processes and capabilities enabled by them, or the products and platforms they provide. These are depicted in the figure below.



**Figure 8: TBM Taxonomy Business Units, Business Architecture and Customers & Partners**

The TBM Council does not define specific business units, architectural elements, products, or platforms. However, the following definitions can be used to help users of the taxonomy define those that are specific to their organization:

Business Object	Sub-Object	Description
<b>Business Units</b>		<b>The divisions, lines of business (LOBs), departments, affiliates, or other legal or organizational entities that consume solutions. Sometimes are charged for consumption via chargeback. Usually viewed as the entities that fund IT and often have a direct say in how the enterprise’s IT resources are directed. May have their own technology teams and resources as well.</b>
	Revenue Generating	Units that are responsible for generating revenue for the enterprise and therefore maintain their own income statement or “P&L” (profit and loss report). Often consume services from non-revenue generating business units such as corporate
	Non-Revenue Generating	Units that do not directly generate revenue for the enterprise or maintain their own income statement. Often provide services to revenue-generating business units.
<b>Business Architecture</b>		Represents the enterprise’s capacity to drive a business outcome such as generating revenue, reducing costs, increasing productivity, or otherwise improving corporate performance in the eyes of your firm’s partners, suppliers, or customers. Often span Business Units and are supported (e.g., automated, informed and controlled) by solutions. Mostly unique to each enterprise, although they may be similar across enterprises in the same vertical industry.
	Business Capabilities	Represent what the enterprise does to drive business outcomes, but not how. Often defined and documented by Enterprise Architects, who may leverage third-party methodologies (e.g., The Open Group Architecture Framework, Federal Enterprise Architecture Framework, BIAN Service Landscape).
	Business Processes	Represent how the enterprise drives business outcomes. Often defined and documented by business analysts or business process owners, who may leverage third-party artefacts (e.g., APQC Process Classification Frameworks, Business Process Framework - eTOM). Often specifies roles and responsibilities and the flow of work.

Business Object	Sub-Object	Description
<b>Customers &amp; Partners</b>		Refers to the customers and partners of the enterprise, not those internal customers and partners of the IT/tech provider. Customers refers to the individuals (B2B) and companies (B2C) for which the enterprise primarily exists to serve and from which the enterprise earns revenue or other funding (e.g., government funding, donations). Partners refers to the external business entities with which the enterprise collaborates to drive business outcomes.
	Product Lines	The groupings of products and services provided by the enterprise to customers and/or through partners (e.g., resellers). Often refers to technology-based products and services that are built directly on top of (or out of) solutions, but may also represent the solution-related resources needed to deliver non-technology based products and services. (Non-technology based products and services would often be represented by revenue-generating business units instead.)
	Digital Platforms	The system or combination of systems that are used to directly engage and serve customers and partners of the enterprise. May include mobile app based platforms used to promote and sell physical products or to socially engage customers and prospective customers or other external users.

## Scope of the TBM Taxonomy and Additional Definitions

The TBM taxonomy defines the what of the TBM model, not the how. Moreover, the TBM Council has taken a limited view of what is included in the TBM taxonomy's scope and therefore the TBM taxonomy does not reflect all the dimensions and objects that TBM professionals and their stakeholders may need for their decision making.

Prime examples of items outside of this scope are investment-related objects such as projects, epics, and development value streams. Many TBM leaders use these objects, and associated data from tools like Project Portfolio Management (PPM) and Agile Lifecycle Management (ALM) suites, to support their TBM model cost allocations. Many also produce reports on the cost of those objects (e.g., the cost of a project or the rate of spending on a value stream). Do not construe the absence of these objects from TBM taxonomy as a value judgment; instead, they are not presently in the scope of the taxonomy because they have more to do with how work gets done than on the solutions they produce, enhance and maintain.

There are some additional definitions that fall outside of the scope of the TBM taxonomy that are worth noting and defining here. They are not shown in the taxonomy, but they are often present in reports provided by the TBM model and used in decision making.

### Fixed and Variable Costs

Every cost has an underlying driver of that cost: a unit of measure that determines the total cost of a resource (tower), application, service, or product. For example, the more storage (i.e., gigabytes) you buy, the more you pay. However, the driver of a cost may not change with increased or decreased business output, at least in the short term (e.g., less than one year). For example, if you buy enough storage hardware to satisfy your business demand for the next three years, your storage costs will not change substantially over those three years as your business volumes fluctuate.

Knowing the relationship of your costs to your business volumes can be very useful. For this reason, we define fixed costs and variable costs in relation to your business volumes:

- **Fixed costs** do not vary materially with the level of your business volumes. They inhibit financial agility because they do not go down when business volumes decline. Spending capital (capital expenditures), hiring employees and signing long-term, fixed fee contracts tends to create fixed costs. Infrastructure and applications that are owned are often examples of mostly fixed cost sources, including the labor needed to maintain and support them.
- In contrast, **variable costs** vary in concert with the level of output, i.e., is strongly correlated with your business volumes. Variable costs support financial agility because they go down when your business volumes decline, so business leaders can change their costs by changing their consumption. Depending on the nature of your contracts, third-party services such as public cloud infrastructure may represent a variable cost to your company.

Care must be taken when evaluating the relationship of your costs and your business volumes. Again, take storage as an example. If you are a healthcare provider and you store medical images and other health records, you may be required by law to store them for many years. In this case, just because your medical procedures have declined does not mean your storage costs will go down. As this example illustrates, sometimes costs are fixed in one direction (they do not go down) and variable in another (but they do go up).



## Direct, Consumed and Indirect Costs

Cost accounting depends on understanding how costed objects, such as solutions, consume or depend upon other resources and the costs of those resources. Sometimes, the relationship is direct and simple: an application that runs on a dedicated server should bear the full cost of that server. However, in a world of shared resources (e.g., the hardware running virtual machines, a storage array supporting multiple applications, a team supporting multiple solutions), the relationship is often not direct and simple.

There are a variety of reasons why TBM leaders choose to allocate costs in their model the way they do. Here are a few examples:

- The enterprise needs to justify the internal pricing that is used for charging business units in other tax jurisdictions (via what's called transfer pricing). Here, tax laws and accounting principles apply to ensure costs are not improperly transferred to higher tax jurisdictions.
- The enterprise needs to establish rates used for internal chargeback that impacts the profit and loss (P&L) of its revenue-generating business units. Here, the costing needs to appear fair and be easy to understand by the business unit leaders who are, in effect, paying the bill.
- A CIO wishes to improve accountability for the costs of delivering solutions such as applications or services. Here, the CIO may want their leaders to focus on the costs they can reasonably control and not be too concerned about those costs they cannot control.

For reasons such as these, understanding the relationship of costs to costed objects is important, as is setting a cohesive policy for costing. For this, mind the following definitions:

- **Direct costs** are resources in the budget or span of control of the costed object's owner. For example, an application owner might have app developer labor, tier 3 support labor, and some software licenses (e.g., software development tools) in their budget. These resources drive the direct costs of the application. The application owner has control over those resources and therefore over their costs to the business.
- **Consumed costs** are resources that are used to support or deliver the costed object but are owned by another resource owner. Consumed costs do not appear in the budget (e.g., cost center) of the costed object. However, the consumption of those costs is clearly reflected in a data source, meaning their consumption is controllable (to some degree) by the costed object's owner. For example, an application's consumed costs would include servers and storage that are assigned to the application, as recorded in a configuration management database (CMDB). The budget and the costs of those servers and storage belong to another resource owner, but the application owner dictates their consumption by requesting them and having them assigned to their application.
- **Indirect costs** are resources that are owned by another resource owner where the consumption is not attributable to a costed object using a data source. These indirect costs may be considered overhead. For example, an application may depend upon the help desk, but the help desk tickets may not provide sufficient information to show the relationship of help desk resources to the applications they support. In some cases, it is defensible to allocate indirect costs to an object using an agreed upon method, especially where a fully-burden cost is needed for cost recovery, tax purposes, contractual obligations, or other requirements.

The nature of direct, consumed, and indirect depends on the objects in question, the data and management practices you have in place, and your accounting policies.

## Run-, Grow- and Transform-the-Business Spending

Oftentimes, business leaders want to know how much the enterprise is spending and investing on continuous operations versus investments to grow, improve or transform the business. A commonly used set of definitions is the run/grow/transform model defined by Gartner. The following are working definitions for these categories:

- **Run-the-business (RtB)** refers to spending and investments used for ongoing operations of the business. May include both operating and capital expenditures. Operating expenditures that qualify often include internal and external labor, depreciation and amortization of assets, facilities expenses, utilities, and telecommunication services. Capital expenditures that qualify include hardware refreshes or upgrades that do not qualify as grow- or transform-the-business. Mostly includes non-discretionary expenditures, although some discretionary expenses such as training and travel may also be run-the-business. Most mandatory expenditures such as compliance, safety or risk investments are also run-the-business.
- **Grow-the-business (GtB)** refers to spending and investments used to increase business volumes and/or revenues and/or profits in existing or complementary markets and product lines. May include both operating and capital expenditures. Operating expenditures that qualify often include project spending that occurs before capitalization begins and additional operational resources employed to increase capacity. Capital expenditures that qualify include the purchases and/or development of new assets, such as increased capacity, that directly enable business growth. Is a subset within change-the-business spending.
- **Transform-the-business (TtB)** refers to spending and investments used to improve the long-term competitiveness and growth opportunities of the company. Often implies game-changing investments, in that they often allow the business to employ revolutionary sourcing models, tap into new markets, dramatically improve efficiency, or rapidly launch new and significantly different products and services. May include both operating and capital expenditures. Operating expenditures that qualify often include project spending that occurs before capitalization begins and additional operational resources that are categorized as transform-the-business. Capital expenditures that qualify include the purchases and/or development of new assets that directly enable business transformation.

Sometimes, grow-the-business and transform-the-business are collectively referred to as change-the-business, which is the opposite of run-the-business.

Similar terms are used elsewhere in actual practice. These include *business-as-usual* (same as run-the-business), *run-the-bank* (run-the-business in the banking industry), *operations & maintenance* (or O&M, analogous to run-the-business in US government), *development, modernization & enhancement* (or DME, analogous to change-the-business in US government), and *maintain and operate the organization, systems and equipment* (MOOSE, from Forrester Research).

## Sanctioned and Unsanctioned Technologies

Many enterprises use TBM to manage enterprise-wide spending on their business technologies, not just that of a centralized IT department or business unit. This means creating transparency of spending on tech regardless of where the budget resides. For example, a company's marketing department may spend a significant amount of money on the marketing tech stack; TBM may be used to report on such spending.

The following terms apply to enterprise-wide spending:

- **Sanctioned** technologies and resources are those that are known to meet enterprise-wide standards, policies or guidelines and were acquired or built following proper procedures with necessary approvals. Those standards, policies and guidelines are usually defined by the global CIO, Chief Technology Officer and/or Chief Information Security Officer. Furthermore, they are documented in the appropriate management systems, such as a CMDB, software asset management database, or project management system. As such, they are more easily reported using a TBM model.
- **Unsanctioned** technologies and resources are those that are known to exist but do not meet enterprise standards, policies, or guidelines. These includes systems that may be outdated and therefore no longer meet security standards. They include systems that are more recently implemented but did not meet the requirements. Shadow IT, or technologies that were purchased or built without the knowledge of the global CIO's organization, are also considered unsanctioned even though they may meet many of the standards, policies, and guidelines in place.

The TBM taxonomy helps deal with these types by defining the scope of what is consider "IT". Procurement staff should be familiar with the taxonomy and look out for purchase requests for products or services that fit within the scope of the taxonomy. Unsanctioned resources not only represent compliance and security risks to the enterprise, but they also make it difficult to understand the true investment and spending on technology.

If TBM is used to help govern technology on an enterprise-wide basis, attention must be given to creating greater transparency of unsanctioned technology spending and resources. Since all purchases of the enterprise flow through the financials, TBM provides the ability to identify unsanctioned spending and bring it back into compliance.

## Extending the TBM Taxonomy

Extensibility is one of the design principles of the TBM taxonomy. Extensibility enables enterprises to use the standard TBM taxonomy while enabling industry- or organization-specific extensions to the taxonomy while still supporting compatibility with the standard. Extensions that are supported include the addition of new categories or sub-categories that do not conflict with the definition and meaning of any existing, standard categories. This enables an organization to isolate costs for any unique technology (e.g., medical devices in healthcare, SCADA equipment in oil and gas, automated teller machines in banking) that are not part of an existing standard category. This allows costs to be tracked independently and does not corrupt the definition of an existing standard category.

The types of changes to the TBM Taxonomy that are not supported and are not considered extensions include:

- Splitting an existing category into two or more categories thereby changing the definition of the original category
- Consolidating two categories into one category
- Changing the definition and composition of a published standard category

One of the main reasons for not allowing these types of extensions is the impact on industry benchmarks. If changes are made to the definition and the expected composition of costs, the industry benchmark values will no longer be relevant and comparable.

Examples of changes that are not supported as an extension include:

- Splitting the *Enterprise Data Center* sub-tower into *Company Owned Data Centers* and *Co-Location Data Center Facilities*. A better solution is to use the optional Sub-Tower Element (level 3) to distinguish these costs.
- Consolidating *Database* and *Middleware* into a single sub-tower. If one of the sub-towers is not material in an organization's environment, don't use it or allocate any costs to it.
- Changing the definition of the Voice sub-tower to include both voice equipment and voice telecommunication costs. The telecommunication costs should remain in the Transport sub-tower.

The need for extending the TBM taxonomy tends to be unique from one vertical industry to another. In order to address these vertical industry needs, the TBM Council supports extending the TBM Taxonomy through a formal mechanism (TBM Council Vertical Industry Workgroups) that help preserve certain attributes of the standard taxonomy, such as its support of industry benchmarking, while leveraging the contribution of Council members that may not sit on the Standards Committee or any subcommittees.

The overarching principle behind industry-specific extensions is that the standard TBM taxonomy remains intact. Most of the taxonomy, from the bottom layer Cost Pools and Sub-Pools to the Towers and even much of its Solutions (especially the technical solutions of Infrastructure, Platform, and Delivery) can be applied to IT organizations in every industry. However, industry-specific extensions add to these standard elements, primarily for Business solutions, to address unique requirements.

In this way, TBM taxonomy extensions are additions to the standard TBM Taxonomy v3.0, not changes to it. For example, a healthcare provider would still use many of the standard Shared & Corporate solutions that are defined by the TBM taxonomy, such as Financial Planning, Fixed Assets, Payroll, and so on, but also use many (and possibly all) of the Business Solutions defined by the Healthcare workgroup. These include Solution categories like Clinical Services and Patient Support & Engagement and Solution Names such as Cardiology, Oncology, Food Services and Patient Portal.

The TBM Council provides the TBM Taxonomy Extension Kit (TEK) to its workgroup members for this purpose. This includes a guide for workgroup leaders, templates, and support contacts within the TBM Council's Standards Committee.

For more information about the Taxonomy Extension Kit contact us at [teksupport@tbmcouncil.org](mailto:teksupport@tbmcouncil.org).

## **About the Technology Business Management Council**

The Technology Business Management (TBM) Council is a nonprofit business entity focused on developing a definitive framework for managing the business of IT. It is governed by an [independent board of business technology leaders](#) from a diverse group of the world's most innovative companies. The TBM Council established a set of tools and best practices including organizational traits, management disciplines, a common taxonomy, and metrics. Members are encouraged to develop and contribute to their understanding of TBM through the Council's research, standards, education offerings, and community engagements. Members collaborate with their peers through an annual global conference, regional meetings, and an online community.

## **About the TBM Council Standards Committee**

The Standards Committee, working together with TBM Council Staff, oversees, reviews, and manages the development and maintenance of TBM standards, including but not limited to the TBM taxonomy and TBM KPIs/metrics. The Committee reports and is accountable to the TBM Council Board of Directors. The Committee has the responsibility to keep the Board informed regarding standards development and is also responsible for documenting and publishing the standards for all TBM Council members to see, use and comment upon.

The Committee is comprised of a chairman (Atticus Tysen, SVP & CIO, Intuit), voting members from industry, a Federal government liaison (non-voting), and industry advisors. Learn more at <https://www.tbmcouncil.org/about/standards-committee/>.