July 2016

*There exists the need for a strategic approach for Software Licensing Management at Queen’s University to ensure the appropriate tools required for teaching, learning and research are available to the academy in the most cost effective manner.*

Software Licensing Report

Findings and recommendations from the CIO’s Software Licensing Task Group

**Executive Summary**

**The need for Enterprise Software License Management (SLM) at Queen’s**

Enterprise software is that which is selected, procured, managed and funded at a university-wide level because of its overall benefit to the institution. Strategic SLM for enterprise software has never been formally addressed at Queen’s University. In the absence of a software licensing office, the Campus Computer Store (CCS) was the unit most heavily involved in the negotiation, procurement, billing, distribution and maintenance of several software titles used by the institution. While the store did provide support for a select number of titles, SLM was never fully established and many gaps existed between the services offered and the institutional need. With the closure of the CCS unit in April 2016, the resources and funding model that made some of the management of software licensing possible were now no longer available, and made the gap even wider. A new model is necessary to facilitate the procurement of, and access to software required for teaching, learning, research and administration. In addition, a governance model should be put in place to address the life cycles of software license agreements necessary to achieve continuity in these areas.

**Objectives**

The Software Licensing Task Group’s (SLTG) objectives are:

To **identify and recommend a strategic direction or model for the identification, funding, licensing, and distribution of enterprise software** where there exists the ability to realize cost savings, and to provide the essential tools needed for teaching, research or administration at Queen’s University.

To **recommend policies, procedures and funding approaches** which will achieve greater consistency, lower costs and improve the current software licensing practices at Queen’s University.

**Scope**

A cross section of the university was involved in the development of this report to ensure that the recommendation addresses the following challenges:

* Categorization & Prioritization
* Funding Strategies
* Distribution or Provisioning of Access
* Relevance and Alignment with Software Needs
* Compliance with and Preservation of License Agreements

**Recommendation**

It is the recommendation of the SLTG that ITS procure and manage enterprise wide software agreements and distribute via electronic download. Funding for enterprise software needs to be made available from the University Fund and added to an earmarked software account within the ITS budget. Software titles not deemed to meet the required criteria would be funded and managed by the faculty, school or department requiring its use. This process will need a governance structure to oversee the review and selection of software titles, and the business cases for their funding. A Software Licensing Review Committee (SLRC) will need to be established, and have representation from faculties, schools, departments, and student groups. This oversight body, like the SLTG, will need to possess both the insight into the needs of their respective areas, and the ability to look at SLM from the enterprise perspective to ensure the offerings are well suited to the needs of the entire university.

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# 1 – Introduction

## 1.1 - Business Need

Software License Management (SLM) for enterprise software has never been formally addressed at Queen’s University. In the absence of a software licensing office, the Campus Computer Store (CCS) has been the unit most heavily involved in the negotiation, procurement, billing, distribution and maintenance of several software titles used by the institution. This ancillary unit operated with a cost recovery model by which a markup was applied to each software title sold to the end users and/or departments, in order to fund the administrative roles required to provide this service to the campus. The licenses that were adopted by CCS were selected based on their ability to provide revenue to the unit, rather than the strategic alignment the software may have provided to the university. In many instances this recovery model fell short of projections and the resale of site licensed software to departments resulted in a net loss to the unit. Those titles that did not offer a viable cost recovery model were left to the individual departments, or end users to procure and manage individually. Value to the university was realized through the economies of scale that the service offered on the titles that were managed and distributed by the unit. Costs were reduced through this volume licensing, and academic units were not burdened with the need to assign resources to take on the procurement and distribution of software. Even with the value-added provided, and cost-reduction realized, CCS was unable to scale the service to the strategic level necessary for cost-recovery of SLM. With CCS now closed, the opportunity exists to develop a comprehensive enterprise approach to SLM and to create a framework that will serve the institution in a cost effective, efficient and transparent manner.

## 1.2 – Strategic Alignment

Addressing the need for SLM aligns with the Queen’s Strategic Framework through its support of “**Ensuring Financial Sustainability”**. SLM demonstrates this alignment by meeting the University-wide Objectives:

* *To implement cost containment initiatives and process efficiencies across the academy; and*
* *To enhance and improve learning and research resources, services, technology and facilities.*

In addition, SLM would also support the **“Ensuring Research Prominence”** strategy, as it would:

* *Improve faculty support services to enhance faculty and staff productivity, research and retention.”*

Through the coordination of software procurement for the university, SLM can leverage the economies of scale that exist with larger scale, consolidated purchases. In addition, the communication and collaboration efforts used to garner input from the faculties and schools to help make the procurement decisions will ensure that the appropriate software is chosen to support teaching, learning and research at Queen’s University.

# 2 - Purpose of Review

The Software Licensing Task Group’s mandate is to recommend a strategic direction and model for the selection, funding, licensing, and distribution of enterprise software where there exists the ability to realize cost savings through bulk purchasing.  With the current absence of any formal service existing on campus to facilitate SLM, a governance body needs to be put in place to recommend a model that will facilitate the investigation, procurement, and distribution of software required for teaching, learning, research and administration. In addition, the model needs to address the life cycles of software license agreements necessary to achieve continuity in these areas.

**The primary questions and challenges that the SLTG was asked to address were:**

## 2.1 - Categorization / Prioritization

There are many different software products used across the university and many different types of license agreements. To be able to address the objectives, some means of classifying or categorizing software will be necessary to ensure transparency with any selection process.

## 2.2 - Funding Strategies

There are numerous challenges, and inefficiencies in the current, adhoc software licensing landscape at Queen’s. To be more sustainable and effective, greater consistency is needed. While there may still be some variation, those should be justified by principles rather than driven by past practice or decisions made long ago under very different circumstances.

At the heart of this topic is whether some or all of the software should be funded centrally (from the University Fund) , in a manner consistent with the Queen’s Activity Based Budget Model (Appendix E) There can be broad based benefit for all faculty and students having access to selected software, even though it may not be used widely in their discipline or department.

## 2.3 - Distribution or Provisioning of Access

The Task Group was asked to provide recommendations on preferred mechanisms for making the software available to those who need it. Previously, equipment was available to produce CD and DVD copies for distribution, and in some cases **departments** were provided access to shared storage folders for download over the network. These options no longer exist because of re-distribution of the resources that had assisted with provisioning software. In the cases where license agreements prohibit installation of software on **student-owned computers**, a method will be needed to provision students with access to that software, to effectively support their learning and the curricular needs of the department or instructor.

## 2.4 - Relevance and Alignment with University Needs

In addition to addressing the “what” and the “how” of software licensing, governance must also address the “why”. The selection of software titles that align with the evolving needs of the university will require the input of many stakeholders. The group will look at the engagement of a cross-section of the university (much like the SLTG) to determine how decisions are made to add a new product to the collection, drop a product of diminished interest to stakeholders, or address university goals for common learning platforms.

## 2.5 - Compliance with and Preservation of License Agreements

How does the University ensure that those deploying and using the software understand and respect the terms of use or license conditions for the Software, which can vary from one product to another? While the other recommendations are expected to help in this regard, it will be useful to have recommendations for ensuring stakeholders are aware of, and understand their responsibilities.

# 3 - Scope

**The scope provided to the Task Group was:**

To recommend policies, procedures and funding approaches that will achieve lower costs and improve the current software licensing practices at Queen’s University. The Task Group is not being asked to review which software is covered under current university licensing arrangements. However, the group will be asked to recommend processes for such regular reviews and decision-making over time.

# 4 - Findings

## 4.1 - Funding/Financial Landscape

Through discussion with the members of the SLTG (Appendix A), the current landscape of software licensing at Queen’s University presents many challenges:

Risks

* Some license agreements and pricing may be “grandfathered” for Queen’s. If allowed to lapse or expire, they may not be renewable at their current pricing level.
* The current “recovery based on usage” funding model for software is unsustainable without a campus entity to handle the volume of transactions.
* The funding model is also inconsistent across products, with some being fully funded, some subsidized, and some fully cost-recovered.
* Some cost recovery license arrangements are vulnerable to unit-level changes in participation. If Department A drops out, their share of the cost must be reallocated among the other participants. The entire arrangement may collapse if participants see their share of the cost exceed a certain threshold.
* Licensing agreements are not properly adhered to, resulting in piracy and other compliance issues that may put the university at risk.

Cost Savings

* The savings realized through current or potential site license arrangements can be very significant. In at least one case at present, the total spend at Queen’s for multiple instances of departmental licenses for the same software is significantly more than the cost if a campus-wide license were in place.

Compliance Issues

* A clear understanding of software compliance requirements may not exist. It involves knowing what software you have installed; what licenses you've purchased; that your installations don't exceed your license purchases; what software is being used; and the details of your software license usage rights and restrictions.
* Purchases made by researchers may also be used by administrative staff and teaching faculty, which may be in contradiction to the terms of the license.
* Some license agreements do not extend to students – i.e. software can be installed only on university-owned computers.

Efficiency Issues

* Numerous departments manage their own software licensing and, therefore, require resources and staffing to manage billing, vendor management and distribution. These local licensing practices result in duplication of effort across the university.
* Some departments pay the license fees and then need to recover funds from researchers to offset the cost.

# 5 – Assessment

## 5.1 – Software Licensing Tiers

In reviewing a sample (Appendix C) of the multiple software titles that are currently being applied across campus, the SLTG identified the various Tiers (Appendix B) at which software license management operates at Queen’s. Each Tier has its own benefits, constraints, risks and serves a specific audience.

## 5.1.1 – Tier 1 – Direct Purchase

Vendors are contacted by the department, faculty, school or individual, and the software is purchased (or a contract is signed) to acquire the licenses desired. The management and distribution remains the responsibility of the unit.

## 5.1.2 – Tier 2 – Funded by select departments

A single unit facilitates the procurement and distribution on behalf of multiple units for the benefit of reduced pricing and coordinated dealings with the vendor. The management and distribution of the software can vary depending on the structure chosen by the units paying for the software. The software may be (if purchased as an enterprise license) offered to the entire university in the hopes of garnering more users that may help spread out the cost further. In other scenarios, the desire is for the license (whether it is enterprise or not) to be only provided to those who have contributed to the cost and are not interested in wider use of the license. Depending on the agreement with the vendor, the distribution of non-enterprise licenses vary greatly, as does the method by which they will need to be managed to ensure compliance.

## 5.1.3 – Tier 3 – Paid from "central fund" and attributed to all faculties

Software is purchased, licensed and distributed at the enterprise level. A single purchase is made for the software, and the distribution is facilitated via a single source that allows the download of the software to anyone at Queen’s. While these licenses occasionally come at an initial higher cost to the university, the savings from the reduced “per user” license plus the lower cost of maintenance and management can prove to be a net cost savings to the university. In addition, the ability of the university to maintain compliance and reduce risk of copyright infringement is reduced tremendously.

# 6 – Options Analysis

## 6.1 – Support for Tier 3 Software Licenses only (Central Model)

**ITS continues to manage enterprise wide agreements for electronic download, and funding for the enterprise software be added to base earmarked software account.**

* These agreements require a central funding budget request to eliminate the charge back model to the faculties, departments and schools that would otherwise be required to cover the cost of the software licenses.
* Enterprise wide agreements are software titles that include some of the following criteria:
	+ The software is licensed for unlimited installations to Queen’s staff and/or students.
	+ The software is required for teaching and labs by multiple academic departments.
	+ The software is required by multiple researchers in multiple departments.
	+ The software is used administratively across Queen’s.
	+ The software cannot be funded within a single unit and would affect course offerings at the university if it was not available.
* It is the recommendation of the SLTG that funding totaling $214K be initially provided for the following enterprise licenses:
	+ SAS ($7K)
	+ SPSS ($90K)
	+ Maple ($12K)
	+ MatLab ($80K)
	+ ARC-GIS ($25K)
* Budget requests will be needed to ensure software licenses are maintained for fiscal 2017-18.
* Business cases will be written and presented by the department, faculty or school, and reviewed by a Software License Review Committee for approval of the:
	+ addition to the current enterprise software offering (as a replacement for another title)
	+ removal from the current software offering (to provide funding for preferred software)
	+ additional funding to ITS for a net-new offering
* Recommendations would be then reviewed by EITAC (Appendix D), as the decision-making body.
* EITAC would provide formal support for software additions/removals based on the criteria and the business case.
* EITAC would provide formal support for any new funding request to assist with the ITS budget submission.
* Review committee in place for (bi) annual review of licenses covered by budget.
* Distribution of software through MyQueensU portal based on the role of the end user and usage rights for specific titles.
* All software titles not approved for Enterprise Funding will be procured, distributed and maintained within the Faculty, School or Department that has selected it for use.

**Benefits:** This option provides the most transparent process, largest (enterprise) cost reduction, and scalable solution to the university.

|  |  |  |
| --- | --- | --- |
| **Current Enterprise Licensing** | **Individual Pricing** | **Current Users** |
| Recommended Campus Wide agreements | Annual Cost  | FTE count | Price per user  | Per Faculty | Per Student | Per Staff | Combination of Faculty, Students & Staff |
| MatLab | $80,000 | 25000 | $3.20  | $700 | $150 | $2500 | 500 |
| SPSS | $90,000 | 25000 | $3.60  | $300 | $150 | $2500 | 300 |
| ArcGIS | $25,000 | 25000 | $1.00  | $2700 | $150 | $7000 | 4 Departments |
| Maple | $12,000 | 25000 | $0.48  | $1000 | $150 | $2275 | N/A |
| SAS | $7,000 | 25000 | $0.28  | $500 | N/C | $1500 | 34 |

While each license is used by a different combination of Faculty, Staff and Students, some titles have a specific user base and can be at the cost per user level, based on volume. As an example, MatLab is used by 500 faculty on campus. At the individual rate (without a centrally managed purchase and distribution process) this title alone would cost Queen’s $350,000. SPSS is used by 409 Faculty, which at individual pricing would total $122,700. SAS has 28 Faculty and 6 Staff users, totaling $23,000.

**Risks:** Not all software will be offered at an enterprise level, requiring some areas to manage their own software licenses. This may in fact prove to be a positive driver that will facilitate the review of “local license management” and its true cost, versus the adoption of an enterprise solution. For some licenses, the shift from an external research funding source to an internal operational funding source will affect the budgets of some departments.

## – Support Tier 2 Software Licenses only (Networked Model)

**ITS would facilitate the procurement and distribution of software titles, and distribute using a chargeback model that would allow for the recovery of the software cost and staffing resources required to manage the licenses.**

* SLM service offered through ITS to manage software titles requested by groups requiring assistance with the procurement, management and distribution of software. The SLM would provide:
	+ Procurement support
	+ A distribution model (either through portal, or outsourced service).
	+ End user billing
	+ Renewal and maintenance support
* Service would require a cost recovery model on each software title that would fund the additional resources required to provide service including the cost of any third-party software license distribution service.
* The cost recovery would need to cover the funding of a dedicated FTE (approx. $60,000 annually) required to negotiate, manage, track, distribute and bill the software amongst the departments and faculties who purchase the licenses for their staff and/or students.

**Benefits:** The only potential benefit of this option is that it provides flexibility to the departments, faculties and schools looking to use specialized software but do not want the administrative burden to manage the licenses. This comes with risk, and at a cost.

**Risks:** The “resale” model of software license management has already been tried, and lacked the ability to scale the needs to the university. In addition, the mark-up of resale of software as a distribution method creates a lack of transparency and inflated costs to the university as a result of the unnecessary duplication and cost of these internal transactions. The solution does not scale as the need for additional FTEs will increase as the number of titles increase, thus driving up the internal mark-up required to maintain the service.

## 6.3 – Adoption of fully Decentralized (Tier 1) Software Licensing Model only (Local)

**Software license management and procurement would become the responsibility of the faculties, schools and departments.**

* Software licensing other than those currently supported and maintained by ITS would be the responsibility of the Faculty, School or Department who wishes to provide the software to its faculty, staff and/or students.

**Benefits:** Creates a level of transparency of what it costs a unit to run a program, by including software fees in their budget.

**Risks:** Dramatic increase in the cost of software will occur as economies of scale are lost. Lack of governance and management of such a distributed model will result in compliance issues stemming from restricted licenses needing to be tightly managed by staff not equipped to provide an appropriate level of control. Resources required for SLM will be duplicated across the institution, driving up costs further.

# 7 - Conclusions

**Objective:** To identify and recommend a strategic direction or model for the identification of funding, licensing, and distribution of enterprise software where there exits the ability to realize cost savings, and to provide the essential tools needed for teaching, research and/or administration at Queen’s University.

**Recommendation: The recommended solution for SLM at Queen’s University is for ITS to manage selected enterprise wide software licenses and agreements, software distribution through the Queen’s portal, and for funding of the enterprise software to be provided centrally based on a governance model involving representation from various faculties, schools and departments.**

Software is core to the academic, administrative and research enterprise of the university. The substantial investments being made by the campus on hardware and networking infrastructure only have value when paired with software. Software enables us to do the work of the university. Our ability to procure these tools in a cost-efficient manner and make them accessible to the largest number of faculty, staff, and students possible has a significant impact on our ability to deliver high-quality academic programs and to engage in high-quality research. This proposal suggests utilizing collaboration and a “Queen’s first” view of software licensing to eliminate the current fragmented processes and create a more user-friendly software experience and better value for our investment. This benefits all faculty, staff, and students at Queen’s University by providing essential software licenses for all who need them.

**Objective:** To recommend policies, procedures and funding approaches which will achieve **increased compliance,** **lower costs** and **improve efficiency of software licensing practices** at Queen’s University.

**Recommendation: Increased compliance**

The institution is ultimately accountable for software license compliance, regardless of whether it is purchased centrally or at the department level. However, the institution does not govern or monitor appropriate use. A centralized, managed enterprise software licensing framework would help ensure that Queen’s is demonstrating its due diligence when dealing with the licensing and distribution of software titles, and is protected from issues of piracy and in appropriate usage.

**Recommendation: Reduce overall costs**

In addition to the administrative costs saved by eliminating redundant work across the institution, the central approach proposed will also leverage the ability of the institution to negotiate at scale. Managing compliance and product delivery centrally have similar benefits. In the event of an audit or related public records request, for example, staff burden would be reduced to a single point, rather than spread across the institution. SLM requires dedicated resources both in the funding of the software and the staffing requirements to manage and distribute them. Following the Queen’s Strategic Framework mandate of ‘Ensuring Financial Sustainability’, the recommendation to centrally fund selected enterprise software licenses will provide the benefits (i.e., lower cost) of managed volume purchases, in addition to reducing the need for faculties, schools and departments to dedicate resources to manage core software titles.

**Recommendation:** **Improve administrative efficiency**

Offering central institutional software evaluation, contract negotiation, procurement, and delivery is an efficient model for the University. Currently, individual units bargain independently with many of the same large software vendors. These duplicate efforts are wasteful and burdensome on unit staff. By rolling these numerous individual negotiations and management effort up into one, we save time across the institution.

Non-centralized purchasing and licensing for broadly-used software tools exacts a toll across the institution. While an exact amount of financial loss is difficult to quantify, the qualitative effects are clear. Managing software licensing on a case-by-case basis is highly disruptive and tedious to faculty as well as supporting staff and students. Regardless of support staff size, this activity also conveys a feeling of lack of support by both ITS, and the local departmental IT units.

# 8 - Appendixes

## Appendix A – Software Licensing Task Group Membership

Bo Wandschneider – CIO (Sponsor)

Keith McWhirter – AD ITS (Chair)

Paul Treitz – Arts & Science Faculty

Brian McDonald – AD ITS

Brian Coughtrey – Manager ITS

Michael Vandenberg – Library

Patrick Legresley - Smith

Bob Burge – Faculty of Education

James McLellan - Faculty of Engineering and Applied Science

Karina McInnis – University Research Services

## Appendix B – Software Licensing Tiers

|  |  |  |  |
| --- | --- | --- | --- |
| Level | Type | Funding | Management |
| 1 | Teaching/Admin/Research | Purchase Direct | Vendor Direct |
| 2 | Teaching/Admin/Research | Funded by select departments | 2.1 - Campus Wide Distribution - tracked (pilot) to determine usage and appropriate funding sources 2.2 -  Targeted distribution is possible with increased resources/cost |
| 3 | Teaching/Admin/Research | Paid from "central fund" and attributed to all faculties | Campus Wide Distribution (same questions and resource requirement as above) |

## Appendix C – Software Licensing Levels and Costs

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| License Title | Cost (annual) | Renewal Date  | Current Tier Level | Partners | Research only? | Staff only? | Number of users | Proposed Tier Level |
| Microsoft | $350,000 | April 30th, 2016 | 3 | n/a | no | no | enterprise | n/a |
| Microsoft Server | $80,000 | April 30th, 2016 | 2 | 10 | no | no | enterprise | 2 |
| SAS | $7,000 | April 30th, 2016 | 2 | 17 | yes | yes | 34 | 3 |
| SPSS | $90,000  | Nov 30th, 2016  | 2 | 35 | yes | yes | 409 | 3 |
| ARC-GIS | $25,000 | April 30th, 2016 | 2 | 5 | no | no | 320 | 3 |
| Maple | $12,000 | April 30th, 2016 | 3 | 3 | no | no | unknown | 3 |
| MatLab (ITS) | $15,000 | June 30th, 2016 | 2 | 1 | no | yes | 500 | n/a |
| MatLab (Dept.) | $32,000 | Various | 1 |  | no | yes | unknown | n/a |
| MatLab (Campus) | $80,000 | n/a | n/a | n/a | no | no | enterprise | 3 |
|  |  |  |  |  |  |  |  |  |

## Appendix D – Enterprise Information Technology Advisory Committee Membership

* IT Directors in Faculties
* IT Director in Advancement
* IT Manager in Residences
* Equivalent of IT Director in Library
* Centre for Advanced Computing representative
* IT Director in Clinical Trials
* IT Manager in School of Computing
* Three representatives from ITS Management Team
* CIO/AVP-IT

## Appendix E – The Queen’s Activity Based Budget Model

