General Knowledge:

Developing tertiary sector general staff

for the knowledge economy

Heather Davis

Knowledge workers must be creative, independent, resourceful, innovative, enterprising, co-operative and versatile people who learn new things throughout their lives. (Andrews, 2003 p 16)

---

* the front cover graphic is from Peter Drucker's online article "Beyond the Information Revolution", published in 1999

Introduction

This reading study focuses on the individual's role as knowledge workers in a contemporary organisation and specifically how this may impact on tertiary sector non academic staff known collectively as general staff. I have been unable to identify literature specifically about general staff in the tertiary sector, therefore I have widened my literature search to find literature and statistics in allied or parallel fields to inform this study.

The catalyst for this study has been the announcement of an administrative review and its intention to move to a team based structure to manage the administrative functions and staff in a typical faculty within a university in Australia. This proposed change to work practices will be used as an example to contextualise the theories and literature expounded in this study. So a move to a team based structure, which in itself can be seen as a move towards better managing a contemporary organisation, will illustrate as one example, the many challenges facing general staff situated in the tertiary sector today.

In any event, major change is likely to evoke similar reactions in those affected by it and this study may prove helpful in working through change management issues facing all workers in a contemporary organisation. For example it appears that general staff undergoing the administrative review are, in equal measure, stressed or energised by the idea of the change. Some are still to be convinced that the exercise isn't simply a cost cutting measure, and deep seated fears based on past experiences or snippets of (mis)information from other faculties undergoing similar restructuring have surfaced. There are also many general staff who think the idea of moving to a new way of working to support teaching and research in the faculty is an exciting proposition. The literature tells us that these reactions to change are predictable and can be mapped, for example, on the process of change model by William Bridges (see page 7 of this study).

This study aims to inform general staff and their managers about how changes to academic work and its management and changes to work in the wider community might impact upon them, thus encouraging general staff to take an active interest in their environment and to advance their own and their organization's professional practice.

This study has identified the following areas of focus in order to set an appropriate scenario so that general staff and their managers may be informed of the issues facing them as they move towards a knowledge economy.

1. The Environment – The knowledge economy and contemporary organisations
2. Change and Change Management
3. Equipping the knowledge worker – Professional and personal development considerations
4. Operating in a knowledge economy – Developing the Organisation
5. Workplace learning – Its place in moving the knowledge organisation agenda forward
6. Conclusion and recommendations

The Environment

We are living in an age where the only constant is change. There is no doubt that the world is a very different place now from 5, 10, 50 or 100 years ago. Jennifer James (1996) in "Thinking in the future tense" estimated that 80 percent of the jobs available in the United States within twenty years would be cerebral and only 20 percent manual, the exact opposite of the ratio in 1900 (James, 1996 p 19).

The literature tells us that the contemporary organisation is now moving towards a "knowledge economy" which is emerging from the rapid changes produced by globalisation and the information and communication technology revolution of recent times. Evolution from an 'information economy' late last century to a likely 'knowledge economy' only a few years later further illustrates the speed and magnitude of the change we are facing, especially as the last significant paradigmatic shift—from the 'industrial economy' to an 'information economy'—spanned almost a century.

The knowledge economy

A knowledge-based economy can be defined as "an economy in which the production, distribution and use of knowledge is the main driver of growth, wealth creation, and employment across all industries" (Dept of Industry Tourism & Resources in Andrews, 2003 p 7) and according to recent Australian Bureau of Statistics figures it is estimated that knowledge workers already represent 38% of the Australian labour force (Andrews, 2003 p 17).

Andrews's (2003) recent review of knowledge-focused literature ably informs the tertiary sector in Australia about key concepts surrounding a knowledge economy and demonstrates, by the reportage of recent statistics and literature, that the knowledge economy is more than a lofty theory—it is fast becoming a reality.

Contemporary organisations

Many contemporary organisations have already adopted the knowledge organization model and knowledge organization literature has itself evolved from the 'learning organization' theories of the 1990's. Peter Senge (1990) encapsulated learning organization theory in his seminal learning organization work about a new way of acknowledging and managing workers by placing them at the centre of the organization.

Learning organization theory differs from managerialist theory used in the industrial economy in that it promotes a 'working with' rather than 'working for' management style. Senge's 'working with' theory is now a mainstream and relevant management approach, especially so for a growing knowledge economy of which the tertiary education sector is a part. Senge's theory is underpinned by the notion that "to excel in the future organizations [must] discover how to tap people's commitment and capacity to learn at all levels in an organization" (Senge, 1990 p 4) and master the five disciplines of the learning organization described in appendix five. Knowledge organization theory further extends learning organization theory and reiterates the importance of harnessing the human[1] and social[2] capital in an organization for the strategic advantage of the organization.

Learning organization and knowledge organization theories, above all, provide theoretical frameworks to plan for and manage rapid change by encouraging organisations to be adaptive, and give voice/responsibility to ALL members of the organisation. These theories particularly advocate the need to change managerialist work practices in order to best support workers as they evolve into knowledge workers.

The literature tells us that a change from hierarchical management structures to horizontal structures is necessary in order to move a contemporary organisation—a faculty moving to a team based structure, for example— forward.

> The notion of a knowledge organisation also has important implications for the ways in which the organisation are structured, how work is organised, how knowledge workers are managed, and how employees interact with each other. These can include for example a change in management approach to supporting employees rather than supervising them, and encouraging informal networks rather than pretending they don't exist.
> (Andrews, 2003, p 15)

---

[1] Human capital—the collective knowledge, competency, experience and skills of people within an organization. (Andrews, 2003 p 10)

[2] Social capital—access through established relationships of resources that include information, ideas, leads, business opportunities, financial capital, power, emotional support, goodwill, trust and co-operation (Baker in Tymon and Stumpf, 2003 p 12)

The tertiary sector

The tertiary sector faces the same challenge of equipping its institutions to become vital knowledge organizations as any other sector, but because the tertiary sector's core business is in teaching and research, this sector may well feel the pressure more keenly to get it right as its status in society as the premier knowledge producer is at stake.

> Globalisation, massification of higher education, a revolution in communication and the need for lifelong learning, leave Australian universities nowhere to hide from the winds of change.
> (Nelson, 2003 p 3)

Thankfully, there has been research undertaken, literature published and theories expounded on how to equip the tertiary sector for such changes. Interestingly though, no research outcomes have been published about the role that general staff play or what general staff think about these changes—even though this work group makes up more than 50% of the tertiary sector workforce. It appears that general staff are viewed in terms of their worth as labour rather than their human capital worth and have not been seriously consulted in planning relating to the expected changes to contemporary organizations as they move towards the knowledge economy.

The Australian National Training Framework (ANTA) through its "Reframing the Future"[3] research project is planning for the expected changes to management, work and teaching practices in the Vocational and Educational and Training (VET) sector. Publications coming from this research project, particularly in the areas of communities of practice, change management and staff development, are informing the VET sector already and are relevant to the wider tertiary sector.

Prof Elaine Martin's book "Changing academic work: developing the learning university" published in 1999 identifies how the university sector's academic staff have viewed their changing work environment. The book, based on her research about the role of non managerial and managerial academic staff and how they view their changing working environment, is informed by student learning, learning organisation literature and change management theory.

> Changing academic work explores the competing tensions in contemporary work: the need to balance individualism with collaboration; accountability with reward; and, a valuing of the past with preparation for the future. The aim is to help staff build a contemporary university which is as much a learning organization as an organization about learning.
> (Martin, 1999 back cover)

---

[3] http://www.reframingthefuture.net

I believe the competing tensions described here by Martin are felt no less by general staff. To be serious then about building a contemporary university "which is as much a learning organization as an organization about learning" (Martin, 1999 back cover), the work of general staff—the people who support academic teaching and research—should also be acknowledged and included in any strategic planning necessary to move their organizations forward.

Though the work of general staff is absent from published literature about changes to work practices in the tertiary sector, there are many individuals and organisations in Australia vocal in their acknowledgement of this work. The Association for Tertiary Education Management Inc (ATEM) is one such organisation giving voice to the role of general staff in the tertiary sector. The ATEM encourages its members to take an active role in advancing their own professional practice and that of their institutions. The ATEM believes that "tertiary education administration and management is a specialised and developing area of work and is working towards achieving recognition of the critical role members now have in their institutions" (ATEM, 2001 p 2).

Change and Change Management

As stated in the introduction, we are living in an age where the only constant is change. Not surprisingly, there is a wide body of literature on change and change management, much of which can be adapted for the tertiary sector and the knowledge workers it employs—academic and general staff.

The views of management theorists Tom Peters and Peter Senge, emphasize just how important the advancement of professional practice by the individual is for a knowledge organization and the knowledge economy because only an individual has the capacity to make the necessary paradigmatic changes of mindset needed to move the contemporary organization forward. Peters (1994) and Senge (1990) reiterate that profound change can take place within the working environment and within the individual working in this work environment—making the individual's role critical to the organisation's smooth operation in a knowledge economy.

Senge (1990) believes that "at the heart of a learning organization is "*metanoia*"—a shift of mind—(pp 12-13) while Peters (1994) has an interesting perspective on change in that he believes that the individual will "either change in a nanosecond – or never, [that] it takes just

a flash to achieve change of even the most profound sort [but] it takes forever to maintain change (p 3)".

Because change is everywhere and is so critical to the evolution of societies, workplaces and the individual, it is no surprise then that change management theories abound. Martin (1999) devotes a chapter on change "Encouraging change: valuing the past, preparing for the future" (pp 130–146) in her book about developing the learning university and draws heavily here on the work of William Bridges and his recognition of the change process in managing change.

> The single biggest reason organizational changes fail is that no-one thought about the endings or planned to manage their impact on people. Naturally concerned about the future, planner and implementers usually forget that people have to let go of the present first. They forget that while the first task of change management is to understand the destination and how to get there, the first task of transition management is to convince people to leave home.   (Bridges in Martin, 1999 p130)

If we have the luxury of being able to plan for change, moving to a team based structure for the management of administrative functions and staff for example, the literature tells us to take the transition stage seriously if we want to succeed in implementing change to the nature, culture or structure of a working environment. The Bridges model below is one example of the stages to consider when factoring transition into a change management plan.

Bridges' Three-Stage Process of Change model [4]

| Stage One: Letting go of the past	Stage Two: Moving through the transition	Stage Three: New beginnings
1. Treat the past with respect	1. See the change as an opportunity	1. Celebrate success as soon as possible
2. Expect overreaction	2. Training and development, as required	
3. Share information	3. Rationalize the changes	
4. [Expect] misrepresented information	4. Time release to devise, develop and plan changes	
5. Be aware of the threat of loss of position and loss of status	5. Develop a purpose, a picture, a plan and a part to play for all staff	

---

[4] Bridges, W. 1991, Managing Transitions: making the most of change, Addison-Wesley, Reading, Mass. in Martin, E. 1999, Changing academic work: Developing the Learning University, Society for Research into Higher Education & Open University Press, Buckingham. pp 129 – 146.

Adding to the established process of change theory by Bridges (1991) is an example of recent literature on change management. Struckman and Yammarino (2003) look at managing multiple change activities, itself a significant shift inferring that change is commonplace and accepted practice and that we now manage disparate simultaneous changes as a matter of course. Their work has generated a change types and response quadrant model of change. The model is based on their premise that "change activities can be classified based on the degree of impact—how fundamental is the change to the core functioning of the organization—and that change can also be classified by the perceived time to complete the change" (Struckman and Yammarino, 2003 p 234).

Struckman and Yammarino posit that once the type of change has been identified it is much easier to manage the change(s) and they provide case studies to demonstrate their model on how to best manage specific change types. As well as identifying change types and recommended responses as illustrated below, their work recommends strategies to deal with optimum leadership, decision making, performance management, and communication styles to suit each change type.

Struckman and Yammarino Change Type and Response matrix[5]
Quadrant Model for Change Types

Change Type Response Model
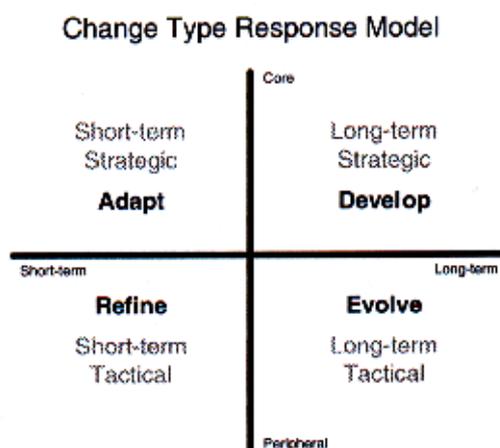
Using the Struckman and Yammarino model, together with the example of moving to a team based management structure for administrative staff in a faculty, I can see that this type of change is identifiable as "long-term" and likely to affect strategic[6] outcomes. The following

---

[5] Struckman, C. K. & Yammarino, F. J. 2003, 'Managing through multiple change activities: a solution to the enigma of the 21st century', *Organizational Dynamics,* vol. 32, no. 3, p 235
[6] This model refers to 'strategic change' as change that affects the mission, core systems or processes, or culture of the organization (Struckman and Yammarino, 2003 p 234)

response to this particular change type is recommended by Struckman and Yammarino's organizational change response model as:

Change Event	Change of organisational culture and structure for administrative functions and staff management in a Faculty
Change Type	Long term Strategic
Response	Develop
Leadership Style	Inspirational
Decision-Making	Consultative
Performance Management Source	Directive
Performance Management Value	Intrinsic
Communication Intention	Attention / Desire / Action
Struckman and Yammarino Case Study example	Nissan's planned change to organisational culture in Japan

Excerpt from the Struckman and Yammarino Organizational Change Response model[7] relating to "Long Term Strategic Change"

Having now set the scene—contemporary organisations in the tertiary sector in an environment of change—I will now move to the most important section of this study which is the role of the worker in this environment and how to best equip general staff to become knowledge workers.

Equipping the Knowledge Worker–Professional and Personal Development Considerations

The Andrews (2003) literature review informs us that the World Bank believes that 'global knowledge is transforming the demands of the labour market, and is also placing new demands on individuals who need more skills and knowledge to be able to function in their day to day lives" (Andrews, 2003 p 19).

Whilst the knowledge economy literature tells us that knowledge workers are vital to their organizations, at this time—as we lay on the cusp of the next paradigmatic shift in the economy—the term 'knowledge worker' itself may represent different things to different people. This makes recommendations for development speculative.

For the purposes of this study I will define the term 'knowledge worker' based on current literature and posit that there are already characteristics that all workers in a contemporary

---

[7] Struckman, C. K. & Yammarino, F. J. 2003, 'Managing through multiple change activities: a solution to the enigma of the 21st century', *Organizational Dynamics,* vol. 32, no. 3, p238

organization—i.e. academic and general staff in the tertiary sector—should be encouraged to develop NOW, not the least being learning more about themselves and their own mental models as Senge (1990) suggests. It may be that the development of personal and professional attributes described in the literature will at the least cause general staff to think about themselves, their place in their organisation and their world whilst providing a solid foundation, when and if called, to make the transition to knowledge work.

When the terms 'knowledge work' and 'knowledge worker' were coined in the 1960's by Peter Drucker he was referring to an elite, highly specialised worker who added value by processing existing information to create new information which could be used to define and solve problems. Today, Andrews (2003) believes that the fastest growing occupations are in knowledge work and cites Australian Bureau of Statistics (ABS)[8] figures showing that knowledge workers have increased their labour force share from 28% in 1997 to 30% in 2003 (Andrews, 2003 p 17).

The dichotomy of the term 'knowledge worker' persists because the term can refer to the occupation (i.e. academics, librarians, analysts) or be describing the work undertaken by workers in many occupations (i.e. managers, administrators, technicians). For the purposes of this study I concur with the view that "everyone is a knowledge worker to some degree, and knowledge work is everyone's responsibility, not just that of a few people with 'information' or 'knowledge' in their job title" (National Electronic Library for Health, 2001 p 3).

A knowledge worker's main value to an organization can be defined as "their ability to gather and analyse information and make decisions that will benefit the company. They are able to work collaboratively with and learn from each other; they are willing to take risks, expecting to learn from their mistakes rather than be criticized for them" (Miller in National Electronic Library for Health, 2001 p 1).

When we look to the literature to identify the ideal personal and professional qualities in an individual fit for the knowledge economy, we see that much of it is attitudinal and there are some generic skills that are seen as advantageous as well. In many cases these are the same attitudes and skill sets sought in Senge's (1990) learning organization theory or by futures theorists like Peter Drucker—from his earliest work in the sixties to the present

---

[8] The ABS classifies knowledge workers in the Australian Standard Classifications of Occupations as being managers and administrators, professionals and associate professionals.

(Drucker, 1999, 2000)—and Jennifer James (1996) indicating that these optimal attitudes and skill requisites are not new, but rather their time has now come to be seriously considered for all workers in a contemporary organisation.

The following skill set is a concatenation of the main themes identified in this study with details of each theory included in the appendices. The following matrix lists the elements of the skill set and where it has been cited in the literature.

Optimal skills and attitudes for a 'knowledge worker'

	Andrews (Appendix 1)	Drucker (Appendix 2)	James (Appendix 3)	Martin (Appendix 4)	Senge (Appendix 5)
Ability to acquire new skills	✓				✓
Ability to change mindset	✓	✓	✓	✓	✓
Adaptable	✓		✓		✓
Aware of wider environment			✓		✓
Awareness of mental models					✓
Interest in lifelong learning	✓				✓
Pattern recognition, problem solving and sense making skills	✓		✓		
Personal mastery			✓		✓
Productive and creative	✓				
Research and analytical skills	✓				
Shared vision			✓		✓
Systems thinking	✓	✓	✓	✓	✓
Team learning					✓
Tolerance for ambiguity	✓			✓	

Whilst the whole skills set above is crucial to the development of knowledge workers and knowledge organizations in the knowledge economy, the following two criteria having been cited by all of the main theorists, and are detailed below to be considered at the individual and organisational level of this study:

the ability to change mindset

> To grasp the meaning of "metanoia" is to grasp the deeper meaning of "learning", for learning also involves a fundamental shift or movement of mind. Real learning gets to the heart of what it means to be human.   (Senge, 1990 pp 13-14)

and, **systems thinking**

> Systems thinking is a discipline for seeing the "structures" that underlie complex situations and for discerning high from low leverage change…It is the conceptual cornerstone that underlies all of the five learning disciplines, concerned with a shift of mind from seeing parts to seeing wholes, from seeing people as helpless reactors to seeing them as active participants in shaping their reality, from reacting to the present to creating the future.   (Senge, 1990 p 69)

Individuals and teams working in a knowledge organization must consider how they will operate in this environment and the skills set above identifies the likely skills and attributes that should be valued in this environment.

The organisational environment must also change if it is to effectively support the knowledge worker, so a change in mindset and systems thinking at an organizational level will be necessary to institute appropriate changes to management structures and thinking to provide a supportive work environment for knowledge workers.

> People of the contemporary organization have to be supported to change and to see constant change as an essential part of their professional responsibility. But, equally, contemporary staff must learn to take responsibility themselves for their own learning and development.   (Martin, 1999 pp 5)

The literature postulates that a different way of thinking about how we work, how we can learn in the workplace—as individuals and in teams—and how the organization can support and benefit from that learning is necessary, and is the focus of the next section of this study.

Developing the Organisation for the Knowledge Economy

For the purpose of this study I will limit the focus on organisational development for the knowledge economy to the two emerging themes from the last section—change of mindset and systems thinking—as the body of literature and the discipline of organisational change and development is too large to be managed within the constraints of this study.

Both of these themes are as important to the development of organisations as they are to the development of individuals in the knowledge economy. They both have an important role to play in change and change management cycles which have been well documented when describing past significant shifts in the economy.

In fact history is a salient indicator of change. Management futurists Drucker (1999) and James (1996), for example, employ pattern recognition—i.e. looking back to history—as a way of predicting the patterns of the future. History tells us that when significant shifts occur affecting the social fabric of society—the invention of the printing press, the industrial or information revolution, for example—society initially carries on with established ways of doing things. For example it took 58 years after the invention of the printing press for a non biblical text[9] to be printed—prior to this the newly minted texts were copies of the work that monks had for centuries copied by hand. More recently, we have seen the World Wide Web (WWW) revolutionise information sharing by making the Internet available to the masses, but we continue to see the majority of the material available on the WWW today conforming to the pre-WWW print standards. Web pages may occasionally display graphics or other "bells and whistles", but they are still rarely displayed in the multi media formats the Internet and WWW is capable of delivering.

We need to keep this in mind as we look at better ways to manage contemporary organisations because the real challenge for organizations will be to deinstitutionalise management structures, and move out of the comfort zones of familiar, hierarchical, managerialist structures if we are to truly move a contemporary organisation into the knowledge economy.

It has been acknowledged in the literature that the cultural shifts necessary to move agendas forward, be they organisational or societal, have historically shown to be the hardest shifts to make.

> Anthropologists use social data and models from the past to provide a frame or a context for the future. The details of millions of years of history and hundreds of societies reveal patterns. When you understand these patterns of the past, culture is often the last system to adapt. Vestiges of old beliefs hang on long after the technological, economic and demographic systems have changed. (James, 1999 p 22)

What this means for organisational development in order to support knowledge workers then is the imperative for an "organisational" change of mindset—the way management is equated with control, for example—to a new way of structuring and managing organisations to acknowledge the human and social capital of their workers as the organisation's most significant asset and the most likely way of operating, competing and gaining competitive advantage in the knowledge economy.

---

[9] Machiavelli's "The Prince" published in 1513 was the first Western book in more than a 1000 years that contained no biblical quotation (Drucker, 1999, p 2)

Partnerships, self managing teams and communities of practice, for example, have been cited as appropriate ways of managing workers for the knowledge economy and reflect a growing attitudinal change in valuing the organisation's human and social capital to support the organization.   These ways of working represent a more horizontal management approach than has traditionally been used but has nevertheless been theorised and put into practice over the last 10 – 15 years.   Traditionalists however, may view this type of management structure as providing less leadership and control than more rigid vertical management structures offer.

Is this view a remnant of the past, an example of the cultural lag to which James (1999) refers or are vertical structures necessary still for the smooth running of the contemporary organisation?

> The chaotic world of corporate affairs especially requires leadership that diverges from age-old conceptions of leading by control. The only possible way to lead our way out of trouble in management is to become mutual and to share our leadership.
>
> (Raelin, 2003) p 6

Proponents of horizontal management structures (Raelin, 2003, Senge, 1990, Peters, 1994) view these structures as promoting '*leaderful'* rather than "*leaderless*" behaviours. It could be also argued that horizontal structures place more responsibility and expectations on the knowledge worker, not less.   Raelin advocates his four "c's"—the tenets of leaderful management—to be "concurrent, collective, collaborative and compassionate" and believes "leaderful leadership can accomplish the process of leadership in more settings and with more pervasive effectiveness than the conventional approach" (Raelin, 2003 pp 13-14); while Peters believes that "changing a culture of dependence to a culture of self organizing independence is hard work but, according to the literature, is becoming pervasive in these times of constant flux" (Peters, 1994, pp 245-146).   The views here of Raelin and Peters concur with Peter Senge's view on the leadership requirements for the learning organization.

> Our traditional view of leaders—as special people who set the direction, make the key decisions, and energize the troops—are deeply rooted in an individualist and non systemic worldview. Our prevailing leadership myths are still captured by the image of the captain of the cavalry leading the charge to rescue the settlers from attack. So long as such myths prevail, they reinforce the focus on short-term events and charismatic heroes rather than on systemic forces and collective learning.
>
> The new view of leadership in learning organizations centers on subtler and more important tasks. In a learning organization, leaders are designers, stewards and teachers. They are responsible for *building organizations* where people continually expand their capabilities to understand complexity, clarify vision, and improve shared mental models—that is, they are responsible for learning.   (Senge, 1990 p 340)

Upon reviewing the literature for this study, I believe the most significant shift of mindset required of the organisational leaders will be to think of their workers as assets rather than encumbrances—to move from thinking of workers as labour to acknowledgment that (knowledge) workers and what they bring to the organisation are paramount to their success and perhaps even their survival.

Ulrich (in Goodhead, 2002) believes that an organization "is only equal to the sum of the capabilities of its people multiplied by the effectiveness with which these capabilities are managed" (p2). Drucker (2000) extends this view and believes that "to succeed in the new world we will all have to learn first who we are" and to articulate this to others and that organizations can best develop and motivate knowledge workers by:

- Knowing people's strengths
- Placing them where they can make the greatest contributions
- Treating them as associates
- Exposing them to challenges   (Drucker, 2000) pp 1-3

In particular the opportunities for growth and success for the knowledge organisation hinge on the human and social capital knowledge workers bring to the organisation:

> **human capital**—the collective knowledge, competency, experience and skills of people within the organization (Andrews, 2003 p 10), *or*, employee capability x employee commitment (Ulrich in Goodhead, 2002 p 3)

> and **social capital**—access through established relationships of resources that include information, ideas, leads, business opportunities, financial capital, power, emotional support, goodwill, trust and co-operation
> > (Baker in Tymon and Stumpf, 2003 p 12)

Drucker's (2000) work on managing the individual in terms of managing knowledge, (see appendix two) further supports this view and brings into sharp focus the importance of identifying simple but salient questions in the face of the seemingly overwhelming task of identifying how to best support knowledge workers at an organisational level. The organisational focus—in terms of the tertiary sector and the example of general staff undergoing an administrative review—could well rest on three simple questions:

1. *What are academics paid to do?*
2. *How much of their time do they spend doing that?*
3. *How can general staff best support academic staff to do what they are paid to do?*

Another challenge for organisations is that not all staff will be enamoured of the expected changes and may well be resistant to change and exhibit defensive routines, causing conflict. This is to be expected when such paradigmatic changes are challenging the comfort zones of an individual and an organisation. When people and organisations are being asked to deeply reflect on their practices and norms, conflict is likely to occur. Conflict itself does not have to always be negative. Senge (1990) believes that in great teams, for example, "conflict becomes productive but in mediocre teams conflict is represented by either a rigid polarization or no apparent appearance at all of conflict" (Senge, 1990, p 249).

The literature already provides a guide to organisational leaders for coping with paradigmatic changes, with historic comparisons, theories and models, but there may be other significant changes to mindset necessary to truly move into a new paradigm. Whilst it is certainly comforting to know that there are precedents for significant change, it is also quite likely that we will be required to move forward in new and untested ways.

If we are to be serious about progressing towards the knowledge economy, we need to find ways to work *smarter* not *harder*, for example, the very premise of the nine-to-five worker could well be challenged. Martin (1999) argues that although "our life is infinitely more flexible, it is no longer our *life*. There is no time in the day or week when we are able to legitimately claim that this is *our* time for *our* life. Every moment can be filled with a commitment and we quickly find that it is and, strangely, although we now have 168 hours instead of 40, there is still not enough time" (Martin, 1999 p 3).

The whole notion of workers attempting to balance their lives between work and home has been challenged recently by Hacker and Doolen (2003) who believe the 'balance' paradigm itself is part of the problem. By questioning the established "balanced life" mindset we see an example of how a new way of thinking about an established norm, combined with what we know already about paradigmatic change, might truly move a knowledge organization agenda forward.

If knowledge workers, fully supported by their knowledge organisations, for example, could shift the way they think about their life and commitments to an integrative and holistic approach as Hacker and Doolen recommend, there may be less stress and guilt about not being all things to all people, both at work and at home. This would produce a mutual benefit for both the knowledge worker and the organization. Hacker and Doolen (2003) believe that the very metaphor of balance contributes to the problem in that it is not a

powerful or empowering metaphor and it should be replaced with a fuller expression of their integrative approach to this dilemma.

> Balancing does not embrace the integration of life, but rather depicts life as a set of competing priorities. Each important element of our life seeks our attention, with several losing out…
>
> The balancing act [should be] replaced with a fuller expression of *being* through engagement in life in its many different forms. Additionally, synergy is discovered because of the integrated nature of *being whole* and showing up *whole*. Instead of pitting one objective against another, new options are revealed.
>
> (Hacker and Doolen, 2003) p 285

A heart wrenching example of the corollary of the balance paradigm is given by Martin (1999) when describing the effects of the pressure of academic staff in a changing work environment. She quotes a lecturer of economics thus:

> I gave to my work what I should have given to my family. I now have no family….and I soon may have no job. (Martin, 1999 p 22)

Hacker and Doolen find that sacrifice is needed to succeed in the balancing paradigm with dire results for staff, their families and society, as evidenced by Martin's findings above.

> The choice has become work or family in terms of time, physical strength, mental capacity and spiritual energies. Work often wins. Employees have given this mega-system, the organization, the bulk of their attention and consciousness. Time, talent and treasure go to work, while a high dose of rhetoric is given to the family.
>
> (Hacker and Doolen, 2003 p 287)

Hacker and Doolen challenge the current understanding of the work-versus-family problem, in that they see the 'definition' rather than the dilemma as the 'problem'. Hacker and Doolen argue that instead of solving the work versus family problem, the whole person should be considered first and foremost in all endeavours associated with human resource management, and they further contend that this is possible with a shift to a mindset to view an individual's life purpose as central to their lives.

> The broader perspective needed in the attempt to find a solution to the work versus family issues is that work and family flow from the same source, a personal life and a personal life with a purpose. When an individually tailored purpose is brought to consciousness, the balance equation no longer constrains the actions of the individual. Life pieces flow from this purpose and exist in harmony, not conflicting and competing for time. In other words, both work and family flow from, towards and throughout the lives of individuals in keeping with their own life's purpose.
>
> (Hacker and Doolen, 2003 p 288).

Hacker and Doolen's views may be confronting, but they do provide a salient example of how a shift of mindset might move the knowledge economy agenda forward which also fits with the views of Senge (1990) and Drucker (2000) who tell us that we need to be asking the uncomfortable "who am I?" questions if we are to develop personal mastery and identify our own mental models, which in turn are necessary to know to work effectively as knowledge workers.

It is clear from the literature, that there will be many challenges at the organizational level, not the least finding a suitable organizational structure and management style to best develop and retain knowledge workers.

> There are two key points [for leaders] to remember: one, you cannot 'herd' knowledge workers using traditional command and control methods and two, knowledge workers require a certain environment to be productive…Leaders now have to respect different individual workers' learning and communications styles; 'one-size-fits-all' management is no longer appropriate.   (Western Management Consultants, 2002 p 1)

It is also clear that much 'development' is necessary to move individuals, teams and organisations into the knowledge economy. There are already many models and theories cited in contemporary literature about organisational and professional development, but one in particular—workplace learning—is well positioned to move organisations forward in their quest to become knowledge organisations. When organisational and professional development is required, particularly when dealing with changing and developing workplace culture—a move to a team based structure, for example—it is reasonable to assume then that the workplace itself might also provide the locus for this development.

Workplace Learning – its place in moving the knowledge organisation agenda forward

Senge's learning organization theory is built on the premise that engagement of individuals to learn is critically important. Indeed the first of the five disciplines that make up Senge's learning organization theory is 'personal mastery' (Senge, 1990 p 7) where Senge is particularly interested in "…the connection between personal learning and organizational learning, in the reciprocal commitments between the individual and organization, and in the special spirit of an enterprise made up of learners" (Senge, 1990 p8).

For contemporary organisations to move towards developing Drucker's (2000, pp 1-3) organisational agenda of providing a workplace environment conducive to knowledge work, much learning—cultural, organisational, to mindset, etc—will need to occur.

Workplace learning therefore, is one way of optimally managing the necessary personal, professional and organizational learning to move the organisation forward—for example, moving to a team based structure for administrative staff. Generative learning in the workplace is possible by providing strong leadership, an appropriate organisational framework, and support and encouragement for workers to seek "the sort of learning which builds on itself, which generates and refines questions and reflects on practice and knowledge, and which is undertaken out of genuine commitment and curiosity" (Martin, 1999 p 60) at both an individual and an organisational level.

> Team learning is vital because teams, not individuals, are the fundamental learning unit in modern organisations….unless teams can learn, the organisation cannot learn.
>
> (Senge, 1990p 10)

Knowledge management literature informs us that 90% of organisational knowledge is not written down and that 70% of what is learnt [at work] is never taught" (Goodhead, 2002 p 2). Workplace learning acknowledges that both informal and formal learning occurs in the workplace and if managed appropriately, both forms of learning could be harnessed for the strategic advantage of the organization.

The seamless nature of knowledge work and learning, for individuals and work groups in the contemporary organization, where continuous quality improvement, generative and double-loop reasoning and learning[10] is sought, is exactly the type of environment where the workplace learning model of development could have a positive impact.

Workplace learning, for example, could be employed to assist workers to identify defensive routines and help defuse conflict which is likely to manifest with any major change of mindset. It could also be employed when encouragement to move to new ways of working, from a vertical controlling structure to horizontal structures like self managed teams or communities of practice, is required. Senge's (1990) development of the five disciplines for the learning organization, draws heavily on the research of Argyris and Schön (Argyris and Schön, 1978) "who for more than twenty-five years have studied the dilemma of why bright, capable managers often fail to learn effectively in management teams" and concluded that defensiveness is one of the key reasons for the inability to perform well in these teams.

---

[10] Argyris and Schön (1978) define double loop reasoning as a way of working which attempts to see the alternative point of view and which positions the problem differently for the purpose of seeing a way forward. They define double loop learning as being able to open up to criticism to discuss concerns and alternatives. It means learning from how others see the situation, trying to see the problem in another light, letting go of blaming and focusing on working positively to bring about satisfactory resolutions.

Defensive routines—"entrenched habits we use to protect ourselves from the embarrassment and threat that come with exposing our thinking" (Senge, 1990 pp 249 – 250)—and conflict must therefore be acknowledged and dealt as early as possible.

> Defensive routines form a sort of protective shell around our deepest assumptions, defending us against pain, but also keeping us from learning about the causes of the pain. The source of defensive routines according to Argyris, is not belief in our views or desire to preserve social relations, as we might tell ourselves, but fear of exposing the thinking that lies behind our views.   (Senge, 1990 p 250)

Workplace learning simply situates 'learning' within the workplace, and is underpinned by the same principles of learning that is found in any classroom. Research into student learning literature generally finds that "all learning is rich, complex, and occasionally unpredictable. Building effective environments to foster it [then] must rest on collective knowledge and active discussion of this complexity" (Ewell, 1997 p 2). Martin (1999) also draws heavily on student learning literature in her work on developing the learning university.

It is appropriate therefore to identify from the student learning literature what is assumed knowledge about learning and the promotion of learning. Ewell's assumptions on learning in appendix six, based on his thorough review of the literature, are relevant whether situating learning in the workplace or in a classroom. The thread of these assumptions can be followed through the literature on workplace learning (i.e. workplace curriculum, learning network theory, team learning) as a way of describing "the social arrangements, the person-to-person relationships and interactions that bring forms of workplace learning into existence" (Henry et al., 2002 p 14).

> The question of interest now is how can employees, as individuals within workbased teams, establish 'organisational' learning arrangements through their interactions with each other which, in turn, expand the learning opportunities 'their organisation' can make available to them?   (Henry et al., 2002 Henry in p 14)

Billett (2003) aptly conceptualises workbased learning as "affordances, engagements, intentionality and continuity" (Billett in Billett et al., 2003 p2). This description distils his earlier work (Billett, 2001) into a succinct means of identifying the key components of workplace learning and the necessary interplay between identified factors, thus providing the following useful framework for situating learning in the workplace:

Billett's Framework for Workplace Learning

- the workplace provides opportunities (affordances) [for learning]
- the worker must actively choose to take advantage of affordances.
- the reciprocal interaction between affordances and individual engagement can be described as co-participation
- there is a need to appreciate the employer's agenda (intentionality) and the workers' interests/goals (individual continuity)   (Billett in Billett et al., 2003 p2)

Billett's framework recognises the importance of a commitment by the individual to take advantage of learning opportunities afforded to them in the workplace, whilst also focussing on the organisational agenda. The engagement of individuals to learn is a critical factor in 'learning organisation' and 'knowledge organization' theory too.

Workplace learning can assist individuals and teams learn more about themselves, cited as being critical to their development in becoming knowledge workers (Senge, 1990; Drucker, 2000). Importantly, the workplace may be the only legitimate place to learn about the unique cultural and organisational shifts necessary to move an organisation to become a knowledge organisation.

> Understanding our strengths, articulating our values, knowing where we belong—these are essential to addressing the great challenges of organizations…Effective organizations put people in jobs in which they can do the most good. They place people—and allow people to place themselves—according to their strengths.
> (Drucker, 2000 pp 2-3)

Conclusion

This paper provides an overview of the issues now facing contemporary organizations as they move toward a knowledge economy. It identifies strategies and models in current literature to guide organizations and individuals interested in developing the notion of the knowledge economy, from logical change management processes to the identification of two key premises for the development of individuals and organizations—systems thinking and the ability to change mindset.

In this paper I have argued that the role of general staff in contemporary tertiary organizations is invisible in the literature, despite the fact that general staff play a vital role in the support of the core business of this sector—teaching and research.

The future success of the knowledge organization hinges on the development of its staff into "creative, independent, resourceful, innovative, enterprising, co-operative people who learn new things throughout their lives" (Andrews, 2003 p 16). In the case of a tertiary sector knowledge organization this means the development of both academic and general staff.

I recommend that studies into the preparedness of general staff and their appropriate management in a knowledge organization be undertaken, before a complete picture of the tertiary sector's readiness to operate in the expected knowledge economy can be fully understood.

Heather Davis
8 December, 2003

Appendix One: Andrews "Capabilities of Knowledge Workers" Skills Set [11]

Kate Andrews's review of knowledge-focussed literature identifies the following characteristics for the knowledge worker:

- High pattern recognition skills in order to apply existing skills and knowledge to new problems
- Flexibility and tolerance for ambiguity
- Ability to learn and a strong sense of the importance of lifelong learning
- Strong problem-solving and sense-making skills
- Research and analytical skills
- Ability to manage information overload
- Ability to be productive and creative
- Ability to rapidly acquire new skills

---

[11] Henry, J. & Smith, P. 2003, *Professional Development Models for the Future Project Paper 2: Contemporary models for professional development in the knowledge era*, Draft, RIPVET for ANTA, pp 1 - 25.

Appendix Two: Peter Drucker

The enduring theme in Drucker's work over the last forty years as a management futurist, has been to look to the future whilst referring to the past and the necessity to be open to the possibilities and opportunities that emerge. The ability to be able to change mindset in the individual, organisation and society is seen as critical as is the importance of social recognition of the changes.

Change of mindset

Systems thinking

Drucker's (2000) article "Managing knowledge means managing oneself" works through the premise that people, for the first time in history, have choices and will have to manage themselves, and do this effectively they will need to think about the following:

Know yourself

Reflect on your strengths and what you are good at.

Build on strengths

Improve productivity

See the role of the social sector in a new light, not just what volunteering can do for the non profit organisation (social responsibility), but what it can do for the volunteer (social opportunity, i.e. development of social capital)

Appendix Three: James "Thinking in the Future Tense" Skills Set [12]

James believes that the following eight skills are the basic building blocks for understanding and adapting to change. By being able to 'think in the future tense' means to understand how the currents of technological change will affect your life and your work, how economic changes will affect your business and it place in the global market, how demographic and cultural changes will alter your self-perception, your perception of others and of human society as a whole. (James, 1996 p 24)

Perspective

Pattern Recognition

Cultural Knowledge

Flexibility

Vision

Energy

Intelligence

Global Values

---

[12] James, J. 1996, *Thinking in the future tense: a workout for the mind*, Simon & Schuster, New York. p 24

Appendix Four: Elaine Martin [13]

Elaine Martin focuses on Senge's learning organisation theory (see appendix five) to chart organizational change. Her work about working in and through paradoxes in academic life and how Senge's 'systems thinking' discipline should be applied is salient to this study. Martin's book focuses on:

> Changes to academic work
>
> Experiences of change in academic work
>
> Learning and teaching in higher education
>
> Organizational change and learning organizations
>
> Finding a way forward
>
> Paradox one: Visions and missions and reality
>
> Paradox two: Collaboration and independence
>
> Paradox three: Accountability and reward
>
> Paradox four: Encouraging change: valuing the past, preparing for the future
>
> A better working life

---

[13] Martin, E. 1999, *Changing Academic Work: Developing the Learning University*, Society For Research Into Higher Education & Open University Press, Buckingham, UK.

Appendix Five: Senge's Five Disciplines for the Learning Organization [14]

Personal Mastery	Personal mastery is the discipline of continually clarifying and deepening our personal vision, of focusing our energies, of developing patience, and of seeing reality objectively. As such it is an essential cornerstone of the learning organization… An organization's commitment to and capacity for learning can be no greater than that of its members.
Mental Models	Mental models are (often unconscious) deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action.
Building Shared Vision	When there is a genuine vision, people excel and learn, not because they are told to, but because they want to. What has been lacking is a discipline for translating individual vision into shared vision, a set of principles and guiding practices to unearth shared 'pictures of the future' that foster genuine commitment and enrolment rather than compliance.
Team Learning	The discipline of team learning starts with "dialogue", the capacity of members of a team to suspend assumptions and enter into a genuine "thinking together".
Systems Thinking	Systems thinking is a conceptual framework, a body of knowledge and tools that has been developed over time to make the full patterns of human and business endeavours clearer, and to help us see how to change them effectively. Systems thinking is the fifth discipline, integrating these disciplines and fusing them all into a coherent body of theory and practice. By enhancing each of the other disciplines, it continually reminds us that the whole can exceed the sum of its parts.

---

[14] Senge, P. 1990, The fifth discipline: the art and practice of the learning organization, Doubleday, New York. pp 6-13

Appendix Six: Ewell's Assumptions on Learning [15]

What we know about learning	What we know about Promoting Learning
The learner is not a "receptacle" of knowledge, but rather creates his or her learning actively and uniquely.	Colleges and Universities remain "novice cultures" in developing approaches consistent with the following insights. Rather than being guided by an overall vision of learning itself, established through systematic research and the wisdom of practice, reform efforts tend to be particularistic and mechanical…yet decades of experimental work in educational psychology and instructional design have taught us a lot about the relative values of specific pedagogical settings and approaches.
Learning is about making meaning for each individual learner by establishing and reworking patterns, relationships and connections.	
Every student learns all the time, both with us and despite us.	
Direct experience decisively shapes individual understanding.	Promote approaches that emphasize application and experience.
Learning occurs best in the context of a compelling "presenting problem".	Promote approaches in which faculty constructively model the learning process.
Beyond stimulation, learning requires reflection	Promote approaches that emphasize linking established concepts to new situations.
Learning occurs best in a cultural context that provides both enjoyable interaction and substantial personal support.	Promote approaches that emphasize interpersonal collaboration
	Promote approaches that emphasize rich and frequent feedback on performance
	Promote curricula that consistently develop a limited set of clearly identified, cross-disciplinary skills that are publicly held to be important.

---

[15] Ewell, P. T. 1997, 'Organizing for learning', *AAHEBulletin.com,* vol. 2003, no. December, pp. 1 - 5.

References

Andrews, K. 2003 unpublished, *Professional Development Models for the Future Project Paper 1: a Review of Selected Knowledge-Focused Literature*, Draft Literature Review, ANTA, pp 1 - 23.

Argyris, C. & Schön, D. 1978, *Organizational Learning: A Theory of Action Perspective*, Addison-Wesley, Reading, Mass.

ATEM, 2001, *Strategic Directions Statement and Priorities 2002-2004*, ATEM, pp 1 - 3.

Billett, S. 2001, *Learning In The Workplace: Strategies For Effective Practice*, Allen & Unwin, Sydney.

Billett, S., O'Connor, B. & Sachs, P. 2003, The Perspective: The Workplace and Learning from Experience, *Building An Inclusive Model For Integrating Learning at Work: Proceedings of 2nd International Practice-Orientated Education Conference*, Center For Work And Learning, Northeastern University, Boston, pp. 1-4. <http://www.poe.neu.edu/workplace.htm>

Bridges, W. 1991, *Managing Transitions: making the most of change*, Addison-Wesley, Reading, Mass.

Drucker, P. F. 1999, 'Beyond the Information Revolution', *The Atlantic Online,* October, pp. 1 - 5. <http://www.theatlantic.com/issues/99oct/9910drucker.htm>

Drucker, P. F. 2000, 'Managing Knowledge Means Managing Oneself', *Leader To Leader,* No. 16, Pp. 1 - 4.

Ewell, P. T. 1997, 'Organizing For Learning', *AAHEBulletin.com,* 2003, December, pp. 1 - 5. <http://aahebulletin.com/public/archive/ewell.asp?pf=1>

Goodhead, P. 2002, '*Cadence Occasional Paper: Strategies for building human resource capital*', Cadence Consulting Ltd, Wellington, NZ, pp 1 - 4

Hacker, S. K. & Doolen, T. L. 2003, 'Strategies For Living: Moving From The Balance Paradigm', *Career Development International,* Vol. 8, No. 6, pp. 283 - 290.

Henry, J. & Smith, P. 2003 unpublished, *Professional Development Models for the Future Project Paper 2: Contemporary Models for Professional Development in the Knowledge Era*, Draft, RIPVET for ANTA, pp 1 - 25.

Henry, J., Smith, P. & Angwin, J. 2002, *'ECV712 Situated Learning at Work: Study Guide',* Deakin University, Geelong.

James, J. 1996, *Thinking in the Future Tense: A Workout for the Mind*, Simon & Schuster, New York.

Martin, E. 1999, *Changing Academic Work: Developing the Learning University*, Society For Research Into Higher Education & Open University Press, Buckingham, UK.

National Electronic Library for Health, 2001, *'What is a Knowledge Worker?'* NHS, UK.

Nelson, B. 2003, *Our Universities: Backing Australia's Future*, Commonwealth of Australia, Canberra.

Peters, T. 1994, *The pursuit of WOW! Every person's guide to topsy-turvy times*, Vintage Books, New York

Raelin, J. A. 2003, *Creating Leaderful Organizations: How to Bring Out Leadership In Everyone*, Berrett-Koehler, San Francisco.

Senge, P. 1990, *The Fifth Discipline: The Art And Practice Of The Learning Organization*, Doubleday, New York.

Struckman, C. K. & Yammarino, F. J. 2003, 'Managing Through Multiple Change Activities: A Solution to the Enigma of the 21st Century', *Organizational Dynamics,* Vol. 32, No. 3, pp. 234 - 246.

Tymon, W. G. & Stumpf, S. A. 2003, 'Social Capital in the Success of Knowledge Workers', *Career Development International,* Vol. 8, No. 1, pp. 12 - 20.

Western Management Consultants, 2002, *'Herding Knowledge Workers? Summarised from Discussions Held at the Strategic Leadership Forum, Toronto, by a Group Discussing Peter Drucker's Book "Management Challenges Of The 21st Century"* ', Western Management Consultants, Canada, pp. 1-2. < http://www.wmc.on.ca/articles/article06.htm>