Technology Business Management Taxonomy

An Overview for the TBM Council Members

Executive Summary

In November of 2013, the TBM Council and its technical advisor, Apptio, introduced the TBM Taxonomy – a standard, hierarchical set of categories for costs and related metrics. As discussed then, the TBM Taxonomy was developed in response to the pain points that were shared by members of the TBM Council: that there really is no easy standard way to classify, allocate and model IT costs for communicating with the business, tracking improvements over time or comparing to external benchmarks.

The TBM Taxonomy provides a standard set of categories of IT costs and other metrics across finance, IT and business perspectives. In essence, the TBM Taxonomy is a standard business model for IT. In the last year, the TBM Council — through principal member discussions and vertical industry workgroups spanning banking, insurance, healthcare, energy and more — has reviewed the TBM Taxonomy, provided input, and is now defining useful industry-specific extensions.

This paper will provide an overview of the TBM Taxonomy for council members, along with answers to important questions:

- What is the TBM Taxonomy?
- Why is the TBM Taxonomy essential for IT executives and TBM?
- Who should use the TBM taxonomy?

The TBM Taxonomy is not final. Along with experience from real-world TBM initiatives, the Council will incorporate feedback from members and share updated versions over time. We believe this work is essential: the TBM Taxonomy will enhance the decision-making value of TBM and become the basis for a *lingua franca* between IT, business and finance.

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The Need for a Business Taxonomy for IT

In today's world where IT leaders are increasingly using business principles to run their IT organizations more like other service providers, IT leaders need the ability to model and analyze costs and other related metrics in a consistent manner. This includes the ability to compare towers, products and services to peers and third-party options (e.g., cloud). Just as US businesses rely on Generally Accepted Accounting Principles (or GAAP) and global companies rely on International Financial Reporting Standards (IFRS), IT leaders need a generally accepted way of reporting costs and other metrics.

This need extends beyond IT. Finance leaders need the ability to generate meaningful KPIs and reports for IT to support value-based conversations with IT leaders, business partners and other stakeholders. Additionally, line-of-business leaders need the ability to compare internal vs. external options.

Because there are no prevailing unified practices by which IT and finance leaders implement technology business management processes — or practices for standardized modeling of costs and allocations — it can be difficult to obtain consistent and repeatable models. That precludes, among other things, "apples to apples" comparisons across categories and in the field. This in turn makes it difficult to drive strategic business alignment (the goal of TBM) through true IT asset and services costing and benchmarking.

Taking that a step further, we've found that there is no standard set of categories for costs and other IT metrics, or industry-specific versions that take vertical nuances into account. The TBM Taxonomy provides this standard set.

Overcoming a Frankenstein Cost Model

We've seen this with the TBM Council from both large and small companies: They often opt to implement their own model for costing and allocations as a component of TBM, in lieu of a standardized model, with varying outcomes. At one financial services company, the TBM leaders deployed a cost model that reflected the various Excel-based approaches that had been cobbled together over many years to support various reporting requirements (but had become unsustainable).

The model "worked," but in the end it did not provide the reports, metrics and comparability that they needed to take their TBM program to the next level and answer many of the harder questions organizations seek to answer through TBM. Their SVP of Infrastructure told us:

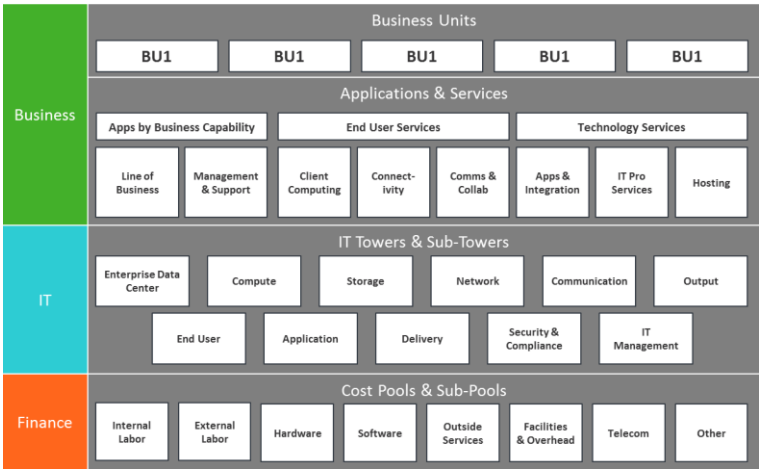
> *The model we built is somewhat of a Frankenstein. We are seeing gaps in our model where some reports don't tie into others, so my people think the numbers don't tie out when they really do. And we're seeing new opportunities for reporting that this approach doesn't support. What we really need is a best practices model.*

This company then deployed a model based on the TBM Taxonomy. This model not only supported most of the customer's unique reporting requirements, it also delivered a foundation for addressing new requirements that were beginning to surface as more TBM principles were exploited. Not only did this accelerate the company's TBM journey and give them comparability for benchmarking, it proved that the TBM Taxonomy could be applied to what were previously considered *unique and complex* circumstances.

What is the TBM Taxonomy?

Taxonomies are generally defined as a scheme of classification. And many taxonomies, such as biology or evolutionary taxonomies (think "tree of life"), are hierarchical, showing the relationship of taxonomic ranks. Similarly, the TBM Taxonomy classifies and organizes IT costs and other metrics from disparate sources, assets and services in a hierarchical structure.

The TBM Taxonomy provides a means to model that data in a manner that is consistent with industry peers. This helps not only in building commonality across different sets of data to enable comparisons, but it helps those who are executing their TBM roadmap move forward in a fairly consistent and cost efficient manner.



Simple representation of the TBM Taxonomy (detailed chart in Appendix)

There are three layers of the taxonomy that represent the major steps of translation of costs and other metrics. From the bottom up we have:

- **Finance:** The lowest layer begins with the general ledger, but may include other cost sources unique to the organization. This provides for a standard set of breakouts (e.g., CapEx vs. OpEx, Fixed vs. Variable) and a standard set of cost pools: hardware, software, internal labor, external labor, facilities/overhead, telecom and outside services. Cost pools make cost allocations easier and enhance reporting because they can be traced through the unified model to reveal cost composition (e.g., how much internal labor is in a service; how does it compare to another?).
- **IT:** The middle layer includes a standard set of infrastructure 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 basic building blocks of specific applications, services and so on. 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/overhead), largely externally (e.g., outside service, external labor), or as a hybrid of the two. This view enables you to assess the cost-effectiveness of IT's technologies and services.
- **Business:** At the highest layer, the taxonomy provides a standard but generic set of applications and services along with higher-layer business capabilities. It is at this layer of the model organizations also include their own business and IT applications and services. It also includes the business unit consumers, or breakouts (allocations) by consumers.

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

The TBM Taxonomy was first developed by Apptio, the Technical Advisor to the TBM Council, and is part of the Apptio TBM Unified Model[1]. As such, the TBM Taxonomy is not merely theoretical; IT cost and metric models based on the TBM Taxonomy have been deployed at hundreds of Apptio's customers and across nearly every industry vertical. And because the taxonomy is aligned with the categories and costing methods used for Apptio's benchmarking data, the Taxonomy facilitates apples-to-apples comparisons to industry peers. It is now openly available for use by all TBM Council members.

Key Benefits of the TBM Taxonomy

The TBM Taxonomy is a game changer for financial and business-minded technology leaders, as it is the first generally accepted approach for translating between finance, IT and business perspectives. It also enables TBM trailblazers to participate in a community of like-minded peers to gain knowledge, share experiences and benchmark. When the TBM Taxonomy is implemented in a technology solution for TBM, as it is for companies using Apptio, the benefits are numerous; we've called out four that are transformative:

- **Enterprise IT Business Model –** The Taxonomy supports standard models with predefined metrics and KPIs so that business and IT leaders can rapidly define their own IT business model for managing cost, consumption, utilization and quality of technologies, products and services.
- **Accelerated Benchmarking –** The Taxonomy was built with benchmarking in mind, and was designed to support meaningful comparisons to benchmark data from leading third parties.
- **Extensibility –** The TBM Taxonomy is extensible, allowing organizations to add their own specific categories or subcategories without losing the benefits of the standard categories.
- **Ecosystem Leverage –** The TBM Taxonomy makes it easier for TBM Council members, Apptio user groups, the broader practitioner community, and others to collaborate and learn from others. It is a common language among the TBM ecosystem.

There are also benefits of the TBM Taxonomy that are unique to Apptio customers, where it is delivered with other best practices such as data specifications, allocation methods, reports and KPIs. As a result, the TBM Taxonomy helps accelerate time-to-value.

Who Should Use the TBM Taxonomy

We believe the TBM Taxonomy will become an industry standard for IT leaders seeking a way to manage the business of IT, and in turn be more strategic business partners. That said, the TBM Taxonomy can and should be used by a range of individuals:

- IT financial leaders and analysts may use the Taxonomy to define their cost categories and map their organization's technologies and services to those categories for allocations and reporting.
- IT operations analysts may use the Taxonomy to define categories of costs and other metrics and build a hierarchical model for reporting and analytics.
- Application portfolio managers may use the Taxonomy to evaluate the composition of their applications, including consumption of IT towers such as infrastructure and application development resources.

[1] ATUM also includes data definitions and standards for cost allocations and modeling.

- Service management leaders, such as service portfolio managers or service catalog managers, may find value in evaluating how their services compare to the standard categories and definitions.
- Business unit IT leaders, such as line-of-business CIOs, may use the Taxonomy to create a shared internal taxonomy of services, applications and towers among all business units.

Of course the Taxonomy will continue to be incorporated into the Apptio TBM Unified Model (i.e., within Apptio's software products) to facilitate cost modeling and reporting.

The TBM Council's Role in TBM Taxonomy Development

The TBM Council was formed as a nonprofit organization to create and promote best practices for running IT as a business. As the Council's technical advisor, Apptio provides intellectual property (IP) in pursuit of the Council's mission. As such, Apptio reviewed the TBM Taxonomy through a series of peer reviews with over 50 principal members of the TBM Council in order to gain additional input, beyond customer implementations.

In mid-2014, the TBM Council formed and convened vertical industry workgroups – energy, financial services (banking-focused), insurance, health services and media & entertainment – gathering CIOs and other TBM executives from over 120 distinct organizations along with industry leaders from KPMG and ISG. The workgroup members also reviewed and provided feedback on the TBM Taxonomy.

Conclusion

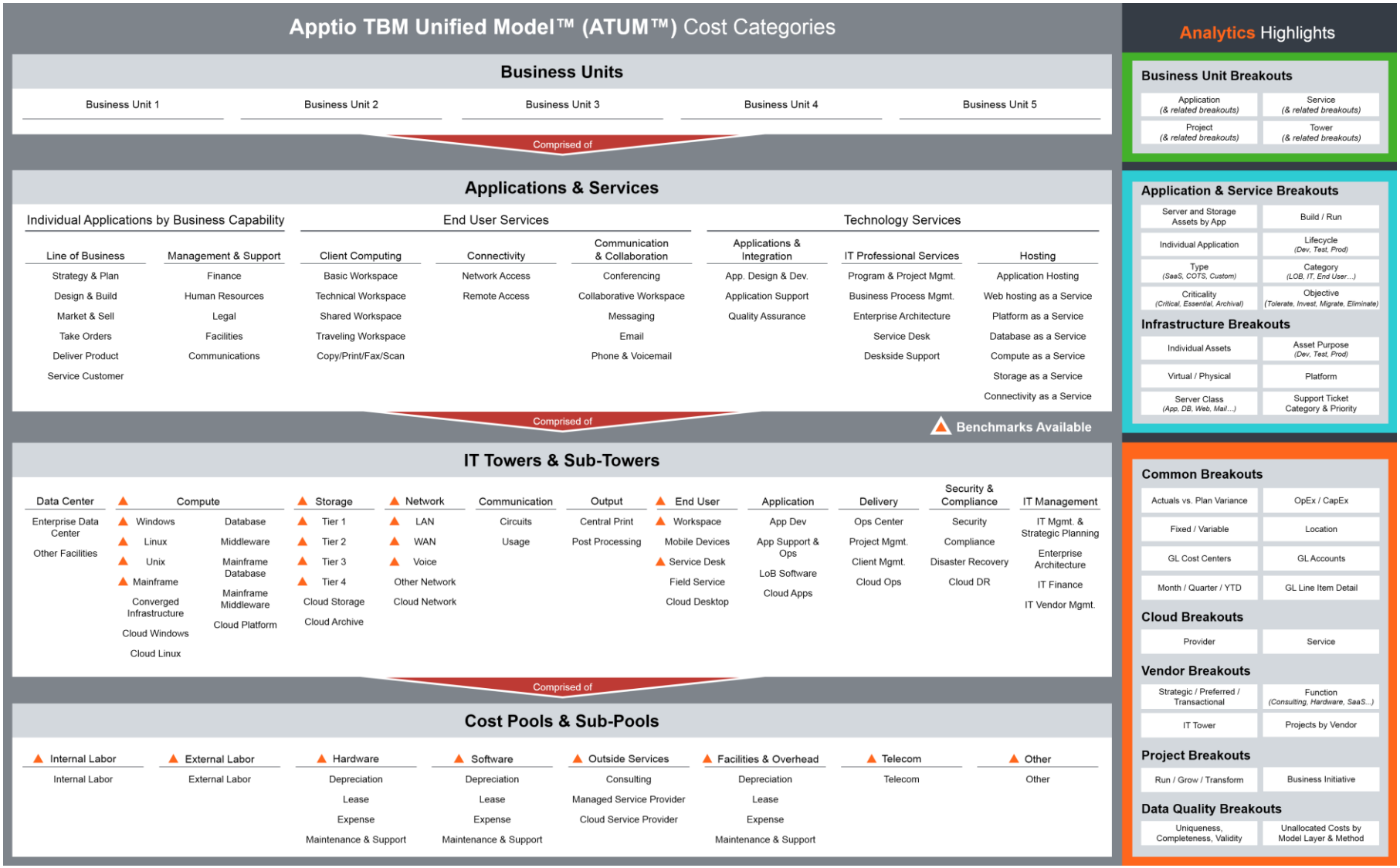
The TBM Taxonomy helps CIOs and the TBM leaders accelerate the development of a TBM model for their own IT costs, create meaningful metrics and reports, and create apples-to-apples comparisons of their costs to industry benchmarks. Those reports, comparisons and benchmarks are the language by which IT, finance and business leaders can effectively communicate.

Given the context of an industry lacking in a standardized methodology for categorizing costs, comparing relevant metrics and communicating findings with business leaders, we believe the TBM Taxonomy, with continued council feedback and input, will be an invaluable tool for IT leaders as they seek to become strategic business partners.

If you would like additional information about the TBM Taxonomy or would like to participate in the TBM Council or any of the TBM workgroups, email us at Info@TBMCouncil.org. You can learn more at TBMCouncil.org.

Appendix: TBM Taxonomy Details

The detailed chart here reveals the major entities and sub-entities of the TBM Taxonomy. Peer benchmarks are available from Apptio for the elements indicated. Finally, the breakouts available in Apptio software are made possible by using the TBM Taxonomy.



Cost Pool and Sub-Pool Definitions

Cost pools are low-level categories that are often aligned easily to general ledger accounts. Not only do pools make cost allocations easier, they enhance reporting because they can be traced through the model to reveal the composition of costs. They are like chemical elements: no matter what compound you have, you can always express its composition in elemental terms. Water is H_20. Caffeine is $C_8H_{10}N_4O_2$. Similarly, app TCO can be broken down into hardware, software, internal and external labor, outside services, facilities, and telecom costs.

The following tables define the cost pools and sub-pools in the standard (non-vertical) TBM Taxonomy.

Cost Pool	Cost Sub-Pool	Description
Internal Labor	Internal Labor	Employee wages, benefits, expenses & occupancy.
External Labor	External Labor	External contractor fees, travel & expenses.
Hardware	Depreciation	Hardware depreciation of capitalized purchases.
	Lease	Hardware lease expenditures (e.g.: hardware purchased through a supplier or financial services leasing arrangement).
	Expense	Hardware expense of non-capitalized purchases (e.g.: spare parts, consumables or equipment below capitalization threshold).
	Maintenance & Support	Hardware maintenance and support expenditures.
Software	Depreciation	Software depreciation of capitalized software license purchases & software development efforts.
	Lease	Software lease expenditures.
	Expense	Software expense of non-capitalized software purchases.
	Maintenance & Support	Software maintenance and support expenditures.
Outside Services	Consulting	External consulting project-based services.
	Managed Service Providers	External managed service providers.
	Cloud Service Providers	External public cloud service providers including IaaS, PaaS and SaaS.
Facilities and Overhead	Depreciation	Data center depreciation of facility build and lease hold improvements (e.g. raised floor investments, power/PDU infrastructure, and rack build-out).
	Lease	Data center lease expenditures.
	Expense	Data center space, power, security and other operating expenses (e.g. co-location facility services, electricity, water, etc.)
	Maintenance & Support	Data center maintenance & support expenditures.
Telecom	Telecom	Voice and data network connectivity including circuit and usage expenditures.
Other	Other	Miscellaneous or non-standard expenses.

Tower and Sub-Tower Definitions

Towers and sub-towers are the basic building blocks of services and applications. Examples include compute (e.g., Windows, Unix, Linux, mainframe, cloud), storage (e.g., tier 1, tier 2, tier 3), network, application (e.g., app dev, app support and maintenance) and IT management (e.g., enterprise architecture, IT finance, IT vendor management).

They are sometimes called domains or functions, and align to the way many IT shops were organized prior to the shift to delivering services. Many shops still have tower-centric teams or departments responsible for delivering towers cost effectively using a centralized or standardized approach.

The following tables define the towers and sub-towers in the standard (non-vertical) TBM Taxonomy.

Tower	Sub-Tower	Description
Data Center	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. Unit of measure: kW-month.
	Other Facilities	Computer rooms and MDF/IDF/telco closets that house IT equipment in corporate headquarters, call centers or other general purpose office buildings. Unit of measure: sq. ft.
Compute	Windows	Physical and virtual servers running a version of Microsoft's Windows Server operating system; includes hardware, software, labor and support services. Unit of measure: physical server. Unit of measure: physical server.
	Linux	Physical and virtual servers running a version of the Linux server operating system; includes hardware, software, labor and support services. Unit of measure: physical server.
	Unix	Servers running vendor-specific, proprietary Unix operating systems (e.g. IBM AIX, Sun Solaris, HP UX); includes hardware, software, labor and support services. Unit of measure: physical server. Unit of measure: physical server.
	Mainframe	Traditional mainframe computers and operations running legacy operating systems. Unit of measure: MIPS.
	Converged Infrastructure	Purpose-built appliances that provide compute, storage and network capabilities in one box. Unit of measure: appliance

Tower	Sub-Tower	Description
	Cloud Compute Windows	Public cloud Infrastructure-as-a-Service (IaaS) compute offerings running any version of Window Server operating system. Unit of measure: instance-hour.
	Cloud Compute Linux	Public cloud Infrastructure-as-a-Service (IaaS) compute offerings running any version of Linux operating system. Unit of measure: instance-hour.
	Database	Distributed database services focused on the physical database (versus the logical design) including DBAs, DBMS, tools and operational support. Unit of measure: instance.
	Middleware	Distributed platform, application and system integration resources enabling cross application development, communications and information sharing. Unit of measure: n/a.
	Mainframe Database	Mainframe database services focused on the physical database (versus the logical design) including the DBAs, DBMS, tools and operational support. Unit of measure: instance.
	Mainframe Middleware	Mainframe platform, application and system integration resources enabling cross application development, communications and information sharing. Unit of measure: n/a.
	Cloud Platform	Public cloud Platform-as-a-Service (PaaS) application development offerings. Unit of measure: instance/hour.
Storage	Tier 1	Storage resources which enable mission critical applications & services and requires highest levels of availability. Unit of measure: TB
	Tier 2	Storage resources which enable essential but non-mission critical applications, services and data; requires relatively high service level performance. Unit of measure: TB
	Tier 3	Storage resources used for non-essential, historical and other information where immediate availability is not required. Unit of measure: TB
	Tier 4	Online and offline storage resources used for archive, backup & recovery to support data loss, data corruption, disaster recovery and compliance requirements. Unit of measure: TB

Tower	Sub-Tower	Description
	Cloud Storage	Public cloud Infrastructure-as-a-Service (IaaS) storage offerings supporting normal transactional or other operational applications and system. Unit of measure: TB
	Cloud Archive	Public cloud Infrastructure-as-a-Service (IaaS) storage offerings for backup and archival purposes. Unit of measure: TB.
Network	LAN	Physical and wireless local area network connecting equipment within the core data centers and connecting end users in office working areas to the company's broader networks. Unit of measure: port.
	WAN	Wide area network equipment, labor and support services directly connecting data centers, offices and third-parties (excludes telecom and communication services). Unit of measure: device.
	Voice	Voice resources which enable or distribute voice services through on-premise equipment including PBX, VoIP, voicemail and handsets (excludes telecom and communication services). Unit of measure: extension.
	Other Network	Other specialized network equipment, infrastructure and services including: contact center, network security, remote access through VPN/RAS, cabling infrastructure and telepresence (video conferencing services). Unit of measure: n/a.
	Cloud Network	Public cloud Infrastructure-as-a-Service (IaaS) network offerings providing ingress/egress, load balancing, intra/inter-data center connectivity and resiliency services. Unit of measure: MB.
Communication	Circuits	Voice and data network circuits and associated access facilities and services; includes dedicated and virtual data networks, internet access and voice circuits. Unit of measure: n/a.
	Usage	Voice and data usage associated with standard telephone calls, 800 number service, mobility and other data transit based on usage billing. Unit of measure: MB.
Output	Central Print	Central print services; often provided to support customer billing or customer documentation support processes. Unit of measure: page.

Tower	Sub-Tower	Description
	Post Processing	Centralized post print processing support (e.g. fold, stuff, apply postage, bundle); often provided to support customer billing or customer documentation support processes. Unit of measure: page.
End User	Workspace	Client compute physical desktops, portable laptops, thin client machines, peripherals and associated software used by individuals to perform work. Unit of measure: PC.
	Mobile Devices	Client compute tablets, smart phones (iOS, Android, Windows Mobile) and apps used by individuals to perform work. Unit of measure: device.
	Service Desk	Centralized help desk resources which handle user requests, answer questions and resolve issues; includes centralized incident, problem and change management resources. Unit of measure: ticket.
	Field Support	Local support resources which provide on-site support for moves, adds, changes and hands on issue resolution. Unit of measure: visit.
	Cloud Desktop	Public cloud Infrastructure-as-a-Service (IaaS) virtual desktop offerings running a personal compute operating system and common utilities. Unit of measure: instance/hour.
Application	App Dev	Resources involved with the analysis, design, development, code, test and release packaging services associated with application development projects. Unit of measure: FTE-hr.
	App Support & Ops	The operations, support, fix and minor enhancements associated with existing applications. Unit of measure: FTE/hr.
	Line of Business Software	Software expenditures including licensing, maintenance and support related to off-the-shell software purchases. Software expenditures including licensing, maintenance and support related to off-the-shell software purchases. Unit of measure: n/a.
	Cloud Apps	Public cloud Software-as-a-Service (SaaS) application offerings (e.g. Salesforce.com, ServiceNow, Workday, Apptio). Unit of measure: n/a.

Tower	Sub-Tower	Description
Delivery	Ops Center	Centralized IT Operations Center resources including monitoring and intervention e.g. NOC (network operations center), GOC (global operations center). Unit of measure: task.
	Project Management	Resources involved with managing and supporting IT-related projects including business and IT-driven initiatives. Unit of measure: FTE-hr.
	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. Unit of measure: FTE-hr.
	Cloud Ops	Public cloud centralized service management, operations and monitoring services. Unit of measure: task.
Security & Compliance	Security	IT Security resources setting policy, establishing process & means, measuring compliance and responding to security breaches. Unit of measure: managed system.
	Compliance	IT Compliance resources setting policy, establishing controls and measuring compliance to relevant legal and compliance requirements. Unit of measure: managed system.
	Disaster Recovery	IT Disaster Recovery resources setting DR policy, establishing process & means, dedicated failover facilities, 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.). Unit of measure: managed system.
	Cloud Disaster Recovery	Public cloud Infrastructure-as-a-Service (IaaS) on-demand disaster recovery services. Unit of measure: managed system.
IT Management	IT Mgmt. & Strategic Planning	IT management and administration resources; typically CIO, senior IT leaders and administrative support including centralized IT strategy and planning. Unit of measure: FTE-hr.
	Enterprise Architecture	Enterprise architecture services including business, information, application and technical architecture to drive standardization, integration and efficiency among business technology solutions. Unit of measure: FTE-hr.

Tower	Sub-Tower	Description
	IT Finance	Resources involved in the planning, budgeting, spend management and chargeback of IT expenditures and the costing of IT products and services. Unit of measure: FTE-hr.
	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. Unit of measure: FTE-hr.

About the Technology Business Management Council

The TBM Council emerged from a biannual executive summit sponsored by Apptio, the leading and independent provider of TBM solutions. To allow for an independent board of directors, the TBM Council was formed as a nonprofit organization to create and promote best practices for running IT as a business. Apptio remains the Council's technical advisor.

Our mission is to serve equally our members and our profession by defining a decision-making framework that creates and sustains business value by balancing the supply of and demand for technology services. The Council's objectives are to publish a generally accepted set of TBM practices and facilitate benchmarking by business technology leaders against those practices.

The Council is open to any qualifying CIO or senior IT executive. Learn more at TBMCouncil.org.