Proposal: Establishing Life-Cycle Replacement Funding for Faculty and Staff Computers

DRAFT V2, 8-April-2004

1. Purpose

The purpose of this proposal is to present a philosophy and model for implementing life-cycle replacement funding for faculty and staff computer workstations. This is part of a larger effort to implement life-cycle funding for all mission-critical elements of UWF’s information technology infrastructure. Should this proposal be approved, an accompanying framework of policies, procedures, and responsibilities will be required to enact the University-wide computer replacement process.

2. Preamble

The UWF Information Technology Strategic Plan establishes the importance of sustaining the quality and reliability of UWF’s information technology infrastructure. Goal 4 of that plan is to “provide a quality, reliable, sustainable, consistent, and secure information technology infrastructure that enables contemporary teaching, learning, research, and administrative operations to flourish.” Goal 5 includes the concept of “making adequate information technology tools and support readily available to faculty and staff.” At the heart of this issue is the need to establish reliable, sustained funding for renewal of information technology. The Plan addresses this need through two specific priorities:

Priority 4-1. Establish baseline standards to ensure that all acquisitions and implementations of information technology meet the minimum functional requirements needed to maintain a consistent infrastructure and environment.

Priority 4-2. Implement full life-cycle funding mechanisms that treat all aspects of the information technology infrastructure as operational costs, including stable budgeting for network infrastructure, core systems, computers, software, programming support, and maintenance.

This proposal addresses priority 4-2, life-cycle funding mechanisms, specifically for one area of the IT infrastructure: computers used by faculty and staff.

3. What is “Life-Cycle Funding?”

“Life-Cycle Funding” is a term used to identify a variety of related concepts. In its fullest sense, life-cycle funding refers to budgeting the total cost of providing a service or supporting an operation – including not just equipment costs, but also other operational costs such as upgrades, operating expenses, resource and consumables usage, equipment replacement, and personnel.

In its simplest sense, life-cycle funding refers to the practice of:

1. Identifying an appropriate “life cycle” for a piece of equipment – that is, a period of time after which it will be replaced;

2. Determining an appropriate replacement cost for the piece of equipment.
3. Dividing this replacement cost by the number of years in the life cycle, putting this amount aside every year to provide for the eventual replacement at the end of the life cycle.

This proposal concerns that simple definition of life-cycle funding – **equipment replacement** – which is most commonly used for technology funding in higher education.

Continuous replacement of information technology equipment is necessary due to the relentless march of obsolescence of this equipment. Various cycles – including growth in integrated circuit capacity, digital storage capacity, and network bandwidth utilization – create the situation where much IT equipment is quickly made either functionally obsolete (unable to provide the necessary functionality or capacity) or economically obsolete (too expensive to support and maintain compared to newer equipment).

For computer workstations, the current industry-recognized optimal life-cycle is three years. A number of factors determine this cycle. Computer models are replaced approximately every six months by manufacturers. Currently, the common warranty period for PCs is three years. CPU power doubles every eighteen months (Moore’s Law); digital storage capacity doubles every twelve months. Thus, discounting revolutionary technology improvements, at the end of a three-year period a desktop or notebook computer has seen the expiration of its warranty; the completion of two turns of Moore’s Law; and the completion of one-and-a-half turns of the storage improvement cycle.

However, in spite of the optimal three-year replacement cycle, due to economic factors it is common to see computer replacement cycles in higher education ranging from three to five years, with a four-year cycle a common compromise.

4. **Scope of This Proposal**

This document proposes a University-wide life-cycle replacement budget for each faculty and staff member’s **primary desktop**\(^1\) computer. Specifically, it proposes that a central computer workstation replacement fund be established to ensure the timely replacement of:

1. The primary (i.e., only one) computer workstation used by each faculty and staff member.
2. Only for full-time faculty and staff whose positions are E&G-funded.
3. For only devices identified as computer workstations (desktop personal computers, laptop computers, or “thin-client” workstations\(^2\)).
4. **Not** including peripherals (e.g., printers) for those computers.

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\(^1\) The term “desktop computing” commonly refers to computer workstations designed for individual use, as distinguished from central computers such as servers. Although the term is becoming outdated – these devices are increasingly mobile rather than desktop-bound – no generally-used term has yet arisen to replace it. This term also specifically refers to computer workstations – such as desktop personal computers and laptops – rather than other computing devices such as handheld computers, personal digital assistants (PDAs), intelligent cell phones, etc.

\(^2\) When the prices of tablet computers fall to a range comparable to desktop and notebook computers, this definition will include tablet computers as well.
The proposed matrix of funding responsibilities is described in Table 1.

### Table 1: Proposed Desktop Equipment Replacement Funding Responsibilities

<table>
<thead>
<tr>
<th>Cat.</th>
<th>Type of Equipment</th>
<th>Responsibility for Funding</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Primary computer workstation for each full-time faculty and staff member.</td>
<td>Depends on primary funding of that position:</td>
<td>Includes “common” workstations for those that share (e.g., receptionist, cashier, etc.) and “work site” workstations (e.g., library circulation desk, information center, etc.).</td>
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<td></td>
<td></td>
<td>• For E&amp;G funded positions, the computer workstation replacement fund.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• For grant- and auxiliary-funded positions, the source grant or auxiliary operation.</td>
<td></td>
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<tr>
<td>2.</td>
<td>Additional computers for full-time faculty and staff (beyond the primary).</td>
<td>The employee’s department (via college or division).</td>
<td>Any computers other than the single device identified as the “primary workstation” for the employee. For example, if an employee is given the use of both a desktop and a laptop computer, the laptop would be an “additional” computer.</td>
</tr>
<tr>
<td>3.</td>
<td>Computers for adjunct and part-time faculty and staff.</td>
<td>For employees &gt;= ½ FTE, the computer workstation replacement fund.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>For employees &lt; ½ FTE, the department (college/division).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>For adjunct instructors, the department (college/division).</td>
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<td>4.</td>
<td>PDAs and handheld computers; intelligent cellular phones; special-purpose “tools”; and printers used by employees.</td>
<td>The department (college/division), source grant, or auxiliary operation.</td>
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### 5. Proposed Life-Cycle Funding Program for Faculty/Staff Computers

Two plans must be described in proposing to establish life-cycle budgeting and funding. One is the **target state**, or end state, describing the situation when the program is fully implemented. The other is the **implementation plan** for how we move from the current environment to the proposed target state.

#### 5.1 Target State

The proposed target environment presumes that UWF is an institution characterized by the rich and robust use of information technology in all aspects of the University’s mission and operations. As part of that pervasive “eCulture,” all University employees are expected to competently and effectively utilize information technology in their roles at the University (*UWF IT Strategic Plan*, goal 5). To enable this expectation, it is the responsibility of the University to ensure that each
employee has sufficient access to a functionally adequate computer workstation that is fully able to utilize UWF’s IT environment.

To provide for this necessary equipping of employees with computer workstations, the University should centrally budget for life-cycle replacement of employee primary computer workstations via a computer workstation replacement fund. This fund should provide for the base cost of replacing an employee’s primary computer workstation at the end of its life cycle with a standard replacement workstation as defined by the University’s minimum standard for faculty and staff computers.

The optimal target state is a three-year replacement cycle, with a four-year cycle being an acceptable compromise. It is also possible to envision a mixed model where most machines are on the three-year cycle, while selected machines can acceptably accommodate a four-year replacement cycle.

It is estimated that the population of primary faculty and staff computer workstations at UWF approaches 1000 computers. A working estimate of the average replacement cost of a standard computer (using bulk purchasing) is $1500. Using three-, four-, and mixed-year replacement scenarios, the general budget implications of these possibilities are shown in Table 2.

<table>
<thead>
<tr>
<th>Number of computers that must be replaced each year.</th>
<th>3-Year Cycle</th>
<th>4-Year Cycle</th>
<th>Mixed Model (70% 3-Year, 30% 4-Year)</th>
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<tbody>
<tr>
<td>333</td>
<td>250</td>
<td>308</td>
<td></td>
</tr>
<tr>
<td>Approximate annual replacement costs.</td>
<td>$499,500</td>
<td>$375,000</td>
<td>$462,000</td>
</tr>
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</table>

5.2 Implementation Plan

The major parameters of the implementation plan are:

1. The timespan over which to phase-in the program.
2. How to establish the replacement funding.

Regardless of whether a three- or four-year cycle is chosen, it is proposed that a three-year phase-in plan be employed, whereby the computer workstation replacement fund would be built up over three fiscal years to its resulting steady-state of ongoing recurring funding.

It is also recommended that University units (departments, colleges, or divisions) must “buy in” to the replacement program in order to register a computer for life-cycle replacement funding. The “buy in” would be a permanent recurring budget transfer to the workstation replacement fund. The buy in budget amount should be in the range of $150 to $200 per computer. This “buy in” would be matched by $1300 to $1350 of University budget funding for each computer. Scenarios for the contributions of new University funding and reallocated departmental funding are shown in Table 3.

<table>
<thead>
<tr>
<th>Models for Establishing the Replacement Fund</th>
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<td>&lt;complete this table based on UPC-IT recommendations&gt;</td>
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</table>
This program should begin with the 2004-2005 academic year. A three-year implementation plan would accomplish the initial replacement of all faculty and staff computers by the conclusion of the 2006-2007 academic year, at which time the program would be fully funding for ongoing cyclical replacements.

The UPC-IT Committee recommends <complete after April meeting>. The budgetary implementation plan is described in Table 4. <complete after April meeting>.

This proposal approved by the UPC-IT Committee, <date>.