



HARVARD UNIVERSITY  
Information Technology

## **Integrated Planning for IT (IPIT) Update**

# Integrated Planning for IT

## Goals

### Purpose of Integrated Planning for IT

In FY2010 the CIO Council and the Financial Deans created an annual process to assess total IT spend across the University. In December 2012, the CIO Council proposed the next step to the Administrative Deans' Council -- creating a university multi-year IT investment planning process to:

1. Engage leadership in making strategic IT investments;
2. Provide predictability, transparency and visibility into IT spending;
3. Enable tradeoff decisions between investments;
4. Avoid duplicate investments across the University;
5. Improve renewal and replacement planning; and
6. Ensure an appropriate pace of investment in IT to support Harvard's mission.

### FY14 IT Workgroup\* Considerations

- **IT investment is different than investment in facilities**
  - Not stand alone; greater interdependence and integration needed across schools and the central administration
  - Shorter life cycle
- **Process must be light-weight and coordinated. Multiple IT data collection efforts already exist that need to be reconciled.**
- **Process should identify best practices that:**
  - Consider local capacity to realistically manage implementations and operate systems
  - Evaluate investments for positive ROI and impacts on operating budgets
- **Sharing and vetting of school data with Financial Deans and Administrative Deans is needed prior to any wider distribution.**

\* Workgroup included: Rainer Fuchs, Jack Jennings, Penny Kaligian, Leslie Kirwan, Anne Margulies, Don Oppenheimer, Heidi Vanderbilt-Brown, David Waxman

## 3-Phased Approach

**Phase 1 (FY13):**  
Gather Initial Data

**Phase 2 (FY14):**  
Refine Data

**Phase 3 (FY15):**  
Roll up and merge data to enable better IT planning

COLLECT DATA	<p>Total actual spend for previous year (FY12)</p> <ul style="list-style-type: none"> <li>• By school</li> <li>• By type, (new, enhancements, O&amp;M)</li> <li>• By mission (teaching, research, admin)</li> </ul> <p>Forecast for FY14</p> <ul style="list-style-type: none"> <li>• By school</li> <li>• By type</li> <li>• By mission</li> </ul>	<p>Total actual spend for previous year (FY13)</p> <ul style="list-style-type: none"> <li>• By school</li> <li>• By type, (new, enhancements, O&amp;M)</li> <li>• By mission (teaching, research, admin)</li> </ul> <p>Forecast for FY14, FY15, FY16</p> <ul style="list-style-type: none"> <li>• By school</li> <li>• By type</li> <li>• By mission</li> </ul>	<p>Total actual spend for previous year (FY14)</p> <ul style="list-style-type: none"> <li>• By school</li> <li>• By type, (new, enhancements, O&amp;M)</li> <li>• By mission (teaching, research, admin)</li> </ul> <p>Forecast for FY15, FY16, FY17</p> <ul style="list-style-type: none"> <li>• By school</li> <li>• By type</li> <li>• By mission</li> </ul> <p>Create 3-year forecast of top IT priorities for University and Schools</p>
	<p>Developed investment pyramid</p>	<p>Refined investment pyramid</p>	<p>Refine common IT tools (, investment pyramid, business impact, ROI, organizational capacity, roadmaps)</p> <p>Identify savings, divestments, etc. (arrows in pyramid)</p>
DEVELOP COMMON TOOLS			

### Key Observations from Phases 1 and 2:

- Harvard's FY2013 Total IT Spend (\$322M) was 7.6% of the university's total operating expenses, and this percentage has been relatively flat since FY2010 (increase of < 1% over 3 years).
- Harvard's IT spend forecasted to grow by 10% (FY14), & 4% (FY15 and FY16) annually.
- Harvard's IT spend is more distributed than benchmarks (60/40 vs. 70/30).
- Harvard's FY13 IT spend was 77% on operations & maintenance, 16% on enhancement, and 7% on new.
- Harvard's FY13 IT spend was 56% on Administration, 22% on Instruction and 22% on Research.
- Harvard's IT strategic and risk mitigation plans are aligned with Gartner education and Educause IT focus areas.

### Key Questions for Phase 3 (FY15):

- What is the actual IT spend for the prior year (FY14)?
- What is the projected IT spend for Harvard and by school for FY15, FY16, & FY17?
- What are the highest priority projects planned by school and central admin for FY15, FY16, & FY17?
- For University-wide projects, what is the ROI, operating "tail," organizational capacity/impact, and savings/reinvestment?

# Key Findings

1. Schools are investing in IT at varying rates.
2. Forecast potential total IT spend (FY15-FY17) is essentially flat (0% over 3 years), relative to projected 3.8% year-over-year growth in total university operating expenses for the next five years. This is the first year of collecting multi-year, potential IT spend projections and there is uncertainty in the forecast.
3. The CIO Council strategy to shift IT spend from operations and maintenance (O&M) toward enhancements and new initiatives, through lifecycle efficiencies, has been successful (O&M: 77% in FY13 to 69% in FY14), and is projected to continue in FY15 (O&M: 64%).
4. Central Administration IT investment has shifted (11% over 5 years) toward teaching and learning and research projects (88% on administration in FY13 to 77% in FY17).
5. In addition to investment in the Student Information System (SIS), there is significant planned IT spend (FY15-FY17) across the university for classroom/video (~\$20M) and reporting/analytics projects (~\$29M). There is also increasing alignment in major IT investments across schools.

## Key Finding #1

Schools are investing in IT at varying rates.

IT Spending by School																
Org	2010			2011 <sup>1</sup>			2012 <sup>1</sup>			2013 <sup>1,2</sup>			2014			
	Total IT Spend (\$M)	% of Total School Exp	% to Grand Total IT Spend	Total IT Spend (\$M)	% of Total School Exp	% to Grand Total IT Spend	Total IT Spend (\$M)	% of Total School Exp	% of Total IT Spend	Total IT Spend (\$M)	% of Total School Exp	% to Grand Total IT Spend	Total IT Spend (\$M)	% of Total School Exp	% to Grand Total IT Spend	% Inc./ (Dec) to Pr. Yr. Total IT Spend
CA+ Svc Units+ Allieds	\$74.5	N/A	29%	\$76.9	N/A	28%	\$87.6	N/A	29%	\$94.5	N/A	29%	\$96.6	N/A	26%	2.2%
FAS	65.7	6%	26%	66.9	5%	24%	76.0	5%	25%	79.5	6%	24%	84.0	6%	23%	5.7%
HBS	44.4	11%	17%	54.6	12%	20%	51.0	9%	17%	60.2	11%	18%	78.5	13%	21%	30.5%
HMS	28.1	5%	11%	33.3	5%	12%	36.1	5%	12%	35.0	5%	11%	48.4	7%	13%	38.2%
HSPH	11.1	3%	4%	11.5	3%	4%	11.4	3%	4%	12.1	4%	4%	12.1	4%	3%	(0.2%)
HLS	10.4	6%	4%	11.1	6%	4%	10.6	5%	4%	11.7	5%	4%	11.7	5%	3%	(0.3%)
HKS	7.0	7%	3%	7.3	5%	3%	7.7	5%	3%	7.7	5%	2%	8.6	5%	2%	10.8%
GSE	6.6	4%	2%	5.8	6%	2%	6.3	6%	2%	6.7	6%	2%	7.9	7%	2%	18.1%
SEAS	4.7	5%	2%	4.9	5%	2%	6.1	5%	2%	5.7	5%	2%	5.7	5%	2%	1.1%
GSD	2.2	5%	0.8%	2.4	5%	0.9%	2.7	5%	0.9%	2.8	5%	0.9%	2.8	4%	0.8%	0.5%
HDS	2.1	6%	0.8%	2.4	7%	0.9%	2.1	6%	0.7%	2.1	6%	0.6%	1.9	5%	0.5%	(10.5%)
RAD	0.7	4%	0.3%	0.7	3%	0.2%	1.1	5%	0.4%	0.9	4%	0.3%	0.9	3%	0.2%	(2.3%)
IFI							2.7	2%	0.9%	10.4	7%	3%	11.2	7%	3%	8.5%
<b>Grand Total:</b>	<b>\$256</b>	<b>6.8%</b>	<b>100%</b>	<b>\$278</b>	<b>7.1%</b>	<b>100%</b>	<b>\$301</b>	<b>7.2%</b>	<b>100%</b>	<b>\$330</b>	<b>7.7%</b>	<b>100%</b>	<b>\$371</b>	<b>7.9%</b>	<b>100%</b>	<b>12.4%</b>

### Key Observations

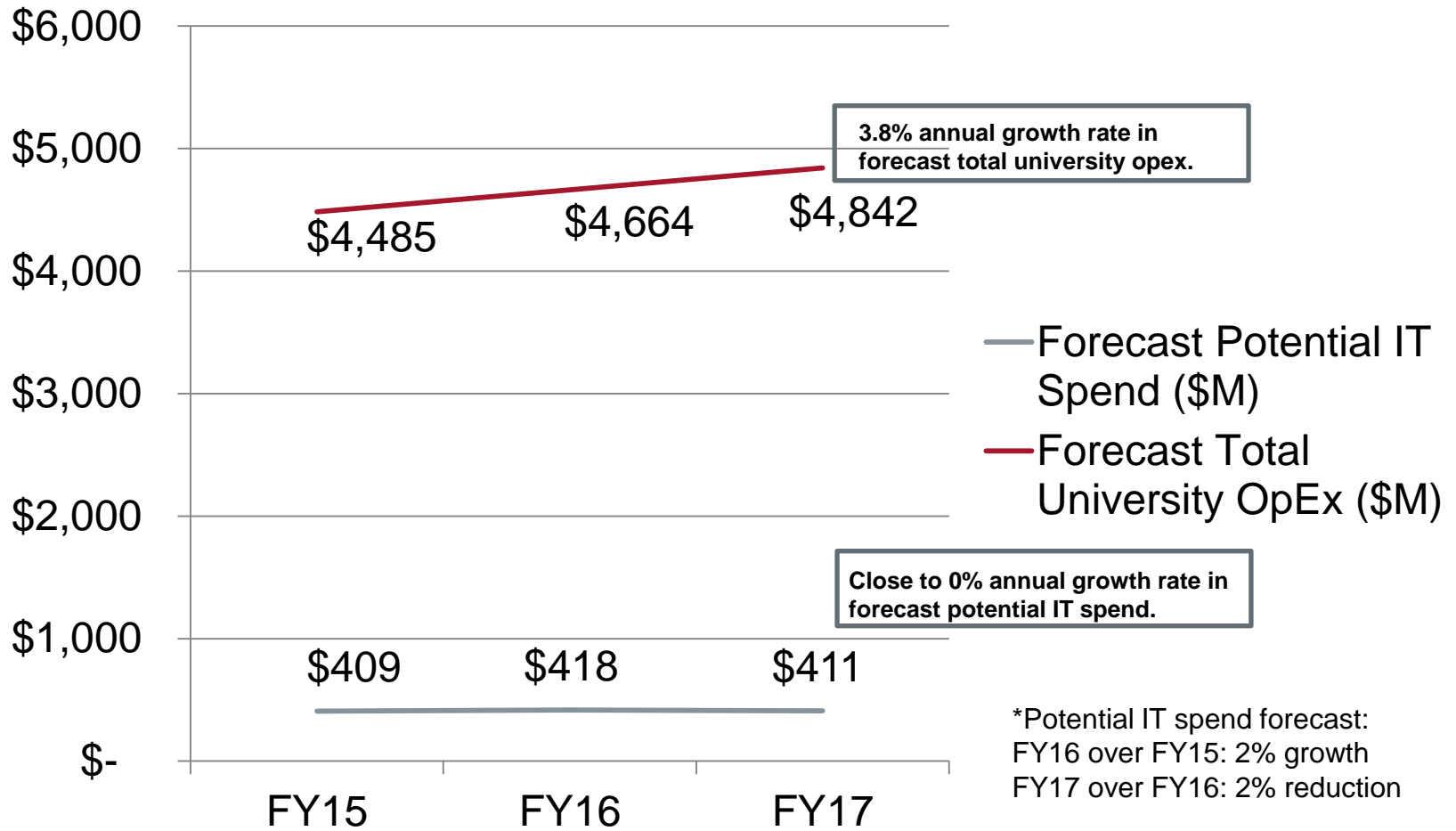
- Overall YoY Total IT Spend has increased 12.4% primarily driven by a 30.5% growth in HBS and 38.2% growth in HMS. YoY growth is 4.0% without HBS and HMS
- Four groups (CA +Svc Units +Allieds, FAS, HBS & HMS) represent 83% of total IT spending
- YoY \$ Growth in HBS/HBP driven by start-up investment expenses for HBX; peak development expenses for their Executive Education core business platform; and development expenses for a suite of new alumni applications
- YoY \$ Growth in HMS driven by IT investments in research data management platforms and other areas of infrastructure

### Prior Period Adjustments

- (1) FY2011 – 2013 revised to include impact of ITCRB Projects, HPPM & CADM share of Transition expenses
- (2) FY2013: HSPH adjusted to correct \$3M overstatement in Total IT Spend; and HKS Total School Spend adjusted to include \$16M for Financial Aid

## Key Finding #2

Forecast potential total IT spend (FY15-FY17) is essentially flat (0% over 3 years)\*, relative to projected 3.8% year-over-year growth in total university operating expenses\*\* for the next five years. This is the first year of collecting multi-year, potential IT spend projections and there is uncertainty in the forecast.

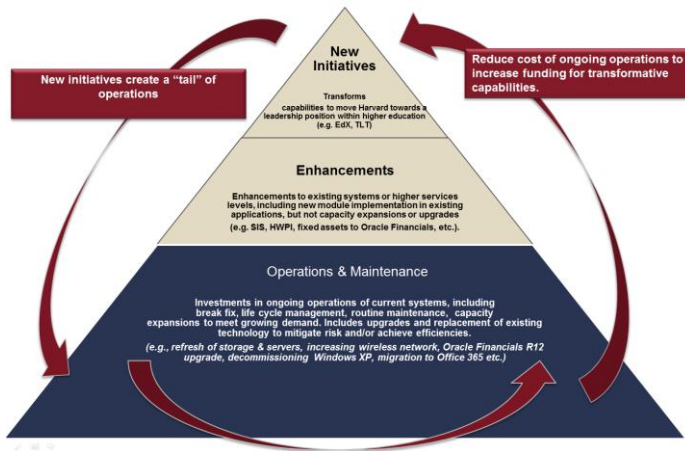


\*\*Projections for total university operating expenses provided by Assistant Vice-President for Finance.

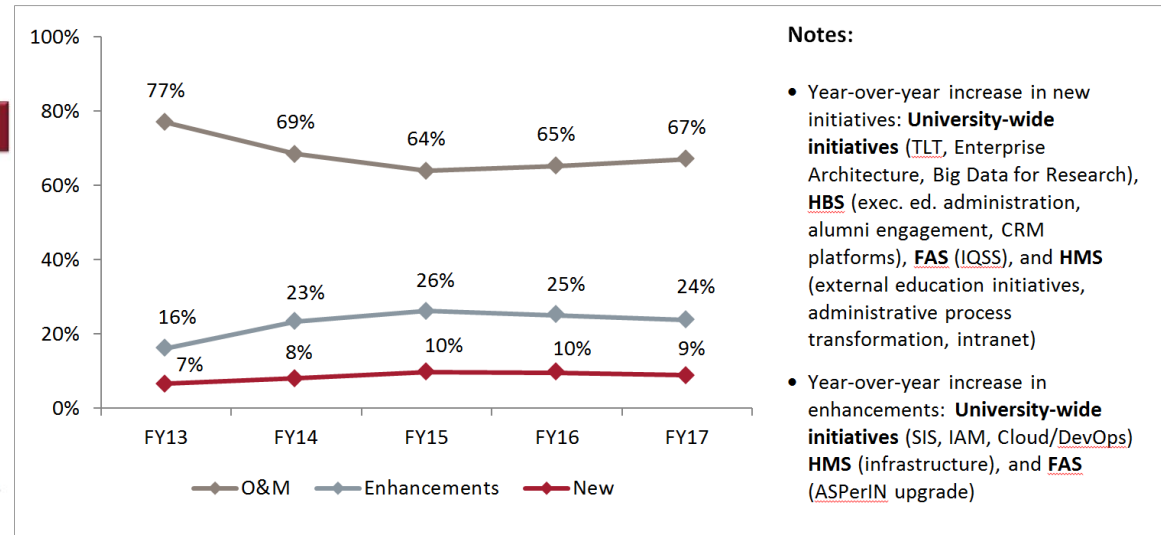
### Key Finding #3

The CIO Council strategy to shift IT spend from operations and maintenance (O&M) toward enhancements and new initiatives, through lifecycle efficiencies, has been successful (O&M: 77% in FY13 to 69% in FY14), and is projected to continue in FY15 (O&M: 64%).

### IT Investment Pyramid



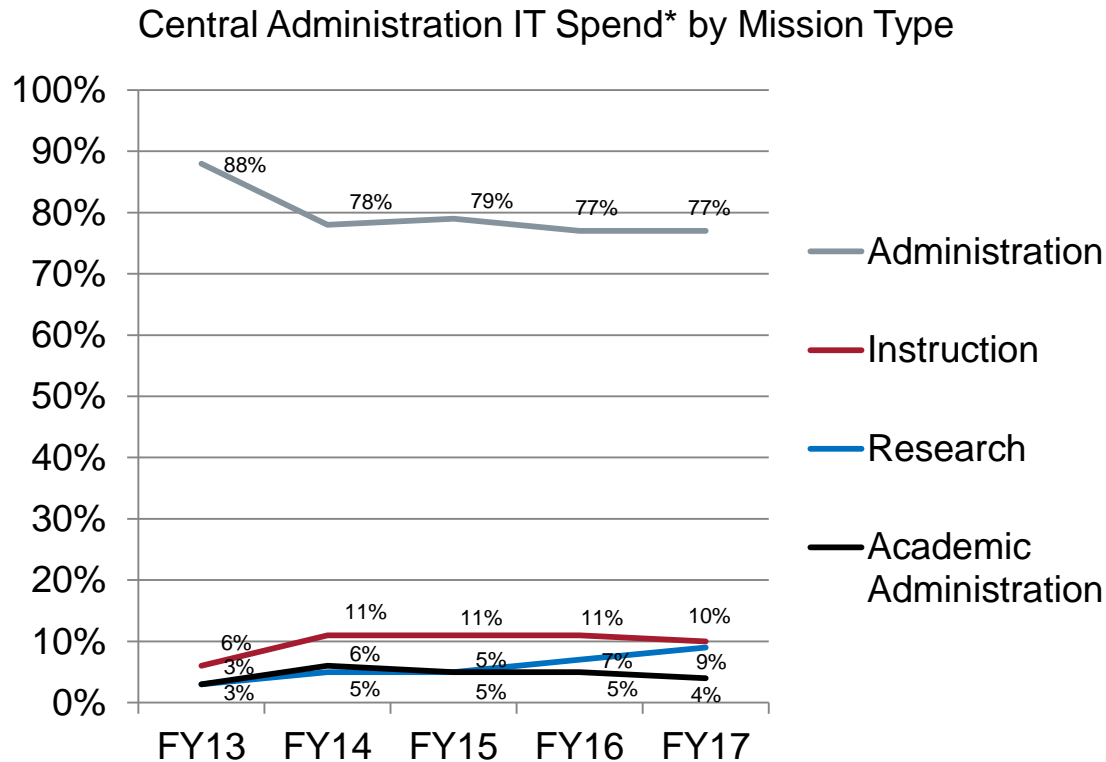
### Total IT Spend by IT Investment Pyramid Tier



From FY13 to FY14, approximately \$40M of IT spend shifted from operations and maintenance to enhancements and new initiatives.

## Key Finding #4

Central Administration IT investment has shifted (11% over 5 years) toward teaching and learning and research projects (88% on administration in FY13 to 77% in FY17).



ITCRB funded projects with an instruction, research or academic administration focus

FY13: SIS, IRB technology platform, Aries, Faculty finder, Online cross-registration

FY14: Teaching and Learning Technologies, SIS, GMAS 2.0, IRB technology platform, Effort reporting, Aries, Online cross-registration

FY15: Teaching and Learning Technologies, SIS, GMAS 2.0, Aries.

FY16-FY17: Assumes CIO Strategic Initiatives: Big Data for Research, Data for Learning Analytics, Access to Harvard Scholarship, and Access to Institutional Data and Systems Integration will be funded from Central Administration

\*Central Administration IT spend does not include EdX and HarvardX

## Key Finding #5

In addition to investment in the Student Information System (SIS), there is significant planned IT spend (FY15-FY17) across the university for classroom/video (~\$20M) and reporting/analytics projects (~\$29M). There is also increasing alignment in major IT investments across schools.

### Top 10 Themes (FY15-FY17 IT Projects)

Theme	CA	FAS	GSD	GSE	HBS	HDS	HKS	HLS	HMS	SEAS	SPH	TOTAL \$M
SIS	★	★	★	★	★	★	★	★	★	★	★	~\$50M
TLT/Canvas	★	★	★	★	★	★	★	★	★	★	★	~\$9M
Office 365	★	★	★	★	★	★	★	★	★	★	★	~\$5M
Classroom/Video	★	★		★	★		★	★	★	★	★	~\$20M
Website work	★	★	★	★	★		★	★	★			~\$8M
IAM	★	★			★		★	★	★	★		~\$10M
Reporting & Analytics	★	★		★	★					★		~\$29M
VoIP	★	★			★		★					~\$8M
CRM (e.g. Salesforce)	★				★							~\$20M
Access to scholarship and knowledge	★						★					~\$5M

1. Project data was captured for IT projects with annual spend >= \$250k in one or more years in FY15-Fy17
2. The stars indicates that the school or Central Administration has a planned project or activity in this IT area.

### Top 3 IT Projects by School (FY15-FY17)\*

School/Project	FY15	FY16	FY17	3 Yr Total	Annual Inc. Operating Tail	Annual Value Derived
<b>FAS</b>	\$ 5,050,000	\$ 4,100,000	\$ 3,260,000	\$ 12,410,000	\$ -	\$ -
1 ASPerN Upgrade (Aurora). Provide a new FAS Human Resources Management System.	\$ 2,700,000	\$ 3,000,000	\$ 3,000,000	\$ 8,700,000	\$ -	\$ -
2 Matterhorn (DCE)	\$ 2,250,000	\$ -	\$ -	\$ 2,250,000	\$ -	\$ -
3 New CARAT (Centralized Application for Research and Travel)	\$ 100,000	\$ 1,100,000	\$ 260,000	\$ 1,460,000	\$ -	\$ -
<b>GSE</b>	\$ 700,000	\$ 300,000	\$ 1,450,000	\$ 2,450,000	\$ -	\$ -
1 Digital Production Studio. For production of video assets for online learning	\$ 300,000	\$ 150,000	\$ 600,000	\$ 1,050,000	\$ -	\$ -
2 Business Intelligence. Creation of data marts, ETL / Reporting / Analytics for institutional research & planning	\$ 400,000	\$ 150,000	\$ 600,000	\$ 1,150,000	\$ -	\$ -
3 Portal. Replace iSite w/horizontal portal to aggregate applications/resource access with single sign-on		\$ -	\$ 250,000	\$ 250,000	\$ -	\$ -
<b>HBS</b>	\$ 7,500,000	\$ 5,992,000	\$ 3,800,000	\$ 17,292,000	\$ -	\$ -
1 Atlas (Executive Education Administration and CRM)	\$ 4,350,000	\$ 4,266,000	\$ 2,500,000	\$ 11,116,000	\$ -	\$ -
2 External Relations - Alumni 360 (Alumni Engagement Platform and ecosystem)	\$ 2,400,000	\$ 1,050,000	\$ 1,050,000	\$ 4,500,000	\$ -	\$ -
3 Alumni Clubs	\$ 750,000	\$ 676,000	\$ 250,000	\$ 1,676,000	\$ -	\$ -
<b>HKS</b>	\$ 500,000	\$ 450,000	\$ 200,000	\$ 1,150,000	\$ -	\$ -
1 Developing an enhanced public website for the school	\$ 150,000	\$ 400,000	\$ 200,000	\$ 750,000	\$ -	\$ -
2 Implementing Canvas to replace current SharePoint based LMS	\$ 100,000	\$ 50,000	\$ -	\$ 150,000	\$ -	\$ -
3 Developing new portal for Executive Education	\$ 250,000	\$ -	\$ -	\$ 250,000	\$ -	\$ -
<b>HLS</b>	\$ 600,000	\$ 1,175,000	\$ 275,000	\$ 2,050,000	\$ 27,000	\$ 75,000
1 Several AV classroom upgrades for FY15, 16 and 17	\$ 600,000	\$ 750,000	\$ 200,000	\$ 1,550,000	\$ 15,000	\$ 75,000
2 Exec Ed Classroom	\$ -	\$ 250,000	\$ -	\$ 250,000	\$ 4,000	\$ -
3 Migrate to Office365	\$ -	\$ 175,000	\$ 75,000	\$ 250,000	\$ 8,000	\$ -
<b>HMS</b>	\$ 6,450,000	\$ 4,310,000	\$ 2,910,000	\$ 13,670,000	\$ -	\$ -
1 Infrastructure Transformation Initiative - Network Upgrade	\$ 5,600,000	\$ 3,400,000	\$ 2,000,000	\$ 11,000,000	\$ -	\$ -
2 Infrastructure Transformation Initiative - Data Center Realignment	\$ 850,000	\$ 860,000	\$ 860,000	\$ 2,570,000	\$ -	\$ -
3 Information Security Function	\$ -	\$ 50,000	\$ 50,000	\$ 100,000	\$ -	\$ -
<b>HSPH</b>	\$ 748,000	\$ 163,000	\$ -	\$ 911,000	\$ 40,000	\$ 75,000
1 DL Room- build a second Distance Teaching studio & staff in partnership with HMS	\$ 155,000	\$ -	\$ -	\$ 155,000	\$ 5,000.0	\$ -
2 VDI- Implement Virtual Desktop Computing solution for computer labs & staff pc's	\$ 430,000	\$ -	\$ -	\$ 430,000	\$ 35,000	\$ 75,000
3 Classroom renovation project-install new AV systems in new flexible classroom buildout	\$ 163,000	\$ 163,000	\$ -	\$ 326,000	\$ -	\$ -

\* List excludes SIS project, as all schools are participating.



**Recommendation:**

Implement integrated planning for IT on an annual cycle, aligning the process with the existing multi-year financial planning process and schedule.

- Will limit duplicate requests.
- Will inform the ITCRB process.

University Planning Processes	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Multi-Year Financial Planning	◆ Templates distributed			◆ Templates due			◆ Corporation/Finance Committee review					
Capital Planning				◆ Guidance issued	◆ Capital Planning System available for updates			◆ Plans due	◆ Corporation/Finance Committee review			◆ Corp./Finance Comm. review
Annual Budget					◆ Letter issued	◆ Guidance issued		◆ Budgets due				◆ Corp./Finance Comm. review
IT Capital Review Board (FY16)				◆ Templates published		◆ Proposals submitted	◆ PRC review	◆ ITCRB review			◆ EVP review/ funding awarded	
Proposed: Integrated Planning for IT (FY16)	◆ Templates distributed			◆ Templates due			◆ Report out complete					

# Detailed Timeline for Integrated Planning for IT in FY16

