

THE RESISTIBLE RISE OF THE ULTRANET

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Abstract

This paper examines the rise and fall of the Victorian education department's learning management system Ultrahnet. The Ultrahnet was conceived as a web-based portal that was designed to integrate and deliver on a range of policy objectives in the areas of student management, school networking and communication, and teaching and learning. Heavily promoted by the Victorian educational bureaucracy and the government, the Ultrahnet, which operated between 2010 and 2013, proved a costly failure and became the subject of an inquiry by Victoria's anti-corruption commission. This paper looks beyond the inquiry's focus on the conduct of senior departmental officials involved in Ultrahnet's procurement to examine the policy, technological and pedagogical contexts that framed the project. We argue that the project had its roots in pre-digital educational policy settings of devolution and entrepreneurship, which supported a transformative agenda focused on digital information and communication technologies. While the Ultrahnet software had fatal design and usability flaws, we broaden the scope of analysis to argue that the project rested on problematic assumptions about the digital literacy and connectivity of parents and teachers, and the viability of a technology-based response to risk and privacy embodied in a 'closed' network, that compromised the venture from its inception.

Introduction

In 2016 Victoria's Independent Broad-based Anti-corruption Commission (IBAC) held a public inquiry into the failure of the Ultrahnet, the state department of education's learning management system that operated between 2010 and 2013. IBAC's Operation Dunham raised questions about the structure, culture and accountability of the Department of Education and Training (the Department). The behaviour of senior bureaucrats involved in the system's procurement, together with the eye-watering sums that were involved—project outlays are estimated at up to \$240 million—attracted substantial media coverage, seriously damaging the Department's reputation. This paper looks beyond issues of personal corruption that were the inquiry's focus to examine the policy, technological and pedagogical contexts that framed the Ultrahnet's design, implementation and, ultimately, failure. The Ultrahnet was vigorously promoted by policy entrepreneurs for its capacity to deliver across—and indeed to integrate—a range of policy objectives, including school-based innovation and collaboration, student management, parental engagement, and the enhancement of teaching and learning skills and resources. We argue that the project mobilized a 'schools of the twenty-first century' discourse, particularly in its promise of the 'transformative potential' (Selwyn 2011a, p.58) of digital technologies in all facets of schooling. This worked, in the prevailing bureaucratic environment, to shield the project from effective prudential and project management oversight. We ask, where did the enthusiasm come from? How was it generated, and circulated? What assumptions and arguments about education, the conduct of public service management, and so-called 'digital futures' was the Ultrahnet built on?

In this paper we argue the project has its roots in pre-digital debates about devolution and marketisation which were characteristic of late twentieth century neoliberal thinking on 'enterprise' in public sector management (du Gay 2004). School-based entrepreneurship was a powerful strand of this entrepreneurial turn, with the ideology and rhetoric of 'reinventing government' (Osborne and

Gaebler 1993) influencing educational policy and programs, particularly through advocacy of digital information and communication technologies (ICTs) in education (Ellmore, Olson and Smith 1995). At school level, the adoption of digital ICTs and experimentation with school networks conferred positional advantage on schools and teachers ('navigators' and 'champions' in Department rhetoric) at the leading edge of the digital education revolution. At system level, digital ICTs provided new ways of mobilizing teacher labour and connecting homes and schools. However, the Ultranet project rested on problematic assumptions about the digital literacy and connectivity of parents and teachers, and the viability of a technology-based response to risk and privacy embodied in a 'closed' network, that compromised the venture from its inception.

The following section of this paper outlines the policy and technological contexts that framed the development of the Ultranet. We then analyse the project's design, promotion and implementation, and attempt to explain why a discourse of entrepreneurship trumped conventional bureaucratic and prudential oversight. We conclude with some policy lessons that can be drawn from the episode.

Background

In the late twentieth century both Labor and Liberal-National coalition Victorian state governments pursued devolutionist educational policies, with the locus of policy concerns shifting from Labor concerns with pedagogy (seen in the focus on community schools and school-based curricula) to the Liberal coalition focus on school management (for example, in school-based budgets and local recruitment). The signal policy statement of this era is the Kennett Liberal government's *Schools of the Future*, released in 1993 by education minister Don Hayward. This policy cut substantial sums from the public education budget and devolved a large proportion of remaining funding to individual schools, which then effectively governed themselves under a new, statewide curriculum and standards framework. The centrality of new ICTs to schooling was a second theme pursued in *Schools of the Future*. The interdependency of these two themes were discussed by the policy's chief architects and promoters, educationist Brian Caldwell and Minister Hayward:

It seems that most schools around the world have simply failed to keep pace with the revolution in technology...Technology empowers the learner and the teacher and other professionals in a host of ways. For the student, it means being able to access almost unlimited sources of information without spending time in limited searches in traditional sources, and in being able to manage that information in highly creative ways, including advanced problem-solving. For the teacher, it means freedom from a mountain of boring administrative chores, allowing the easy management of complex information to support their work; and freedom from standard and often out-of-date lesson plans and learning designs, allowing access to teaching and learning resources that are the world's best. (Caldwell and Hayward 1998:6)

The educational 'crisis' narrative that, for Labaree (2010), impels educational reform chimed with the Kennett government's wider critique of the preceding Labor administration, and Hayward's interest in new communication technologies was evident in other portfolios. The Kennett government led other Australian jurisdictions in articulating and promoting the digital economy, with treasurer Alan Stockdale also holding the title of minister for multimedia from 1996 (Costar and Economou 1998).

In 1994 the Victorian government released a report on the use of technology for education and communication in schools (Smith 1994). The report's discussion of the transformative potential of ICTs, and its recommendations for teacher skill development in this area, set the tone for departmental policy. In 1995 the Department announced its *Classrooms of the Future* (CoF) program, with Minister Hayward's depiction of "a brave new world" which demanded "brave new schools" typifying, for Jordan (2009), the flavor of "techno-discourse" that permeated the department. A key part of CoF was the Navigator Schools Program (NSP), a network of schools trialling new learning environments with digital ICTs. NSP promoted the development of school learning technology plans based on fast intranets and computers in all learning areas (Jordan 2009).

One of the ‘navigator’ schools, Glen Waverley Secondary College (GWSC), in Melbourne’s south-east, was especially entrepreneurial in its development and promotion of an intranet involving a handful of schools in its region. Its principal and several senior staff – none with specialist ICT expertise - established a private company, with its place of business registered at the school, and initiated discussions with the global software company Oracle. Department officials were enthusiastic about the potential of GWSC’s intranet as a platform for all Victorian government schools. The GWSC principal was subsequently appointed as the department’s deputy secretary, an unprecedented move in the department, to be followed by several other GWSC staff. Another GWSC staff member took up a consultancy position with Oracle (Hill 2016).

The GWSC-Oracle partnership became the basis of a departmental project titled Students at the Centre (sometimes rendered as Students @ Centre, hereafter SAC) that sought to scale up the initiative to statewide level. By 2004 SAC, now rebadged Ultranet, was seen as a platform to integrate student management, school-parent communication, and learning and teaching functions, and, in the Victorian Auditor-General’s (2004, p. 64.) view, was “generally seen as an effective tool for facilitating positive change in school/parent culture towards the management of student outcomes”. Following a favourable assessment of SAC by University of Melbourne academics, which did not include technical matters (Griffin and Woods 2006), the Bracks Labor government announced a commitment to invest \$60 million in developing the Ultranet. Described as ‘a statewide online learning system’, the Ultranet was supported by two key educational technology infrastructure programs that signaled the ‘computers in schools’ policy paradigm of the late twentieth century had given way to a new conception of networked, mobile and ubiquitous communication. These programs were the Notebooks for Teachers and Principals (NTPs) scheme implemented in 1998, and the VicSmart fibre optic broadband network that connected all Victorian schools from 2005. Interestingly, these programs were implemented through quasi-market arrangements within the Department, reflecting the advance of neoliberalism, with its reliance on market institutions within the education bureaucracy. The “commitment to providing notebook computers for all teachers” made in a 1998 report on Navigator Schools was fulfilled by a compulsory leasing arrangement, later found by the Federal Court of Australia to be unlawful (Australian Education Union v State of Victoria 2015). The bandwidth quasi-market was organized through the allocation to schools of bandwidth, or data transfer speed, at 10, 20 or 50 megabits per second, depending on school size and location. Schools were able to “upgrade” or purchase additional bandwidth if desired (Victoria Auditor General 2012).

The integrity of the procurement process that eventually awarded the Ultranet development contract to a little-known Darwin-based software developer CSG Pty Ltd, which proved incapable of successfully undertaking the build, is the subject of the ongoing IBAC inquiry Operation Dunham. The inquiry’s public hearings paid particular attention to the relationships between departmental staff and the successful bidder. Operation Dunham follows on from a 2015 inquiry into corrupt financial arrangements within the department, Operation Ord (IBAC 2015), with several senior Departmental officials featuring in both inquiries.

The ill-fated 2010 launch of the Ultranet, where the system failed to operate for officials at a high-profile opening function, and for teachers waiting at their desk on a special ‘pupil-free’ training day, was a portent. The reduction of system features and functionality during the development phase, the software’s clumsy interface, its lack of integration with basic school tasks such as time-tabling, persistent performance problems, and limited technical and classroom-based support, saw low levels of use. Departmental figures showed that between February 2011 and September 2012, only 10% of students and 27% of teachers used the system, with the Victorian Auditor-General suggesting that teacher use was likely to be inflated by school-based practice of requiring staff to log-on for audit purposes, even if no activity was undertaken (Victorian Auditor-General 2012, p. 21). The objective that Ultranet would provide a new platform for school-home communication was also assessed by the Victorian Auditor General (2012, p. 21) to have been unmet, although no figures were provided.

The Ultranet contract expired on 30 June 2013. By late 2012 a new education department secretary

had formed the view that the system could not achieve the objectives set for it (Bolt 2016) and after expenditure of between \$180 million (Victorian Auditor General 2012) and \$240 million (Hill 2016) on a project originally budgeted at \$60 million, the Ultranet was closed down.

IBAC's two inquiries, discussed above, generated significant negative media coverage, which focused on witness evidence. Witnesses included the state education minister holding the portfolio from 2007-2010, who strongly supported the project. However, the Victorian Department of Premier and Cabinet and the Department of Treasury and Finance had rung alarm bells about the project's procurement from 2007 (Victorian Auditor-General 2012). In the face of criticism from the centre of government administration, how did the project manage to proceed in the way it did? The following section of the paper discusses structural and cultural factors that underpinned the Ultranet's rise.

Selling the Intranet

The promotion in 2004 of a school principal to the position of Department deputy secretary, which on one view was unprecedented in Victorian education administration (Bolt 2015), pointed to the value premium that the Victorian government of the day placed on entrepreneurship in the digital realm. The necessity for education institutions to develop a more entrepreneurial outlook was strongly articulated in the 1990s, with business figures such as Peter Drucker and Bill Gates warning that schools were unprepared for the transformation to a knowledge society (Cranston 1998). 'Enterprise' was the new metaphor for schooling in a post-industrial society, argued Beare (1998), a message that chimed with neoliberal developments in public administration, such as the use of markets, contracts, and performance-based rewards. In du Gay's (2004) wider analysis, the concept of 'enterprise' has been employed as a political critique against 'bureaucracy' not only to re-shape organizational forms and strategies, but to promote particular forms of conduct within bureaucratic organisations. For du Gay (2004, p. 43), the concept of enterprise has been used to establish a dualism between bureaucratic government and entrepreneurial government, mapped on to two loosely periodized epochs: the mechanistic, stable past, and the globalized, decentred present (and future). Such epochal schema, he says, achieve significant momentum that brooks little opposition, or, as he characterizes, leave 'now way out' in their terms of reference.

Many writers have remarked on the epochal, even utopian character ascribed to digital ICTs, most relevantly Selwyn (2011a, 2011b) writing on educational technologies. The transformational promise of educational technologies not only feeds into a long-standing view of educational reform as never complete (Labaree 2010), but more specifically lends legitimacy to millennial characterisations such as 'schools of the future' or 'schools of the twenty-first century'. This powerful framing set the overall policy direction of the Department with regard to the Ultranet, but long-standing structural and ethical weaknesses in the Department shaped the particular way policy was implemented.

Ultranet: A Problem of Agency or of Ethics?

As the Victorian Auditor-General (2012) observed plenty of red flags were waved during the Ultranet's development. IBAC's Operation Dunham and Operation Ord revealed two structural features of the Victorian education department that created pre-conditions for the Ultranet project to continue securing high-level political support, despite its design deficiencies and questions of probity surrounding the procurement process. The problems were: 1) a hollowed out internal audit unit and a culture of bullying and intimidation that weakened formal internal checks and balances and discouraged informal 'whistleblowing'; and 2) an unbalanced organizational structure that concentrated resources and information in one area, creating power and information asymmetries that have been theorized as a 'principal-agent' problem (Lane 2005).

As Operation Ord revealed, the department's internal audit area struggled for resources and influence

to undertake its functions. Evidence was given that auditing school accounts (a focus of Ord) had slipped from an annual to a four-yearly schedule, that auditors were subjected to time pressures that prevented proper scrutiny, that 'shadow' ledgers created by senior staff made financial transactions opaque or invisible, that Victorian public sector procurement procedures were not followed, and that the department's executive repeatedly ignored or overruled audit warnings. IBAC (2016, p.100) concluded that the department was "an organization beset with significant and deeply entrenched cultural issues incompatible with public sector values".

The department's annual budget allocated \$5.5 billion for school resourcing, with responsibility for its expenditure given to the deputy secretary of the schools area, the former GWSC college. One of four deputy secretaries in the education department during the span of Ultranet's development and implementation, this official controlled over three-quarters of the departmental budget. A close friend who was deputy secretary of the finance and infrastructure area and acting departmental secretary, and found to have engaged in corrupt behavior by IBAC, was responsible for a further sizeable chunk of the budget (REFS).

Such an imbalance in the department's organization created risks for public administration in the event that the agent, in this case deputy secretary, failed to properly carry out government and departmental policy. In this instance, the IBAC inquiry produced evidence that not only had the deputy secretary failed to implement procurement processes, attempts by the education minister and departmental secretary to bolster those processes were undermined, several senior departmental staff were involved in insider trading activities, in purchasing CSG shares prior to award of the contract, and an atmosphere of bullying and intimidation dissuaded whistleblowers from coming forward (IBAC refs).

A classic response to the agency problems is to introduce competition or performance-based rewards. The political capital invested by Victorian Labor governments in power from 1999 to 2011 in the Ultranet, and personal friendships, and indeed collusion (IBAC 2016), between some of the key players discounted the viability of in these solutions. Du Gay (2001), though, critiques the effectiveness of such a neoliberal response, grounded in 'public management', in favour of the ethical and procedural dispositions characteristic of public administration. The IBAC inquiry, and subsequent strengthening of Departmental checks and balances, appear to have returned somewhat to bureaucratic orthodoxy.

Convincing the Users

In focusing on the salacious details that emerged in the IBAC inquiry, we risk losing sight of the larger issue of how the Ultranet 'story' was constructed and sold to political, school and parent constituencies.

While the Ultranet was a pioneering initiative in Australia, it was similar in concept to closed or 'walled garden' education networks in other parts of the world, and, indeed, in school-based networks that proliferated in Australia. The introduction of digital ICTs in schools is the subject of a large and often highly critical literature. Larry Cuban (2001), for example, encapsulates one strand of thinking in the title of his book *Oversold and Underused: Computers in Classrooms*. Cuban's analysis of teachers' digital literacy deficits and the limited opportunities to integrate ICTs in curricula was echoed by contemporaneous Australian writers in Australia, drawing on both small qualitative studies and large-scale surveys (Watson 2001, Meredyth et al. 1999). Yet, as Selwyn (2011b, p. 22) argues:

...the use of digital technology in schools is a matter of intense conviction and passion for many people. Over and beyond the general belief that digital technology is a 'good thing' for education in the twenty-first century, a set of more specific transformative claims are advanced to justify the reorientation of schools and schooling along digital lines.

The arrival in the early 2000s of the interactive Web 2.0, the development of social media, and the

uptake of mobile wireless computing marks a technological turning point that divides policy and critical thinking framed in terms of ‘computers in classrooms’, and the pedagogical and communication environment in which the Ultranet was conceived. Interactive media significantly expanded networking opportunities, and facilitated both teachers and students to simultaneously be producers and consumers of information (expressed in neologisms such as ‘produser’ and ‘prosumer’). However, the predominant design response to Web 2.0 adopted by the Ultranet designers was to manage risk and privacy through the development of a secure site, the virtual equivalent of the school fence. This decision isolated the Ultranet not only from increasingly popular social media software applications (‘apps’), but also from the growing market in third party student management and other educational software products, which many Victorian schools were using (Victorian Auditor-General 2012). While local-level software purchases could be seen as consistent with devolution, the department favoured a centralized solution:

...no single solution could provide the full level of scalability, security, interoperability and functionality that is needed to meet the identified business needs and objectives of the Ultranet. (cited in Victorian Auditor-General 2012, p.4).

The “learning environment of the future” heralded by the Ultranet involved an educational partnership of students, teachers and parents that promised to enable improved system-level monitoring of both attendance and learning progress, as well as tutelage for parents:

This information will build up over time to include their homework and in-class learning activities, creating an ongoing record for each student. These records will travel with your child from year to year and school to school. The Ultranet provides the opportunity for parents to gain a better understanding of their child’s learning progress. It aims to encourage open communication about what’s happening at school. (cited in Tatnall et al. 2013, p. 33).

The Ultranet was heavily promoted in departmental policy statements and communications. The department’s slick monthly internal magazine *Shine*, which commenced publication in January 2009, was particularly florid in its descriptions. The Ultranet’s “rich functionality offers endless possibilities for teachers and students” claimed *Shine*’s first feature article on the project. It allowed “parents to become more involved in their child’s education at the click of a button”, and was “a part of how we are helping to strengthen communities” (March 2010, p 49). The articles were particularly addressed to teachers, the magazine’s main audience, and contained reassuring advice that the project was “...something that adds value to the work teachers are already doing...It’s a chance to build a collaborative approach to teaching and learning, to open the door to the classroom and equalize learning opportunities” (March 2010, p. 49). The Ultranet would “bridge the divide between school and home and provide an educational platform that can link students, teachers and parents in an online safe environment” (June, 2010, p. 44). Interviews with coaches and lead users reassured their peers that the Ultranet would “make life much easier for everyone” (June 2010, p. 42). However, in organizing Ultranet training, school leaders were advised to distinguish between “early adopters versus laggards, who need to be skilled up in the basics” (March 2010, p. 49).

Shine headlined feature articles with tags such as “the Ultranet revolution is here...throw away pencils and paper” (June 2010, p. 3). However, some teachers who were cited in articles, although well-disposed to the project, were more cautious. As one teacher suggested “(i)f teachers or students are having trouble accessing or logging in then you are off to a bad start. Reliable hardware and software is the key to success.” (March 2010, p. 51). Kathleen Morris, a primary school teacher and Ultranet lead user, who blogged on educational technologies, was also cautious. Following completion of the two-day Lead User training, she recorded her thoughts on her blog. She critiqued the design as complex and confusing, and thought the controlled environment provided “[n]o flexibility to collaborate globally, which is, in my opinion, one of the major benefits of using technology in the classroom. (Morris 2010).

While some Victorian schools had been rewarded for digital entrepreneurship in their selection as Navigator schools, and chosen as trial sites for the Ultranet's initial evaluation, the Ultranet also created new advancement opportunities for individual teachers who were appointed as Ultranet coaches operating across schools or as "lead users" in schools from 2008. Senior departmental staff recognized that the lack of skills and confidence in using ICTs would constrain uptake of the Ultranet (Hartnell-Young, Davie and Peck 2011). However, focusing simply on skill deficits avoided more profound industrial issues that the incorporation of the Ultranet in the daily teaching workload raised. Where the department's 2007 business case argued that the Ultranet would "reduce the administrative burden on teachers and school leaders" (Victorian Auditor-General 2012, p. 5), the Australian Education Union was sufficiently concerned by workload implications that it imposed a ban on using the system. The Victorian Auditor-General (2012), too, criticized the department for failing to consider workload issues. It also criticized the timing of funding for Ultranet coaches – they were appointed too far in advance of project roll-out, and discontinued when the need for support peaked.

Accessing the Network

Perhaps the greatest shortcoming in the Ultranet project, though, was the adoption of a technological solution to managing risk and privacy issues, rather than an educational approach. The decision to deploy the Ultranet as a closed system, effectively preventing the use of third party apps or media, replicated the early impulse of some liberal educators to isolate schools from the malign influences of the outside community (REF). Had the project continued the decision may have also been likely to render the Department captive to the original contractor for software enhancements or new features, rather than take advantage of the cheap and responsive third-party apps.

The closed network design traded-off risk and access. Of course, this trade-off is a basic concern of educational policy, requiring judgement and decision-making that have regard for student welfare. The decision to develop the Ultranet as a closed space was justified on the grounds that it would encourage students, teachers and parents to share information, and that it would provide proper security for student management data (REF). These reasons are not without merit, although the security features appear to have hampered rather than encouraged use. However, the development of the Ultranet as a closed space displays a similar control and disciplinary disposition as does the heavy control and filtering of school networks. Recent research has demonstrated the ineffectiveness of such a technological solution to Internet access at school level. For example, the proliferation of mobile phones amongst the secondary student population that provides unfettered internet access using 3G/4G cellular networks, combined with the ability of some students to find technical ways to bypass existing school network-filtering technologies, suggests that the technology-based response of education authorities to appropriate internet use is becoming redundant. A recent study by Monash University revealed that nearly 60% of Victorian secondary students have used mechanisms to bypass internet filters when accessing the internet at school (Selwyn and Bulfin 2016). The methods identified in the survey of 1200 students include stealing teacher passwords, changing access rights, using proxy servers and virtual private networks, identifying filtering loopholes, and hacking around the filtering software. The study found that students most commonly avoid the filtering system by using their own phones. Such facility suggests that an educational response, emphasizing the discerning and responsible use of the Internet and digital ICTs, seems more consistent with policy ambitions to transform schools for the twenty-first century.

As the Victorian Auditor-General's user figures cited above indicate, we have some quantitative data on the use of the Ultranet by schools, teachers and students. The user group we know nothing about is parents and carers, who were promised, in typically rhetorical fashion, '24 hour access' to their children's learning portfolio. This promise was predicated on household connectivity, digital skills, and willingness and confidence to contribute to the 'educational partnership'. We do not know

whether the Department undertook any surveys of parents as users, or has any technical data that might indicate access levels from students' homes. However, we speculate that school-based decisions on Ultranet use were a strong determinant on home-based use. As the Victorian Auditor-General found, one in five Victorian primary schools had ceased to use the 'compulsory' system by 2012. That level of commitment offered little incentive for parents.

Conclusion

Prolific academic commentators on the Ultranet, Tatnell et al. (2013), argued that the Ultranet development can be understood as a case of project management failure that was exhibited at all stages of the endeavor: from a failure to clearly identify a need for the system, failures in presenting an acceptable business case and following procurement guidelines, and loss of trust amongst users due to the launch day catastrophe and system under-performance thereafter, and finally the withdrawal of support following a change of state government in 2011. The decision of the incoming government to de-fund Ultranet coaches was, for Tatnell et al., a decisive factor in the project's fate, closing off possibilities for building a user base and improve its functionality.

The forthcoming release of IBAC's report of its Operation Dunham inquiry may reveal the extent to which the Ultranet procurement was also tainted by personal corruption, and the degree to which this compromised the design, functionality and usability of the system.

Our analysis steps back from IBAC's focus on the behavior of some departmental executives to examine the assumptions underpinning the conception of the Ultranet. In particular, we conclude that, whereas the mantra of educational transformation and its reliance on educational technologies was used to tell and sell the Ultranet 'story', the ultimate design response turned back to administrative centralization and control, rather than embrace the communicative and networking possibilities of a more open and useable system. While teachers' digital literacy was recognized as a constraint on the uptake and use of Ultranet, consistent with a research literature in this field, the focus on individuals here can also act to mask underlying industrial challenges that Ultranet presented. The promise of educational technologies making life easier seemed to ring hollow for many.

This paper offers a necessarily limited perspective on the rise and rise of the Ultranet, which is a topic that, we suggest, warrants fuller study. Our analysis to date, though, suggests that the Ultranet was the product of an ultimately unstable combination of risk-taking entrepreneurship and a risk-averse system.

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