IT Governance Overview

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Executive Summary

The mission of Washington University in St. Louis (WashU) is to discover and disseminate knowledge and protect the freedom of inquiry through research, teaching and learning. Creating an environment that supports student, faculty and staff exploration has earned the university a reputation as a well-respected institute of higher learning, patient care, research, service and innovation. Maintaining the resources and services that support this environment requires a holistic view of the needs of the entire university community. To attract and retain the best and brightest, the university must regularly assess these needs and implement a system of review, implementation and measurement to ensure it provides services that not only meet student, faculty and staff expectations, but that also meet or exceed the standards set by our partners in higher education.

The university excels in providing many of the services required to foster excellence. As technology—and the ways in which technology are managed and distributed—evolves, our approach to management and provisioning IT services must also evolve. Having access to a robust, integrated digital infrastructure that facilitates knowledge sharing, innovative research, clinical activity, and social interaction is critical to the success of Washington University. We must address the ever-changing technological needs of our community to compete. The IT governance structure works to improve the information technology environment at Washington University in St. Louis by developing a coordinated vision of IT that serves the university's mission, managing IT service life cycles, identifying strategic projects, and helping to ensure we realize the value of our IT investment.

What is IT Governance?

IT governance can be defined as specifying the decision rights and accountability for assuring appropriate behavior in the creation and use of IT. IT governance puts structure around how we align IT strategy with the strategy, initiatives and mission of the university. The IT governance structure prioritizes IT initiatives, establishes operational processes for implementing IT initiatives, manages risk and measures the realization of IT investments. In short, IT governance exists to optimize the value of the portfolio of university IT investments.

The IT governance structure is forward thinking—able to respond to the rapidly evolving world of technology innovation, information security policy and regulations, and higher education funding.

The IT governance framework will answer the following key questions:

1. How will IT create value for the university?
2. How much and where will we invest?
3. What applications and services will we deliver to enable access to information, collaboration and innovation?
4. How will we execute against portfolio decisions?
5. What technical guidelines and standards will we use?
6. How will we build and deliver shared services effectively and efficiently?
7. How will we measure the realization of our IT investment?

Strategic Vision and IT Guiding Principles

The IT governance structure operates under a strategic vision and a set of principles that will guide decisions of IT investments, resources and scope. The vision and guiding principles serve as the foundation of all elements of the IT governance process and IT infrastructure. Both should be communicated to all faculty, staff and students.

Campus-Wide IT Strategic Vision

The IT governance structure will create a strategic vision of IT as it serves the needs of the university.

IT Guiding Principles

The following are Washington University IT guiding principles.

Mission First

IT exists to support and enable the mission of the university, facilitating an environment for research, teaching, learning and clinical activity. University and school strategy will drive IT strategies and initiatives. We will provide a responsive environment that serves the needs and expectations of students, faculty, staff and patients. IT service activities will be designed first to enhance the experience of our faculty, students and patients and secondarily to support staff in their administrative activities. IT services will provide information management services to meet the needs of university and school leadership.

Data as an Asset
The university's data—by definition, practice, and intent—is a University asset. Data will be managed as an institutional resource. Specifically, institutional data will be identified and defined.

There should be one authoritative source for institutional data. The data resource will be safeguarded/protected. Data will be shared based on institutional policies, and federal and state laws. Information should be shared (rather than stored) in multiple secure and monitored places/silos. Information quality will be actively managed. Contingency plans will be developed and implemented. Access to data will be authorized and managed.

Appropriate Solutions Approach
The IT governance structure recognizes there are times when building applications to differentiate the university will be a strategic advantage. However, our "first choice" is to acquire technology. Insource or outsource decisions will be based on a clearly defined set of criteria. Where it makes sense, we will reduce the number of vendors. Doing so improves integration, allows us to maintain a staff focused on a limited number of strategically selected IT skills, improves the support model, increases user productivity and lowers total cost of ownership. The university will practice process redesign and is open to changing processes to leverage best practice inherent in acquired software. We also acknowledge that minimal modification of acquired systems is better than complete system development. Once a need is validated, IT will work with campus constituents to identify business and architectural requirements, examine existing solutions, and consider the resource capacity needed to develop, scale and support a solution throughout its lifecycle.

Intentional IT Service Design
The IT governance structure will help determine when to design for scale and when to design for innovation or mission-unique requirements. IT initiatives will engage in architecture design early in the process to ensure the university realizes the fullest value of the investment. Service components will be categorized within the IT architecture to improve the quality of service support, to allow commodity technologies to be scaled, and to encourage innovation. All university organizations should adhere to this intentional design of the IT architecture to strengthen the ability of IT services to provide a consistent and measurable level of quality.

Secure, Sustainable, Maintainable, Reliable, Available
We will use an end-to-end project approach that considers strategy, user experience, implementation, deployment and support via the IT governance structure, including architecture review and priority setting. This will encourage technology solutions that facilitate seamless operations, collaboration and communication. This means deploying technology that: includes mobility and multi-platform access features; is agile and able to quickly respond to changing business and technical requirements; adds value to the institution; allows for efficient use of IT resources; and minimizes risk.

Keep IT Skills and Knowledge Current
As technology is ever-changing, a good IT service provider must be aware of new technologies, trends and issues to better serve the current and future needs of the end-user. Management will work with IT staff to develop initiatives to keep staff skills current. IT staff will be encouraged to continually gain knowledge and to gather intelligence through professional development opportunities, independent research, interaction with end-users and information sharing. This mission critical task enables IT service

providers to provide optimal service and support to end-users, to proactively deploy new solutions or 'fixes' to solutions in use, and to prepare for emerging business and user requirements.

The Scope of IT Governance

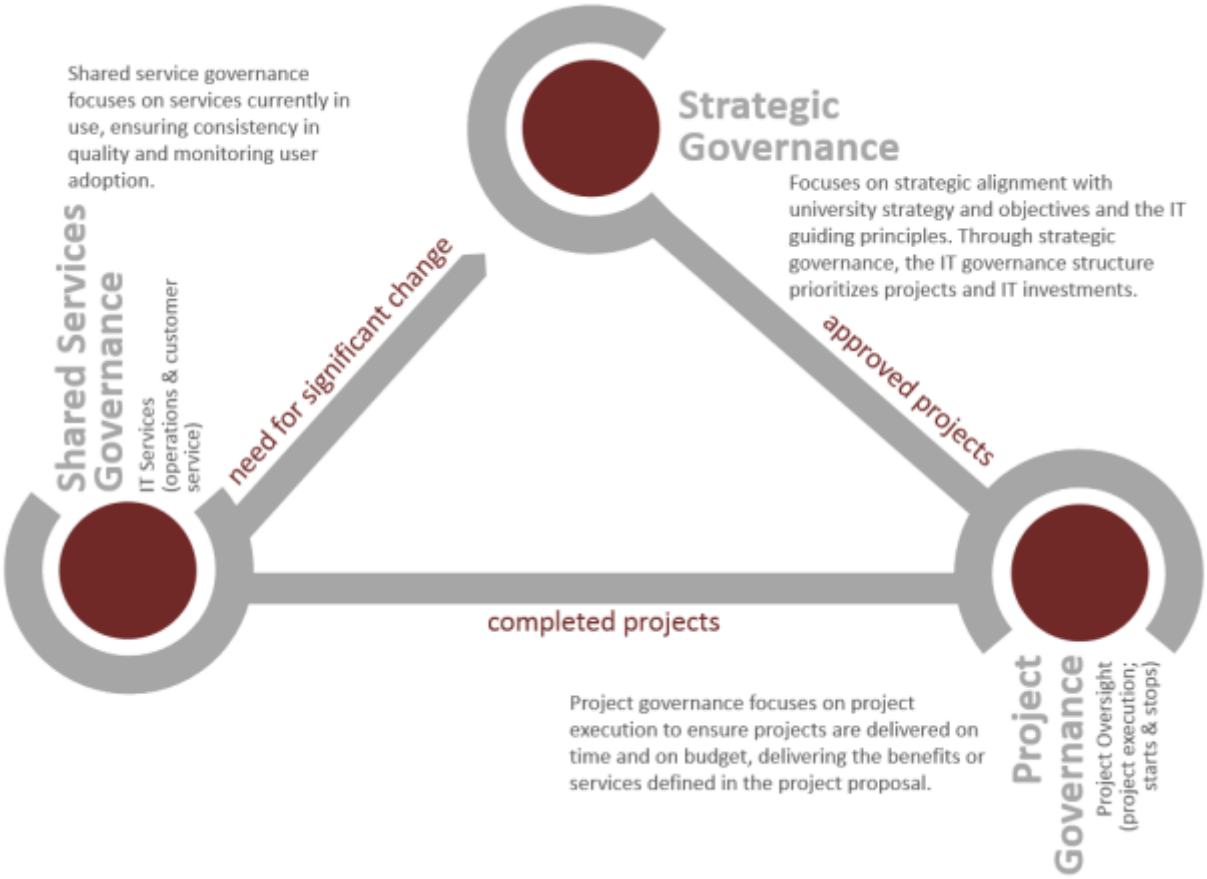
Three Types of IT Governance

To effectively execute this mission, the IT governance structure at Washington University is organized into three areas:

Strategic Governance (this is the focus of this document)
Strategic governance focuses on strategic alignment with the strategy and objectives of the university and the IT guiding principles. IT services providers regularly provide the IT governance committees with project, services and portfolio health reports for consideration of investment proposals. Through strategic governance, the IT governance structure prioritizes projects and IT investments.

Project Governance
Project governance focuses on project execution to ensure projects are delivered on time and on budget, delivering the benefits or services defined in the project proposal.

Shared Services Governance
Shared service governance focuses on services currently in use, ensuring consistency in quality and monitoring user adoption.



IT Strategic Governance Focus

Strategic IT governance focuses on five key areas:

Strategic Alignment
Strategic alignment involves aligning the IT function with university strategy to meet defined university goals and objectives.

Risk Management
Risk management involves examining risks and security objectives across the IT enterprise and implementing protective measures to improve the university's risk posture.

Value Delivery
Value delivery means ensuring economic and benefits values are realized in all IT investments, from project selection to implementation to ongoing management throughout the life cycle.

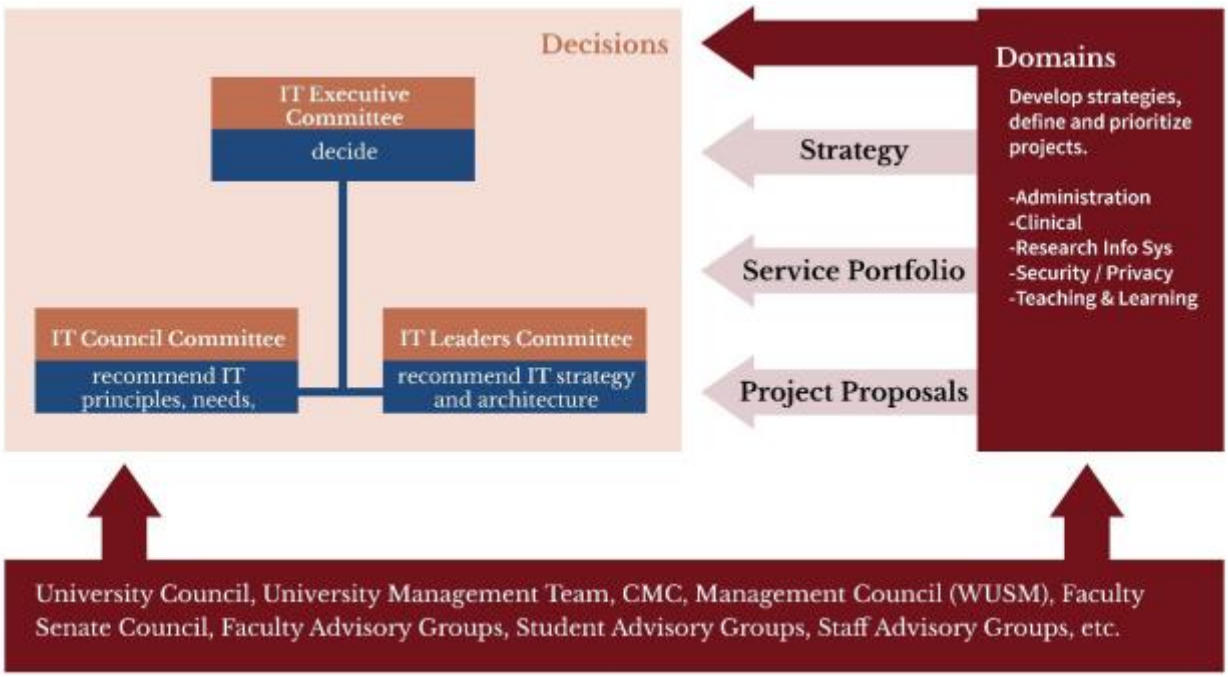
Performance Measurement
Performance measurement includes determining and establishing performance measures to define the success of IT projects and services. Measurement of alignment with university strategy, funding allocation and project results are considered.

Resource Management
Resource management includes optimizing IT resource capacity and performance while forecasting future IT needs to plan for changing staffing requirements. The IT governance structure provides macro-level direction on resource management.

Washington University Information Technology Service Portfolio—Turning Governance into Action

The Washington University Information Technology organization can provide higher quality and lower costs when two or more university units deliver solutions to meet the same requirements. Over time, the IT Domain Committees will determine their shared needs and recommend new services or investments to expand or improve existing services. For example, common shared services used by most faculty, staff and students include phone services, Internet access, document storage and email. Improvements to these services might include: using more of the VoIP capabilities of our phone system (to get voicemail via your email); expanding wireless access coverage; unified implementation of SharePoint and email (to avoid multiple authentication/authorizations to access documents). All of these changes have the potential to improve quality and lower the cost of these services.

Governance Committee Structure



Domain Definition

Given the decentralized and autonomous nature of the university, the concept of a domain was created to ensure that 'business' strategy and IT strategies are aligned as part of the IT governance process. A domain is defined as a specific scope of functions, policies, processes, data and organizations. Domains are intended to define strategy, identify projects to achieve that strategy, and set priorities.

IT Service Layers and Services

To address the current and future development of a shared information technology infrastructure at Washington University, the IT governance structure recognizes four IT service layers.

Common Good
Common good services can be used by all users within the IT community. Funding for common good services is primarily driven by allocation. All units within the IT community will contribute to the funding of these services. At times, there will be a select community within the institution that leverages a service. In this case, the community will contribute to funding these services.

Community Good
Community good services are used by a segment of common users. Funding is primarily driven by units using the service.

Toll Good
Toll good services can be used by most units within the IT community. Funding for toll good services is primarily driven by consumption-based measurements or related allocation keys. Only units using toll good services will pay for them.

Mission Unique
Mission unique services are used by one unit. Funding for mission unique services is borne solely by the unit consuming the service. Guidance of mission unique services is not within the scope of IT governance.

The IT Service Lifecycle

To maximize the efficiency of the university's IT assets and optimize the IT investment, the IT governance structure must manage IT resources according to changing IT community requirements, trends and advancements in technology. The IT Service Lifecycle is the framework used to identify, align, design, deliver, support and retire IT services. Defined criteria determines which layer a service falls into. Each service layer decision will be revisited periodically (not more than once per year).

The domains, with help from Enterprise Architecture and IT Leaders, determine the content of their service portfolio. Throughout the lifecycle of the services, the domains identify goals—consolidate the offerings, fill gaps, improve quality and access, reduce cost, or retire services. As unique services mature, the domains can determine when it is appropriate to scale the service and provide it to several units (Community Good), most units (Toll Service) or all units (Common Good). The domains may identify metrics to measure success. Approved IT project proposals will keep the IT Service Portfolios relevant.

Service Layers and Service Life Cycle Management

IT Governance Membership

The effectiveness of IT governance is dependent on those who participate. The governing structure's ability to quickly respond to IT issues requires a clear ownership of responsibility and decision-making authority within the governance structure. IT governance is a highly collaborative process requiring interdisciplinary participation. The IT governance framework is a cross-functional team consisting of representatives from administration, schools and departments across the university and IT leaders. This structure includes the following:

IT Executive Committee

The IT Executive Committee makes enterprise-wide IT decisions and is charged with the following:

- Authors and approves the IT guiding principles
- Approves changes in the strategic plan
- Reviews domain strategy and project proposals
- Approves domain IT investment allocations and management reserve
- Approves service layer designation changes
- Approves funding model changes
- Makes annual selection of domain stewards and IT committee chairs

IT Council Committee

The IT Council Committee focuses on decisions such as IT funding and resources. The committee is charged with the following:

- Recommends IT guiding principles
- Recommends resource allocations for domains
- Reviews domain strategy and recommends priority projects across the domains
- Reviews and recommends service layer designations

IT Leaders Committee

The IT Leaders Committee focuses on decisions such as IT policy, IT architectures and IT infrastructure. The committee is charged with the following:

- Develop and recommend IT strategy for the university
- Develop and recommend IT architecture to support services for the domains
- Review architecture exceptions
- Review domain strategies and make recommendations from an IT perspective on priority projects across the domains
- Reviews and recommends service layer designations

Domain Committees

Domain committees are responsible for developing strategy, identifying strategic investments, and managing their service portfolio.

The domain committees include:

- Administration Domain Committee, with sub-domain committees including:
    - Alumni & Development
    - Physical Operations
    - Finance, Human Resources
    - Integration Communication and Relationship Management
    - Research Administration
    - Student Administration
- Clinical Domain Committee
- Teaching & Learning Domain Committee
- Research Information Systems Domain Oversight Committee
    - Research Information Systems – Policy
    - Research Information Systems – Clinical Applications
    - Research Information Systems – Research Operations Applications
    - Research Information Systems - Infrastructure
- Security and Privacy Domain

The domain committees are charged with the following:

- Develop the overall strategy for each domain
- Identify IT services needed to support the university strategy
- Identify and prioritize projects to develop, enhance or retire services
- Make recommendations on service level designations

The IT Governance Process

Since good ideas could come any time, proposals can be reviewed/approved on an exception basis. Contact the appropriate domain steward or the CIO.

IT Capital Investment & Shared Service Approval Process

Overview

The IT Capital Investment and Shared Services Request process allows the IT Governance committees to review, compare and prioritize information technology requests collectively. The IT planning process includes all university domains: Administration, Clinical, Research Computing, Security and Privacy, and Teaching and Learning.

The process can be used when a unit is seeking funding, or when a unit has an idea or service it believes has broader use. Sharing plans and information across units will bring synergies and dependencies to light, resulting in more consistency across departments, improved quality, reduction in duplicate solutions and more effective use of available funding. A unit should use the IT Capital Investment and Shared Services Request process when proposing an information technology investment that may have broader use across multiple units. For proposal submissions and other IT Capital Investment and Shared Services Request process timelines, visit the OCIO website at cio.wustl.edu.

This periodic process:

- Provides a portfolio view of all requests, ensuring WashU's limited resources are used to support the highest priority IT needs and best ideas
- Provides visibility to funding needs over multiple years
- Aligns IT investments to WashU strategic plans so that we remain competitive
- Fosters more unit collaboration and transparency
- Provides visibility into unit-driven innovation efforts to create awareness and support
- Allows IT services to be optimized, reused and extended to become common good or toll services with maturity
- Ensures a sound infrastructure foundation for mission unique solutions
- Integrates/Aligns unit plans to the university enterprise architecture roadmaps and support services where appropriate
- Provides a sustainable way to avoid using university dollars to create duplicate services

The Process

- Submit WashU IT Investment Request Form for each investment request to the Office of the CIO Portfolio & Project Management Office (OCIO PPMO). The OCIO PPMO will collect and distribute requests to the IT governance committees and track decisions.
- Enterprise Architecture will work with the domains and make recommendations for optimizing solutions where appropriate
- Domain committees will review all submissions against their domain strategy, then collaborate and prioritize their own lists.
- IT Leaders Committee aligns proposals to Enterprise Architecture, support model, and IT Capital Plan, then make recommendations.
- IT Council Committee aligns proposals to university strategy, IT Capital Plan, policy, and principles, then makes recommendations.

- Submit collective recommendations to IT Executive Committee for decision.
- Decisions regarding how many investments can be funded.

The Criteria

IT capital investments are made to create assets (IT services) that: have future value, are expensive; are interrelated with other assets; and require a longer planning horizon. IT capital planning is used when an organization wants to plan together to achieve economies of scale, sequence investments to avoid rework, achieve interoperability and integration, or meet larger strategic needs. Using capital requires planning, communication and coordination across the enterprise. In summary, criteria for submitting proposals in the IT capital investment process include:

- Project/Service has (or potentially has) broad use across the institution (or with a significant community within the institution)
- Project/Service requires significant investment
- Project/Service requires broad or high level sponsorship
- Project/Service could potentially eliminate unnecessary redundancy
- There's opportunity to leverage purchasing power (negotiated volume discounts) for equipment, licensing, or services
- Implementation of service requires the use of IT human resources across the university

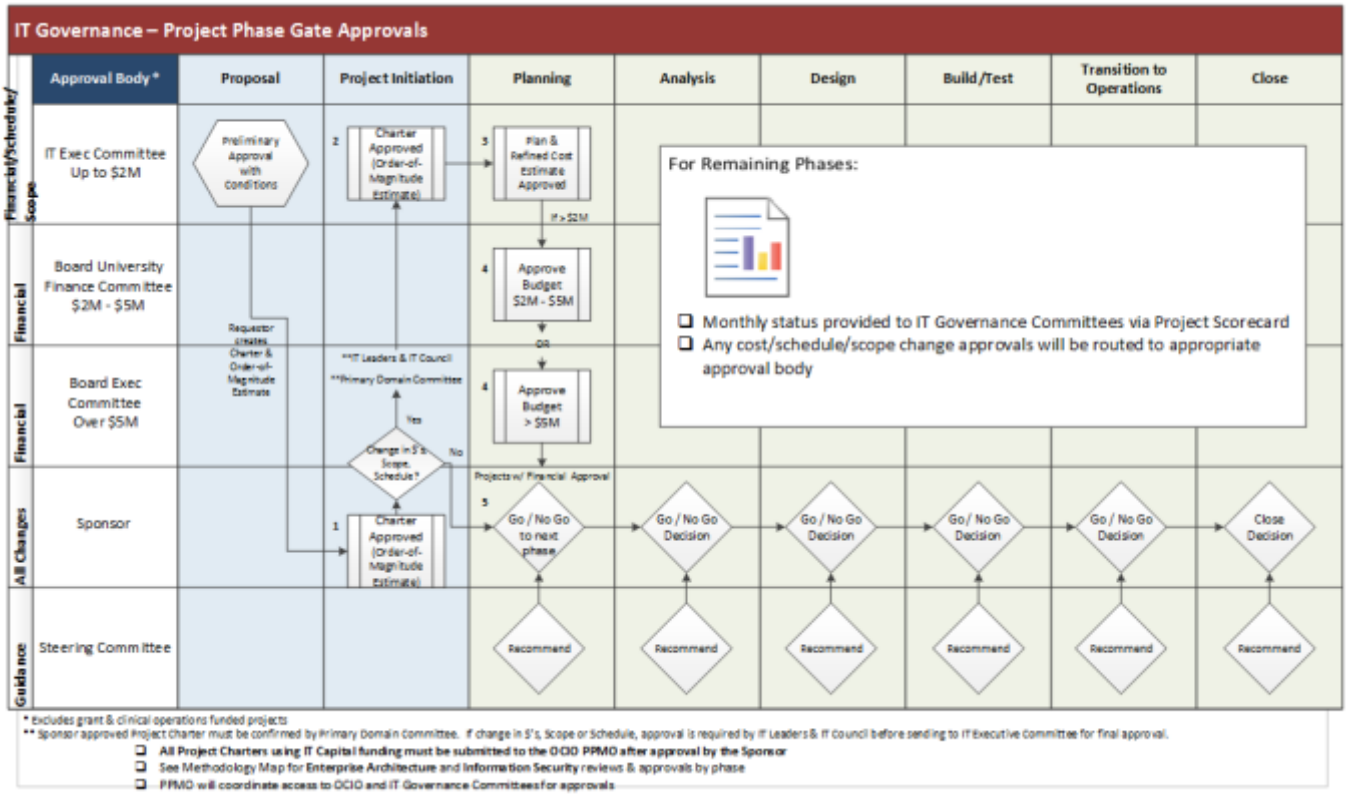
Proposals should be submitted if:

1. They meet one or more of the criteria above, and
2. They require full or partial funding, or
3. You are sharing an idea to see if others across campus have a similar need/interest

Proposal Evaluation Criteria

Proposals will be evaluated across the following items:

- Each other
- Alignment with university strategy
- Alignment with domain strategy (when existing)
- Alignment with IT architecture
- Impact on university
- Sponsorship
- Available funding



IT Governance in the Context of Other IT Processes

IT governance, guided by university strategies, works to ensure the right projects are selected to support the needed portfolio of services. The OCIO provides portfolio management services to support IT governance. This includes:

- Tracking proposals from the idea stage through proposal evaluation
- Ensuring projects are weighed against each other relative to strategic alignment, technology alignment, value and risk to ensure the portfolio is risk balanced
- Ensuring projects are resourced before development (over-allocation of resources is common in IT and the primary cause for schedule delays and cost over-runs)
- Ensuring active projects are periodically reviewed for progress, and revised or stopped if necessary
- Ensuring metrics relevant to IT governing committees are provided

IT Governance Administration

As IT governance is a collaborative process and as IT Services recognizes that transparency is necessary in building a trusting relationship with the university community, the IT governance structure regularly communicates information, including: the IT vision and guiding principles; IT strategies and initiatives; IT funding; IT architecture; IT governance meeting schedules, minutes and outcomes. The OCIO will provide facilitation, coordination and information tracking services for the IT governance committees.

Meetings

IT governance committees meet periodically. Domain committee chairs provide regular updates to the IT Council.

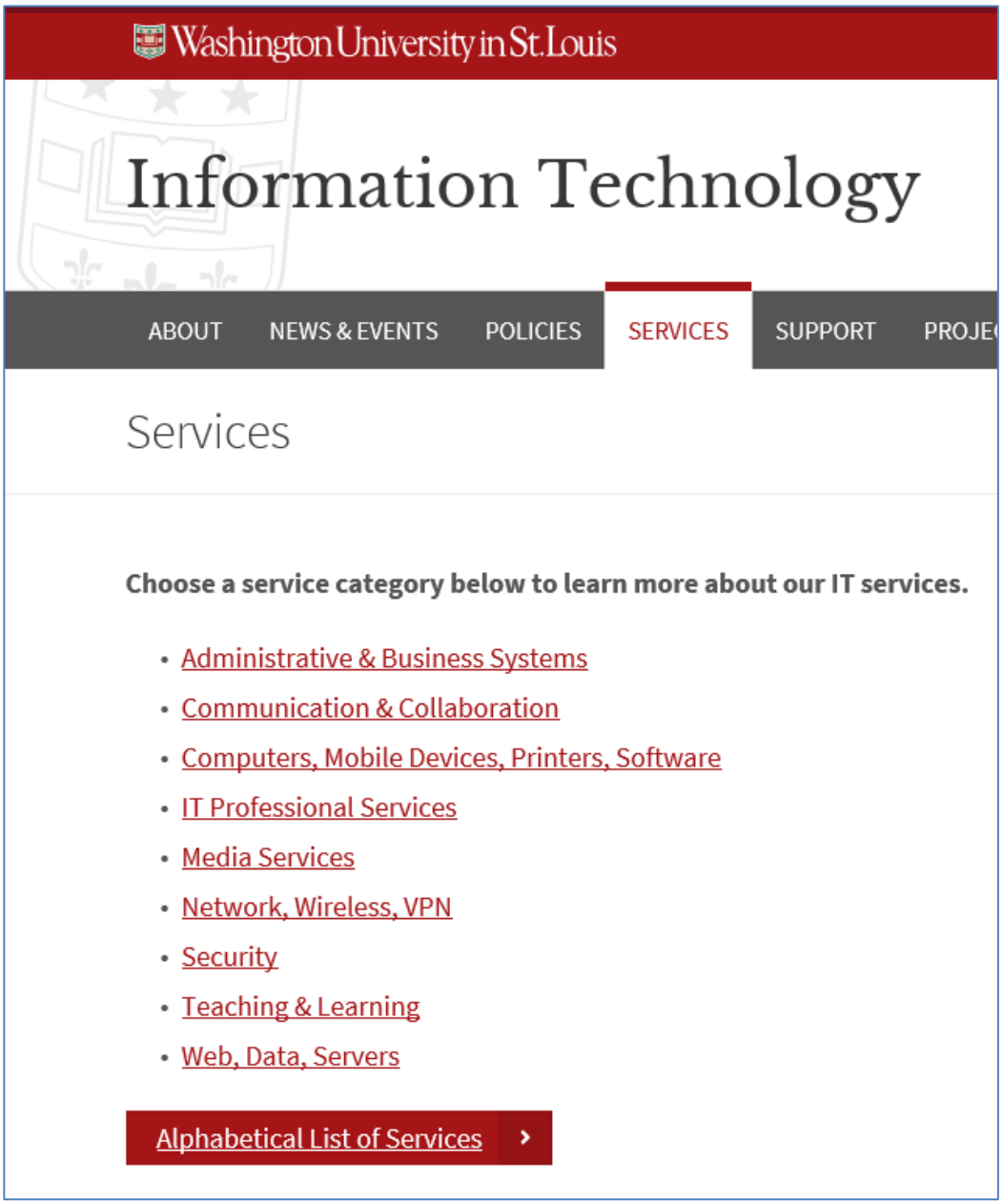
Reporting

Committees are responsible for providing strategy updates and plans to the OCIO, IT Leaders, IT Council and IT Executive Committee. The OCIO Portfolio & Project Management office provides quarterly project portfolio review and financial status reports to all strategic governance committees.

Appendix

Appendix A: Glossary

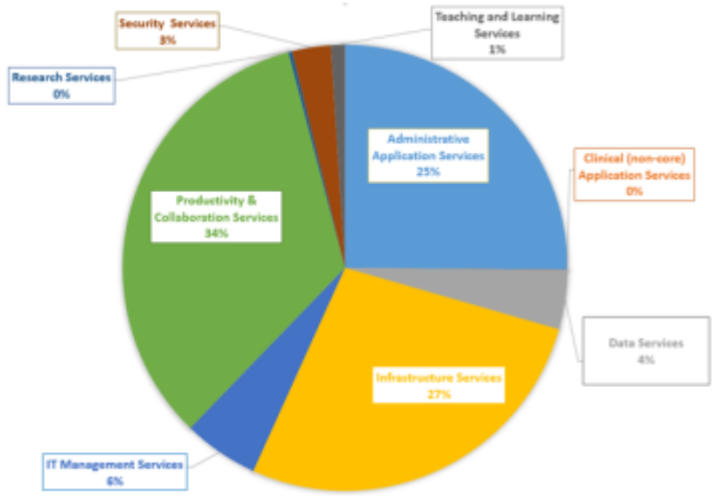
IT Service Portfolio – the complete set of services managed by the IT service provider. The service portfolio is used to manage the entire lifecycle of all services and includes three categories: service pipeline (proposed or in development); service catalog (live or available for deployment); and retired services. Active services exposed to users via a "service catalog". The WashU IT Service Catalog is available at it.wustl.edu.



IT Project Portfolio – the projects, programs and operations managed as a group to achieve strategic objectives.

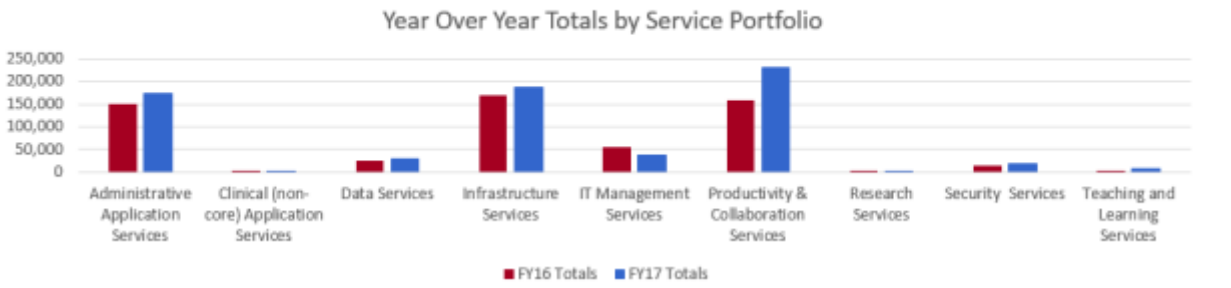
Project investments are proposed to create, enhance, replace and/or retire shared services. Upon approval by the IT Executive Committee, project work is scheduled. Portfolio management requires integrated project execution and focuses on benefits realization across the organization for shared services. Illustration of various views of the IT project portfolio.

FY17 Total Actual Labor Hours by Service Portfolio



Administrative Application Services	172,915	25%
Clinical (non-core) Application Services	313	0%
Data Services	29,158	4%
Infrastructure Services	187,769	27%
IT Management Services	37,656	5%
Productivity & Collaboration Services	231,206	34%
Research Services	1,893	0%
Security Services	19,272	3%
Teaching and Learning Services	7,048	1%
Total	687,229	100%

FY17 Changes vs. FY16—Actuals by Service Portfolio



Service Portfolio	FY16 Totals	FY16 Percent	FY17 Totals	FY17 Percent	Year over Year % Change	
Administrative Application Services	149,222	26%	172,915	25%	16%	
Clinical (non-core) Application Services	1,080	0%	313	0%	-71%	
Data Services	24,548	4%	29,158	4%	19%	
Infrastructure Services	169,661	29%	187,769	27%	11%	
IT Management Services	56,295	10%	37,656	5%	-33%	
Productivity & Collaboration Services	159,714	28%	231,206	34%	45%	
Research Services	1,471	0%	1,893	0%	29%	
Security Services	13,987	2%	19,272	3%	38%	
Teaching and Learning Services	3,327	1%	7,048	1%	112%	
Service Portfolio Total	***579,304**	**100%**	***687,229**	**100%**	**19%**	**Increase over FY16**

*Service Portfolio totals vary from other monthly aggregate totals due to portfolio reassignment over time.

IT Capital Plan – the prioritized capital spending plan resulting from the periodic investment appraisal process conducted by IT governance. Note: capital plans reflect the organization's priorities in allocating scarce resources (funds and people) across domains and types of investments (advances mission, regulatory and compliance, cost reduction, revenue increase, improved productivity, improved competitive advantage, risk avoidance, etc.).

IT capital investments are made to create assets (IT services) that: 1) have future value, 2) are expensive, 3) are interrelated with other assets, and 4) require a longer planning horizon. IT capital planning is used when an organization wants to plan together to achieve economies of scale, sequence investments to avoid rework, achieve interoperability and integration, or meet larger strategic needs. Using capital requires planning, communication and coordination across the enterprise. The capital plan is reassessed periodically and revised as the environment changes.

The IT capital plan must be funded to be executed, and the organization's funding model determines the funding sources and options for financing the plan.