

The New Zealand Online Learning Community Financial and Administrative Research Study for the Virtual Learning Environment

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Executive Summary

The New Zealand Online Learning Community project represents a joint venture between the teaching community, the Ministry of Education – Digital Opportunities, Microsoft NZ, and Unisys NZ to allow a test group of users to trial an online Virtual Learning Environment (VLE). This consists of a portal environment using Windows Sharepoint Services (WSS) and a content delivery and curriculum management software product Microsoft Class Server, combined with the email functionality of Windows Exchange.

Unisys is able to offer the service for the Virtual Learning Environment at a flat rate, based purely on a student numbers and resource usage within a defined set of guidelines. This rate is likely to range from \$1 - \$1.50 per student per school month. For the purposes of this study only, the approximate cost of the VLE will be \$1.25 per student per school month. For instance a school with 120 pupils will pay \$150 per month, whereas a school with 2000 pupils will pay \$2500 per month. This effectively means that Teacher and Administrative usage is free and that small schools are not penalized for low roll numbers (existing Network charges still apply).

The objectives of this case study are:

- To test our hypothetical pricing model by demonstrating that extending VLE usage within pilot schools will further reduce reliance on manual methods and accrue savings.
- To identify the financial and administrative benefits that could potentially be achieved for schools that have not yet implemented the VLE, therefore providing Unisys with the basis for a costing model (should the current model be found to be inaccurate) and business case.

This project focused on Riccarton High School in Christchurch, and Wainuiomata High School and Saint Bernard's College in Lower Hutt. These schools are currently trialling the Virtual Learning Environment. The schools ranged in gender, decile (from 3 to 7) and size (500 to 1000 pupils). Benefits that can ultimately be converted to money or time were analysed in order to test the pricing model.

The VLE was observed to be a cost-neutral endeavour for schools based on the following findings:

	Riccarton High School	Wainuiomata High School	Saint Bernard's College
Approximate Cost per page for printing (\$)	0.035	0.031	0.03
Estimated % Families with Internet Access	80%	80%	85%
Approximate number of teaching staff	70	70	35
Approximate School intake	1000	1000	500
Total Costs of Observed Processes that could accrue savings from VLE Usage	\$24,404	\$14,854	\$8,528
Potential Savings from Portal	\$7,010	\$8,271	\$2,716

	Riccarton High School	Wainuiomata High School	Saint Bernard's College
Usage			
Potential Savings from VLE Mail	\$7,000	\$1,063	\$500
Potential Savings from Class Server Usage	\$52	\$3,360	\$3,819
Total Potential Savings	\$14,062	\$12,694	\$7,035
Savings per student per month	\$1.41	\$1.27	\$1.41

For more detailed information refer to Appendix A for the financial and administrative savings for each individual school.

Some contingencies of this case study were:

- Teacher's working hours were not observed to be reduced from Class Server usage as this depended on individual teachers, teaching styles and the subject being taught. However it was observed that the VLE allows teachers to spend more time on preparation and teaching, by reducing administrative effort such as marking and attending meetings.
- The financial benefits of the Class Server component of the VLE could not be calculated in terms of 'savings'. Resources that have been created specifically for Class Server would not normally be produced, for instance, past assessments such as tests are set again for revision purposes. This would not normally be undertaken in the absence of Class Server due to the costs of photocopying the tests again. Financial savings identified from the usage of Class Server were determined by calculating the potential cost of performing the same activity without it.

Introduction

The New Zealand Online Learning Community (NZOLC) Financial and Administrative Research Study concentrates on the tangible financial benefits of an electronic system such as Virtual Learning Environment (VLE) for potential schools.

Since Unisys has implemented the systems as a 'Web' based and 'Shared' environment, indicative pricing has indicated that Unisys is able to offer the service for the Virtual Learning Environment at a flat rate, based purely on a student numbers and resource usage within a defined set of guidelines. This is shown in the table below:

Usage Model	Sizing
Per School Class Server Storage	10 GB
Per School Portal (Administration & Collaborative) Storage	10 GB
Teacher and Administration Mail Storage	25MB
Pupil Mail Storage	5MB
Cost per PUPIL	\$1 - \$1.50 per Month

Note: This assumes that a majority of the licensing costs are covered under the Microsoft Ministry of Education Licensing Agreement.

Based on the above example a school with 120 pupils will pay from \$100 - \$150 per month, whereas a school with 2000 pupils will pay from \$2000 - \$2500 per month. This effectively means that Teacher and Administrative usage is free and that small schools are not penalized for low roll numbers (existing Network charges still apply).

This study is designed to test the Unisys pricing model. It attempts to identify how schools can recover this cost by identifying a selection of monetary savings resulting from the usage of the VLE. This empirical data will be collected by researching schools currently trialling the VLE. The process will involve identifying and quantifying the financial and administrative benefits that are currently being achieved or could potentially be achieved within pilot schools, and consequently other potential schools in New Zealand.

The scope of this project is to:

- Analyse a small sample of pilot schools, being Wainuiomata High School, Riccarton High School and Saint Bernard's College. These schools are currently trialling the VLE.
- Analyse only benefits that can ultimately be converted to money or time. Our objective is to test the pricing model and determine whether the cost of the VLE for schools can be offset by potential savings.

Project Description

The objectives of this project were to:

- Test the Unisys hypothetical pricing model by demonstrating that extending VLE usage within pilot schools will further reduce reliance on manual methods and accrue savings. These savings will allow the teaching community a measure of security in purchasing the system by showing the VLE is, at least, a neutral cost endeavour.
- Extrapolate this data to identify the financial and administrative benefits that could potentially be achieved for schools that have not yet implemented the VLE system, therefore providing Unisys the basis for a sound costing model and business case.

They represent the population of schools within New Zealand, each pilot school varied in operating practices, processes, size, decile, degree of VLE implementation and Information Communication Technology (ICT) facilities. Therefore the approach to a research project of this nature was ad-hoc and executed through five discreet phases at each school. The process within each phase differed for each school.

Phase 1: Scope

The objectives and approach of the project were discussed with Judy Lymbery (WHS), Graham Warburton (RHS) and David Housden (SBC), key advocates of the VLE within each school, to ensure assumptions could be tested.

Phase 2: Discovery

This step verified our current understanding of teaching and school administration processes that were unique to each school. It identified additional benefits of the VLE, where the system could potentially reengineer school administration and teaching working practices that will result in financial savings.

Phase 3: Data Collection

Data was collected via interviews, observation and workshops held with administrators, teachers and the business manager of each school.

Phase 4: Analysis

The data findings were used to calculate potential financial savings resulting from the administrative benefits of using the VLE. The tables shown in Appendix A have been created to allow potential savings to be calculated based on entering the degree of Internet Access within the parent/student community, or a specified level of portal usage for each process identified, for instance, a school may wish, or it may only be possible to send 80% of school newsletters home via email. The calculated savings have taken this into account. This will allow each school to view immediate potential savings based on varying levels of VLE usage.

Phase 5: Results

The key findings of the analysis and recommendations will be provided in this case study.

Case Analysis 1: Riccarton High School (RHS)

Approximate Student Intake	1000
Approximate number of Teaching Staff	70
Institution Type	Year 9 -13
Gender	Co-educational
Decile	7
Location	Christchurch

RHS currently has the highest degree of VLE implementation of the pilot schools within this study. There is a strong ICT presence within the school, with an existing Sharepoint knowledge portal and intranet. Intranet functions for performing administration online such as absences and daily notices exist, but are not utilised to their full potential. There is a ratio of one computer for every four students.

However, Riccarton has intense competition in the area with other High Schools, leading to significant expenditure on school promotions and advertising. RHS also has high monthly internet costs. The school pays approximately \$1200 for Internet filtering services annually and mail filtering costs are increasing each year due to viruses, spam and an increase in ICT development.

Financial and Administrative Savings (Cost Inputs)

All manual teaching processes and school administration that can accrue potential savings for RHS are listed below. Note: These findings provide an example of savings for schools that may have similar traits to RHS.

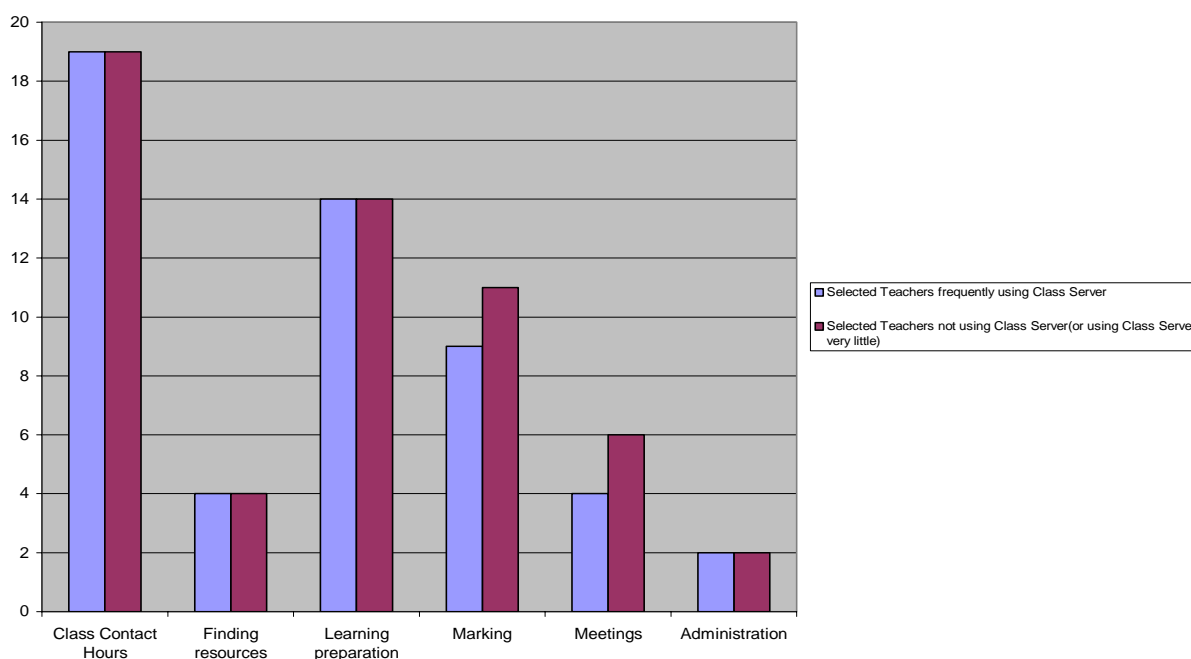
Observed School Activity	Financial/Administrative Savings
Newsletters (reduced production)	\$2,381
Postage of Newsletters (80% can be emailed)	\$288
Assembling of reports can be automatically entered via portal eliminating the need for sorting	8 working days per year
Interim Reports (80% can be emailed)	\$149
General Postage that is able to sent via email	\$3,312
Absences	\$12
Daily Notices	\$868
MailMarshal Software Maintenance	\$7,000
Marking of school work - (A sample of 6 teachers surveyed showed that those who did not use Class Server were marking	1 – 4 hours per week

Observed School Activity	Financial/Administrative Savings
approximately 1-4 hours more each week than those who did)	
Economics Tests	\$22 (per class) + 2.5 hours marking
Social Studies Weekly Assignments	5 hours preparation (would potentially cost \$720 per year to produce if they were printed out on paper)
Classics Tests	2 hours per week
History Essays	2 hours per essay
Chemistry Videos/Visuals purchased	\$30 - \$70 per video
Parent Teacher Interview Preparation	Varies by teacher and subject

N.B. Calculations are based on the assumption that 80% parents/caregivers have email and internet access. The principal has also stated that they still wish to produce and send formal reports to students, a process that can otherwise accrue an additional \$8000 in financial savings via the VLE.

Time Spent on Teaching Activities

Due to the high usage of Class Server among teachers at Riccarton, a survey of the time spent on various teaching activities was taken among a group of teachers consisting of those who used Class Server extensively and those that did not. The results are presented in the graph below:



As a result it was found that on average, teachers using Class Server spent less time marking and attending meetings. From the activities specified this amounts to four hours less per week.

The benefits of The VLE were also discussed with the teachers at Riccarton that were currently using Class Server extensively in specific subjects, for instance;

Economics

All assignments are self-marking resulting in a saving of 2.5 hours to mark one class assignment. Additionally Tests are set up on Class Server and can be done at home within a timeframe resulting in print savings of printing out the test (with 4 pages per test and approximately 6 tests per year); this would normally cost approximately \$22 per class.

Social Studies

Weekly current affairs homework assignments are downloaded from Marlborough Boys High School for two Social Studies classes. It was estimated in this would normally take 5 preparation hours and \$18 per week to produce without Class Server. This currently takes a minute to download.

Classics

The time spent creating tests have decreased by 2 hours per test. Time consumed creating a marking schedule is reduced; this is now produced simultaneously, while creating the test on Class Server. Additionally past tests can be provided for revision purposes, without the costs of printing them again.

History Essays

Essays are completed online. Time savings result from a clear marking criteria present through text boxes (outlining the essay structure), the ability to mark as submitted and no effort at all in having to decipher handwriting. Normally a teacher would have to plan ahead and set aside approximately 6 hours during the week to mark a class essay. It is now it has been estimated that this only takes about 10 minutes per essay. This time can be spread over a number of days, as essays are marked as they are submitted.

Chemistry

Class Server can provide more interactive learning through visuals, and animations, beneficial in the study of chemistry. Demonstrations can be viewed online and at home, saving costs in the purchases of chemicals and science videos which range from \$30 - \$70 each.

Preparation for Parent/Teacher Interviews

The administration involved in preparing for these interviews, includes updating homework lists and marks. This usually takes a day or two, to sort out a page for all students. With Class Server however, feedback, updated marks, homework and even examples of student work can be immediately retrieved and accessed from laptops during the actual interview process. Therefore eliminating required administration involved in preparation.

A contingency with Class Server financial savings was that the savings resulting from potential financial and administrative benefits of Class Server must be looked at retrospectively. The activities that Class Server has allowed teachers at RHS to perform would not be performed under usual circumstances. Savings should be identified with by determining the cost of performing the task manually.

Results

Cost of the VLE for RHS (based on school intake and the Unisys pricing model)	Total financial savings resulting from recommended usage of the VLE
\$12,500 per year	\$14,062 per year

Financial and Administrative Benefits

- Extending portal usage for school administration can reduce photocopying and printing costs, saving approximately \$7000 for RHS
- Leveraging the use of the VLE built-in email functionality will save approximately \$7000 per year that is currently spent on MailMarshal email filtering and access.
- Class Server can reduce marking and meeting time for teachers by approximately 1- 4 hours per week.
- Approximately \$22 per class is saved in printing costs by performing revision tests online. This is based on a typical Economics class of 30 pupils.
- Reduced preparation time of 5 hours per week by using assignments created and shared via Class Server, and completed by students online.
- Chemistry demonstrations and visuals can be placed on class server saving from \$30 - \$70 of the cost of a single video that the school purchases as learning resources.

Case Analysis 2: Wainuiomata High School (WHS)

Approximate Student Intake	1000
Approximate number of teaching staff	70
Institution Type	Year 9 -13
Gender	Co-educational
Decile	3
Location	Lower Hutt

WHS has a moderate degree of VLE implementation. There are approximately 15 teachers committed to extending the usage of Class Server within the school. 74% teachers have their own laptop and 79% of teachers have internet access and their own computer at home. WHS has new technology and modern facilities and there is approximately one computer for every four students.

Although all teachers and students have email, WHS does not have an established school intranet or any online internal broadcasting or communication. There are also limited available computing labs for general teaching as they are predominantly used for ICT specific and technology-related courses. The current absence process is also manual, contributing towards high administration photocopying costs. The school currently budgets approximately \$22,000 for administration photocopying only. WHS is also facing significant mobile phone call costs. This is assumed to result from calls to parents, as families are more often supplying the school with mobile numbers instead of landline numbers. WHS also produce a large number of homework booklets for English, Science and Social Studies faculties which amounts to over \$3000 per year in photocopying costs. The cost of printing of 3.5cents per page is currently not covering the cost of resources (i.e. lease of the photocopiers, paper, staples), and there are discussions in process to increase the photocopying cost for teachers to 5 cents per page. For further information refer to Appendix B showing a situation analysis of WHS.

Financial and Administrative Savings (Cost Inputs)

All manual teaching processes and school administration that can accrue potential savings for WHS are listed below. Note: These findings provide an example of savings for schools that may have similar traits to WHS.

Observed School Activity	Financial/Administrative Savings
Newsletters	\$1,429
Progressive Reports	\$252
Filing of Reports	\$700
Detention Submission	\$14
Detention Letters and Postage	\$466

Observed School Activity	Financial/Administrative Savings
Filing of Detention Letters	\$42
Supervisor detention letters	\$42
Event Notices	\$336
Internal Communications	\$50
Daily Notices	\$700
Mobile Call Costs	\$3,000
Calling parents	2 hours per day
Absence Slips (printing)	\$700
Entering of absences after each spell	4 hours per day
Absence Summaries - Truancy Officer, Form teachers and Deans (printing)	\$540
Absence Summaries - Truancy Officer, Form teachers and Deans (producing)	1.5 hours per day
ICT Email Costs (Includes MailMarshal costs and Exchange Licensing)	\$1,063
Year 10 Science Homework Booklet	\$960
English homework booklet	\$1440
Social Studies homework booklet	\$960

N.B. Calculations are based on the assumption that 80% parents/caregivers and students use email and have internet access.

Results

Cost of the VLE for WHS (based on school intake and the Unisys pricing model)	Total financial savings resulting from recommended usage of the VLE
\$12,500 per year	\$12,694 per year

Financial and Administrative Benefits

- Extending portal usage for school administration can reduce photocopying and printing costs, saving approximately \$8000 for RHS. This includes the printing costs involved in the school attendance process which costs the school approximately \$1200 per year.

- Potential savings of 37.5 hours per week administering manual attendance-related processes, which could potentially be automated via the VLE portal
- Students will not have to miss a day of school to collect absence slips and dispatch notices or other internal communications, by use of MSN and the VLE portal
- Approximately \$1000 in savings annually by using the VLE's Email functionality.
- Approximately \$3000 savings per year by placing English, Science and Social Studies homework booklets on Class Server. This eliminates printing and photocopying costs for the 80% students who have internet access at home. It also allows the tasks to be effortlessly updated each year.

Case Analysis 3: Saint Bernard's College (SBC)

Approximate Student Intake	500
Approximate number of Teaching Staff	35
Institution Type	Year 7 -13
Gender	Boys
Decile	5
Location	Lower Hutt

Situation Analysis

SBC has a high degree of ICT facilities available for staff. Almost all staff members have a desktop and a laptop, therefore approximately 2.5 computers per staff member. There are 25 laser printers; most are located in personal offices of teachers. This means the monitoring of printing is difficult and printing expenditure is hidden. There is evidence to suggest that staff tend print tests and learning resources on their personal printers rather than sending it to one of the three main photocopier machines. The cost of printing is approximately 3 cents per page, and is charged to the faculties account. The school does not have an intranet, currently a shared drive is used for sharing and storing resources. SBC has a website where newsletters and enrolment forms are placed, however they are not presently using the VLE portal. Additionally students do not have school email addresses. This is provided for staff only. However a survey completed by SBC last year showed that 85% of students used internet and email at home.

Due to SBC's small size, the school has an open-door timetabling policy relating to the use of computing labs for teaching purposes. A lab can always be made available for a class that may need it. This presents the opportunity for more class server usage during school. Only two teachers are actively using Class Server for teaching purposes.

A major issue brought up in discussions was that the students and community tend to ignore paper communications or notices sent home. For instance, it was assumed that approximate 30% of newsletters sent home with pupils reached their parents, as pupils tend to leave them in their bags or lose them. This was also attributed to the fact that during the start of the year or beginning of terms, pupils would be taking home nearly 90 sheets of school-related information.

Financial and Administrative Savings (Cost Inputs)

All manual teaching processes and school administration that can accrue potential savings for SBC are listed below. Note: These findings provide an example of savings for schools that may have similar traits to SBC.

Observed School Activity	Financial/Administrative Savings
Monthly Literacy Survey	\$53
Daily Notices	\$240
Newsletters	\$612
Detailed pupils list and teachers pupils lists	\$11

Observed School Activity	Financial/Administrative Savings
Staff Manuals	\$95
Start-of-Year Mail Out (Printing)	\$225
Start-of-Year Mail Out (Postage)	\$450
Options booklets and selections sheets – Senior and Junior	\$126 (booklets), \$45 (sheets)
Subject Management Folders	\$120
Absence Pads	Printed and produced externally
Absence Summaries – For Deans, teachers and full school	\$135
Teachers Financial Reports	\$50
Interim School reports	\$15
NCEA Financial Forms	\$98
Postage of NCEA Financial Forms	\$261
Full School Print outs	\$180
Detention Pads	Printed and produced externally
Meetings – Staff briefings and year-levels meetings	1 hour 45 mins per week
ICT Email Costs - GroupWise	\$500
Subject Standards/Course outlines/Assessment Schedule	\$1,350
Science Internal Test	\$21
Science Year 11	\$105
Physics Exam booklet	\$27
English Exam booklet	\$15
Senior Level Exam booklets	\$1,833
Workbooks – Cooking, Woodwork, Construction and General Studies	\$468

N.B. Calculations are based on the assumption that 85% parents/caregivers and students use email and have internet access.

Results

Cost of the VLE for SBC (based on school intake and the Unisys pricing model)

\$6,250 per year

Total financial savings resulting from recommended usage of the VLE

\$7,035 per year

Financial and Administrative Benefits

- Initiation of VLE portal usage can reduce administration photocopying, printing and postage costs (by using Microsoft Exchange functionality) for newsletters, induction mail outs and NCEA documents. This can potentially accrue nearly \$3000 per year.
- ICT Email costs will be reduced by provision of VLE email functionality for both staff, and students as well if required. This can save approximately \$500 per year.
- Class Server can be used for exams, tests, and a number of subject work booklets that are repeatedly produced each year. Printing and photocopying cost savings were estimated to be approximately \$3000 per year.
- Being a small school, the teachers attend a number of meetings including staff briefings, year-level meetings, house meetings, senior management meetings. At least 1.75 hours of time spent in meetings each week could be eliminated for all teachers by utilising portal discussion boards or meeting workspaces and email.
- Recommendations for an VLE Business Case

The following financial and administration benefits for potential schools that have not yet implemented the VLE are:

Potential Benefits

- Printing costs.
- Photocopying costs
- Photocopier and printer consumables (toner cartridges, paper)
- Email hosting and filtering costs
- Meeting time for teachers
- Marking time for teachers
- Postage costs
- Promotional costs (newsletters, advertising, maintaining communication with past students)
- Mobile calls
- Administration work hours
- Pupil learning time spent dispatching school communications/absence slips
- Specific learning resource expenditure (i.e. Chemistry/Science videos or visuals)
- NCEA-related printing costs – financial forms, assessment and unit standards schedules

- Based on the results of this study, implementation of the VLE is potentially a cost neutral endeavour. It was observed that at the cost of \$1.25 per student per month at school, potential savings range from \$1.27 to \$1.41 per student each month, presenting a cost neutral endeavour for schools intending to implement and utilise the VLE as recommended in this case study. Any additional savings can then be utilised elsewhere.
- The VLE Sharepoint portal can reduce the high costs of school administration photocopying, and printing. It can be developed to support manual processes such as attendance, detentions, and internal communications (currently via runners or 'pigeon holes'). Potential savings resulting from these recommendations have been observed to range from \$2666 to \$7785

- The VLE Email functionality can reduce ICT costs. Most schools have recognised the need for Email for both staff and students. The provision of Email access, hosting and filtering services is included within the \$1.25 per school month per student costing model, therefore eliminating any current email-related costs. The cost of maintenance of these servers will be covered by Unisys. These will also provide the added-value of a more secure environment. Cost savings ranged from \$500 to \$7000 at the sampled schools.
- Class server can reduce the time teachers spend marking (i.e. creating marking schedules and automated marking) and in meetings. It is estimated that time spent retrieving learning resources, and preparing work will be reduced once the VLE resource based is added to, and more resources are created for class server and shared by teachers over New Zealand. NCEA standards will also be able to be added to any resource or assessment created in Class Server. Administration time may also be reduced depending on the teacher, i.e. the preparing of reports and preparation for parent-teacher interviews is made easier by having this information online. Updating this information is effortless.

The VLE can assist in addressing the following issues:

1. Reducing increasing administration workloads for teachers at school, administrative tasks can now be performed at home.
2. Improving communication with the communities and homes of students, as many paper-forms of communication are frequently lost.
3. Direct communication, via the portal or email, with parents and caregivers by reducing the reliance on pupils to pass on any paper-form of communication (notices, forms). This method currently is assumed to have a low success rate in the senior levels, as students tend to forget to pass notices on.

Recommendations for achieving increased savings within Schools:

- The uniqueness of teaching styles and variety of subjects should be acknowledged and used to build specific teaching ideas to encourage use of Class Server (teachers must have a reason to use it)
- Advocating wider internet usage in the parent, student and teacher community will allow increased savings for the school, as more and more communication will no longer have to be printed.
- There must be access to technical support personnel for troubleshooting and assistance after Class Server and lessons are in place. If problems cannot be solved quickly and easily, teachers may return to traditional teaching methods. This will also be provided through the Unisys helpdesk and is covered within the pricing model
- ITC facilities should be taken into account in a business case for each individual potential school. If Class Server resources (assignments, homework) are not easily accessed and implemented, they will not be used.
- The observed savings can only be successfully achieved if a commitment is made to reduce photocopying and a culture change is communicated regarding the changes in school administration processes. This may require future projects or communication plans to be development.

Appendix A: Observed Financial Savings

Riccarton High School Financial Savings

Observed school Activity	Process Description			Variables			
WSS Portal							
Newsletters	10 Newsletters are produced each year, 12 pages each, 800 families = 96000 pages.	800	\$2,976	% prepared to receive newsletters online?	0.8	\$2,381	
Postage of Newsletters	800 newsletters are posted each year. These are about 12 pages long and are placed into a 45cent envelope.	800	\$360	% prepared to receive newsletters online?	0.8	\$288	
Assembling of reports	Admin staff take 2 days to collecting report pages from teachers and sorting them by student and class. These are then handed back to the form teacher to check through. Any incorrect reports are reproduced.		unknown				8 working days per year
Interim Reports	2000 created each year, assumed to be about 3 pages long (similar to WHS)	1000	\$186	% families with email/internet?	0.8	\$149	
Formal Reports	2000 formal reports are created each year. It is estimated that each report is about 10 pages long and costs about \$4 per report. This cost includes: envelope, cardboard coloured cover, photocopying, paper	1000	\$8,000	% families with email/internet	0	\$0	

	and administrative time to put them together).						
Postage of Formal Reports	Reports for absent students are posted out. If 50 (5%) students are absent on the last day of school, they may post 100 per year at 0.90 cents per report	50	\$90	# students absent and prepared to receive reports sent via email	0	\$0	
General Postage	The school spends a total \$4500 on general postage as This includes postage of referral letters, congratulatory letters, school announcements etc. If we exclude the cost of posting newsletters, the cost of general postage is\$4140.		\$4,140	% postage able to sent via email	0.8	\$3,312	
Absences	Most absences are submitted over the Riccarton Portal. However a print out for each dean is still produced at the end of every week. It is assumed there are at least 2 Deans per year level.	10	\$12.40	%Deans able to view absences online	1	\$12	
Daily Notices	Riccarton has the ability to submit and view notices online. However on average the notices page gets about 5 hits per day. It can be assumed only 5 staff access the notices to read out. However these are likely to be students In other words most staff will require a print out of the daily notices.	70	\$868	% teachers able to receive daily notices online	1	\$868	
Email							
Mailmarshal	RHS currently budget approximately \$7000 per		\$7,000			\$7,000	

Software Maintenance	year on email filtering and access, by Mailmarshal,					
Class Server						
Marking time	May reduce 1-4 hours per week	unknown			unknown	1-4 hours per week
Economics Tests	Tests are set up on Class Server and can be done at home within a timeframe resulting in print savings of printing out the test (4 pages per test, approximately 6 tests per year); this would normally cost approximately \$22 per class.	\$22			\$22	2.5 hours to mark
Social Studies Weekly Assignments	Weekly current affairs homework assignments are downloaded from Marlborough for two classes. These would normally take 5 preparation hours \$18 per week to produce.	\$720				5 preparation hours
Classics Tests	The time spent creating a marking schedule is reduced, as this done while creating the test on Class Server. Additionally the same tests given during the year can be provided for revision. This would not normally be provided due to printing costs.	unknown				2 hours per week
History Essays	Essays are completed online. Time savings result from; not having to decipher handwriting, a clear marking criteria present through text boxes outlining the essay structure, and the ability to mark as submitted. Normally a teacher would have to plan and s	unknown				2 hours per essay
Chemistry Demonstrations	Class Server can provide more interactive learning through visuals, and animations beneficial in the study of chemistry. Demonstrations	Cost of video:	\$30	#Number of chemistry videos/visuals	1	\$30

	can be viewed online and at home saving on the purchases of chemicals and science videos which range from \$30-\$70 each.			purchased			
Parent Teacher Interview Preparation	Administration involved for teachers in planning interviews, updating homework lists, marks etc, usually takes a day or two to sort out a page for each student. With class server feedback given, marks and even examples of student work can be accessed from						
Total	Total Cost to RHS		\$24,404	Total Savings to RHS		\$14,062	

Wainuiomata High School Financial Savings

Observed School Activity	Process Description	Number required per instance	Total Cost to School per year (\$)	Variables	Enter appropriate factor:	Financial Savings (Photocopying/Printing) per year	
WSS Portal							
Newsletters	1160 copies of 4-page newsletters are produced for families and staff. Each year 11 newsletters are produced at a cost of \$2552.00.	1160	\$1,786	% prepared to receive newsletters online?	0.8	\$1,429	
Progressive Reports	The cost of printing is \$450 per year. These are produced term 1, 2, and 4 for all students and are approximately 3 pages long.	1000	\$315	% families with email/internet?	0.8	\$252	
Formal Reports	These are produced twice a year and are 10 pages each. The cost of printing these is at least \$1000.00.	1000	\$700	% families with email/internet	0	\$0	
Filing of Reports	Full reports are also photocopied to store on the students file in filing cabinets at a cost of \$1000 per year.	1000	\$700	% reports to store online	1	\$700	
Detention Submission	All deans have photocopied sheets to record detentions each week. At the end of the week these are passed onto the administration so they can create the letters. Each year the photocopying of these sheets is approximately \$20 per year.	10	\$14	% Deans who can send email	1	\$14	
Detention Letters and Postage	There are about 30 detentions per week. 3 copies are produced for each standard detention letter, one for the student's file, one for the parents and one for the supervisor doing detention. Letters are posted to parents.		\$582	% families with email/internet	0.8	\$466	

Filing of Detention Letters	Number of detentions per week?	30	\$42	% detentions can be stored online	1	\$42	
Supervisor detention letters			\$42	% detentions can be stored online	1	\$42	
Event Notices	Notices are printed out for almost all school events. Frequently administrators will have to print out an additional 50 to 100 notices to account for students losing them. 12 Observed yearly events include requiring notices include: School swimming, Sports			School Event Notices placed on the portal or emailed to students and parents			
	Number of school events:	12					
	Avg number of notices printed for each event:	1000	\$420	%Notices emailed	0.8	\$336	
Internal Communications	The school produces a Telephone Message Pad and Mail Notification Pad to give messages to teachers. For mail notification – when parcels are received and are too large to fit in pigeon holes a message is recorded on a mail notification sheet.		\$50	% Internal communication emailed/ through MSN instead of Pigeon Holes	1	\$50	
Daily Notices	100 notices are printed each day. In addition, there is a lot of paper use in submitting notices to the office. Estimated cost is \$1000.	100	\$700	%Daily notices submitted and accessed online via teacher laptops	1	\$700	
Mobile Calls	It is assumed most mobile calls are regarding student absences and to notify parents if children are sick. This costs \$300 a month. Cell phone calls cost 36c per minute.						
	Cost per month mobile calls	300	\$3,000	%Mobile calls done through MSN	1	\$3,000	2 hours per day calling parents

Absence Slips required	<p>An absence sheet is required for every class at every spell. Assuming there are 40 classes per spell (40 form classes), 25 spells per week and 2 absence slips per sheet, the school requires approximately 500 A4 sheets per week.</p>	<p>500</p>	<p>\$700</p>	<p>% teachers able to submit absences online</p>	<p>1</p>	<p>\$700</p>	<p>4 hours per day for someone to enter absences into the system,</p>
Truancy Officer Absence Summary	<p>At the end of each day the truancy officer requires a list of all pupils absent for that day. Approximately 4 pages.</p>	<p>\$40</p>	<p>%Truancy officer/(s) able to receive email</p>	<p>1</p>	<p>\$40</p>	<p>30 mins per day generating a summary</p>	
Form Teacher Absence Summaries	<p>At the end of each day each form teacher requires a list unexplained absences from previous day. These are printed out daily by Helen and placed in their pigeon hole. There are 40 form classes and 200 days in the school. This costs \$400 per year.</p>	<p>\$400</p>	<p>% Form teachers that can access absences online</p>	<p>1</p>	<p>\$400</p>	<p>30 mins per day generating summaries and distributing (pigeon holes)</p>	
Dean Absence Summaries	<p>At the end of each day, each dean receives a summary of unexplained absences (for only pupils in their year). This is on average about 1 page. There are 10 Deans. Printing costs are \$100 per year.</p>	<p>\$100</p>	<p>% Deans internet access</p>	<p>1</p>	<p>\$100</p>	<p>30 mins per day generating summaries and distributing (pigeon holes)</p>	

Email								
ICT Licence Purchasing	Initial Mailmarshal licence \$3989		\$0			\$0		
ICT Email Costs	\$686 per year MailMarshal + \$1130 for 3 years for Exchange.		\$1,063			\$1,063		
Class Server								
Year 10 Science Homework Booklet	20 pages long. Each booklet has 20 homework tasks and 300 booklets are required. Issued 4 times per year.							
	Number of pages:	20						
	Number books required:	1200	\$1,200	%Students online access	0.8	\$960		
English homework booklet	English Books are 30 pages, issued 4 times per year. 300 are required of each book.							
	Number of pages:	30						
	Number books required:	1200	\$1,800	%Students online access	0.8	\$1,440		
Social Studies homework booklet	Has not yet decided on format, but will probably be the same as Science.							
	Number of pages:	20						
	Number books required:	1200	\$1,200	%Students online access	0.8	\$960		
Total	Total Cost to WHS		\$14,854	Total Savings to WHS		\$12,694		

Saint Bernard's College Financial Savings

Observed School Activity	Process Description	Total Cost to School per year (\$)	Variables	Enter appropriate factor:	Financial Savings (Photocopying/Printing) per year
WSS Portal					
Monthly Literacy Survey	This is a 5 page survey relating to the SBC's current literacy initiative that is printed out for all 35 teachers on a monthly basis. It is approximately a 5-page survey.	\$53		1	\$53
Daily Notices	At least 40 copies are produced each day, to place on Noticeboards and hand out to classes.	\$240		1	\$240
Newsletter	Produced every third week, each time 600 copies are produced for staff and students. These are usually 2-4 pages long. Yearly cost is based on a 3-page newsletter. However it is assumed only about 30% actually get home, as students do not even take them home.	\$720	Percentage of newsletter receivers with Internet Access	0.85	\$612
Folding machine	A folding machine was recently purchased to fold student newsletters into pamphlet form				\$0
Detailed pupils list	This is a list of all pupils and enrolment details such as address, contacts etc. This is produced for the principal and administrator only and is a 129 page booklet.	\$8		1	\$8
Teachers pupil's list	This is a shortened version of the principal's list but available for any teacher to use. At SBC 1 copy is produced and kept in the staff area for use, however these sometimes go missing, as all teachers often need to use them and take them away. It would be useful if this reference was placed online. This book is	\$3		1	\$3

	about 100 pages.				
Staff Manual	This is similar to an induction document, and can range from about 60-100 pages. It contains items such as school map, teaching procedures - withdrawing students etc, fire drills, contacts, policies, what to do with sick students, how to fill out detentions/absence slips etc. These are updated every year, so are therefore produced for every staff each year.	\$95		1	\$95
Start-of-Year Mail Out Printing	This is posted out in the holidays and in January. However it has been stressed this should be posted out late December to allow parents to prepare for the year financially. It contains general information such as Uniform lists, Stationary requirements.	\$225		1	\$225
Postage of Start-of-year package	Theses are posted in 90c envelopes.	\$450		1	\$450
Options booklet - Senior	This is an A5 sized booklet with a coloured paper cover for Years 11-13 to choose their subjects for the following year. Approximately 250 are produced for the senior school. As there are a wider range of subjects and some are not compulsory, this book is twice the size of the Junior options booklet at 12 pages.	\$90		1	\$90
Options booklet - Junior	Approximately 200 are produced for Years 11 & 13, these require 6 A4 pages.	\$36		1	\$36
Options Selection Sheet	This single A4 sheet is produced for students to fill out their subject choices. Approximately 1500 are produced each year because students lose them	\$45		1	\$45
Subject Management Folders	These documents are created by each HOD for each faculty/subject. They outline the schemes of work or curriculum for the year, the budget, policies, copies and templates of reports, goals and the professional	\$120		1	\$120

	development activities you will carry out. They are approximately 200 pages each, although they vary depending on the subject. About 20 are created (Languages are split up i.e. French, Japanese)				
Absence Pads	The school orders the production of pads from an external company for teachers to record absences and pass them onto the administrator to enter them in the database.				\$0
Absentees - Deans summary	A dean's summary of all absent students for their year is produced each week for the 6 Deans. This is a 1 page sheet.	\$7		1	\$7
Absentees - Teachers summary	A teacher's summary of all absent students for each form class is produced each week for 21 form teachers. This is a 1 page sheet.	\$126		1	\$126
Absentees - Full School summary	A full summary of all absent students for the school is produced each week. This is usually about 2 pages.	\$2		1	\$2
Teachers Financial Reports	12 are produced for each of the 35 teachers/board each year. These are approximately 4 pages long.	\$50			\$50
Interim School reports	Each student receives a 1-page Interim report each year. These are not posted.	\$15		1	\$15
Formal School reports	Two produced each year for each student. These are approximately 10 pages long.	\$300			\$0
Postage of formal reports	Formal reports are posted out at 90c each, twice a year.	\$900			\$0
NCEA Financial Forms	If you have siblings sitting NCEA, the family has a community services card, etc the child is entitled to a reduction in the fees of \$150. However the parents have to fill out a form, and read the documentation outlining the details to determine if they are eligible. This is a 5 page document. It has been sent out to 330	\$149		0.66	\$98

	families of school students. Because students frequently lose these/ parents do not remember to read them (these have been posted 3 times already this year.				
Postage of NCEA Financial Forms	These forms have also been posted out 3 times this year. This is assumed to be in a 40c prepaid envelope.	\$396		0.66	\$261
Full School Print outs	Full school notices, such as House Notices, School events were estimated to be produced at least 12 times a year. Usually more that the current number of students is printed to cater for them losing them.	\$180		1	\$180
Detention Pads	The school orders the production of pads from an external company for teachers to record detentions.				\$0
Meetings	Staff briefings are held Monday, Tuesday and Thursday three times a week; these are approximately 15 mins long. Every Wednesday there is a 1 hour year levels meeting				Unknown
Email					
ICT Email Costs	The school pays GroupWise \$500 for email (Students do not currently have a school email address).	\$500		1	\$500
Class Server					
Subject Standards/Course outlines/Assessments Schedule	These documents amount to about 15 pages per subject. They include basic course outline and the NCEA standards/achievement standards, and assessments etc. Each student does about 6 subjects. So every boy receives approximately 90 pages of information over all their chosen subjects at the start of each year.	\$1,350		1	\$1,350
Science Internal Test	This test is about 7 pages long and is given to 100 students.	\$21		1	\$21
Exams					\$0

Science Year 11	Science Year 11 consists of about 70 students. Each student receives 5 booklets which are about 10 pages per book. (50 pages per student)	\$105		1	\$105
Physics Exam booklet	This exam booklet is approximately 20 pages, and is produced for 45 students.	\$27		1	\$27
English Exam booklet	This exam booklet is approximately 5 pages long and produced for approximately 100 students	\$15		1	\$15
Senior Level Exam booklets	It was estimated that over the course of the year, each of the 250 senior students would receive approximately 25 10-page booklets for exams and formal exam preparation. This amounts to a photocopying cost of about \$1875 (at 0.03c per page).	\$1,833		1	\$1,833
Workbooks					\$0
Cooking workbooks	These are write-on booklets and range from 8-10 pages. They include class tasks, homework, recipes, and word finds/puzzles etc, about 10 sets are created each year, and approximately 40 (30-50) copies required per set.	\$108		1	\$108
Woodwork workbooks	These booklets were perceived to be produced on approximately the same scale as the cooking workbooks.	\$108		1	\$108
Construction workbooks	These booklets were perceived to be produced on approximately the same scale as the cooking workbooks.	\$108		1	\$108
General Studies	80 copies of these booklets are produced for General Studies. Each book is about 60 pages and contains work/write-on tasks for the year.	\$144		1	\$144
Total	Total Cost to SBC	\$8,528	Total Savings to SBC		\$7,035

Appendix B: Situation Analysis of Pilot Schools

Riccarton High School

<p>Strengths</p> <ul style="list-style-type: none"> • Have their own knowledge portal and Intranet • Strong ICT presence within the school (ICT committee, voice-recognition based learning, ICT support group, 10 servers) • Online administration processes such as submission of absences online and daily notices • Ratio of 1 computer for every 4 students, 4 labs and 3 pods 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Competition in the area with other schools, leading to high expenditure on school promotions and advertising
<p>Opportunities</p> <ul style="list-style-type: none"> • Partnership with the Christchurch City Council to build a large community/school library by December 2005. 	<p>Threats</p> <ul style="list-style-type: none"> • High Internet Costs per month of approximately \$1175 (\$175 filtering services) • Increasing mail filtering costs due to viruses, spam and an increase in ICT development.

Wainuiomata High School

<p>Strengths</p> <ul style="list-style-type: none"> • Offers a wide variety of ICT and specific technology courses • Approximately 15 teachers committed to extending the use of Class Server within the school • In addition to the current VLE portal, WHS have a school website where enrolment forms and newsletters are placed • Have modern facilities including a new technology centre, modern science laboratories, two full size gymnasiums, a Wharenui and with a total of 163 PCs there is approximately one computer to every four students. 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Do not have an established school intranet in order to share resources and information internally, the current VLE portal is underused • Limited available computing resources for teaching during class, as most labs are booked for computer-related teaching • The principal expressed a requirement to budget significant expenditure for a number of issues specific to low-decile schools (literacy initiatives, guidance, health, etc) • The current absence process requires a lot of time and paper costs in comparison
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<p>Team Teaching initiatives, i.e. Team taught junior classes have two teachers for all core subjects.</p>	<p>with other schools</p>
<p>Opportunities</p> <ul style="list-style-type: none"> • Based on a sample of 33 teachers surveyed, about 73 percent of teachers have a school laptop and 79 percent have their own computer and Internet access at home • Have recently introduced the concept of co-operative learning as a whole staff initiative • Based on discussions with teachers, it is assumed approximately 80 percent of students have Internet access at home • Have a homework centre that is open four nights a week (Tuesday to Friday) from 3.15 – 5.00 pm. The Homework Centre is based in the library. • Emphasis on literacy with nationwide recognition for its literacy programme. One on one support is available for students needing extra help. • All students are helped to set individual development plans. These are reviewed in individual interviews throughout the year. • Actively support communication with home. WHS believes students achieve best when school and home are in close partnership with open, clear and positive communication. Parents are informed about their children's progress, and school newsletters are delivered regularly to students' homes. 	<p>Threats</p> <ul style="list-style-type: none"> • More and more families of WHS are supplying mobile phone numbers instead of landline numbers. It is assumed that there is an increase in the area for families to switch to having mobiles rather than a landline. This has caused a significant increase in phone costs. • Administration photocopying is a very large expense for the school (approximately \$22,000). This includes the photocopying of exams as well. However with the introduction of NCEA, photocopying and administration will likely increase. • Currently photocopying costs for teachers and support staff is 3.5 cents per page. It was recently found that this cost meant the school was operating photocopying at a loss, as this did not cover the cost of paper, staples, toner etc. There are discussions to increase this cost to 5 cents a page.

Saint Bernard's College

<p>Strengths</p> <ul style="list-style-type: none"> • High degree of ICT facilities available to staff (2.5 computers per staff member, a large number of teachers have personal laser printers) • High degree of computers available for use at School. Approximately 1 computer for every 5 students 	<p>Weaknesses</p> <ul style="list-style-type: none"> • With a large number of teachers having access to their own laser printer means that the monitoring of printing is difficult and printing expenditure is hidden. Consumables such Toner for these printers amounts to \$5000 per year (recycled) and paper \$8000 per year. Teachers request these through the office, which is kept
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<ul style="list-style-type: none"> • 85% students have internet access at home 	<p>stocked up.</p> <ul style="list-style-type: none"> • Meetings tend to consume a lot of time. There are staff briefings Monday, Tuesday and Thursday for 15 minutes, Year levels meetings every Wednesday, and in successive weeks there is the Staff Meeting (of 30 teachers), Pastoral, and Curriculum meetings. It is perceived that a considerable amount of meeting time is used to disseminate information rather than to make decisions
<p>Opportunities</p> <ul style="list-style-type: none"> • Using the current portal for staff discussion to reduce meeting times • Use the current portal and student email functionality to reduce administration photocopying and postage • Use class server to leverage the school's ICT facilities and reduce photocopying costs 	<p>Threats</p> <ul style="list-style-type: none"> • A perceived low accessibility to parents through communications via notices sent home with students • Low internet usage by parents although they do have access to this. This was assumed to also relate to language barriers, as 50% of the parent community are of Pacific Island ethnicity.