

# The Network University? Technology, Culture and Organisational Complexity in Contemporary Higher Education

Tania Lewis, Simon Marginson and Ilana Snyder, Monash University, Australia

The development of computer-mediated communication and global digital networks appears to be the realization of a more or less well-formulated project to deliberately create new forms of collective intelligence, which are more flexible and democratic and based on reciprocity and respect for singularities (Levy, 1998, p. 122).

We cannot take the distributed power and hence the democratizing potential of digital networks as an inevitable feature of this technology (Sassen, 2002, p. 367).

## Abstract

*This paper discusses the concept of the network organisation in relation to the technologised university. Drawing upon the early findings of a study that examines the impact of information and communication technologies (ICTs) on both organisational and teaching and learning issues in five Australian universities, the authors discuss the way in which discourses of network technology have become articulated to a range of at times paradoxical agendas within higher education. The introduction of new technologies into organisations tends to be portrayed in either transformative or oppressive terms. The complexity of the university experience foregrounds the important role played by pre-existing organisational practices and narratives in determining the uses and meanings of ICTs in the organisational setting. These observations place into question the notion that the network organisation is a single coherent entity driven by a particular technological logic. Instead, it suggests that network technologies are socially embedded and therefore highly variable in their expression.*

## Introduction

The point of departure for this article stems from a series of debates that have been occurring around the notion of the network society. In particular, we are interested in investigating the claim that the shift to a global, informational economy has been accompanied by a radical change in the social dynamics of organisations, one that is tied in particular to the rise of information and communication technologies. The literature to date on the network society and organisational change has tended to focus on the private rather than the public sector (Podolny and Page, 1998). This rather narrow focus has meant that public sector-based organisations such as universities have largely been ignored. It is our contention, however, that universities represent important sites for studying the complex social and organisational shifts that are seen to have accompanied the move to networked forms of social relations.

This concern with examining the university as a form of network organisation emerges out of a 3-year study based at Monash University examining technological innovation in five Australian universities.<sup>1</sup> In this study we have interviewed over 100 staff and students in a range of university types, from an older 'sand-stone' institution to a newer post-Dawkins university.<sup>2</sup> The interviews encompassed actors at all levels of the organisation including high-level executives (information technology managers, pro-vice chancellors), middle managers (deans, heads of schools), lecturers and students. The interviews were conducted across three disciplinary fields: Medicine and Health Sciences/Nursing; Business and Economics; and English and Cultural Studies/Communications. The type and degree of networking present in this group of universities and across these disciplinary fields ranged from those well on the way to linking networked administration systems to a universal teaching and learning software package to those with a much less centralised approach to technological innovation. However, despite these variations, we found that all of the universities under study were grappling with major issues raised by the relationship between networked technology and organisational structure.

Using the study as a springboard, this article examines the notion of the network organisation specifically in relation to the broad sweeping changes currently being experienced by universities around the world. Our intention here is not to provide a comprehensive analysis of the data collected from our study but rather to reflect on the issue of the network organisation by drawing upon some of our preliminary findings and discussing some of the wider management and sociological literature

on network organisations. By foregrounding the often contradictory processes underpinning the culture of change and innovation prevalent in universities today, we want to highlight the drawbacks of holding up the network organisation as a kind of normative ideal or of treating the network society as a structural inevitability in the face of global, economic forces. The notion of the network society *does* have considerable power as a metaphor that goes some way towards capturing the changing nature of contemporary social relations. However, the concept of the network, particularly when it is tied to the rhetoric of technological progress, also tends to assume the form of a grand narrative, working to exclude any perspectives that might challenge its 'logic'.

The organisational cultures and identities of Australian universities, like their British counterparts, have for some time been undergoing a period of rapid transformation that has seen notions of academic collaboration, knowledge sharing and community engagement jostling for ideological airspace with discourses of managerialism, entrepreneurialism and marketisation. Added to this complex and often volatile mix is the more recent push towards reconceptualising universities as informational or network organisations. Managers in particular have held up the devolved, network model as an emancipatory alternative to what they define as the previous culture of universities: bureaucratic, inflexible, unresponsive and autarkic. Yet while terms like the network university and the virtual campus are figuring increasingly in management, media, policy and academic debates over the future of higher education, these labels are subject to little critical scrutiny and have tended to take on a primarily normative quality.

Despite the currency of the term, the concept of the network is a slippery one. Simultaneously embracing a politics of communitarianism linked to a notion of a global knowledge commons *and* an economic, neoliberal logic concerned with efficiency and market access, the network model can be linked to a range of often contradictory ideological positions and organisational processes. The university system has been and continues to be marked by a similar set of contradictions. Universities increasingly find themselves straddling the public-private divide, a situation that has seen them being pushed towards a business model of networking at the same time as attempting to maintain collegial networks as well as links with the wider critical public sphere. In this sense, universities offer a unique and timely perspective on some of the major contradictions underpinning the concept of the network society. What follows then is a discussion of some of the ways in which the model of the network organisation has been applied to and taken up

by universities. While the management literature has tended to set up the network organisation as a kind of model or ideal, the complex organisational cultures of universities offer an exemplary site for examining both the positive and the potentially oppressive aspects of network organisations.

### **The rise of the network(ed) organisation**

Since the early 1970s, social commentators from Alain Touraine (1971) to Daniel Bell (1974) have been predicting the emergence of a postindustrial, information society, characterised by a shift away from a Fordist mode of production towards an expansion in service-oriented jobs, niche marketing and production, and flexible organisational structures. While there has been a number of ongoing debates over these claims,<sup>3</sup> there is a growing consensus that we are shifting towards an economic era in which the basis of the mode of production itself is increasingly informational (Hardt and Negri, 2000). Thus, policy debates in countries such as the UK, Australia and the USA now routinely refer to the knowledge-driven economy and the information society.

One of the major contemporary theorists to contribute to this widespread acceptance of the notion of informational production and in particular the concept of the network society is the Spanish-born sociologist, Manuel Castells.<sup>4</sup> In 1996 Castells published *The Rise of the Network Society*, a book that saw him updating Bell and Touraine's arguments by placing them in a contemporary context where the information economy has become increasingly connected to information and communication technologies (ICTs). While he is at pains to avoid equating the logic of the network with that of ICTs, Castells argues that the emergence of these new technologies has facilitated the rapid realisation of the 'structured flexibility' that has come to characterise the network society.

Central to Castells' argument is the claim that the shift to a flexible, networked mode of production is accompanied by a transformation in the form and nature of organisational culture. Further, the emergence of the postbureaucratic organisation, in combination with the networking capabilities of ICTs, has transformed the very nature of work itself. While Braverman (1974) famously argued that the introduction of technology into the workplace tended to take away workers' autonomy, transforming them into deskilled robots, Castells (1996) claims that in the post-Fordist organisational setting 'the broader and deeper the diffusion of advanced information technology in factories and offices, the greater

the need for an autonomous, educated worker able and willing to program and decide entire sequences of work' (p. 241). The image of the deskilled, assembly line worker is replaced instead by the figure of the 'networker', an active agent who, freed from the demands of repetitive labour, is able to play a greater role in analytical and decision-making processes.

Castells is not alone in his descriptions of a major shift in contemporary organisational culture, variously described as the virtual or network organisation. The focus in much recent management literature has been on the need to move from old, Fordist bureaucratic structures to more devolved organisational practices marked by greater worker autonomy and empowerment (Wilson, 1999). Karin Knorr Cetina and Urs Bruegger (2002) note that while the concept of the network is a familiar one in sociology, the interest in this model has also recently been renewed because of changes in organisational formations.<sup>5</sup> They contend that, in response to the rise of devolved organisational structures, sociologists have now switched from talking about 'bureaucracy and hierarchy' to 'network and connectivity' (Cetina and Bruegger, 2002).

Given these claims concerning the increasing predominance of networked organisational structures in the information age, we need to ask how universities might fit into this picture. As perhaps the pre-eminent producers of knowledge in contemporary society and as organisations that have over the past decade been working within sophisticated, technologically mediated global networks, universities could be held up as the ultimate exemplars of the new information society. However, rather than accepting at face value the notion that all universities are now network organisations the question remains as to whether the concept of the network enterprise is so readily generalisable? Linked to this issue is the question of whether the claims attached to the universalistic reading of the network organisation stand up in the context of the university. Much of the management and sociological literature constructs the network organisation as the ultimate model of devolved responsibility, flexibility and worker empowerment. These boosterist claims raise questions of whether universities (and indeed all organisations) are experiencing a shift towards network technology and organisational practices.

Like other buzzwords associated with the discourse of ICTs, such as virtuality and cyberspace, there is a temptation to reify the concept of the network. As McLaughlin et al. (1999, p. 23) argue in their study of the implementation of information technology systems in three different types of organisation, discourses around ICTs and organisational culture are often marked by 'an over-emphasis on transformation' and a ten-

dency to simplify the pre-ICT organisational world. One of the major tensions then in discussions of networked organisations lies around the way new technologies are presumed to displace traditional ways of organising. In reality the actual acquisition and implementation of new technology is often organised through existing practices (McLaughlin et al., 1999, p. 25). Accordingly, it is important to outline some of those existing organisational practices and in particular to set the debates over the network organisation against the backdrop of a university culture that has been dominated in recent years by the discourses and practices of managerialism.

### **The managed university**

The corporate management stuff [. . .] is embedded absolutely into our management system, into our budget systems. So, you divide management work into jobs, you put accountabilities on them, and you reward, and penalise, on the basis of performance against those.

This comment, made by the vice chancellor of one of the universities included in our study, resonates with a broader ideological shift that has impacted across the Australian higher education sector. Over the past decade, Australian universities have moved towards corporate models of management and accountability. As Simon Marginson and Mark Conside (2000) argue in *The Enterprise University*, while universities may differ somewhat in the way they have taken up such models, in general they have adopted new forms of governance marked by an increased emphasis on the role of the university executive and a tendency to marginalise collegial structures. Much of the rhetoric found in university mission statements attributes this organisational change to global and market pressures. The new corporate forms embraced by many universities are seen to embody a shift from an administered public service model to self-managed market practices. However, as a number of commentators have noted, these developments have largely been driven by neoliberal governments (Vidovich and Currie, 1998; Gleeson and Shain, 1999; Gallagher, 2000).

As Michael Peters and Peter Roberts (2000, p. 196) note, while drawing upon 'neoliberal theories of human capital, public choice and new public management', government policy has tended to push universities towards an increasingly massified and vocationally oriented model of education characterised by the management of predetermined outcomes. This shift towards a mass university system and away from traditional models has seen new organisational forms emerging in higher

education. Partly because of their previously highly decentralised, and often unwieldy organisational structures, the search for greater accountability and tighter processes of governance has seen university executives taking on board many of the theories and practices of corporate management (Hardy, 1996; Deem, 2001). Indeed, David Preston (2001, p. 355) argues that, while management theorists have started to critique strategic management practices and to argue for more loose, more experimental forms of organisational planning, universities have embraced managerialism 'with the uncritical fervour and enthusiasm often associated with new disciples'.

This preoccupation with managerial techniques is partly a response to contemporary government systems for securing control over and shaping the work of universities. On the surface, the neoliberal state appears to be concerned with deregulating higher education, thereby opening it up to free-market forces. However, in reality it continues to closely control the destinies of universities through a series of devolved mechanisms, such as accountability-based and performance-oriented funding strategies and standardised data collections, a process that has been described as 'steering at a distance' (Vidovich and Currie, 1998, p. 207).<sup>6</sup>

In their study of Australian higher education before and after the 1988 Dawkins reforms, Lesley Vidovich and Jan Currie (1998) noted a greatly increased awareness of top-down accountability and decreased autonomy among university academics. The preliminary results of our study likewise suggest a university climate increasingly dominated by accountability and performance-oriented decrees from the university executive. As one dean we interviewed noted:

Increasingly we have to devote more and more resources to demonstrate accountability. One of the ways Central Admin deals with its budget problems is to devolve more and more activity and responsibility to the faculties.

As this quote suggests, however, while there has been a general tendency towards centralising mechanisms of control, we have also found that universities are marked by a continuing tension between centralisation and more devolved structures and processes. While the process of devolving responsibility described by the aforementioned dean could be seen merely as another manifestation of steering at a distance, the continuing role of devolved institutional units within the university is setting points to a more complex set of organisational pressures.

Ian McNay's (1995) essay on the changing cultures of universities offers one way of understanding the often contradictory organisational

processes we witnessed in the Australian universities under study. He argues that there are four models of university organisation: the collegium, characterised by its lack of central control and high level of autonomy; the bureaucracy with its fairly loosely defined policy but tightly controlled rules and regulations for organisational practices; the corporation with its characteristically strong central control over both policy and implementation; and the enterprise, an organisational model marked by clear central goals but a considerable degree of autonomy in relation to how those goals are carried out. While universities tend to be a complex mix of all four organisational cultures, McNay argues that over the past few decades universities have been progressing from a primarily collegial organisational structure through bureaucratic and corporate modes to a predominantly enterprise-oriented model. This last model, with its emphasis on the melding of a coherent organisational culture with devolved work units articulated together by ICTs, clearly fits into the networked model of organisation held up by Castells and others as the paradigmatic organisational structure of the information age.

Essentially, McNay offers an evolutionary model of organisational change, one in which the post-Fordist network organisation is held up as the ideal model towards which all organisational forms are moving. According to this logic, higher education is in a transitional phase, that is, the organisational culture of universities is for the most part moving towards devolution rather than increased centralisation. However, the findings of our study indicate that many academics have experienced organisational restructuring in terms of an *increase* in both bureaucratic processes and top-down corporate managerial techniques, and a concomitant loss of flexibility and autonomy, a process that is often tied to the implementation of centralised systems of networked technology. In other words, McNay's bureaucratic, corporate and enterprise models may be simultaneous rather than sequential. Contemporary university organisation might even be evolving into hybrid forms rather than culminating in decentralised networking. At the least, there are doubts about the claim that the network model is enabling universities to move from a rigid, bureaucratic structure to a flexible, entrepreneurial environment in which autonomy and initiative are rewarded. While the logic of the network organisation is set up in opposition to that of the bureaucracy, the experience of many academics seems to be that these logics are often interwoven. As a number of critics have noted, while the introduction of networked ICTs into the organisational setting is meant to empower workers, it also increases the ability for organisations to exercise centralised control and surveillance.

It seems that in the university setting the network model offers a number of potential and at times contradictory organisational trajectories. In the next section we examine some of the major debates that have emerged around the network organisation, first in relation to the argument (often put forward by management) that 'networked agency' offers the possibility of imagining new forms of decision-making in the organisational setting, and second in relation to the critiques of technology and managerialism that have emerged in response to these claims.

### **Collaboration and academic autonomy in the network university**

Somewhat ironically, while universities have been remodelling themselves along orthodox corporate lines, many management theorists are becoming increasingly critical of top-down corporate styles of management and organisational structure. Cynthia Hardy (1996), for instance, finds that recent critiques of strategic planning have seen business more aware of the need for so-called 'soft' people skills and collaborative approaches. Managerial strategies have tended to rely on instrumental modes of power, reflected in processes such as line authority and the centralisation of resource control. Within the university setting, however, Hardy argues that other forms of power more conducive to collegiality need to be called upon – unobtrusive, symbolic forms of power that encourage cooperation by changing attitudes rather than controlling behaviour directly. As Grahame Thompson (2003) notes, the network model, with its emphasis on 'informal practices of coordination' and on 'loyalty and trust rather than administrative orders', offers a critical counterpoint to 'bureaucratic procedural rationality' (p. 30).

In our study, although management rarely used the term network organisation, we found a number of university executives expressing concerns about the limitations of hierarchical models of management. One of the vice chancellors we interviewed, for instance, emphasised the need to move away from top-down directives and narrow forms of accountability and instead to create a broader culture of cooperation and dialogue within the organisation. In relation to the tension between centralised and decentralised approaches to university management, the vice chancellor mused:

I don't like the term centralisation because I actually think that what we're trying to find is a model that moves beyond the simplistic power thing that translates into centralisation or decentralisation. What we're talking about is having a shared decision-making role.

This shift in focus towards devolved power and collaborative approaches was echoed by a number of managers interviewed in our study, raising the question of whether McNay's contention that universities are moving towards more networked, enterprise models of organisation has some degree of validity.

In his study of Australian universities, Gallagher (2000) argues that despite the shift to centrally managed organisational structures, universities are also increasingly networking and collaborating. He notes, for example, the formation of several consortia,<sup>7</sup> not only for commercial reasons, but also to enable greater power when lobbying government and when dealing with benchmarking and accreditation issues.

Our study also found a significant degree of networking and collaboration occurring within and between universities, and between universities and other bodies, whether professional, corporate or public sector-based. However, this finding needs to be qualified with the recognition that the concept of the network here is rather Janus-faced in that it is being readily articulated to both corporate and noncorporate agendas. In other words, while the rhetoric of networking and collaboration is increasingly used across the public and private sectors, the practices and politics associated with different types of networked organisational forms can vary considerably. Thus, just as McNay's categories of organisational structure are not mutually exclusive, corporate models of collaboration and flexibility certainly do not exclude competition, centralisation and hierarchy; instead, seemingly paradoxical forms may often coexist.

A good illustration of this is the way in which the notion of the borderless university is not just being articulated to corporate needs but is also being tied to community and social concerns: a number of the universities in our study, for instance, included issues of justice, equity and community-mindedness in their 'vision' statements. Likewise, the rhetoric of the collaborative, networked organisation has also been picked up by university educators who perceive the electronic networks and virtual communities facilitated by the rise of ICTs as offering 'interesting possibilities for greater democratization of education' (Lankshear et al., 1996, p. 160). The purported shift within network organisations towards the formation of flexible institutional structures and devolved lines of communication, responsibility and power, echoes the early calls of critical educators such as Ivan Illich to move away from hierarchy and linearity. As Lankshear et al. (1996, p. 168) note, the collaborative sense of meaning making produced through virtual communities on the Inter-

net, for instance, resonates with 'Illich's vision of education being remade via learning webs and networks developed within an ethos of conviviality and interrelatedness'.

Certainly, the restructuring of universities and the spread of networked technology have put teaching and learning reforms on the agenda in many universities, offering opportunities for rethinking pedagogical practices. With the diversification and massification of the student body, universities have increasingly shifted their educational rhetoric from a notion of 'one size fits all' to a concept of tailored, flexible learning, one which seems to complement the notion of the university as a borderless, network organisation.

In all of the universities we studied, managers and academics alike talked of the need to move towards a model of flexible learning, emphasising in particular a student rather than teacher-centred approach to education. In the case of management, the rhetoric of student-centred learning tended to be seen as going hand in hand with a market-driven, enterprise model of the university. Under this model, it is assumed that the student is now a 'self-managing learner conceptualized as flexible, adaptable, self-motivated, independent, and capable of making choices in order to maximize personal benefits – a discriminating consumer' (Blackmore, 2001, p. 7). In addition, many managers see the notion of a democratised, student-centred learning model as breaking down the boundaries between university learning and learning in so-called 'real world' settings. Networking in this context is about creating a seamless boundary between work, study and leisure, a process captured in our study by terms like 'generic skills', 'lifelong learning' and 'capability-oriented education'.

This again points to the ambiguities at the root of the network model. On the one hand, the kinds of organisational shifts universities are currently undergoing are not necessarily articulated to wholly corporatist, market-oriented agendas but also seem to be marked by democratic trajectories in which the relationship between the university and the community is being rethought in various ways. On the other hand, while these conceptions of teaching and learning have democratic potential, at the same time these orientations are actively compatible with output models of corporate university production and the notion of education as a commodity for sale.

Having noted the often paradoxical nature of these potentials, it is important to point out that the model of the flattened, networked university is still very much an ideal rather than a norm (Marginson and Considine, 2000). For example, a recent government-funded study of

central computer databases in Australian universities found that, despite the dwindling resources of individual institutions, overall there was a surprising lack of collaboration between universities to create central digital archives, with the study's authors noting that '[a] factor which works against collaboration with external organisations is the emerging competitive environment' (McNaught, 2000, p. 158). Thus, while collaborative projects and networking are central to the everyday working lives of many academics, these collegial relationships can at times be constrained by strong institutional objectives, which may work against the collaborative ethos underpinning such projects. In our study, for example, a number of lecturers complained about the privatisation of electronic space that often accompanied the move to networked teaching and learning software, noting the difficulty of sharing material placed in these spaces with people outside the university. Other teachers were concerned that while their universities presented educational technology as an opportunity to move towards new models of pedagogy, the tendency was for teaching and learning software packages to be used as little more than centralised, administrative systems.

The idealised picture of the network organisation put forward by management theorists, sociologists and networking democrats thus provides only a partial picture of the complex and contradictory processes underpinning organisational change. While many management writers see network technologies as transforming organisations along positive lines, there is also a growing concern in the debates over technology and social organisation that ICTs may in fact strengthen traditional forms of managerial control through mechanisms such as increased surveillance (DiMaggio et al., 2001, p. 322). Putting into question the notion that network technologies go hand in hand with collaborative and power-sharing organisational structures, these critics suggest that technology, and in particular the structure of the network, can be articulated to a range of different and often oppressive organisational goals.

### **Networks of control? Technology in the managed university**

Perhaps the strongest critique yet to emerge of the technologisation of the university has come from US historian David Noble, who has described the recent push to online education as representing a move back to the days of Fordist automation and mass production. In his much quoted essay 'Digital Diploma Mills', Noble (1998) argues that rather than providing academics with greater freedom and control over their work, the introduction of network technology into universities has

instead contributed to the commoditisation of education. Echoing Braverman's account of the increased pressures on workers following the introduction of technology into the industrial workplace, he contends that the digitalisation of education similarly positions teachers as labourers in an automated 'production process designed for the efficient creation of instructional commodities' (Noble, 1998, p. 7). Thus, in the 'wired' university, the role of academics 'is being restructured, via the technology, in order to reduce their autonomy, independence and control over their work and to place workplace knowledge and control as much as possible into the hands of the administration' (Noble, 1998, p. 7).

Noble's words here resonate with one of the other main concerns arising from the implementation of centralised, networked technology, that is, the increased organisational visibility and potential for worker surveillance associated with networked ICTs (McLaughlin et al., 1999; Wilson, 1999). The notion of the electronic panopticon as discussed by Shoshana Zuboff (1988) and David Lyon (1994) captures the sense of oppressive transparency that many critics see as accompanying the technological push within universities. In our study we found this theme emerging not only in interviews with academics but also in student focus groups. In particular, a number of students voiced concerns about the fact that their contributions to discussion groups on WebCT, Blackboard, or whatever proprietary software their university had adopted, represented highly visible, written records that were potentially being monitored or archived without students' permission. Rather than the image of empowerment depicted by supporters of the network organisation, critical accounts of the digitised university suggest that technology may enable a far more controlling and centralised organisational culture.

Although these critiques offer important counter-narratives to the often boosterist discourses surrounding the role of technology in the contemporary organisation, they tend to lack a more nuanced understanding of organisational culture. In particular their preoccupation with top-down technological and organisational imperatives tends to prevent any discussion of the role of academics (and students) as active consumers and users of technology (Noble and Lupton, 1998). In these rather dystopian accounts there is little space given to discussions of the shifting and contested nature of the relationship between technology and the social and therefore minimal sense of the competing narratives at play within any organisational setting.

A number of commentators have attempted to present a more complex picture of the relationship between the organisational culture of universities and technology. For example, McLaughlin et al. (1999) combine organisational theory with literature from the sociology of consumption and science and technology studies (in particular actor-network theory) to highlight the role played by diverse agents in the network organisational setting. Their focus is not only on managerial players and the role of technology designers but also on other actors in the techno-social network, including the technology itself. As they note, 'the relationship between technological design and user needs is both more problematic than it sometimes appears to be, and more open to interpretation, change and challenge, at both the individual and organisational levels' (McLaughlin et al., 1999, pp. 1–2). In the university setting, this notion of 'interpretive flexibility', to borrow a term from the field of Science and Technology Studies, suggests that technological systems are not simply forced on organisations in a preordained, top-down fashion. Instead, this process is characterised by an ongoing struggle between various groups over the uses and meanings of technology, a struggle that is manifested most clearly in the university setting between forces of centralisation and standardisation, and disciplinary and departmental narratives of specificity and autonomy.

Similarly, in his study of two 'virtual universities' in the UK, Harris (2000) affirms this account of the contested, internally divided nature of the technologised university. Noting that most commentators on the virtual university share a tendency to abstract the process of virtualisation, Harris argues that they fail to ground their arguments in the specificity and complexity of organisational experience. Although theorists like Castells capture the broad markers of the virtual organisation, they tend 'to underestimate the diversity and reflexive choice associated with network formation' (Harris, 2000, p. 594). As suggested, one of the problems with network theory is the belief that there has been a linear development from the bureaucratic organisation to the network form. Underpinning this developmental narrative is the assumption that the relationship between the bureaucratic and the network organisation is an oppositional one. However, Harris found that the organisational structures of the virtual universities under study were more hybridised than the notion of the network organisation might suggest. His description of the Open University as a 'networked bureaucracy' leads him to conclude that 'the relationship between information networks, knowledge base and organizational structure are more

complex and variegated than is assumed by the network metaphor' (Harris, 2000, p. 592).

Likewise, our study found that there were multiple competing organisational narratives and cultures at work in Australian universities. All five of the universities were undergoing or had recently undergone major transformations associated with the introduction of network technology. However, all these universities operated within different networked structures and cultures, exhibiting unique combinations of the collegial, bureaucratic, corporate and enterprise elements described by McNay (1995). Disciplinary differences in relation to degrees of, and approaches to, networking also complicated the institutional picture. Furthermore, within each university there was considerable variation in how different groups interpreted and responded to the network process. Understandings of technological transformation and innovation were read through often contrasting paradigms depending on the institutional location of the interviewee. As one academic manager commented:

I talk about innovation as being active co-production with people, creating things out of shared experience. But I think [the Vice Chancellor] is talking about something else, which is in fact the business model of innovative products and getting them all onto the smorgasbord for the new consumer.

Within each university we found that there was often a large degree of disparity between how different groups understood key organisational terms. Thus, while the university might centre its vision statement on issues such as quality, entrepreneurialism or indeed networking, different factions at work in the organisation were likely to take up this vision in very different ways. One common theme in the study was the way in which seemingly radical discourses revolving around issues of diversity, equity, student-centred learning and the democratisation of knowledge were given very different political valences when used by management. As mentioned, we found management in a number of universities appropriating the radical discourse of critical pedagogy for commercial ends. Terms like student-centred learning and lifelong learning were often used alongside a user-pays discourse where students were positioned as active consumers operating within a level playing field (the market). These kinds of contradictory narratives are of course rife in the policy and management literature on higher education. James Duderstadt (1999), president emeritus of the University of Michigan, for instance employs the rhetoric of student-centred learning and learning networks while being essentially concerned with a consumerist vision of a networked educational future. In his conception of the university as a

devolved, vertically integrated organisation he suggests that 'the virtual university might be viewed as the "Nike approach" to higher education' (Duderstadt, 1999, p. 13), selling its intellectual content while outsourcing the marketing and packaging of its educational products.

Duderstadt's attention to the commercial potential of the virtual university illustrates the highly contested nature of the meaning of the network organisation. While Castells and other network theorists often treat the network as a force that is somehow seen to precede the social, the findings of our study of networked technology in the university setting indicate that the so-called logic of the network is marked by a number of potential trajectories. Thus, while networked technology has a materiality and is a social agent in its own right, the potentialities of the network form are not defined from the outset by a set trajectory but are socially embedded and therefore highly variable.

### **Concluding remarks: alternative futures for the network university**

The term network is widely used in academic and policy circles, but is often poorly defined. This is no doubt related in part to the fact that the concept of the network or information society is often associated with a discourse of techno-utopianism, which like its dystopian counterpart, derives much of its power from a large degree of hype rather than critical analysis. That said, when used as a metaphor for a number of complex contemporary social processes, the network does have a certain symbolic potency. Many aspects of everyday life in today's globalised, virtual society are undoubtedly marked by features of the network society outlined in Castells' work. However, while the notion of the network offers a potentially useful framework for comprehending contemporary social relations, one of the drawbacks of seeing the network as a kind of *zeitgeist* is that we risk treating it as an unstoppable and therefore incontestable force. As Judy Wajcman (2002) notes, at the core of the major social theories about contemporary social change is a concept of technology and its social impact that is based on a deterministic conception of technological effects. It is easy to slip into 'the language of causality' when discussing the socio-technological realm rather than viewing it in terms of 'a theory of complexity' (Menser and Aronowitz, 1996, p. 8).

The association of the network with a kind of technological logic or rationality has produced a tendency to universalise the impact of networked forms of technology and sociality. In his critique of what he

terms Castells' 'one-dimensional network society', Jan Van Dijk (1999) argues that while network structures are emerging as an important organisational feature of contemporary society, they are not the *content* of that society and that questions of social specificity are still central to understanding the way in which the complexities of the network society are being played out at a grassroots level. For Van Dijk, Castells' lack of attention to the social content of networks means that he tends to gloss over the social struggles of individuals, groups and organisations within and over the networks themselves, thereby offering a meta-sociological analysis at the cost of a focus on grounded social processes.

Our study seeks to move away from the dichotomy described by Van Dijk, where the network as a social structure is played off against networking as a marker of human agency. After Castells, we are concerned with producing some broad sociological insights into the plight of the contemporary university in a purportedly networked age. At the same time our focus on specific institutional case studies reflects a concern with capturing the complexity of lived organisational experience. Early on in our research it was apparent that all the universities under study were coming to grips with a series of major organisational changes related to the introduction of networked technology, changes that could in part be understood in relation to the network organisational model. At the same time it became evident that prevailing understandings of the network organisation were too narrowly corporatist in their conception and normative in their outlook to capture the complexities of people's experiences of these organisational shifts.

In other words, while the universities under study could be seen to be increasingly marked by the forms of networked sociality discussed in the management and sociological literature, the networking process was being played out in a number of different and at times unpredictable ways. For instance, in the universities under study the network organisational model did not necessarily supersede previous organisational structures but instead was often articulated in complex ways to existing bureaucratic, collegial and managerial practices within the university setting.

In this essay, we have sought to highlight some of the dominant discourses circulating in network universities. The findings of our study suggest that these discourses are highly contested. For example, while managers were often concerned with using technology to strengthen centralised systems of control, support standardised teaching and learning software, and develop uniform administrative and evaluative systems, many of the teachers interviewed were more interested in the

distributed and collaborative possibilities of networked technology. While these academics were often seen to operate within the broader organisational/managerial agenda laid out for networked technologies, at the same time they also found ways of pushing alternative agendas such as using technologies to help democratise the classroom. In other words, managerialist concerns with using technology as a driver of certain kinds of organisational change also created spaces for academics to negotiate different interpretations of the potential uses of network technology.

Although figures like Noble argue that hegemonic forces within the university have linked networked technology to essentially conservative organisational agendas, our findings indicate that the network university is a more complex and contested site than such claims would suggest. The complex organisational cultures at play in networked and network-ing universities show that network technology, while marked by certain historical tendencies and assumptions, can be articulated to a number of goals, not all of them necessarily tied to purely instrumental or technocratic concerns.

## Notes

1. The project is entitled 'Information and Communication Technologies in Australian Higher Education: An Investigation of Pedagogical and Organisational Innovations' and was funded by the Australian Research Council from 2001 to 2003. The chief investigators are Professor Simon Marginson and Associate Professor Ilana Snyder. Dr Tania Lewis is the research fellow attached to the study. The study focuses on the dynamics, the effects and the potentials created by information and communication technologies (ICTs) in Australian higher education. Focusing on three discipline areas across five universities, the study examines the intersections between innovations in ICTs and in two other domains: those of teaching and learning, and administration/organisation. The research involved interviewing a range of university staff including academic teachers, unit managers, general staff, as well as senior university managers, and conducting focus groups with students at each disciplinary/university site. Data collection also involved the acquisition of relevant documents, e.g. university policy statements, annual reports, web-based data, etc. Data analysis included thematic and discourse analysis of the transcribed interviews, university documents and web-based teaching and learning materials.
2. In Australia in 1988 the then minister for education, John Dawkins, oversaw a radical restructure of the higher education sector, which included reconfiguring institutes of technology and colleges of advanced education as universities.
3. For a thoroughgoing critique of all the major information society theorists including Bell and Castells, see Webster (2002).
4. It should be noted that in a recent article in which he responds to numerous critiques of his work, Castells backs away from the term 'information society', arguing that, since knowledge and information have been a feature of all societies, the notion is 'unspecific and misleading' (Castells, 2000). Instead, he contends that what marks out the network society from previous eras is the centrality of new technology. As he notes,

- '[w]hat is new in our age is a new set of information technologies' (p. 10) Needless to say, this shift in his thinking does not alter the central thesis of his work that we now live in a new economy that is informational, global and networked.
5. It is important to note here that while these accounts conflate the organisational networks of businesses with technological networks, the concept of the network organisation emerged well before the emergence of the Internet. With the rise of the Internet, however, network forms of sociality can no longer be understood without reference to the information technology revolution.
  6. A recent example of 'steering at a distance' in the Australian context is the government implementation of the Australian University Quality Agency, which audits each university every five years.
  7. Such as the Group of Eight or Go8 Network, which comprises Australia's older, elite universities and the Australian Technology Network, a coalition of five universities of technology.

## References

- Bell, D. (1974) *The Coming of the Post-industrial Society: A Venture in Social Forecasting*. London: Heineman.
- Blackmore, J. (2001) Universities in Crisis? Knowledge Economies, Emancipatory Pedagogies, and the Critical Intellectual, *Educational Theory*, 51, pp. 353–367.
- Braverman, H. (1974) *Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century*. New York and London: Monthly Review Press.
- Bromley, H. and Apple, M. W. (Eds) (1998) *Education/Technology/Power: Educational Computing as a Social Practice*. SUNY Series, *Frontiers in Education*. Ithaca, NY: State University of New York Press.
- Castells, M. (1996) *The Rise of the Network Society*. Cambridge, MA: Blackwell Publishers.
- Castells, M. (2000) Materials for an Exploratory Theory of the Network Society, *British Journal of Sociology*, 51, pp. 5–24.
- Cetina, K. K. and Bruegger, U. (2002) Inhabiting Technology: The Global Lifeform of Financial Markets, *Current Sociology*, 50, pp. 389–405.
- Deem, R. (2001) Globalisation, New Managerialism, Academic Capitalism and Entrepreneurialism in Universities: Is the Local Dimension Still Important?, *Comparative Education*, 37, pp. 7–20.
- DiMaggio, P., Hargitaai, E., Neuman, W. R. and Robinson, J. P. (2001) Social Implications of the Internet, *Annual Review of Sociology*, 27, pp. 307–336.
- Duderstadt, J. (1999) Can Colleges and Universities Survive in an Information Age? In R. N. Katz (Ed.) *Dancing with the Devil: Information Technology and the New Competition in Higher Education*. San Francisco, CA: Jossey-Bass, pp. 1–25.
- Gallagher, M. (2000) The Emergence of Entrepreneurial Public Universities in Australia. Paper presented at the IMHE General Conference of the OECD Paris, September 2000. Canberra: Higher Education Division Dept. of Education Training and Youth Affairs.
- Gleeson, D. and Shain, F. (1999) Managing Ambiguity: Between Markets and Managerialism – A Case Study Of 'Middle' Managers in Further Education, *The Sociological Review*, 47, pp. 461–490.
- Hardt, M. and Negri, A. (2000) *Empire*. Cambridge, MA and London: Harvard University Press.
- Hardy, C. (1996) *The Politics of Collegiality: Retrenchment Strategies in Canadian Universities*. Montreal: McGill-Queen's University Press.
- Harris, M. (2000) Virtual Learning and the Network Society, *Information, Communication and Society*, 3, pp. 580–596.

- Lankshear, C., Peters, M. and Knobel, M. (1996) Critical Pedagogy and Cyberspace. In H. A. Giroux (Ed.) *Counternarratives: Cultural Studies and Critical Pedagogies in Post-modern Spaces*. New York: Routledge, pp. 149–188.
- Levy, P. (1998) *Becoming Virtual: Reality in the Digital Age*. New York: Plenum.
- Lyon, D. (1994) *The Electronic Eye: The Rise of Surveillance Society*. Minneapolis: University of Minnesota Press.
- Marginson, S. and Considine, M. (2000) *The Enterprise University: Power, Governance and Reinvention in Australia*. New York: Cambridge University Press.
- McLaughlin, J., Rosen, P., Skinner, D. and Webster, A. (1999) *Valuing Technology: Organisations, Culture and Change*. London: Routledge.
- McNaught, C. (2000) *Developing a Framework for a Useable and Useful Inventory of Computer-Facilitated Learning and Support Materials in Australian Universities*. Canberra: Dept. of Education Training and Youth Affairs.
- McNay, I. (1995) From the Collegial Academy to Corporate Enterprise: The Changing Cultures of Universities. In T. Schuller (Ed.) *The Changing University?* Buckingham: Open University Press, pp. 105–115.
- Menser, M. and Aronowitz, S. (1996) On Cultural Studies, Science, and Technology. In S. Aronowitz, B. Martinsons and M. Menser (Eds.) *Technoscience and Cyberculture*. New York: Routledge, pp. 7–28.
- Noble, D. F. (1998) Digital Diploma Mills: The Automation of Higher Education, *Monthly Review*, 49, pp. 38–52.
- Noble, G. and Lupton, D. (1998) Consuming Work: Computers, Subjectivity and Appropriation in the University Workplace, *Sociological Review*, 46, pp. 803–827.
- Peters, M. and Roberts, P. (2000) Universities, Futurology and Globalisation, *Discourse*, 21, pp. 125–139.
- Podolny, J. M. and Page, K. L. (1998) Network Forms of Organization, *Annual Review of Sociology*, 24, pp. 57–76.
- Preston, D. S. (2001) Managerialism and the Post-enlightenment Crisis of the British University, *Educational Philosophy and Theory*, 33, pp. 343–363.
- Sassen, S. (2002) Towards a Sociology of Information Technology, *Current Sociology*, 50, pp. 365–388.
- Thompson, G. (2003) *Between Hierarchies and Markets: The Logic and Limits of Network Forms of Organization*. New York: Oxford University Press.
- Touraine, A. (1971) *The Post-industrial Society*. New York: Random House.
- Van Dijk, J. (1999) The One-Dimensional Network Society of Manuel Castells, *New Media and Society*, 1, pp. 127–138.
- Vidovich, L. and Currie, J. (1998) Changing Accountability and Autonomy at the ‘Coal-face’ of Academic Work in Australia. In J. Currie and J. Newson (Ed.) *Universities and Globalization: Critical Perspectives*. CA: Thousand Oaks, pp. 193–211.
- Wajcman, J. (2002) Addressing Technological Change: The Challenge to Social Theory, *Current Sociology*, 50, pp. 347–363.
- Webster, F. (2002) *Theories of the Information Society*. London: Routledge.
- Wilson, F. (1999) Cultural Control within the Virtual Organization, *Sociological Review*, 47, pp. 672–694.
- Zuboff, S. (1988) *In the Age of the Smart Machine: The Future of Work and Power*. New York: Basic Books.