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Report Title: Software and Services Governance Initiative

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**PROBLEM STATEMENT**

- Limited institutional knowledge of software/hardware/services
  - We don't collectively gather or organize this info
- Limited coordination of USC entities
  - Departments work independently
- Limited Transparency
  - Limited info to share
- Insufficient Cooperative direction
  - Decision makers don't have knowledge needed to work together
- Limited coordinated purchasing
  - Limited enterprise information
- Limited governing policy
  - No central/neutral governing body
- Limited awareness
  - Users are not fully aware of purchasing initiatives/cost savings/policy or restrictions
- Limited marketing
  - Users are not fully aware of software/services/hardware savings/coordinated purchasing options.

The initiative that we propose to advance is the **provision/governance/maintenance of a database/registry of software, hardware, and services**. We feel that this has always been an issue in IT that drastically effects organizations world-wide. It's a giant set of organizational knowledge that needs to be defined and guided. For most individuals, software/hardware/services serve a purpose to fulfill a need of a process that is lacking. Everyone, whether they are acting for themselves or on behalf of a large organization (or entity), for the most part, decides which software, hardware, or service(s) fulfills their need(s) based on an isolated decision of functionality with no regard to organizational financial impact or security risk. This is probably our largest undefined, unregulated area at our university.

Due to the historic Department of Revenue breach, the state of South Carolina (and its flagship university) have become ground zero regarding security reform. This was, in part, due to lackadaisical, unformed, unorganized, and unregulated historic directional guidance and development of our IT entities. The State has worked diligently and successfully made strides to correct this unguided development in the form of new laws and policies in most areas of IT security/governance.

While many of the areas that needed to be addressed are clear and can easily be defined (installation of intrusion detection, encryption, data discovery, support for IT knowledge, etc....). Our initiative is unique in that it is clearly an issue that needs to be addressed. However, the actions that are required to govern/regulate/recommend are vague and can be politically and organizationally obtrusive. It will take collaboration, hard work, compromise, and great organizational decision making to accomplish this task as a university. This initiative is one of the most important aspects of IT and is a natural evolution of organizational IT development in our modern world.

INVESTIGATION METHODS/DATA/CONCLUSIONS

Our strategy that we developed will include the following sections:

- Create a key phrase (ex. USC Secure App, USC Secure Service, Gamecock approved, USC Dataverse, IT Connect, Product Gallery, etc....) that we use so that people can identify our initiative?
- Discovery (how do we find currently used services/systems) (Most likely avenues: aggregated network log files, ServiceNow, software distribution, credit card usage, purchasing, security surveys, big fix, user surveys, IT staff surveys, etc....)
- Analysis (After we have all the data, what criteria do we use to categorize and determine ranking/importance, define status (under review, approved, critical, non-critical, scope/usage, etc....) How do we focus so that we can be the most efficient in dissemination?
- Dissemination: How do we communication our findings? Website/email/general communication? Who has access to various portion of the data. Are there parts of the data that are more sensitive than others? Where/how do we store the data?
- Enforcement/Recommendations/Shaping usage: Must be diverse and act independently and objectively. Must have authority to make and enforce decisions. Start thinking about potential ways to promote/enforce/prohibit user's usage of services/systems. Do we potentially create administrative members, administrative funding, etc.... to provide ongoing support and practices? Do we create an approval committee to govern systems/services that are deemed "appropriate" or "approved"?
- Permanence/Policy: What do we need to do so that our initiative remains relevant and adaptive and remains advantageous to the university into the future. Do we go to the level of policy? Discussion among senior leadership (CIO, COO, CFO, Provost, and Chancellors) so all parties are on the same page and can provide the necessary guidance and direction to their staff regarding the change in policy.

EXECUTIVE SUMMARY

USC has many accolades such as:

- 1 of 32 public universities to earn the Carnegie Foundation top-tier designation
- #1 Undergraduate Business Major
- #1 International Business
- #1 International Experience
- #3 in world ranking for Sports science
- Nation's Best Public University Honor College

The list goes on and on.

These awards and accomplishments were built on the foundation of responsibility, reputation, due diligence, and student (customer) support. These actions are performed on a software, hardware, or service platform. In today's world, almost everything is...

We need to make sure that our foundation is secure and will last without exception or incident. Software/hardware/services is this foundation. Without intensive knowledge of the parts that make up our foundation, it is sure to fail.

Our solution is the Software and Services Governance Initiative. This initiative will allow us to:

- Know the software/hardware/services that our organization uses.
- Vet these software/hardware/services.
- Create trust and affirmation in the software/hardware/services that we use as an individual/org.
- Share information to the entire USC organization.
- Become proactive in security and software/hardware/services investment.
- Allow participation and collaboration in what we use to perform our "business".
- Leverage this information into enormous cost savings based on greater security and bulk purchasing.
- Improve our processes on the enterprise level.
- Minimize our individual/organizational liability as a University through the initiatives' collaborative efforts.
- Allow our University to be at the forefront in the trend for more organizational awareness.

We can transform the way that we do business as an enterprise. We can trust our foundation. We can proactively protect our foundation. We can leverage this into cost savings.

We ask for your support in this initiative so that we can build a better USC foundation.

RECOMMENDATIONS/ACTIONS

Recommendation: Create an initiative that includes the provision of a governing entity that gathers, facilitates, directs, organizes, maintains, markets, and disseminates information so that our institution can discover unknown information about how we operate. This information will allow our organization to make better informed decisions which will allow our organization to save money and operate more securely and efficiently.

The initiative intends to complement and extend the capabilities of the following entities: purchasing, security (TRB), data center operations, software distribution, high performance computing, and general users of USC technology.

The University must move towards an increasingly coordinated approach to the use of technology, including sharing knowledge and resources with the regional campuses. Why?

- By identifying software, hardware, services and systems already employed among all faculty, including regional campuses, one can determine the kinds of resources required for faculty to use technology and how technology can be used to most effectively enhance learning.
- By combining and sharing efforts toward addressing IT challenges at a systemic-level, issues such as network security may be improved for a greater number of users.
- By coordinating efforts, IT decision-making and accountability may merge. The University needs to be able to respond to real-time information, produce data, and resolve inadequacies with greater efficiencies.
- By extending the infrastructure to include the regional campuses, processes such as technology upgrades (which are continuously needed in all facets of higher education), and developing security policies, etc., will have a far more reaching impact.

--With rising expectations and demands, integrated and streamlined IT systems (across the campuses) can ensure a smoother, more cost-efficient process.

It appears that many universities have undertaken initiatives to create a central database of software and systems. As expected, most of these are done in conjunction with an effort to centralize the IT licensing and purchasing process. The two best descriptions of such efforts are from Purdue University and the University of Washington (UW). I have attached the pdf reports here, and provide the online links below:

- Purdue: [https://www.purdue.edu/sustaining/initiatives/infotech/CITPC\\_Cost\\_Savings\\_2.pdf](https://www.purdue.edu/sustaining/initiatives/infotech/CITPC_Cost_Savings_2.pdf)
- UW: <https://www.washington.edu/uwit/files/2015/07/2015.2.23.softwarelicenseproposal.pdf>

In addition to these two examples, the UW document contains, in Appendix B, a list of universities with central software management systems (Harvard, Berkeley, Utah, Nebraska, and Indiana), along with links to their online descriptions. Many of these systems are geared more toward the procurement/licensing process, but they do provide strong evidence that universities are seeing value in centralized control and improved visibility of the available software and services at their institution.

In terms of a financial justification for a central database, the university reports found generally acknowledge that a specific dollar figure in terms of savings is difficult to determine. Instead, they talk about more qualitative benefits including:

- Increased IT department efficiency by reducing case-by-case software decisions and elimination of redundant work
- Higher faculty/staff satisfaction when the tools they need are easily accessible (indicative of better support from central administration)
- Better monitoring and thus a reduced risk of audit (e.g. for non-compliance with the software license)
- Stronger negotiating position relative to ad hoc software purchases
- Ability to right-size licenses based on actual need/usage

Overall, the sheer scope of the software management problem at large universities is substantial. Purdue currently has more than 900 separate software contracts in its portfolio, worth a total of over \$8M. In Appendix A of their document, UW lists a sample of their contracts, representing hundreds of thousands of dollars. Providing better transparency into this complex, expensive area seems to represent an opportunity for significant benefits at USC, as at these institutions.

#### RESOURCE REQUIREMENTS AND STRATEGIES

Resource requirements will be determined as the initiative matures and will grow in phases.

- Explain the project plan to key stakeholders and discuss its key components.
- Define roles and responsibilities.
- Develop a Scope Statement.
- Develop scope baseline.
- Develop the schedule and cost baselines.
- Create baseline management plans.
- Develop the staffing plan.
- Analyze quality and risks.