



NSW High Schools

# The Digital Technology Landscape (then and now)

...as recalled and envisaged by Stu Hasic

# From Chaos to Standards



# Our story begins in the 1980s

- **The Department of School Education**
  - 10 regions across NSW – 4 in Sydney, 6 outside Sydney.
  - TAFE was a totally separate entity at this stage.
- **The early reign of “Computer Education”**
  - a few geek teachers doing their own thing
  - Some got together to form the Computer Education Group. This was the starting point of the school computer coordinator

Apple IIe



Microbee



Apple IIgs



Apple Macintosh



# 1988 – Computers in School Administration

- **While computers in the classroom were totally optional, suddenly they were mandatory in the office**
  - *OASIS v1 was released – Admin / Finance / Library*
- **Each school received:**
  - *Two Netware Advanced servers to run the software*
  - *Two Hyundai PCs for each of these buildings*
  - *a dot matrix printer each for Admin and Library*
- **This was the replacement of traditional paper-based systems with computerised versions.**
  - *A lot of training was required as it was all very new.*
  - *It was a world of floppy disks and keyboards. OASIS did not know what a mouse was (and interestingly, still doesn't!)*

## Early 1990s – Apple Reigns Supreme

- **Besides OASIS, schools are purchasing their own computers – about 80% are Apple:**
  - *The Mac IIcx was popular, but cost about \$5000 each*
  - *Then came the Mac LC and LCII –more affordable at less than \$3000*
- **Software is very expensive, computers still a rarity**
  - *especially in K-6 schools*
- **High schools start to network their computers**
  - *PhoneNet and LocalTalk over ordinary telephone cables*
  - *Some schools move to Windows 3.1 connecting them using Co-ax cabling (Ethernet 10Base2) via the OASIS servers*

## 1994 – OASIS v2 and Netware 3.12

- **All schools get their OASIS servers replaced.**
- **NSW DET signs an agreement with Novell to provide Novell Netware 3 to all schools, on as many servers as they like.**
  - *Now schools can make their own “Curriculum” servers for no cost apart from the hardware.*
  - *This starts a major surge in the use of Windows 3.1 computers which are cheaper to buy than Macs.*
- **Netware 3.1 was quite technical to setup and maintain**
  - *Many school CCs put in vast amounts of their own time to put together their networks – some even installed the cabling themselves*
  - *They were pushing the boundaries in a world where there were no official guidelines and the CC position was not even a real position.*

# 1995 – The First Major Restructure

- **Bob Carr wins the election**
  - *Promptly breaks up the Dept of School Education from 10 Regions to 40 districts across NSW with 5 State Offices*
  - *Each District ranged from about 40 to 65 schools each.*
  - *The Regional IT Units which had about 80 staff in total were completely disbanded.*
  - *OASIS support was centralised to Newcastle, Wollongong and Bathurst*
  - *Local IT support was reduced to just 1 person – the **District Technology Adviser***
    - *This one person was somehow supposed to be on top of everything IT in every school in their district – some districts were enormous.*

# The Impossible Job of the District T.A.

(and the Rise of the School Computer Coordinator)

- **40 T.A.s across NSW supporting 2,200 schools**
  - *40 different skill-sets, abilities and geographic barriers*
  - *Too many schools, growing implementation of computers*
  - *While T.A.s had email, schools did not (yet)*
  - *Local support within each school was very limited*
- **The High School Computer Coordinator gains more power**
  - *With limited support from the District, individuals in each High School were forced to stand up, taking control of all IT issues in their school – working to their own abilities*
  - *High Schools become very reliant on their CC*

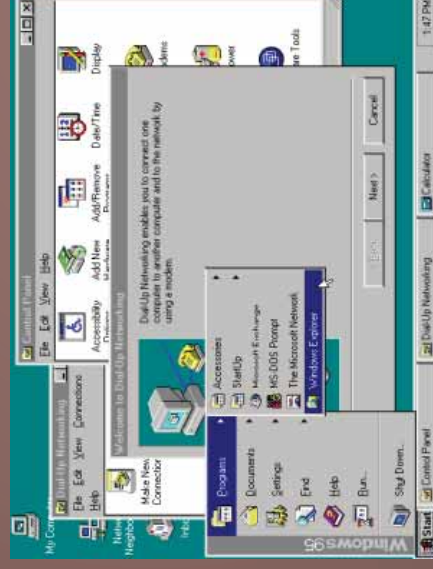
# 1996 – The Internet Arrives in Every School

- **One Single Dial-Up Internet Connection provided:**
  - *Either an Ipex Pentium (46%) with Win 95 or an Apple Mac Performa 6360 (54%) with 33.6KBit/s modem & phone line*
  - *Netscape Navigator browser and Cyber Patrol Filtering*
  - *One eMail Account, ISP is OzeMail*
- **Schools immediately start to look to sharing the single connection across their existing network**



# 1996 - Netware makes more inroads...

- **More schools take on Novell Netware as their server operating system:**
  - *Department upgrades Netware contract to v4.11*
  - *Some standard support is offered by District TAs and Information Technology Branch*
  - *While Netware can handle Apple clients, it begins a shift, particularly in high schools, to Windows 95 clients*



# 1997 – The Computers in Schools Program

- **For the first time ever, the government starts rolling out computers to every school:**
  - *Over the next 3 years, 1 computer for every 12 students in each school*
  - *Schools can choose from 10 different vendors: 9 for Windows and 1 for Apple. By now it's 50:50*
  - *Some funding starts to support CCs at schools*
- **In conjunction with computers comes TiLT:**
  - *A hands-on teacher training program over 3 years*
  - *15,000 teachers in NSW trained (1/3 of all teachers)*
  - *Training targeted at low-IT skilled teachers*
  - *TiLT Coordinators and Facilitators based in each District*

# 1998 – The SchoolsNet Project

- **Networkable ISDN Internet with Cisco Router:**
  - *Every school gets a new internet service with Telstra 64KBit/s ISDN line and Cisco 1600 Router.*
  - *Connected to each school's local area network*
  - *Each school gets 3 email accounts (School/Principal/Admin) using Outlook Webmail*



Cisco 1600 ISDN w/ ISDN BRI/ST WIC

## 1998 – Another Restructure

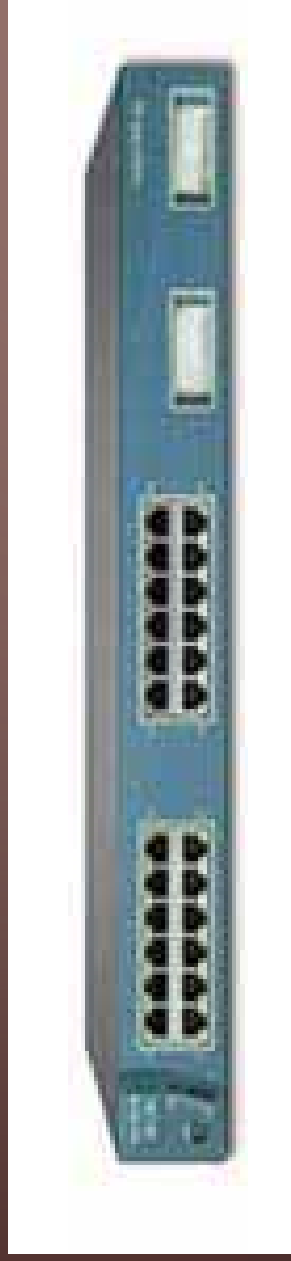
- **The Departments of School Education and TAFE merge to form the Dept of Education & Training**
  - *40 Districts are renamed “School Education Areas” (SEAs)*
  - *Fit under a new Regional umbrella consisting of 10 Regions based on TAFE boundaries*
  - *The initial merger mainly involved rationalising State offices, with TAFE’s IT directorate virtually replacing the School’s IT Branch.*
  - *TAFE is a Windows shop and centralised support for Apple and Netware slowly disappears.*
  - *New Microsoft and Symantec agreements make new software available to schools for free*

## 2001 – Web Services Project

- **Bob Carr announces e-mail for every teacher and student in NSW**
  - *And the NSW Teachers Federation places a work ban on it*
  - *Information Technology Directorate forge ahead, contracting Unisys to co-develop the solution for*
    - *Email, Individual web publishing, filtering and reporting*
  - *A small number of teachers choose to use the service from 2002 despite the ban*
  - *The ban is finally lifted in 2005 with many teachers getting their first ever email account in 2006.*
- **Web Services Project renamed to Authenticated Internet Browsing and Email**

## 2002 - 2003 – Broadband in Schools

- **Every school gets a cable broadband upgrade, providing a minimum 2MBit/s gateway into every school, with many Sydney high schools getting 10MBit/s**
  - *Five different ISPs used across the state*
  - *Approximately 300 schools can only get satellite*
  - *Each school receives a new Cisco 3550 Router*



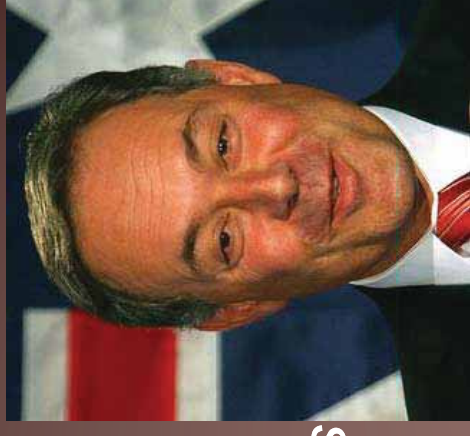
- *As soon as they get broadband, many schools flood it.*

## 2005 – Technology 4 Learning

- **A new computer rollout commences – T4L:**
  - *Now down to three PC vendors statewide – IBM, Optima and ASI - plus Apple*
  - *Hunter Region gets Optima exclusively, Sydney Region gets ASI and the other 8 regions get IBM*
  - *100,000 computers over 4 years (1:8 PC to Student ratio)*
  - *Regional Computer Support Teams established of between 10 and 16 staff per region (depending on region size)*
  - *Apple increased pricing for the new flat screen iMac again sees Apple's share in schools decrease, now below 20%*
  - *Servers and Laptops available with rollout points*
- **DET Portal rolls out linking multiple DET apps**

# 2007 – Big Announcements

- **Morris Iemma announces the Connected Classrooms Project:**
  - *All schools to receive an Interactive Whiteboard and Video Conferencing facility as well as On-Line Learning Tools and a further Broadband upgrade (N-GEN project)*



- **Kevin Rudd announces the Digital Education Revolution as an election promise**
  - *Every Year 9 to 12 student in Australia to get 1:1 access to a computer*



# 2008 – NGEN and Connected Classrooms

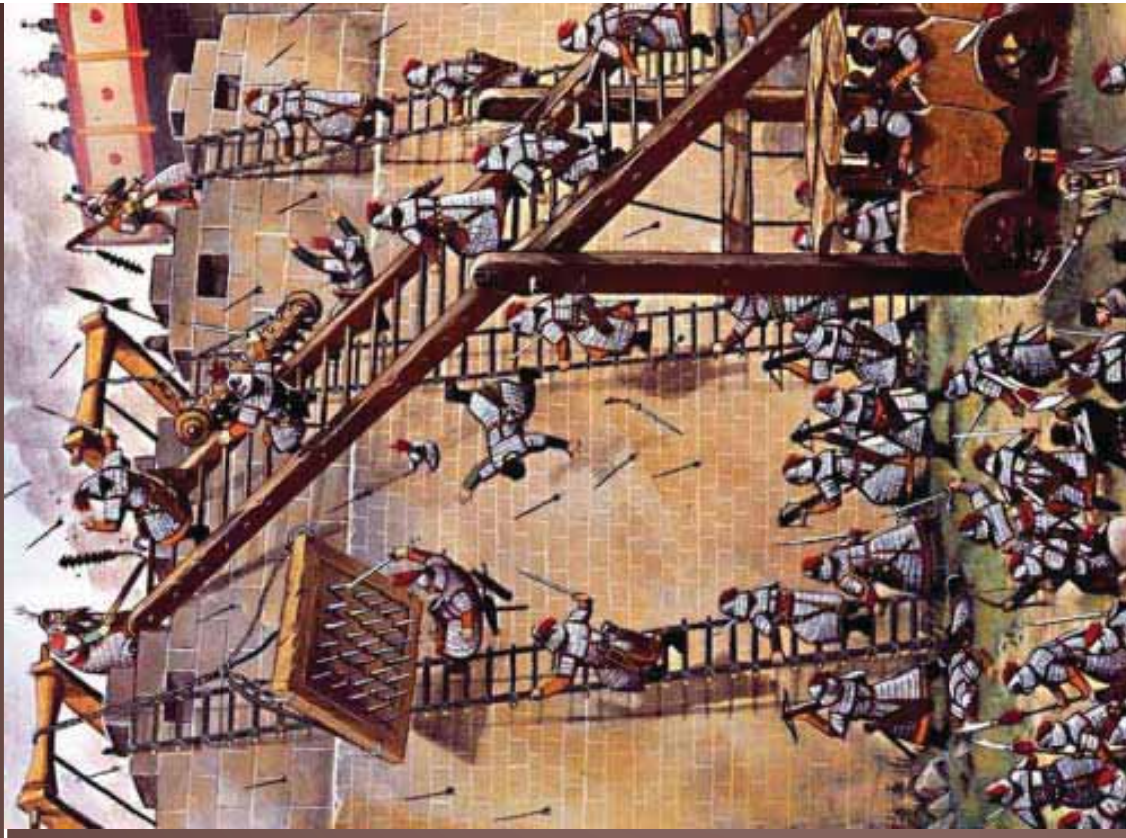
- **NGEN – Next Generation Broadband**
  - *All schools start to get Fibre broadband connections supplied by Telstra*
  - *Another new Cisco Router*
  - *Minimum 10MBit/s broadband, scalable*
- **Connected Classrooms start rolling out**
  - *To be completed by the end of 2010*
- **Planning for DER NSW underway:**
  - *NSW opts for a netbook for every student in years 9-12*
  - *Wireless to be supplied for every high school*

# 2009 – The Digital Education Revolution

- **The New South Wales version of DER**
  - *Lenovo s10e Netbooks with security options*
  - *Windows 7 (the first implementation of its kind)*
  - *Adobe Software Licences*
  - *Aruba Managed-Wireless in a Parallel Network*
  - *10 Regional DER Managers, 50 Regional TSOs*
  - *450+ DER NSW Technical Support Officers (TSOs)*
  - *Teaching and Learning Resources & Teacher Training*
- **T4L rebooted for another four years**
  - *Another 120,000 computers – limited brand choices:*
  - *Lenovo/Apple (Desktops), DELL Servers, Acer Notebooks*

# 2009 – The Year of C.C. Angst

- **Many High School CCs feel their empire crumbling**
  - *Long-time Computer Coordinators feel threatened*
  - *DER's forced (and necessary) standards hit hard*
  - *A feeling of loss of control*
- **It's a sensitive situation**
  - *School Executives need to carefully manage the balance between government priorities and staff support*



# 2009 – The Bitter-Sweet Year for Teachers

- **The Sweet:**
  - **Many Teachers breathe a sigh of relief**
  - *Suddenly it's OK for teachers to access and use ICTs*
  - *The T1 & T2 netbook rollout gives the access teachers crave*
  - *Talk about ICTs in school starts to resonate*
- **The Bitter:**
  - **The realisation that this is all happening...NOW.**
  - *Suddenly all year 9 students have netbooks!*
  - *A majority of teachers are not ready and have no access*
  - *The old “bag-of-tricks” doesn't cut the mustard anymore*

# 2009 – Empowering Students

- **With 24/7 Access, Student ICT Skills grow:**
  - *Increased typing skills*
  - *Better information skills*
  - *Understanding of Windows and applications*
- **Peer Tutoring moves on-line:**
  - *Facebook groups specifically around DER Laptops for Yr 9*
  - *DET Sucks Forum and YouTube videos promoting hacking*



David Stone I can't play VBA pokemon anymore cuz they blocked the stoopid "run as administrator" crap. Does anyone know a way around this? I literally will cry because these things are so fake and gay and cant do jack shit.

Tue at 8:50pm · [Comment](#) · [Like](#) · [Report](#)

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# 2010 and Beyond – The ICT Road Ahead

- **2<sup>nd</sup> Year DER Rollout (50% complete!)**
- **Web 2.0 Learning Tools:**
  - *Student and Staff Blogs - BlogEd*
  - *eBackpack – online storage and content delivery*
- **Student Administration & Learning Management**
  - *SALM will replace OASIS and ERN eventually*



Sometimes we should learn from the past



John Cotton Dana – b 1856

**"Who dares  
to teach  
must never  
cease to learn."**

20th Century Teacher:

**"It was easier  
to fake it  
when things  
weren't changing  
so fast..."**

# Managing the Fear Factor

- **When did we stop exploring?**
- **At what age do we lose that sense of adventure where we no longer take a risk?**
- **Every educational technology person must help fellow teachers get over this fear. To encourage them to explore these amazing digital tools**
- **Support your school ICT leaders to help others**
- **School Executives MUST model effective ICT use themselves if they expect teachers to also do so**
- **Work together! No teacher should be an island**

# It's Taken 20 Years to Get Standards

- **Network, h/ware & s/ware compatibility means:**
  - *High Schools are no longer islands*
  - *Digital Resources can be stored in repositories and shared between schools*
  - *PD Resources can be centrally and locally developed*
  - *Digital Professional Learning Networks can be wider and will be more effective for each teacher*
  - *Students receive consistent and appropriate content*
  - *High schools have a stable, predictable and scalable platform from where to deliver teaching and learning*
  - *And importantly, better support*

# What does DET State Office Need to do?

- *Remember they are not the only source of resources for schools to use*
- *Recognise there are Ed-Tech professionals already active in our high schools*
- *Identify and harness existing best practises and propagate them - why reinvent the wheel?*
- *Implementing statewide standards doesn't mean you have to kill off effective local initiatives!*
- *Keep up with schools that are capable of moving ahead quicker. Don't apply the brakes on them.*



Questions?

Thank you for your time and attention