EUNIS 2017: Laptop lending, with zero-effort?

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Abstract

Currently we are still seeing a flood of hype to implement BYOD in different ways also in HiEd. This paper presents Metropolia's current plan for the future's flexible PC-classroom. This paper also presents the challenges that we are currently facing.

Do you really know how the computers of your organization are used? Are your PC-classrooms in wrong places at wrong time and also wrong size AND of course never with the needed software resources?

1. Introduction

Metropolia's need to optimize its current resource usage still remains, as the Finnish financial climate hasn't changed from Eunis 2015 presentation. At the same time we are testing and looking for new ways to use the students' own devices for their studies. This change should not be driven only by IT-departments as it will also require changes in teaching. The outcome in the future will be sum up of multiple things.

We have to know where we are to make decisions for the environment. We have been collecting info about how our computers have really been used, and the data shows the challenges with too stationary environment. Walls limit us too much.

1. Current situation

We are currently building a new 6000 student campus and it is going to have only six PC-classrooms. Is the BYOD answer for that situation? We are not able to say how future will be in five years and that's why we have to have a plan for PlanB for situation where we are not able or allowed to use students own laptops in learning process.

When analyzing current usage and resource reservations, we are able to say that the real usage of computers is far too low. By looking only the timetables we are seeing the reality wrong way. We might have room's resource calendar full of teaching, but then the size of the group is not optimal as the usage of the computers is low. And also that, that we do have PC-classrooms, what we don't really use properly.
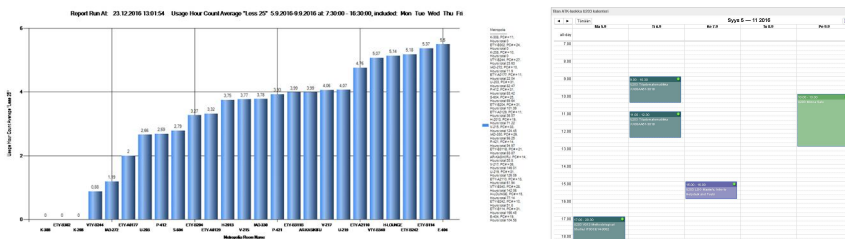

Figure1. Less25 period 1, study year 2016-2017
Figure2. Classroom P214 reservations period 1, study year 2016-2017

When talking with the teachers about the classrooms, they are saying that PCs are in wrong place, not free when needed, containing wrong software, broken etc. We also recognize that we have challenges in creating schedules for students which is also affecting resource reservations.

2. The future planB, automated unmanned lending machine

In the future we cannot be totally locked to fixed classroom. In our vision we have a PC classroom which has small amount (4-8) traditional PC's, lot's extension cords on the tables for own devices and automated laptop lending machines in lobby for those whose laptops are broken, stolen or forgotten to home. This is the best way to try ensure 100% usage for computers in the PC classroom.

In new campus we might have a situation where we need have 400 laptops for short term lending as those six PC-classrooms are not enough for 6000 students.

With automated lending machine we try to tackle multiple challenges.

1) Lending anything normally requires manpower, which means and raises expenses
2) Fixed size classrooms, normal fixed PC classroom is always wrong size for the group
3) Licensing issues, some programs we are not allowed or we cannot afford to provide to students own laptops AND there is no alternative program as freeware etc.
4) With this kind of machine we are able to provide PC classrooms where they are needed and when they are needed. By reading schedules before the new period starts, we could move certain amount of lending machines to optimal locations or floors where computers are needed
5) By integrating lending machines to our building (mobile) info system http://ihana.metropolia.fi we are able to tell easily to users where lendable laptops are or where to return borrowed laptop.

Other task is to provide same study environment to that borrowed laptop what students are using for their studies. We are currently using VMware View environment to do that. By providing centrally the environment, we try to minimize time used for fixing potential problems with those borrowed devices.
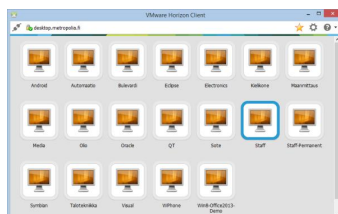
We are currently testing this kind of concept in our university https://wiki.metropolia.fi/x/I4GZBg and first impressions are really positive for this kind of service. Students are able to lend laptops when they need it. Technically laptops are running with Wioski locked down Windows10 LTSB system. The basic Windows Shell is replaced by a VBS script on the laptops. The script only launches VMware View client which is used to connect to Metropolia's VDI environment. When the user closes the client, user is automatically logged out. The laptops are domain joined, so we have a working SSO with VMware Client. The laptops also have a bundled Task Scheduler task, which shuts them down automatically when the laptop is plugged into a power cable. This also initiates a full laptop reset. The laptops report their battery usage percent to the lending machine every couple of minutes, thus we constantly have up to date information on the charge level of the laptops. This information is used to calculate how long the laptop needs to charge to reach the required minimum charge percentage for lending.

Our goal is to create 100% used PC classroom for the future.

3. AUTHORS' BIOGRAPHIES

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