ROI Analysis

Intel® Core™2 Processor with vPro™ Technology
Taibei High School
Education

Taibei High School uses Intel® vPro™ technology to achieve ROI of 115% and virtually eliminate student IM usage during classes

Taibei High School, one of the oldest public high schools in the Shihlin District in East Gate, Taiwan, has a reputation as a technology leader.[1] Founded in 1916, the high school serves over 4,000 students and offers a five-year program, as well as night school to meet the needs of local students and their families. Currently, the school's IT department has three full-time administrators and manages 900 desktop PCs across a large campus with four buildings.

Taibei High School has been very interested in deploying PCs with Intel® Core™2 processor with vPro™ technology to reduce costs for help-desk services and inventories across their large campus.[2] However, a second key focus has been to manage a problem that until recently, had no practical solution: 80% of students used school PCs for IM-ing (instant messaging) during classes, lectures, and labs.[3] Disabling the network during classes was not a solution, because teachers also required Internet access to prepare and present class materials. And as is typical of software-only solutions and creative students, agents installed at the OS level were easily disabled or removed.

In the past year, Taibei High School began deploying PCs with Intel® vPro™ technology as part of their annual refresh cycle. Taibei's IT department implemented several features of the persistent, hardware-based Intel vPro technology – including new services such as software inventory management and agent presence checking – through their software management application, SYSCOM vProMaster.*

Since deploying the new PCs, the school has seen IM usage drop from 80% to virtually 0% on systems with the agent presence checking capability of Intel vPro technology.[4] Teachers, parents, and the school board are excited about being able to reduce student distractions so significantly during class. The school has also lowered IT service costs, sped up inventories, and improved help-desk services for student PCs – with projected savings of over $98,000.[4] Based on the results of their initial deployment of PCs with Intel vPro technology, the school's IT department projects a reduction in PC downtime by 7,300 hours over the next five years – a benefit that will give students significantly more time on the PCs for key class work and labs.[4]

TCO/ROI investigation

Taibei High School's investigation was conducted in an environment with 900 desktop PCs, of which 240 were PCs with Intel vPro technology. Data was analyzed for four IT service tasks: Hardware and software inventory, hardware diagnostics, software diagnostics and repair, and agent presence checking. Data was then projected for four years, with the assumption that the student population would grow 1% per year and that the school would deploy approximately 180 additional PCs with Intel vPro technology each year.[4] ROI was calculated conservatively, for only service tasks for which there was comparative data: hardware inventory, hardware diagnostics, and software diagnostics and repair. ROI calculations do not take into account the subjective benefits to students of reducing IM usage, nor the reduced downtime benefits or productivity gains from various use cases in the production environment.

Key Findings from ROI Analysis

- **Positive ROI of 115% over 5 years,** by deploying PCs with Intel® vPro™ technology to support inventories and problem diagnostics and repair.[4]
- **Break-even point achieved in 1-1/2 years.**[4]
- **Reduced student IM-ing on school PCs to virtually 0%** by using management software to take advantage of the agent presence checking capability built into PCs with Intel vPro technology.[4]
- **Projected savings of over $98,000 in help-desk costs and asset inventories** by reducing deskside visits and enabling remote, automated, off-hours inventories for hardware and software.[4]

Positive results

Since deploying the PCs with Intel vPro technology, Taibei High School is realizing substantially lower IT costs and improved management of their PC environment (see Table 1):

- Effectively blocked virtually 100% of student IM-ing on school PCs, via policy-based agent presence checking.[4]
- Reduced help-desk support costs for hardware and software diagnostics and repair by 31%.[4]
- Sped up hardware inventories by 99% and reduced inventory costs from $1.44 per PC to $0.002 per PC – a cost reduction of 99.9%.[4]
- Enabled a new service: automated, off-hours software inventories at a cost-effective $0.027 per PC.

The successful deployment of PCs with Intel vPro technology, and the benefits of improving student attention, reducing downtime, lowering IT costs, and improving services are expected to influence other public and private educational organizations in the country.

Table 1. Cost and ROI analysis for IT tasks via Intel vPro technology[4]

	Without Intel® vPro™ technology	PCs with Intel® vPro™ technology					
	Year 0[a]	Year 1[a]	Year 2[b]	Year 3[b]	Year 4[b]	Year 5[b]	
PCs with Intel vPro technology	0	245 (27%) Intel vPro PCs	434 (48%) Intel vPro PCs	623 (68%) Intel vPro PCs	812 (88%) Intel vPro PCs	937 (100%) Intel vPro PCs	Estimated savings with 100% PCs with Intel® vPro™ technology
Annual costs of hardware/software diagnostics and repair	$96,600 costs	$92,600 costs	$89,000 costs	$86,100 costs	$83,000 costs	$82,000 costs	Help-desk support cost per PC: 31% less
Support-cost savings[c]	N/A	$4,000 savings	$11,000 savings	$17,900 savings	$25,200 savings	$30,600 savings	Inventory costs: 99% lower
Annual costs of hardware inventory	$2,600 costs	$1,900 costs	$1,400 costs	$900 costs	$300 costs	$4 cost	Reduce student IM-ing on class PCs from 80% to virtually 0%
Inventory savings	N/A	$700 savings	$1,300 savings	$1,900 savings	$2,600 savings	$3,000 savings	Cumulative 5-year savings: over $98,000
% of PCs with access to Instant Messenger (IM) applications	100%	73%	52%	32%	12%	~0%	
ROI Summary							
Total NPV costs[d]	N/A	$11,900 costs	$7,000 costs	$6,900 costs	$6,700 costs	$6,600 costs	Break-even point: year 2[d]
Total NPV benefits[d]	N/A	$4,100 benefits	$11,300 benefits	$17,600 benefits	$23,600 benefits	$27,300 benefits	Positive ROI: 115% in year 5[d]

[a]Data in Q1, Q2, and part of Q3 is the result of measurements; data in part of Q3 and Q4 is the result of projections.

[b]Data is the result of projections.

[c]Calculations of projected savings are based on annual costs of hardware and software diagnostics and repair for PCs with Intel® vPro™ technology, and for PCs without Intel vPro technology; and include a 3% inflation rate and a 1% growth rate.

[d]ROI is calculated based solely on the IT areas of remote inventory, hardware diagnostics, and software diagnostics and repair; and assumes a 5% discount rate and 3% inflation. ROI calculations do not include benefits of agent presence checking, software inventories, reduced downtime, or productivity gains.

For more information about PCs with Intel Core 2 processor with vPro technology, visit www.intel.com/vpro

[1] All content about Taibei High School was provided by Taibei High School.

[2] PCs with Intel® Core™2 processor with vPro™ technology include powerful Intel® Active Management Technology (Intel® AMT). Intel AMT requires the computer system to have an Intel AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see www.intel.com/technology/platform-technology/intel-amt/.

[3] Source: The Taibei High School knowledge base.

[4] Source: The Taibei High School 2008-2009 Pilot of PCs with Intel® Core™2 processor with vPro™ technology, conducted in 2008 and 2009, at the school's campus in the Shihlin district, Taiwan.

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