**Interest-Based Problem Solving** Accelerated Issue Analysis Sheet



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| **Topic Reference #:**  | FY1415-ITC-0003 | **Date Topic Introduced:**  | 03/03/2015 |

**Issue** (frame as a short problem-solving question):

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| **~~Original:~~** ~~What is required to implement/manage a “Front-End” Refresh Policy for maintaining current technology by May 1, 2015 to support students, faculty and staff from the current ad-hoc/unplanned approach to a more cyclical investment to ensure the College can provide its services and maintain its operations?~~**Draft1 Final:** What is required to implement/manage a Refresh Policy for maintaining current technology by ~May 1, 2015 to support students, faculty and staff from the current approach to a more cyclical investment to ensure the College can provide its services and maintain its operations?* Policy is needed to get management attention to maintain an appropriate life-cycle for technology at the College and ensure there is sufficient funding support.
* Operations level should determine details (e.g., refresh time period) based on environmental factors (e.g., changing technology, prices, etc.) and needs of the College.

**Draft2 Final:** What is required to implement/manage a Refresh Policy for maintaining current technology to support students, faculty and staff? * Can a standard cyclical investment of Refresh be defined to ensure the College can provide its services and maintain its operations?
* Policy is needed to get management attention to maintain an appropriate life-cycle for technology at the College and ensure there is sufficient funding support.
* Due to the pace of change, operations level should determine details (e.g., refresh time period) based on environmental factors (e.g., changing technology standards, prices, etc.) and needs of the College.
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**Definitions:**

1. **“Refresh”** means renewing all technology already procured and used at the College, including,
	1. front-end devices (PCs, Laptops, Monitors, Printers, A/V Equipment, etc.);
	2. it also includes the productivity software (such as, Microsoft Office Suite, Operating System, Browsers, etc.);
	3. it also includes the backend network infrastructure that is used to support all the front-end devices/uses;
	4. it DOES NOT include enterprise and academic software, such as, PeopleSoft, Blackboard, etc.
	5. it DOES NOT include original purchases of equipment for new staff/positions, etc.
	6. it DOES NOT include a project/new equipment/asset purchases.
	7. it also does not include the over 400+ instructional software packages that are deployed across the College; however, it is understood that the configuration of technology deployed needs to be able to accommodate these packages.
2. **“Current”** does not mean “Bleeding Edge”; it means keeping technology working so that:
	1. the work of the college is not hampered/diminished,
	2. the support of the environment is not overbearing/unmanageable,
	3. security and compliance issues do not pose a risk to the college,

…typically, maintaining technology to within one version/iteration of what is available in the market, should address this “Currency” need.

**Stakeholder(S) Affected:** College/District-wide: Current and Prospective Students, Faculty, Staff, Administration, Community, including Outreach services (e.g., BICS, Job Services, Public Libraries, Jails/Prisons, other councils, Academic, Student, etc.)

**Background / History** (short discussion of how the issue came to be a problem):

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| * In the past “Refresh” included mainly front-end devices and even these technologies were not clearly defined; there was much variation.
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| * Funding has been, on average, $1.8 million yearly. However, this amount was not fixed; it shifted from year to year. Funding for Refresh has not been consistent and insufficient for the needs of the College.

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| * Expansion of facilities and infrastructure has never triggered a review of the Refresh budget/needs.
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| * Years where there was sufficient budget for Refresh, staffing resources were limited preventing complete use/implementation of the budget.
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| * Back-end infrastructure “Refresh” has not been cyclical. Sometimes costs were covered as part of a major new project implementation e.g., TelePresence.
 |
| * MC has not had a defined policy around Refresh, clearly understood by all. IT/TS managed the Refresh activities with some input from the “Refresh Committee”.
 |
| * The broader implications of not investing in a cyclical Refresh program are not clearly defined. For instance, the fact that…keeping technology for longer periods requires more support and break-fix investments.
 |
| * College community was not aware of when the Refresh would occur. Communication was lacking.
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| * Theft of equipment from classrooms, labs have been funded from Refresh. There is a responsibility on instructors to ensure rooms are locked after use.
 |
| * A criteria for selecting who would receive a Refresh was not clearly defined/known.
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| * There has been a lack of sufficient input for “Exception” to standards.
 |
| * Historically Grant funded equipment purchased have not been supported in the Refresh budget. The assumption was that new Grants or alternate sources of funding would have to be secured to support these equipment.
	+ Loop out/recommendation: When programs are being implemented using Grants, the College needs to take into consideration the broader/long-term support needs of the program and the associated costs post-grant, such as, technology refresh, etc.
 |
| * Academic software packages (400+) increase the size of images pushed out to computers and are dependent on processor and memory capacity of computers. Currently, we use a “Patch as we go” approach for every machine that encounters a performance issue. In addition, there is obsolete software that is never purged from systems, so they take up space and impact updates/upgrades (whether used or not).
 |
| * Currently, we do not have a well-established set of guidelines on PCs. vs. Laptops vs. Macs. Laptops are more expensive. Macs are even more expensive and we do not have sufficient support capacity to cover them (1-2 FTEs for 800 devices).
 |

**Data Needs (and who will provide it)**

| Need | Responsible for Data Collection |
| --- | --- |
| * Historical information about **budget** for Refresh
	+ *See budget information under Background/History*
 | * Mir
 |
| * **Age** of all assets, broken down by location, type, uses, department
 | * Paul/Wayne/Michelle in TS
 |
| * **Costs** of replacement broken down by age groups and type of assets
 | * Paul/Wayne/Michelle in TS
 |
| * **Lease vs. Purchase** options
	+ Leases typically run 4-5 years (HP, Dell, ?)
	+ Typically, funded through operational budget.
 | * Paul/Wayne/Michelle in TS
 |
| * **Warrantee** options – 8/10 years out
	+ Feasible to 6 years; most vendors don’t go beyond this.
 | * Paul/Wayne/Michelle in TS
 |
| * **Upgrades and cascading** across users/types of assets
	+ Use 4-5 year eqt. to replace 6 yo; then 5 year olds.
	+ What is cost of cascading?
		- 3-4 hours of “Touch time” per device
		- $200-$300 per device
		- Repeated again within a year to refresh the equipment.
		- If funding is available, we should NOT cascade.
 | * Paul/Wayne/Michelle in TS
 |
| * Data on use of **alternative forms of technology**, such as, VDI, etc. to use instead of standard PC
 | * Paul/Jim Lowe
 |
| * **Strategies/plans** on our future environment to help determine Refresh approach – where are we going in terms of technology?
	+ Increase use of VDI
	+ Use small form factor systems for space & cable mgt.
	+ Increase security for laptops
		- What is the PC to Laptop ratio recommendation?
	+ Manage standard configurations/images
 | * Mir/Paul/Jim Lowe
 |
| * Data related to **risks** of not upgrading, refreshing, etc.
	+ *See Refresh Rationale write-up.*
 | * Paul/Wayne/Michelle in TS
 |
| * **Support/staffing costs** of a defined refresh strategy vs. none
 | * Paul/Wayne/Michelle in TS
 |
| * **Hardware training** services for new technology
 | * Paul/Wayne/Michelle in TS
 |
| * **Compatibility** of software to hardware dependencies
 | * Paul/Wayne/Michelle in TS
 |
| * Implications of moving more services into the **Cloud**
 | * Paul/Wayne/Michelle in TS
 |
| * **Historical theft/loss of equipment** and budget/insurance premium impact (insurance + deductible); ~45 known losses last year
	+ ~$65K of losses.
	+ No effect on DMI premiums. No claim reached $25K deductible requirement with DMI.
	+ “Self-Insurance Fund”, managed by Admin. Area, paid claims.
		- Departments filing a complaint are charged $100 deductible per item.
 | * Paul/Wayne/Michelle in TS
* Josh Cotillier
 |
| * **Software** – what do we have, how many of each, what are we licensed to have, etc.
	+ *Not necessary for this policy, to be addressed as a separate issue.*
 | * Paul/Wayne/Michelle in TS
 |
| * **Bring Your Own Device (BYOD)** considerations?
	+ BYOD causes increased infrastructure costs – network, switches, bandwidth, virtualization, Mobile Device Management (MDM), data taken off campus (security), etc.  all need to be better established to make BYOD supportable. Support levels and expectations changes/gets more complicated – multiple types of devices, MDM support, etc.
 | * Mir/Paul/Jim
 |

**BATNA**

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| Status Quo: * **Front/Back-end Technologies:**
	+ Use current operating process of using whatever allocated funds are assigned to Refresh.
	+ Work with the Refresh committee to effectively administer the program, based on needs conveyed at the committee.
	+ Identify technology assets that are 4 years old or greater and determine an effective replacement strategy based on the available budget and degree of risk or criticality of needs.
* **Productivity software:** updates are managed on an as needed basis, budgeted currently out of TS operating budget.
* Caveat: This does not guarantee that all technology 4 years or greater gets replaced.
* Caveat: This process is then going to be very fluid and not consistent across time.
 |

**Interests**:

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| * Maintain a refresh program that is consistent and sustainable over time.
 | * The Refresh Program should be administered to mitigate risks of service delivery and security across all functions of the College.
 |
| * Refresh program should address legitimate business and educational needs of entire college-community: students, faculty, staff & specialized equipment used at College.
 | * The Refresh Program should be administered in a timely and consistent manner each year and should not be burdensome to the College.
 |
| * Sustainability: Refresh program should cost the least amount necessary to conduct College’s work and be affordable to the College.
 | * The Refresh Program should be managed centrally and not cause fragmentation in the work environment where there is favoritism or a “Fend for yourself” approach.
 |
| * Sustainability: Refresh program should minimize operational support resources and needs; it should use existing or less resources.
 | * Acceptable changes to the Refresh Policy definition are only those that have gone through the Shared Governance structure and processes.
 |
| * Refresh program, if not “Bleeding Edge”, should stay current with the market.
 | * Maintain a dynamic feedback loop so that Policy can be changed as appropriate.
 |
| * To ensure success, training should be consistent with program.
 | * Refresh Policy should be written such that it is not necessary to revisit it constantly.
 |
| * The Refresh Program should be holistic, addressing needs for PCs, Laptops, Portables, Mobiles, Monitors, Printers, Software Updates, Backend Infrastructure: Servers, Switches, Routers, etc.
 | * The educational needs of the student should be considered first, prior to staff/faculty needs.
 |
| * [Position?] Refresh Policy covers one (1) main device per eligible user as defined by College policy and management.
 | * Before making a refresh decision, we should ensure the appropriate due diligence/forecasting is done to determine if the right technology is in place to support teaching and business needs (over the life of the refresh cycle).
 |
| * [Position?] Refresh Policy should be governed by the age of the device not based on the number of devices.
 | * Manage a repurposing or cascading program (moving computers from “High-End Uses” down to “Basic Uses”) of existing technology to make best/effective use of the technology in a cost-effective manner both for reuse and retirement. *See above under data needed.*
 |
| * Refresh program should be transparent to everyone in the College.
 | * Refresh program should flex with the changes in the environment and the number of devices/assets the College has and will have in the future.
 |

 **Loop out** (to Stakeholders defined). *See below.*

**Options: Brainstorm** (brainstorm a variety of potential options to address interests / criteria and to solve the problem):

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| 1. Consider BYOD support in place of MC provided devices.
	* (note: Mobile Device management [MDM] solution/R&D is an active project)
 | 1. Consider course/lab fees to support instructional equipment costs.
	* (note: need to connect with Student Affairs Council)
 |
| 1. Consider providing full college-owned system/device to students to accommodate BYOD.
	* (note: would need to provide scholarships and other services for those who could not afford them)
 | 1. Consider providing staff stipend for getting their own system to accommodate **BYOD**.
 |
| 1. Refresh based on cluster of programs and use, not based on age – those who need it the most.
 | 1. Maintain current industry timeframes of desktops-4 years, laptops-3 years, printers-when they break, etc.
 |
| 1. Consider leasing computers vs. managing refresh process on our own.
 | 1. Consider moving to Open Office/LAMP architecture (Linux, Apache, MySQL, PHP).
 |
| 1. Consider split lease option of – lease laptops, but purchase desktops.
 | 1. Consider setting a level of $2 million per year for Refresh.
 |
| 1. Standardize on 1 vendor, 1 product suite.
 | 1. Consider setting a level of 1/3 – 1/4 of all assets have to be refreshed per year.
 |
| 1. Provide option to defer refresh for 1 year or so, if user desires it.
 | 1. ~~Leverage volume contracts with other WTCS, UW, State contracts~~
 |
| 1. Develop Refresh Policy for specific groups (labs, fac, staff, admin)
 | 1. Provide recommended (specs) purchase option for students
 |
| 1. Cascading refresh based on Hw/Sw needs and use
 | 1. ~~Option to defer refresh~~ (duplicate)
 |
| 1. Forecasting for 3-year outlook for budget needs
 |  |

**Best Outcome** (accept if better than BATNA):

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| *See below…“Summary Statement for Solution Options”* |

**Solution Evaluated Against Criteria Standards**

***Objective Criteria / Standards:*** (These will be unique to each issue. Examples could be cost, industry standards, accreditation, etc.)

1. **Costs**-investments need to be affordable and sustainable for the College.
2. **Manageability** (Sustainability)-we need to be able to manage the program with current resources.
3. **Needs**-meet student and program needs.
4. **Industry Standards**-in line with industry standards and best practices.
5. **Flexibility**-ensure program is flexible over time.
6. **Legal**-program needs to ensure we are in compliance to legal requirements and obligations.
7. **Risk**-ensure that security and other risks are mitigated.

| **Potential Solution(s)** | **Does it Meet Objective Criteria?**Options: Y, N, ? or N/A | **Consensus?**  |
| --- | --- | --- |
|   | **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** | **Y/N** | **Comments** |
| 1. Leverage Bring-Your-Own-Device (**BYOD**)
 | N | N | ? | Y | ? | N | N |  | Y | Requires infrastructure first; not a quick solution. |
| 1. Consider **course/lab fees** to support equipment costs.
 | Y | Y | N | Y | Y | N | Y; N/A |  | Y | Not approved by WTCS in previous attempt. |
| 1. Consider full **College-owned system/device to students**.
 | N | N | N | Y | N | Y | N |  | Y | Need a business case in collaboration with Academic Council for change in service delivery strategy. |
| 1. Refresh **based on cluster of programs** and uses, specific groups (labs, fac., staff, admin.) etc. not based on age
 | N/A | Y | Y | Y | Y | Y | Y |  | Y | The assumption is that the Refresh Committee will evaluate the best possible refresh strategy to meet needs, including clustering. |
| 1. Maintain current **industry timeframes** of desktops-4 years (1/4), laptops-3 years (1/3), printers-when they break, etc.
 | Y | Y | Y | Y | Y | Y | Y |  | Y | * We have not been maintaining to industry standards but should move in this direction.
* Maintaining to industry standards makes it affordable, sustainable and predictable.
* Currently, based on historical information, we should be investing approximately $2 million per year. (This can change over time.)
 |
| 1. Consider **leasing** computers vs. managing a refresh process on our own; consider split lease option of – lease laptops, but purchase desktops.
 | Y | N | Y | Y | Y | N/A | Y |  | Y | Vendors currently will not lease to us for over 4+ year old assets. We first have to get to a best practice approach, then consider moving to Leasing. |
| 1. Consider moving to **Open Office**/LAMP architecture (Linux, Apache, MySQL, PHP).
 | ? | N | N | N | N | ? | N |  | Y | Software is free. Manageability of environment would require infrastructure, staffing, etc. Businesses/recruiters require more Microsoft experience. |
| 1. **Standardize** on 1 vendor, 1 product suite.
 | Y | Y | N | N | N | ? | Y |  | Y | This solution as stated would not provide the flexibility that programs may need. Exceptions should be considered. |
| 1. Provide option to **defer** **refresh** for 1 year past industry standard, if user’s needs are not jeopardized.
 | ? | Y | Y | N | Y | Y | ? |  | Y | Deferring past 1 year will change these i.e., not a good idea. |
| 1. **Cascading** refresh based on Hw/Sw needs and use
 | N | N | Y | Y | Y | Y | ? |  | Y | * Cascading could be affordable short-term, but not long-term due to break-fixing and moving. Also depends on number of devices (a few or hundreds to thousands).
* Not a best practice, but done in the industry. Should still maintain the devices within the warranty timeframe.
 |
| 1. **Forecasting** for 3-year outlook for budget needs.
 | Y | Y | N/A | Y | Y | Y | Y |  | Y |  |

**Summary statement for Solutions Options:** Maintain a refresh program within **industry best practice timeframes**. **Cluster** refreshes based on needs and for efficiency purposes. Use **forecasting** to define the refresh standards and approach. Consider **leasing**, once we are able to, and **defer** refresh a maximum of 1 year, if necessary due to financial or other critical/major constraints on the College.

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| **Budgetary $ Impact** (+ / -): | ~$2M-front-end; ~$3M-back-end | **Comments:** | These amounts will change yearly, based on market prices, inventory/quantity of devices up for refresh and any increases/decreases in assets as a result of creation/ elimination of programs and services. |

**Looping-Out/Communication Plan:**

| **Step** | **Who is Responsible** |
| --- | --- |
| 1. **4/23-24/15** – TS Managers regional campus visits to discuss issues, needs, etc. Most issues that came up were regarding need for new computers.
 | * Mir & all TS managers – onsite visits, ½ day, Fort Atkinson, Watertown, Reedsburg, Portage
 |
| 1. **6/10/15** – TS managers visit to South & DTEC campuses.
 | * Mir & all TS managers.
 |
| 1. **6/17/15** – Looped out to Assembly – question came up about what the Council had done and if any interests from the Assembly should be captured.
 | * Mir – sent out a summary sheet of Issue Statement, Definitions, Interests, Objective Criteria. No feedback has come in yet.
 |
| 1. **7/23/15** – Looped out to Cabinet (SG Council Co-Chairs) for any issues/input with Refresh Policy, Refresh Committee Charter, 2 Standards, etc.
 | * Mir – No feedback has come in yet.
 |
| 1. **8/13/15** – Looped out to specific stakeholders for any unique interests/concerns: Jennifer B Bakke; Kathleen A Radionoff; John W Alt; Dennis Wessel; Christopher P Vandall; Shawna M Carter; Schauna L Rasmussen
 | * Mir – sent out Issue Analysis Sheet + Draft Working Copy of Policy Statement version 1.8.
 |
| 1. **8/25-26/15** – Feedback/Q&A sessions at Convocation through table in Gateway and 2 informational sessions the 2nd day.
 | * Mir Qader, Penny Johnson, Donna Marconnet, Peter Dettmer, Paul Thomas
 |
| 1. **10/16/15** – Inform **Budget** about policy, sections that talks about budgeting and determine any anticipated changes by team.
 | * Mir – email/discuss with Sylvia Ramirez/Ben Monty.
* Modified Roles & Responsibilities language to reflect Budget’s limitations in defining a budget to giving serious consideration for a budget.
 |
| 1. Loop out/recommendation: When programs are being implemented using **Grants**, the College needs to take into consideration the broader/**long-term support needs** of the program and the associated costs **post-grant**, such as, technology refresh, etc.
 | * Mir – discuss with Tim Casper/Emily Sanders
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**When will this issue be revisited?** (specific date):Fiscal Year 17-18\_\_