

**IS THE INCIDENCE OF
TELECOMMUTING
AS AN ALTERNATIVE
WORK ARRANGEMENT
INCREASING IN THE
FEDERAL PUBLIC
SECTOR?**

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Is the incidence of
telecommuting as an
alternative work arrangement

ABSTRACT

Telecommuting is an alternative work arrangement which allows individuals to work away from the office on a full time or part time basis whilst commuting electronically. In the case of the Federal Public Sector this is mainly associated with part time homebased work. As work cultures continue to evolve and as the Federal Public Sector looks for new and better ways to make the best use of its resources, telecommuting is emerging as an effective work practice that meets these challenges.

This paper investigates whether the incidence of telecommuting as an alternative work arrangement is increasing in the Federal Public Sector and if so, at what rate of growth. It describes the nature of change in the workplace as a result of the introduction of telecommuting and identifies factors which contribute to its success and failure. Critical issues, the current and future status of telecommuting and its trends are also examined.

It was found that the current penetration and participation rates within the Federal Public Sector are low, but that the incidence of telecommuting is increasing at a slow rate. There is a favourable acceptance towards telecommuting within the workplace and with its gradual implementation will enhance work practices within those areas.

Telecommuting is emerging as an effective work alternative which is becoming more cost effective, and has come a long way with the assistance of technology.

It is expected that telecommuting will increase exponentially as the acceptance increases and culturally more technically literate persons enter the workforce.

DECLARATIONS

I certify that this Thesis contains no material that has been accepted for the award of any other degree or diploma in any institute, college or university, and to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due reference is made in the text of this thesis.



Rosa M Vari

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CHAPTER 1 - THE PROBLEM

Introduction

As part of a changing work environment, organisations are adapting to the downsizing, streamlining and restructuring through offering flexible work alternatives.

Telecommuting is a subset of the broader category of teleworking and is an alternative work arrangement which can be defined as working away from the office on a full time or part time basis whilst commuting electronically.

Telecommuting is the temporary relocation of an employee's worksite either to her/his home, or to another closer to home worksite provided by the employer. There are four different options of telecommuting:

- Work at home - which is where employees perform their work tasks at home on designated days and times,
- Satellite office - these are remote office locations usually placed within a large concentration of employee residences, allowing employees at a single company to share common office space and reduce the time and expense of the commute to and from the main office facility,
- Neighbourhood work centre - which provides work space for employees of different companies in one location. Each company housing employees at these locations is usually responsible for the administrative and technical requirements of its employees (Benhamou & Saal 1995, pg 2), and
- Telecottages - which provides computing and telecommunication services for the use of the local community. They have existed in Australia since 1992, and there

are almost 150 telecottages, mainly located in rural centres, across the nation (Susan Munter Communications 1996, pg 4).

Telecommuting also represents the mobile workforce - employees who are constantly on the road using technology as the main link to centrally located resources (Benhamou & Saal 1995, pg 2). Computers, cellular phones, fax, and communications links such as ISDN and dial-up access have removed the physical barriers that once required workers to be in their offices (Benhamou & Saal 1995, pg 2).

In particular, the public sector is looking for new and better ways to make the most and best use of its resources. Forced to explore new ways to support the work effort, telecommuting is emerging as an effective work practice that meets this challenge. (National Business Bulletin 1995, pg 54).

In Australia, the public sector comprises Federal, State and Local governments as well as government enterprises and authorities (Dillon & Stanton 1992, pg 479). Together they ensure that goods and services are produced ie health, education, and public transport, inequality caused by the markets is reduced and instability in the market is corrected (Dillon & Stanton 1992, pg 320).

There were many reasons as to why telecommuting within the Federal Public Sector was chosen as the focus of this paper. The main reason stemmed from the knowledge that the Homebased Interim Award 1994 was in existence. This award was approved by the Australian Industrial Relations Commission on February 14 1994, and was

negotiated between the Public Sector Union and the Department of Industrial Relations (Public Sector Union March 1994, pg 4).~~✕~~The award covers terms and conditions of undertaking telecommuting as a viable work alternative within the public sector.

As a result of the existence of this specific award, this lead to a further curiosity as to why the award was introduced into the public sector and why Australia remained as the only country with an industrial award.

(Another reason for the interest into telecommuting as a viable work alternative was due to the fact that very little work of this kind was being done in Australia and it is certainly an area which is beginning to attract attention. The other main reason why the Federal Public Sector was chosen was because it appeared that telecommuting was experiencing growth within this sector and the need to examine this was of particular interest because of their changing structure.

For two decades or so, telecommuting, has been little more than an occasional exception to the rule. Supervisors have worked out informal arrangements with individual workers, usually because an employee has a particular need to work from a home office or other location for part or all of the work week. The concept has gained greater acceptance among employers as more companies - small and large - and state, local, and federal governments have begun to explore telecommuting (Maynard 1994, pg 61).

The introduction of telecommuting requires an organisational and cultural change within the public sector and this change lays mainly with management (Lynch 1995, pg

37). The virtual office, or alternative office, is one of the most effective strategies for dealing with these changes (Greengard 1994, pg 70).

Background to the problem

Telecommuting has come a long way from its humble beginnings about 20 years ago. Jack Niles, founder of the Los Angeles-based Telecommuting Research Institute, was the first person to extensively research telecommuting as an alternative to travelling to work. The first telecommuting project he worked on was sponsored in 1973 by an insurance company that set up a telecommuting centre and hired students from a nearby high school for data-entry work. The single biggest change in telecommuting, Niles says, is the invention of the personal computer, which allows people in all types of fields to telecommute (Lockwood 1994, pg 12).

In the past, the issues and benefits to telecommuting were unknown, procedures were undefined, manager/employee suitability were unrecognised, small number participation were in existence and internal champions were the drivers. Now there is planned participation, increased number of participants, technology trials and approvals, clear guidelines documented, ongoing communication and awareness and review and evaluation (National Business Bulletin March 1995, pg 55). Also, at present, the leading drive is from the “guerilla teleworkers” who want access to the corporation in the evenings or on weekends, or nomadic teleworkers whose jobs demands they have access to the systems from remote locations (Australia currently remains the only country with a Public Sector Industrial award covering telecommuting (Head 1994, pg 34). On February 14 1994, the Australian Industrial Relations Commission approved

the Consent Homebased Interim Award negotiated between the Public Sector Union and the Department of Industrial Relations (Public Sector Union 1994, pg 4).

Issues relevant to the move by the Federal Public Sector to accept telecommuting include the desire of the central governments within Australia to reduce the size and or cost of their public service, make them more accountable, make them more responsive to political direction, make them more effective, and impart into the public service management practice more entrepreneurship and business like techniques and practices (McCallum 1985, pg 6). As such, departments are discovering that telecommuting is more than just a benefit that they can offer employees who have stressful schedules and long commutes. Employers are also beginning to see telecommuting as a way to become more effective, cut costs, and save money. As they become aware of these advantages, they are bound to encourage or demand that telecommuting programs go into place within their departments. As the practice spreads, it could influence more than just the way employees and work are managed (Wood 1994, pg 3). The cultural acceptance of telecommuting is also getting a push from upper management who have recently identified telecommuting as potentially helpful with issues such as saving money and becoming more effective, while serving customers better (Wood 1994, pg 3).

In the early 1990's telecommuting in Australia needed to overcome a number of problems before it could become popular. Firstly, Australians tend to adopt new technologies in their homes slowly. This has been documented by The Yankee Group Asia-Pacific in 1994, as being due to the lack of telecommuting equipment in the

Australian home, such as computers, faxes, modems and extra phone lines. This is slowly changing as the price of such equipment becomes more affordable and as more companies expand and utilise technologies such as the internet, to improve the way they do business.

Other problems which need to be overcome include increasing costs, adopting more rigid relationships between managers and staff, for those who work at home and the introduction of industrial laws which would regulate the home workplace. (Yankee Group Asia-Pacific 1994, pg 7).

Banaghan (1996, pg 74) suggests that the main barrier to real growth of telecommuting in Australia is that many companies view the process as unnecessarily complex.

Telecommuting is a timely response to today's pressing problems. Maynard (1994, pg 62) states that the focus is on community, economic development, and making the maximum use of resources. Therefore with the adoption of telecommuting we address these points.

Statement of the problem

This thesis is designed to determine whether the incidence of telecommuting as an alternative work arrangement is increasing in the Federal Public Sector and if so at what rate of growth. As a result critical issues, current and future status of telecommuting, its strengths and weaknesses will be examined.

Telecommuting arrangements demand a whole new set of corporate behaviours: trust, individual empowerment, personal accountability, and teamwork. It has been suggested that the implementation of telecommuting will prove fundamental to the improvement in the individual's role in the workplace (Smith 1994, pg 13). With the recognition that employees represent a broad spectrum of ethnic and cultural groups, age groups and lifestyles (Tarrant 1992, pps 18-21), this alternative work arrangement is a means of addressing the change in work culture.

Purpose of the study

The level of interest in telecommuting has increased dramatically, but it is unclear exactly how much telecommuting is occurring within the Federal Public Sector.

Telecommuting penetration (the percent of workers who telecommute) is unknown, mainly due to confusion over definitions (Handy 1995, pg 99).

But is telecommuting growing as fast as its popularity? It's difficult to tell. Part of the problem is that few surveys have actually attempted to count telecommuters.

Employers themselves are probably not aware of the full extent of telecommuting by their employees, as much of it takes place informally and occasionally. Employees who telecommute may not even be aware that they do, simply because they haven't yet heard of telecommuting. The other part of the problem is that the surveys that manage to count telecommuters do so in different ways, using different definitions of who is and who is not a telecommuter (Handy 1995, pg 100).

The main purpose of this paper is to investigate whether the incidence of telecommuting within the Federal Public Sector is increasing and at what rate of growth. Flexible work arrangements are an option which allow employers to adjust to the needs of employees whilst meeting the goals of the departments. It is also significant to outline some of the central issues relating to the introduction of telecommuting, grasping an understanding of telecommuting concepts and current work arrangements. The research, will provide valuable information into telecommuting, by identifying how it can flourish and accelerate as more and more people become aware of its advantages and examining ways in which the Federal Public Sector uses telecommuting and what benefits, if any it receives. The paper will also provide valuable insight to other sectors, examining the strengths and weaknesses of this arrangement.

The outcome of this study will attempt to determine that the incidence of telecommuting is increasing in the Federal Public Sector and further provides an insight into its rate of growth. It endeavours to show that telecommuting is emerging as an effective work alternative which is becoming more cost effective, has come a long way with the assistance of technology and meets the challenges of making the best use of resources. It will also provide information into the acceptance of telecommuting within the Federal Public Sector as departments opt to take advantage of this work method. This study also attempts to show that telecommuting needs to be made less complex in order for growth to continue and for it to thrive in the future. It also provides insight into its current penetration and future outlook, within the Federal Public Sector in particular and provides advantages and disadvantages of such implementations.

Question to be answered and objective investigated

The specific question to be answered within this paper is whether the incidence of telecommuting as an alternative work arrangement is increasing within the Federal Public Sector. The main objective addressed is to analyse and measure the rate of growth of telecommuting within this sector. In order to do so the components of telecommuting are defined and described and an analysis of advantages and disadvantages of such implementations are addressed. Organisational change is also examined.

The thesis also reviews related literature, existing studies and historical data, addressing in particular the evolution of telecommuting, components, reasons for implementing telecommuting, hindrances, advantages and disadvantages, implementing strategies (routes and stages), and telecommuting trends. An analysis and evaluation of the findings is then presented along with a final summary of topics covered, and conclusions and recommendations for additional research.

CHAPTER 2 - LITERATURE REVIEW

Introduction

In reviewing the related literature it was of no surprise that little research within the area of telecommuting has been done to date within Australia. It is relatively fresh and new, and appears to be an undiscovered work alternative that hasn't really taken off within Australia for a number of reasons. The research that does exist covers the basic criteria of advantages and disadvantages, but to no extent is there a wealth of knowledge that can be referenced.

The need for this study as a main consequence is to determine whether the incidence of telecommuting has increased within the Federal Public Sector and in turn measuring the rate of growth within this area.

Gordon (1986) is one of the main authors within the telecommuting area, who has addressed issues such as the requirements, understanding the trends behind telecommutings growth, considering and selecting remote work locations, selecting the right jobs and people, implementing telecommuting and advantages and disadvantages of telecommuting. Other similar work has been written by Greengard (1994), Maynard (1994), Lockwood (1994) and Weiss (1994), however very little research has been conducted in this area.

For two decades or so, telecommuting has been little more than an occasional exception to the rule. Supervisors have worked out informal arrangements with individual workers, usually because an employee has a particular need to work from a home office

or other location for part or all of the work week. But now the concept is gaining greater acceptance among employers as more companies - small and large - and state, local and federal governments have begun to explore telecommuting (Maynard 1994, pg 61).

The Federal Public Sector comprises government departments which provide goods and services in security, employment, education and training, foreign affairs and trade, health, housing and community services (Trotman 1992, pg 52). Issues relevant to the Federal Public Sector include the desire of the central governments to: reduce the size and/or cost of their public services; make them more accountable; make them more responsive to political direction; make them more effective; and import into public service management practice more entrepreneurship and 'business-like' techniques and practices (McCallum 1985, pg 6). Therefore as with other sectors, it is evident that it too is faced with the restructuring of labour markets, and other fast as well as dramatic changes within the information society (European Community Telework Forum, 1996, pg 9). As a result, management of the Federal Public Sector is looking for new and better ways to be more competitive and make the best use of resources. Telecommuting - working for part of the time at a location (home, satellite or mobile office) away from the usual work base - is emerging as an effective work practice that meets these challenges.

Telecommuting is a subset of the broader category of "teleworking". Teleworking is defined as using telecommunications to conduct business at a distance, and includes videoconferencing, online database searches, facsimile transmission, cellular phone

calls, voice mail, and electronic mail. Even the use of the ordinary telephone for work could be considered a form of teleworking (Handy 1995, pg 101). By virtue of the technology available, teleworkers are now able to determine how they work and where they work (Berlin & Denbigh 1996, pg i).

Telecommuting in particular covers a host of alternatives to the traditional office routine. The most common scenario is working at home when special projects demand uninterrupted time, but the concept includes everything from occasional at-home work to formal programs with established guidelines involving people working out of the office 2 or 3 days a week. Some companies have even done away with office space altogether and have a staff that works entirely from remote locations (Wood 1994, pg 143). The Federal Public Sector in particular relies on the rules and regulations set forth within the Homebased Interim Award 1994. In particular this specifies that two days out of the working week needs to be within the office. The broad subjects contained within the award include parties bound, duration, definitions, requirements for approval, job characteristics not considered appropriate for home based work, terms and conditions, termination and re-negotiation, dispute avoidance and settling procedures (Public Sector Union 1994, pg 9 & 44). The Federal Public Service is heavy on regulation and it is of no surprise that the Homebased Interim Award exists.

Components

The four components which make up teleworking include the work, the people, the technology, and management.

Work

There are three types of work which are successfully carried out by workers who work outside the office environment. These include work assessed by results only, for example consultancy, work which requires a high degree of individual creativity, for example journalism, and work which can be well defined and easily measured, for example computer programming. Suitable jobs for telecommuting involve tasks that are easily measured, tasks that require relatively little unscheduled face to face contact and tasks that don't require frequent access to files, equipment, or supplies that can't easily or economically be moved to the remote site (Kelly & Gordon 1986, pps 52-53).

Jobs within the public sector, which are considered suitable include: auditors, policy/research, information technology, and special projects (Public Sector Union 1994, pg 8).

People

Telecommuters in general, must want to participate in the program, be self motivated, possess good time-management and organisational skills, require minimal supervision, be able to maintain a consistently high level of productivity and require only minimal social interaction (Caudron 1992, pg 5). They must also be able to work well independently, enjoy responsibility, and conform to a trusting relationship (Weiss 1994, pg 52).

Technology

Telecommuting has been made possible today largely due to the ability of technology to service its requirements. There is no reason in theory why telecommuting could not have occurred 10 or 20 years ago. Practically, however, it has only been possible since the arrival of an effective means of communication between worker and office. Such communication has been facilitated by the convergence of communications and computer technologies (Scott & Argy 1994, pg 1). Requirements of a telecommuter include: workstation or terminal, communications link, application software and other resources relevant to the position (Benhamou & Saal 1995, pps 21-23).

Developments in the use of ISDN (videoconferencing, fast file transfer), the Internet (email and World Wide Web) as well as increased interoperability of Information Technology (IT) systems make telecommuting a practical alternative (Berlin & Denbigh 1996, pps 4-5).

Vision is seen as the "missing link" in telecommuting. The real breakthrough in adding visual capability to telecommuting will be provided by the establishment of a nation wide network of fibre-optic cable, which will be able to carry full motion, high-quality video images and graphics. More affordable video cameras attached to home computers will make two-way visual communication easy and inexpensive. But, the technology is still expensive and the quality of picture transmitted is less than ideal via regular telephone lines (Petty 1994, pps 16-17). Within the next few years, though, broadband networks will allow us to set up work stations at home, linked constantly to the office

network (Zampetakis 1994, pg 3). The addition of visual capability to telecommuting technology eliminates many of the managerial problems inherent in the current generation of telecommuting. Rapid personal interchange, visual contact, and the exchange of graphics can all occur easily, as can the observation and monitoring of individual work or team projects (Petty 1994, pps 16-17). This feature will assist in confronting one of the major barriers facing telecommuting - management attitudes.

From a technical point of view there has been a continuation of the race to increase bandwidth and of compression technologies. ISDN and Asynchronous Terminal Mode (ATM) are becoming more readily available. The Cable Television companies are creating real competition to the traditional telephone providers. The result of this is to make telecommuting more accessible both from a cost and a practical point of view (European Community Telework Forum 1996, pg 39).

Mitchell (1996, pg 31) outlines a number of developments likely to enhance telecommuting possibilities over the next two years:

- Personal computers spread into the home - computers in the home are on an upward trend. This is partly due to the increased number of outlets and mail order chains;
- ISDN - ISDN lines provide telecommuters with fast file transfer and access to collaborative working tools such as videoconferencing;
- Internet phones - video and voice compression techniques have made the infamous Internet phones possible by compressing voice data into digital signals which can be

transmitted across the Internet. Although the quality is not as good as that from standard lines, it is acceptable and substantially cheaper;

- Email and the Web - dynamic links within email messages are changing the nature of information that is transmitted over the Internet. A number of software companies are converging email reading software with web browsers so that instead of attaching a file to an email, the sender simply includes its URL (uniform resource locator). The reader then clicks on the URL and is immediately switched across the Internet to the source of the document, which he or she can read or download as they please.
- Cable modems will allow users to download and transmit digital data, video and telephony over the carriers' new Hybrid Fibre Coaxial (HFC) networks 1000 times faster than analogue telephone modems. HFC systems enable broadband, bi-directional communications for homes, offices and schools, bringing many new services to customers in urban areas. Together with the Internet, ATM switching and video servers, the HFC networks are likely to transform the way many Australians conduct their personal and business lives (Whittle 1995/96, pg 59).

Providing the right support for telecommuters, remote technical support, is a service that many experienced telecommuters need. A number of computer dealers and specialists are offering premium rate telephone help lines, or remote diagnosis assistance using modems (Berlin & Denbigh 1996, pg 19)

Management

The distribution of workers via telecommuting carries with it some challenges as well.

Management issues cover communication, interaction, equipment, services and security.

Where in the past communication with an employee was a relatively simple task, the physical absence of the employee introduces barriers to that communication. Along similar lines, management must also address the issue of how information is disseminated throughout the organisation. Traditionally this has occurred via informal communication channels in the office and via formal meetings held on a regular basis, where everyone outlines the matters of significance they have been dealing with. In addition to communication problems, a manager should also address the logistics of who is responsible for what equipment and services used by the employee.

Management also needs to address security issues addressing the location of the workstation in the home and its use. The confidential nature of an organisation's information is fragile (Scott & Argy 1994, pps 2-3). The Australian Public Sector Union infers that those items which must be exhausted with regards to security arrangements include: risk analysis, threat assessment, physical security, personnel security and computer and communication security (Public Sector Union 1994, pg 39).

This new business paradigm demands a whole new set of corporate behaviours ie. trust, individual empowerment, personal accountability and teamwork (Smith 1994, pg 13).

Managing the human problems associated with the introduction, acceptance and exploitation of this new resource is a major skill which is often not given sufficient attention (Ross 1994, pg 6). Because of the lack of work definition and measurement for information workers, Australian management seems to rely on time spent and work

attitude to evaluate performance. Australian management style seems to be a 'telling, controlling, dominating' one, but the style most suited to telecommuters is the more modern, 'negotiating, empowering, supporting' style (APTA Conference 1994, pg 9). The key to telecommuting is to manage by results not by overseeing (Caudron 1992, pg 1). To achieve mutually agreed upon goals, managing the invisible employee may require a new attitude and a new level of trust in managements parts (Brown 1994, pg 27). This is primarily a management-by-objective approach whereby managers set objectives with employees at the beginning of a business cycle and are evaluated based on achievement of those objectives, with occasional conversations about the progress of their work (Caudron 1992, pps 3-4).

Therefore the critical success factors of telecommuting include the identification and good specification of appropriate work, the selection of appropriate telecommuters, the provision of appropriate technology and the adoption of appropriate management techniques (APTA Conference 1994, pg 20). It is the combination of all four components which interact to achieve a successful telecommuting initiative, not just technology as most persons would assume.

Implementing Telecommuting

There simply doesn't exist in a univocal concept of telecommuting, nor do there exist any models of telecommuting that can be standardised or readily transferred from one situation to another (TELECOM 1996, pg 68). There are many items to consider when implementing telecommuting routes, stages, hindrances and reasons for implementation.

Routes

There are four main routes by which telecommuting is implemented. These are: in conventional organisations, **planned introduction of teleworking** usually involves three identifiable stages - the idea, the trial and the “contagion” by which the practice spreads out from the trial to widespread usage within the organisation; **tacit teleworking** describes another method by which teleworking spreads in conventional organisations, usually through the practices of a management elite. The elite may consist of individuals or groups who have high visibility and influence in the organisation. In flexible organisations, such as practices of professionals and some academic organisations, **teleworking is often endemic** - established tradition of flexible work arrangements; and for some, the introduction of teleworking may accompany a **move to self employment** or be a method of reducing overheads and improving productivity for an existing small business (Berlin & Denbigh 1996, pps 34-35).

The route taken by the Federal Public Service is that of a planned introduction of telecommuting and this is particularly evident with the formation of the Homebased Interim Award 1994.

Stages Of Implementation

Stages of implementation include: feasibility studies, identifying suitable jobs for telecommuting, setting up a pilot project, selecting suitable staff members, drafting and agreeing on changes to contracts and agreements, arranging training, installing the home office, mobile office or hotdesking system, providing continuing support to telecommuters and monitoring and evaluating the pilot.

The feasibility study should outline the business case including the operational, strategic, cost or employee advantages to be gained. The study should give an implementation plan covering the stages and identify the main problems likely to be encountered and suggest solutions. The first step to setting up a pilot project involves establishing a team for the teleworking pilot and the second step is to identify the parameters that will be used to assess the success of the pilot. Staff selection should be self-selecting and agreements and contracts should address issues such as: what is the likely reaction to the introduction of teleworking? Can a general agreement be reached which deals with concerns or will the trial be handled on a one-by-one basis? Is there a union to negotiate and plan with? Who will provide and pay for IT equipment and telephone lines? What arrangements will be made for private usage? (Berlin & Denbigh 1996, pps 35-42), (Public Sector Union 1994, pps 6-12).

Both management and staff will need training in order to adapt to the new circumstances. Commonly, those who have been telecommuting for some years report that lack of positive feedback becomes an increasing problem. Other issues will be the provision of technical support for corporate and other equipment usage, and continuing management contact covering: reviewing performance, determining pay and bonuses, agreeing goals - improvements in performance, individual development - counselling and training, training (both giving and receiving), general gossip and banter that forms part of all working life, providing space for brainstorming, feedback and general discussion on the operation of the department (Berlin & Denbigh 1996, pps 35-42).

A careful choice has to be made to ensure that the most appropriate communications means are used for the different types of information.

- Telephone - The telephone is a vital way of reinforcing other communications. Useful for airing problems where fax or electronic mail are too constraining, formal or unambiguous.
- Fax - The fax provides a good method of getting short, sometimes urgent, instructions across and delivering copies of documents that may be held in one location but not the other.
- Post - The organisation should instigate a method of ensuring that company mail is regularly delivered to the teleworker.
- Email - Electronic mail is a good way of transmitting information that needs to be reworked by the recipient, and keeping tabs on documents involved in a large number of projects, since most email readers provide an electronic “filing system” for messages. (Berlin & Denbigh 1996, pps 35-42), (Public Sector Union 1994, pg 9)

Companies planning to embark on a telecommuting program are advised to seek the support of top management, to form a prototype group, identify criteria for selecting program participants, to train these participants and their superiors, and to evaluate the effectiveness of the program (Matthes 1992, pg 3).

Reasons for Implementing Telecommuting

The major reasons for implementing telecommuting include:

- Improved competitiveness - large companies can keep down costs and overheads in comparison to non-telecommuting competitors. Small companies that are growing fast can expand without major capital investments.
- Better lifestyles for workers - more flexibility, less commuting stress, better balance between home and work lives.
- Environmental considerations - reduced commuting means less pollution, better use of office space, less traffic congestion.
- Improved technologies - developments in the use of ISDN, the internet as well as increased interoperability of IT systems make telecommuting a practical alternative (Berlin & Denbigh 1996, pps 4-5).

Hindrances to Telecommuting

There are many obstacles hindering the implementation of telecommuting. Firstly, there are corporate and employee security concerns. In an office building, an organisations information is well guarded by the physical difficulty of removing items from the office. Where a worker is at home, there is necessarily a transfer of information to that workers home and the storage of that information there. As such, the confidential nature of an organisations is fragile in that: there are fewer checks on how the employee can access and use the information; there is the risk of the information being intercepted during transmission between the worker and the organisation; and there is less physical security in the workers home than on business premises (Scott & Argy 1994, pg 3). Technology however has come a long way with a number of the remote-access products that have implemented good security. Some have also come a long way with special keys,

encryption techniques, and dial-back features. Reliability is also another objection. Early remote-access products didn't always work so well, from faulty file transfers to software that would hang up. Finally, some organisations abstain from telecommuting because they are concerned about how much time it takes to maintain remote users. This includes time for checking security, adding and deleting users passwords and troubleshooting. Generally it takes less than 3 or 4 hours a month to maintain these systems once the hardware and software is setup correctly (Currid 1992, pg 374).

Women's Bureau (1996, pg 10) stated that the Australian Services Union who is investigating the implications of telework for women suggested that the unions major concern with telecommuting is that it is voluntary. It must be a mutual agreement by all parties. Other concerns that the unions have are that working from home might undermine current award conditions and may also affect career development. In many workplaces, information about training and promotion opportunities is passed on through informal networks. A telecommuter is even more cut off from those sources of information (Women's Bureau 1996, pg 10). The above concerns of unions if not addressed appropriately can hinder the implementation of telecommuting, as the people who work from home are no different from employees in the workplace and unions are on the look out that telecommuters are treated no differently. Telecommuters are entitled to the full range and conditions.

Current Telecommuting Environment

The work opportunities have improved dramatically and the paradigms for how work can best be accomplished will undergo further revisions (Brown 1994, pg 27). Smith

(1994, pg 13) suggests that the current corporate structure as we have known it is incapable of managing the competitive environment of the information age. That bureaucracies should not only be reduced, they should also be removed. That the hierarchical structure within organisations must be reduced, ie with the disappearance of levels of management. Smith (1994, pg 13) also suggests that it is already apparent that corporate jobs wont offer the same security they once did and neither will they impose the same limitations on creativity, initiative, talent and skill. The Information Revolution is replacing the traditional model on the corporate level, and creating a work force of employees who are freed from the bonds that tie them to specific locations and schedules. Telecommuting is gaining strength as a viable work option.

At present little research has been conducted on telecommuting within Australia and it is therefore of little surprise of the handful of authors who have addressed this topic.

Up until recently organisations have been reluctant to pursue telecommuting as an alternative work arrangement. Previously participation rates were low, issues and benefits unknown, procedures undefined and manager employer suitability unrecognised (National Business Bulletin March 1995, pg 55)

Zampetakis (1994, pg 3) suggests that in 1994 there were 30,000 to 50,000 true telecommuters in Australia and of the 250,000 members of the Community and Public Service Union, fewer than 20 were telecommuting, despite the Industrial Award being created. The interim award does not make it an automatic right for employees to be granted working from home arrangements; nor does it give the employer the right to

relocate office based employees to a home based site. The arrangements are voluntary and can be entered into with the agreement of the employer and employee (Public Sector Union 1994, pg 6).

The mind set of Canberra's public service managers has been blamed for the failure of teleworking on a wide scale among federal public service workers (Lynch 1995, pg 37). Head (1994, pg 34) indicated that government departments were using security concerns as a smokescreen, hiding a deeper reluctance to consider telecommuting, which is largely due to the lack of technology (personal computers, modems etc.) in Australian homes. Head (1994, pg 34) also indicated that government departments and private sector employers were not going to be willing to duplicate technology for workers in their home and office. Results as provided by the Australian Bureau of Statistics for February 1996 indicate that about 23 percent of households which used a computer also had a modem compared with 17 percent in February 1994 (Australian Bureau of Statistics, 1996, pg 1).

There is also considerable evidence in the literature of Filipczak (1992, pg 55), Wood (1994, pg 1), and Caudron (1992, pg 2) that the productivity and quality of work produced by teleworkers is significantly higher than that of their office-based colleagues, the reason for the increases are not yet fully established. The Asia Pacific Telework Association (1994, pg 8) suggests two contributing factors that are now widely reported which includes that career episodes are twice as long for telecommuters, and reducing the time lost in changing personnel, and sick leave for telecommuters is half that for office based workers.

Homebased Interim Award 1994

On February 14, 1994, the Australian Industrial Relations Commission approved the Consent Homebased Interim Award negotiated between the Public Sector Union and the Department of Industrial. This award forms the basis of the current practices of telecommuting within the Federal Public Sector. The award covers such items as arrangement, parties bound, duration, definitions, initiation of and approval for home based work, requirements for approval, job characteristics not considered appropriate for home based work, terms and conditions, termination and re-negotiation, dispute avoidance and settling procedures, review of interim award and leave reserved matters (Public Sector Union 1994, pg 44).

As a result of the Award, the Public Sector Union (1994, pg 8) outlines the following job characteristics which if required in the performance of the duties of the position, as unsuitable for homebased work, and will therefore, be considered as inappropriate for telecommuting.

- High degree of supervision or close scrutiny,
- Direct face to face client contact at home,
- The position has no performance indicator measures,
- The position carries full-time training or supervisory responsibility which requires the occupant to be in attendance on a full time basis in the office or
- Working in a team environment which requires daily face to face contact with other employees.

Terms and conditions of the Award include:

- Award entitlements - Current award provisions such as pay, all leave entitlements, allowances and all other entitlements which an employee receives as an on-site worker applies to the homebased site.
- Days on-site/homebased site - The working arrangement will be on the basis that the employee spends not less than 2 days of their working week in the office. The agreement must specify the days and location, including hours to be worked. If this arrangement is not appropriate and an alternative is contemplated, the change can only occur through negotiation between the Secretary and the Public Service Union National Office (Public Sector Union 1994, pps 9-10). The issues of invisibility, isolation and access to information underlie the stance of unions that full time employees covered by an award should work at home for no more than two or three days a week (Women's Bureau 1996, pg 11).
- Equipment and supplies - The employer will be responsible for the provision of equipment and associated supplies such as a personal computer, ergonomic workstation, phone line, fax machine, paper supplies and printer. Whatever equipment is made available on-site should be provided at the homebased site. The agreement entered into should specify items provided by the employer.
- Access arrangements - The employer will have access rights to visit an employee at home and a clear day's notice must be given. The employee can have a third person present when the manager is visiting the homebased site.

- Training/Staff Development - The employee will continue to have access to training and staff development offered by the employer thereby ensuring no reduction or loss of career opportunities (Public Sector Union 1994, pps 9-10).

Australia remains the only country with a public sector industrial award covering telecommuting (Head 1994, pg 34).

Advantages of Telecommuting

The appropriate implementation of telecommuting brings with it a number of benefits for both the employee and the organisation. The reasons for telecommuting growth are wide and varied. Following are advantages which encourage the implementation of telecommuting.

Telecommuting can be rewarding for both employees and employers. Under the arrangement employees reduce commuting time, have increased flexibility to co-ordinate work schedules with personal and family priorities, have the ability to capitalise on personal peak productivity periods, have more control over their lives through increased flexibility to balance work and personal responsibilities, and have an increased physical comfort. Other rewards for the employee include reduction in costs for transportation, parking, food, clothing and child care, reduced stress due to increased freedom from their supervisor, reduction in traffic tie-ups, less worries regarding children and improved finances because of reduced costs. Productivity has improved as a result of telecommuting but it's unclear as to whether it is because people are

motivated to work harder so they can retain telecommuting as a perk or if its because they're free from distractions at home (Eisman 1993, pg 12). Also other advantages include gaining a sense of renewal and motivation especially in ageing or plateaued workers, and improvement in communications (The Worklife Report 1992, pps 1-2). Along with convenience (Titch 1994, pg 48), help simplify complex lifestyles (Maynard 1994, pg 61), help re-cement families fractured by excessive work demands (Brown 1994, pg 27), greater job satisfaction, better work environment and tighter control over surroundings, increased employment opportunities (Lockwood 1994, pg 14), and improvement in morale or increase retention (Weiss 1994, pg 51) also contribute to employee rewards.

On the part of the employers, telecommuting can be used to attract and retain top quality employees (Weiss 1994, pg 17), respond to changing lifestyle needs (Caudron 1994, pg 43), reduce turnover, improve morale, lower absenteeism (Fryxell 1994, pg 18) through fewer sick days (Weiss 1994, pg 51) and utilise better time management (Fryxell 1994, pg 18). Of more importance to companies though, in this era of downsizing, is achieving higher output, lowering costs (Weiss 1994, pg 51) and saving energy (Caudron 1994, pg 43) all of which can be attained through the right choice of candidate plus adequate training (Weiss 1994, pg 51). Whilst these are significant advantages, telecommuting can also be utilised to help governments and businesses cope with natural or man made disasters (effective disaster mitigation strategy), and also help employers and employees deal with more common emergencies in weather related down time (Weiss 1994, pg 17). Telecommuting if used effectively can also spur whole new industries, give economic vitality to neglected regions, (Maynard 1994, pg 62),

support workforce diversity initiatives (Wheeler & Zackin 1994, pg 56), increase work quality (Weiss 1992, pg 17), prolong service hours, and help temporarily disabled workers stay at work. (Lynch 1995, pg 37).

The federal government in the United States of America is exploring the advantages of telework centres through its new Office of Workplace Initiatives in the General Services Administration. With a \$6 million authorisation from Congress, the government has set up four pilot telework centres near Washington D.C. The program is aimed at improving the government's ability to recruit and retain employees quality of life, and to reduce federal operating costs. It was initiated after a study of 700 federal workers nation wide who had telecommuted for a year showed signs of improved work performance and reduced sick leave (Maynard 1994, pg 61). This government initiative can be applied within Australia. The advantages specified are those which the Federal Public Sector are also aiming to achieve.

The reasons for adopting alternative work arrangements are compelling and growing more so all the time: the stress of balancing family and work obligations is prompting many workers to seek alternatives; management has found that the corporate ladder has turned into a step stool, and they need to find ways to reward employees without giving huge pay raises and promotions; and as business becomes more competitive, its important to get and keep the best employees. When the right person for the job lives too far away to commute daily, telecommuting makes it possible to hire them. Big corporations are also discovering that telecommuting can significantly reduce real estate costs (Wood 1994, pg 1).

Disadvantages of Telecommuting

In general potential disadvantages are a possible loss of income to private sector firms in city stores and possible loss of income to governments for fuel, goods and services, provincial sales taxes and as a result of deductions from the employees taxable income (The Worklife Report 1992, pg 2). A source of dissatisfaction could exist if there is a general perception by employees who do not telework that teleworkers are a privileged group. Possible disadvantages for the organisation may include some start-up and operating costs, possible change in management style, security of data - in relation to outsiders gaining access to confidential information, less control over health and safety issues, decreased availability of employees, adjustment in philosophy and procedures and difficulty monitoring actual time on the job (Dawes 1995, pg 3).

Disadvantages surrounding the employer include loss of direct control, potential distraction leading to decline in work output, possible negative public perceptions, and associative training and counselling costs relative to telecommuting (The Worklife Report 1992, pg 2). Other points include the unmanageable situation with workers free to put in meagre hours and yet collect full-time pay, inaccessibility of key workers and the concern that at-home workers could be doing the wrong work or making a lot of mistakes in the absence of onsite supervision (Brown 1994, pg 27).

Employee downsides to telecommuting cover issues such as gaining a sense of isolation - feeling cut off, reduced social interaction with colleagues and reduced visibility which may damage their career objectives (The Worklife Report 1992, pg 2) and hinder chances for advancement. Relationships with supervisors may also suffer without the

chance of face to face social interaction (Fryxell 1994, pps 18-19). Most experts admit, that there's no substitute for face-to-face contact. Limiting telecommuting to two or three days a week allows the telecommuter to still benefit from social interaction at work and can plan to attend critical meetings. Telecommuters themselves need to forestall problems caused by their absence (Wood 1994, pg 2). Other issues include sensing resentment from colleagues stuck at the office and childcare dilemmas. Children can often be more distracting than co-workers (Fryxell 1994, pps 18-19).

Negative Influences to Telecommuting

Negative influences can also hinder the growth of telecommuting. Presently factors militating against it include: shortage of equipment in Australian households, where the communications equipment needed ie. personal computers, modems are not presently held, the need for better laws in Australia - to reduce urban decay and discourage long commutes to work, which results in less cars on the road and therefore causing less pollution, strong tradition of interventionist industrial laws and "old fashioned" management attitudes (The Yankee Group Asia-Pacific 1994, pg 7).

Telecommuting has been far more successful in the US because of the higher penetration of technology in the home, and imperatives such as the Clean Air Act which force companies to examine alternative modes of work (Head 1994, pg 4).

Government intervention in the form of tax incentives and environmental legislation will be required to extend telecommuting beyond the current level of Australian employees who now have formal telecommuting arrangements with their employers.

Government programs and taxation incentives should be used to encourage telecommuting and deliver social benefits such as lower transport costs and reduced pollution (Crowe 1994, pg 3). Also in order for telecommuting to be effective, industrial legislation needs to be made more flexible. This will hopefully be achieved through the enterprise bargaining process. An example of which is extending the bandwidth of hours to be worked (Edwards APTA Conference 1994, pg 14). According to Petty (1994, pg 29) James Luk of the Australian Road Research Board, suggests that if teleworking rose to 10 per cent of the workforce, Australia could save billions of dollars a year in transport costs through lower traffic congestion, accident levels and operating and pollution costs.

Any system of workplace organisation has its strengths and its weaknesses to the individual worker and to the employer. It is not surprising that the jury is still out on whether the positive opportunities presented by the home-based office work and, in particular by telecommuting are likely to outweigh the negative aspects (Shergold 1994, pg 1).

The Telecommuting Evolution

The revolution of telecommuting began approximately in 1973 (Lockwood 1994, pg 12). As markets, technology and employee values have changed (Kelly & Gordon 1986, pg xxvi), as companies have downsized, streamlined and restructured, many have been forced to explore new ways to support the work effort. The alternative office is one of the most effective strategies for dealing with these changes (Greengard 1994, pg 70). Integrating change for telecommuting involves social and cultural needs such as

family support, costs, approvals support, productivity measures, structure and processes, technological availability and employee/management suitability and effectiveness (Hewlett Packard 1994, pg 2).

Presently there is an ongoing awareness towards telecommuting with planned participation - an increased number of telecommuters, technology trials and approvals and clear guidelines documented (National Business Bulletin 1995, pg 55). Many agreed that technology has made telecommuting possible, but it is workplace flexibility, the balance of work and home, and economic influences that are also driving forces (Wheeler & Zackin 1994, pg 56).

Future

Telecommuting is the shape of things to come, but it is also very complex and therefore the developments, the effects and the new social equilibria that will derive from it can hardly be foreseen with any certainty (TELECOM 1996, pg 68).

The current trend towards alternative work arrangements has long term implications and is a reflection of evolving economic, demographic and technological norms (Russel 1992, pps 23-25). Maynard (1994, pg 61) suggests that telecommuting is going to have a place in the future in solving fundamental societal problems that wont disappear. She also indicated that workers' long commutes are robbing the country of productive time. Time which can be put back into the community, the family, and other activities. Maynard (1994, pg 62) also states that telecommuting can help people simplify their complex lifestyles and reduce stress caused by commutes. There are many issues, long

term recruitment and retaining of employees, empowerment, culture change and also a younger generation of workers that is looking at quality of life issues. This is not a quick fix. Telecommuting is a timely response to today's pressing problems.

A contributing factor to the growing interest in telecommuting is downsizing, which has companies focusing on saving money and reducing overhead (Maynard 1994, pg 61).

Another growth area and trend that is rising rapidly, is the move towards business outsourcing. Outsourcing is going to provide a real stimulus to the home office market. That, combined with an obvious growth in telecommuting for social and environmental reasons, is going to continue to grow that market also (National Business Bulletin Apr 1995, pg 24).

A significant trend began in Hawaii, where the first telework centre was developed through a public-private joint venture. Telework centres have been established throughout the country to keep workers closer to home, thereby reducing their commuting to and from distant offices (Maynard 1994, pg 61). As with Hawaii, Australia could adopt this initiative and implement such centres to allow telecommuters to use these centres to hold client meetings, do paperwork, complete reports, or make telephone calls (Maynard 1994, pg 61).

Companies are not yet paying the necessary attention to work at a distance, there has not yet been a strategic vision of the use that can be made of telecommuting as a possible instrument of flexibility. Telecommuting is far more than just working in another place. It is important not only because it is bound up with the technologies of information and

communication, but also and above all because it implies new systems of organising and managing work processes. The present approach is rather simplistic, and for this reason few companies have so far gone beyond that experimentation phase. Application of telecommuting represents a strategic decision, it is not necessarily suitable for each and every organisation (TELECOM 1996, pg 69).

Technology trends are likely to enhance the possibilities of telecommuting over the next two years. Trends related to technology include the spread of personal computers into the home, the growth of ISDN, Internet, email and web enhancements and the provision of technology support via phone, fax and email for telecommuters (Berlin & Denbigh 1996, pps 16-19).

Crowe (1994, pg 9) suggested that a prevention services consultant at Comcare Australia, Dr Richard Archer, estimates by the Australian Bureau of Statistics showed 4 per cent of Australia's workforce was telecommuting in three ways - at home, at small remote offices or by using mobile computers on the road. By 2010 there will be 33 million American workers involved in one of those three forms of telecommuting and we can expect that to be matched in Australia.

Conclusion

Telecommuting has come a long way from its noted beginnings in 1973. It has been recognised as an alternative work arrangement which offers many advantages. This alternative work arrangement has adapted to the changing needs of organisations and employee values. As such with the assistance of technology which has played an

important part in the resurgence of telecommuting, it has been successfully offered as an alternative work arrangement within the Federal Public Sector in particular.

The four components of telecommuting, which include the work, the people, the technology and management have to be considered carefully and implemented appropriately to ensure success. With these components in mind the awareness of telecommuting alone is increased. With the introduction of the Homebased Interim Award 1994, the Federal Public Service enhances the utilisation of telecommuting. With the aid of the Homebased Interim Award 1994, employees can take advantage of this work option.

This chapter has explored issues relating to telecommuting discussed in the literature. It specifically concentrated on telecommuting concepts, current work arrangements, reasons for growth and future trends. The following chapter explains the methodology adapted to explore the research question.

CHAPTER 3 - METHODOLOGY

Overview

This aim of the research investigated telecommuting as an alternative work arrangement within the Federal Public Sector, its current penetration, growth rate and future outlook.

A survey was used to investigate the sequence of telecommuting growth within the Federal Public Sector, describe the nature of change in the workplace as a result of the introduction of telecommuting and identify factors which contribute to the success or failure of telecommuting. Various departments were contacted ranging from Industrial Relations Department, Immigration and Multicultural Affairs Department and Trade Practices Commission. Several departments did not have an independent personnel section as it was handled centrally by the Canberra office, therefore limiting the number of possible contacts.

Description Of Research Methodology

The purpose of the survey was to prepare a descriptive study on the incidence of telecommuting within the Federal Public Sector. In particular the survey methodology used explored aspects of telecommuting, and sought explanations of current and future penetration within the Federal Public Sector. This was based on both qualitative and quantitative data. This study compiled statistics on telecommuting ie type of work, rank of skills base, percentage of telecommunications used, productivity gains, percentage of driving forces, hindrances and rewards and the participation rates of telecommuters. It also reviewed aspects relating to qualitative data such as management issues, skills base, technology, benefits and government intervention.

Pilot Study

A pilot study was conducted prior to the main survey where initial reactions and feelings of questionnaire items, sampling instructions and the overall appropriateness of the survey method was determined. The survey design revolved around three distinct groups of people. These included telecommuters, their manager and external bodies - ie those persons who have knowledge and experience within the telecommuting field. Three persons participated in the pilot study and each group was represented by one individual. These participants were also included in the main survey.

The respondents were asked to complete the relevant surveys. A number of questions were slightly modified to incorporate and rectify any misunderstandings that could eventuate from the wording of certain questions and also determined those items which should be included in rank order questions. These refinements were incorporated to enhance the presentation and legibility of the surveys.

As a result of the number of participants, the data collection technique was to include, where possible, pick up and delivery of questionnaires. It was found that a more formal manner of approaching the participant via an initial introductory phone call before sending the questionnaire allowed for screening of participants on their appropriateness in participation. The approach of the initial introductory phone call was also incorporated in the main survey.

The pilot study also enabled the location of further contacts. Initial inquiries found very few telecommuters willing to participate. Many of those respondents contacted

acknowledged the scarce number of telecommuters, which was evident by the total number of participants found overall. One contact in particular went so far to say that telecommuters in the Federal Public Service were a “rare beast”.

Selection Of Subjects

The population considered in the study were specifically telecommuters and their managers/supervisors within the Federal Public Service. The population also extended to those external bodies which have a direct involvement with the Federal Public Service, and which possess knowledge and experience within this field ie. the Australian Services Union, the Australian Telecommunications User Group and Technology Solutions. Telecommuters were selected on the basis of having used telecommuting as an alternative work arrangement for at least six months. Management chosen was those persons who directly supervised telecommuters and preference was given to those persons who managed the telecommuters being surveyed.

Snowball sampling technique was used. This was where one or more individuals were specifically identified from the population, were interviewed and used as informants to identify other members of the population, who were themselves used as informants.

This approach was used as it was determined during the pilot study, that locating and contacting relevant subjects would be difficult. As a result probability samples such as cluster (ie. where the population is divided into a number of groups or clusters, and a number of these clusters are chosen at random to be the sample), or stratified samples (ie. where there are distinct groups in the population and the population is then divided

into strata and a random sample is selected from each stratum) were found to be inappropriate as it was difficult to identify members of the population.

The methodology approach I took was to identify the population of telecommuting within the Federal Public Service and list the various departments and organisations relevant to telecommuting that could be approached. This involved recording possible candidates from the literature previously read and also locating the departments from within the telephone directory. A representative of that organisation was then contacted, with the hope that he or she would be able to identify telecommuters and their managers which could be approached. Only a couple of telecommuters were in the first instance directly contacted. The departments were specifically within Victoria or Canberra. In total 18 different government departments were contacted. These ranged from the Department of Immigration and Multicultural Affairs, Federal Attorney General's Department, Trade Practises Commission, National Occupational Health and Safety Commission, Industrial Relations Department, Department of Defence, Department of Social Security, Department of Foreign Affairs and Trade, Department of Human Resources and Australian Department of Administration Services. The majority of these departments had a central personnel section, located in Canberra.

Other organisations contacted were identified from literature and articles previously read. These included the Australian Telecommunications Users Group, the Public Sector Union, the Australian Services Union, the Asia Pacific Telework Association, Australian telecentres and telecottages, the University of Tasmania and Technology Solutions.

Of these the Australian Services Union proved to be most fruitful, as it was able to provide a listing of telecommuters within Victoria which were obviously union members and who had previously agreed to be interviewed about working from home for previous surveys conducted. Other organisations, which includes external organisations were not in a position or able to provide a listing of those persons who telecommute. Specific persons noted in previously read newspaper articles, conference reports and text books were also contacted.

Instrumentation

All potential telecommuters and their managers were contacted by phone where they were asked whether they would like to participate in the telecommuting survey and whether they preferred participating in an interview or completing a questionnaire. All subjects opted for questionnaires. Other external bodies such as Smart Valley Inc, Asia Pacific Telework Association, Australian Telecommunications Users Group (ATUG), Australian telecentres and telecottages, and University of Tasmania were initially contacted via email, as this was the only form of communication available (email addresses were only known). They too preferred to receive questionnaires.

Questionnaires therefore were the main tool used for data collection. Three different questionnaires were formulated based on the audience surveyed. One was designed for telecommuters (refer to Appendix A), the second for management of these telecommuters (refer to Appendix B) and finally external bodies (refer to Appendix C).

Each of the questionnaires contained an introductory paragraph on telecommuting. The questionnaires required both qualitative and quantitative responses. The questions were separated into personal questions followed by questions which required either checking categories or ranking specific options in order of preference. The remaining questions were open ended allowing the participant to contribute their own thoughts and feelings.

The specific questions asked were geared towards the category of person and all three questionnaire types measured the current status and future outlook of telecommuting.

The questions were formulated based on literature read. Covering aspects such as perceived penetration of telecommuting, rate of growth, central issues associated with this work arrangement and advantages and disadvantages. Overall, those questions covered aspects discussed to assist in determining whether the incidence of telecommuting is increasing in the Federal Public Sector.

A total of thirty questionnaires were initially mailed to the participants within the Federal Public Service, 20 telecommuters, 5 managers and 5 external bodies, with a cover letter requesting that they return the completed questionnaires within 7 days in the stamped, self-addressed envelope that was enclosed with the questionnaire. Also, with the telecommuters a questionnaire for their managers was placed in the envelope as agreed by them to pass on to their managers. Otherwise the managers were contacted directly from details provided by the telecommuters. Within 15 days, 7 completed questionnaires were received.

At the end of the second week a follow up telephone call was conducted to participants who could be contacted, urging them to return the completed questionnaire immediately if they had not already done so. No further questionnaires were received by mail. At the end of the third week other organisations within the Federal Public Sector who had not previously received questionnaires were contacted by phone and it was decided to hand deliver and personally pick up those remaining questionnaires which were located within the Melbourne metropolitan area.

In total 15 questionnaires, 8 telecommuters, 3 managers and 4 external bodies, were received - a return rate of twenty five per cent. These included those which were sent via email. All questionnaires were used for further analysis.

Data Collection And Recording

The tool used for data collection was questionnaires distributed via, postal mail, telephone and electronic mail.

The data collection process was initiated by interviewing possible participants to obtain information of their availability and other possible persons that could be approached. The interview was unstructured and by telephone and allowed the participant to voice any opinions on telecommuting.

The main method of data collection used was a questionnaire. Three different questionnaires were specifically created to cater for each of the groups being addressed.

These were telecommuters, their management and other relevant bodies. The questionnaires were in three sections. The first asked the respondent to check mark the categories that applied to him/her. The second section asked the respondent to rank order - that is order the response items from most likely to least likely. The final section was open ended questions which allowed the respondent to offer some suggestion or opinion.

Once the questionnaires were received the questions were then manually coded for easier analysis and interpretation. This process did not involve the use of computers or statistical programs. The use of manual coding was appropriate given the small number of questionnaires received.

Data Processing And Analysis

Analysis of the data was achieved through frequency distribution and chi square methods. Frequency distribution was used to describe the sample and involved analysis of current penetration of telecommuting, skills base, productivity gains and hindrances. Chi square method was used to compare telecommuters, management and external others with regards to driving forces, trends, advantages and disadvantages, strategies and participation rates.

At the beginning of analysis of the surveys the information was coded. The open ended questions were especially placed into categories and coded before analysis. The data was also edited where necessary. Not all questions were answered by the participants

but the blank responses did not warrant the exclusion of the questionnaire from the survey. Graphical charts were also used to assist with the analysis of questions.

Limitations

Limitations were based on the number of subjects included in the sample/population.

The resulting participation rate was disappointing and below expectations.

There were a number of reasons as to why there was a poor response rate. It was difficult to obtain information from the government departments regarding their personnel and activities. Therefore, locating possible participants was made difficult especially where a central personnel section existed between departments. Unless a direct contact name of a telecommuter was known, it was extremely difficult extracting information regarding possible contacts. Also, not all persons understood the terminology used to refer to telecommuting. Therefore, one of the steps taken to attempt to increase the response rate was to use terms that the people were more likely to understand. For example rather than using telecommuters when speaking to individuals on the phone the word was transposed with homebased worker.

Another reason for the poor response rate was that it was apparent that not all individuals that would be considered as telecommuters consider themselves as a telecommuter, as mentioned in the literature review.

Apart from the transposing of terminology other steps were taken to improve the response rate even after the pilot study was conducted. This included providing a more deeper message on the covering letter to indicate clearly what the questionnaire was about and the importance of returning the questionnaire and having a balance between open format responses and ranked orders, so that the respondent had the freedom to select their own words.

Also, to encourage the return of completed questionnaires, standard self-addressed envelopes were included. This along with follow-up phone calls were approaches used to increase the return rate. Questionnaires where possible were both hand delivered and picked up. This method in particular did increase the return rate significantly.

This chapter has examined methodologies and procedures used to describe the research design and techniques used to gather, record, process and analyse the information, whilst the following chapter specifically examines the findings and analyses the results.

CHAPTER 4 - FINDINGS & ANALYSIS OF RESULTS

Introduction

The survey results were collated based on three different *telecommuting* survey designs. The surveys were geared to address three different audiences: telecommuters, management and other relevant bodies - those who fell outside the realm of both telecommuters or management. Refer to Appendix A, B and C respectively for a view of the three surveys mentioned. Although the focus remained on three different surveys, all encompassed similar questions, in order to gauge perspectives from all three parties.

All three surveys began by addressing personal details.

Category	No.Of Participants	Percentage of Participants
Telecommuters	8	53%
Management	3	20%
Other	4	27%
Total	15	100%

Table 4.1 Number of participants within each category

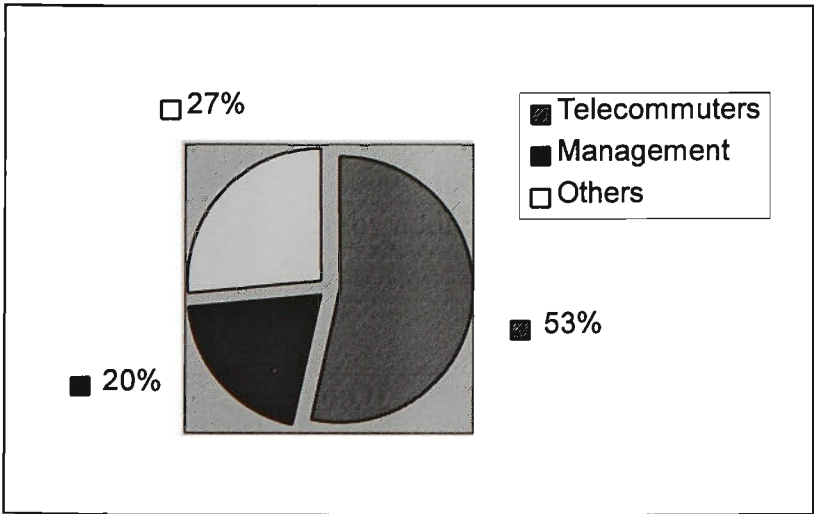


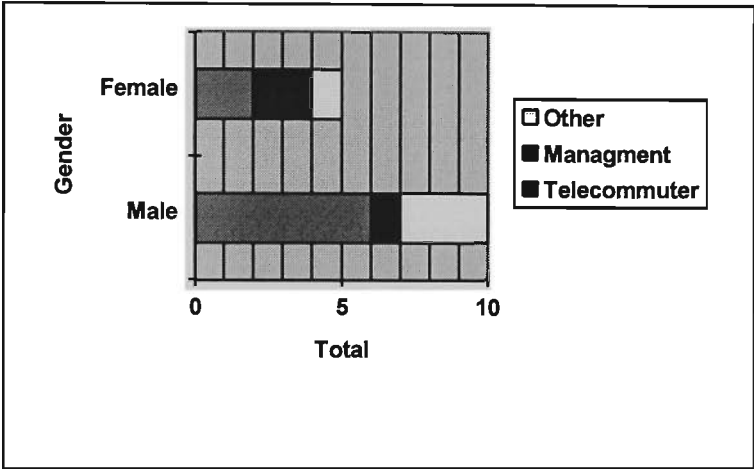
Figure 4.1 Number of participants within each category

In total 8 (or 53%) telecommuters, 3 (or 27%) managers and 4 (or 20%) other bodies were surveyed, a total of 15 persons surveyed, as indicated by Table 4.1 and Figure 4.1.

	<u>Male</u>	<u>Female</u>
Telecommuter	6	2
Management	1	2
Other	3	1
Total	10	5

Table 4.2 Gender Representation

Figure 4.2 Gender Representation



Of the telecommuters surveyed, approximately two thirds were males and one third females. Both genders were represented in all three categories, as indicated in Table 4.2 and Figure 4.2.

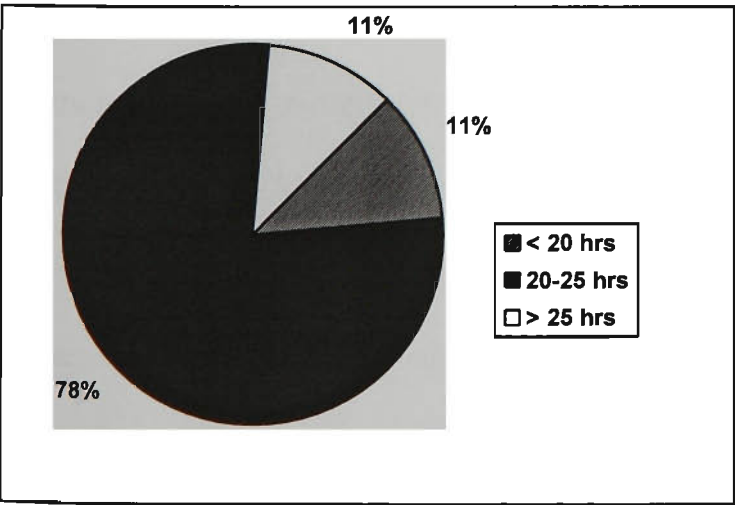


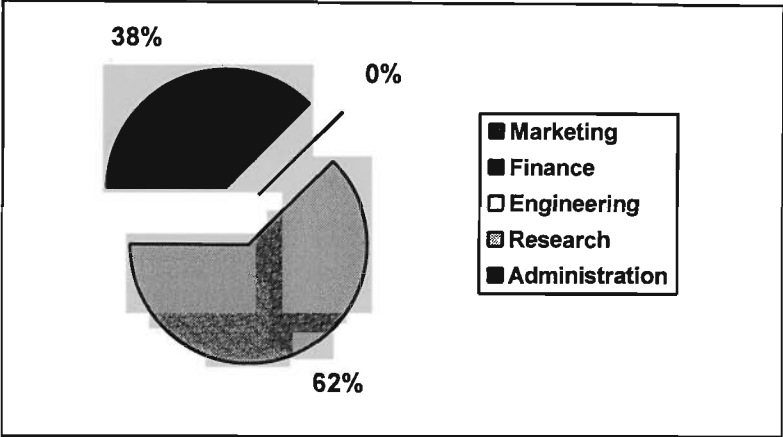
Figure 4.3 Hours worked outside the office environment

As seen in Figure 4.3, approximately ninety percent of the telecommuters surveyed worked outside of the office for more than 22 hours per week, in a remote location namely their home. Other locations such as satellite and mobile offices previously explained in the literature, were not utilised.

Type of Work	Total	%
Marketing	0	0
Finance	0	0
Engineering	0	0
Research	5	62
Administration	3	38

Table 4.3 Type of work

Figure 4.4 Type of Work



The type of work carried out by telecommuters centred around either research or administrative tasks, as indicated by Table 4.3 and Figure 4.4. The telecommuters who participated in the survey were from the Industrial Relations Department, Immigration and Multicultural Affairs Department and Trade Practices Commission. Management personnel surveyed also worked within the same departments. On the other hand the other bodies - organisers or advocates - who were chosen based on their knowledge and experience within telecommuting were from the Australian Telecommunications Users

Group, Australian Services Union, Rural Division Department of Primary Industries and Energy and Technology Solutions Company.

Survey Questions

Following are questions which were asked of the participants within the surveys for the telecommuters, management and other bodies. Most questions were asked of all three categories of participants. The types of questions included who the program initiator was, present and future participation rates, individual requirements, advantages and disadvantages of telecommuting, experiences and strategies of implementing telecommuting. These questions along with others which were included attempted to examine telecommuting within the Federal Public Service in order to determine whether the incidence of telecommuting was increasing in the Federal Public Sector and if so at what rate of growth.

Who was the telecommuting program initiator?

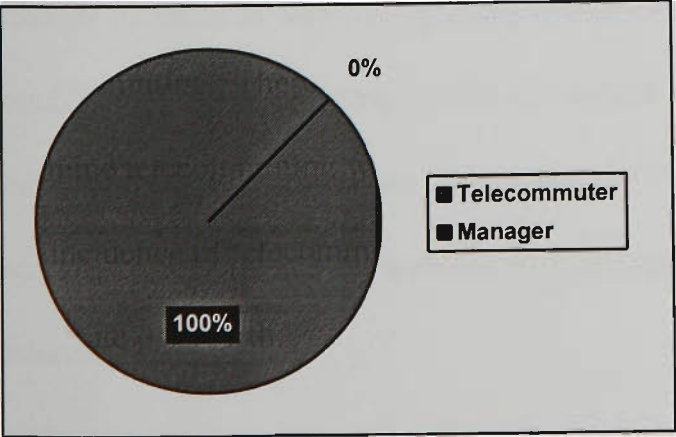


Figure 4.5 Actual Program Initiator

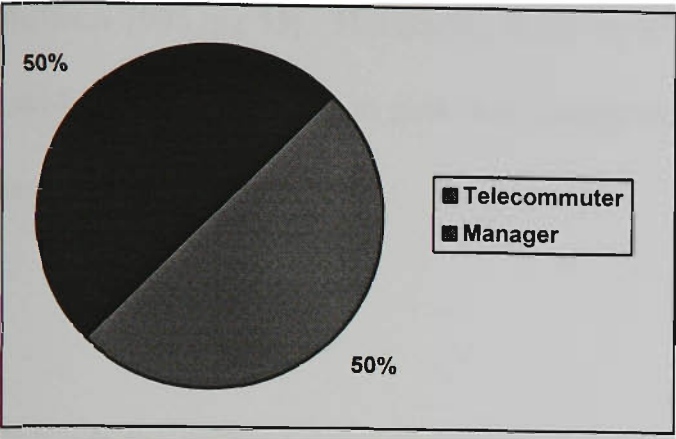


Figure 4.6 Perceived Program Initiator

All telecommuters and management surveyed indicated that participation in telecommuting was unanimously initiated by the employee, as depicted in Figure 4.5. The telecommuters indicated that awareness of telecommuting was brought about by reading about it, personal research, union advice, through colleagues working at home, university projects or from the Australian Public Service Homebased Award.

The perception of the other bodies surveyed as indicated in Figure 4.6 was that both employees and management should be the telecommuting program initiators. The reasons given as to why management should be the initiator was so that they could establish the telecommuting culture and ensure appropriate policies were in place. The main reason given for the employee initiating telecommuting was because most benefits accrue to the employee. Therefore both parties benefit from the initiation of telecommuting.

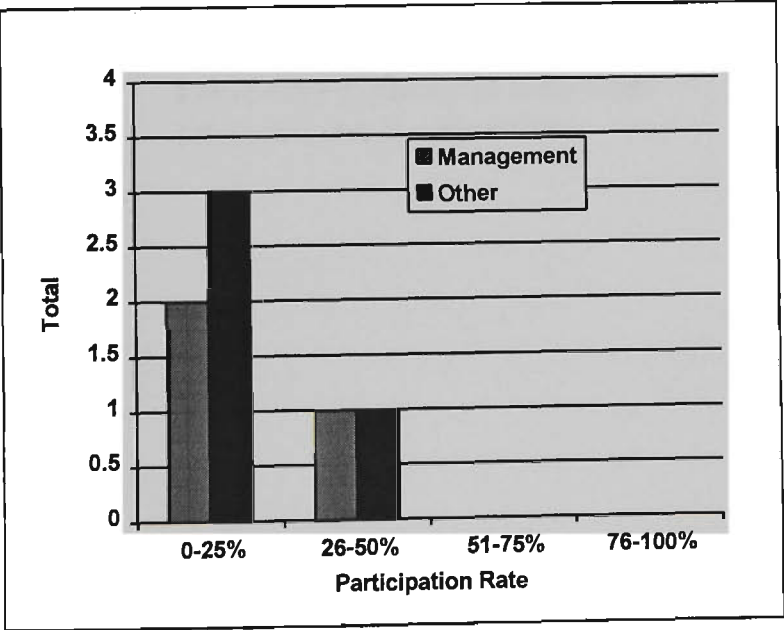
The literature revealed that telecommuting is not encouraged by employers because it is not widely known about, and issues and benefits are also unknown (National Business Bulletin 1995, pg 55). The employee agrees with this statement as generally it is the employee who has more to gain, and management at present are unwilling to tread in unknown paths.

What is the current participation rate of telecommuting within your organisation?

Participation Rate	Management	Other
0-25%	2	3
26-50%	1	1
51-75%	-	-
76-100%	-	-
Total	3	4

Table 4.4: Frequency of participation rates.

Figure 4.7 Current Participation Rates of telecommuting



Management was asked to indicate what the current participation rate was between various ratios provided. As can be seen in Table 4.4 and Figure 4.7. The selection that was chosen fell between 0 and 25 percent, with one person opting for 26 to 50 percent, whilst the other bodies were asked to perceive the current participation rate which they indicated fell between 0 and 25 percent, with one person again opting for 26 to 50 percent. Telecommuters were not asked this question on their survey.

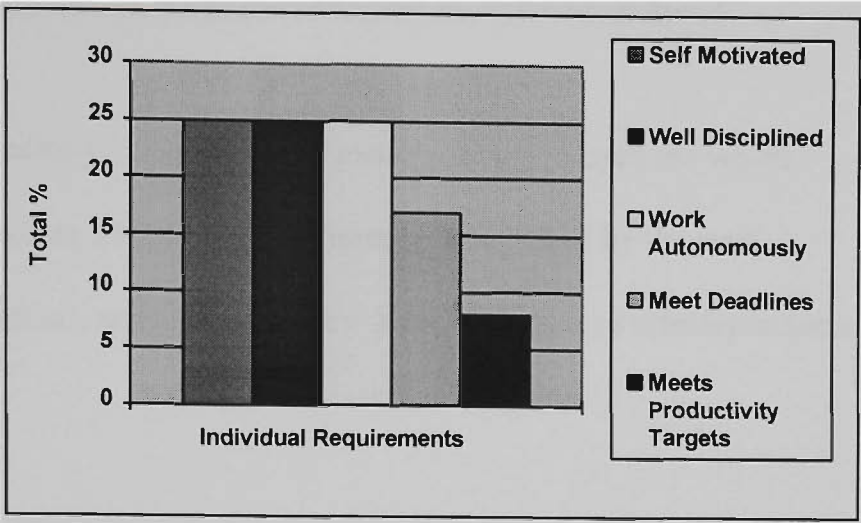
The current adoption rate towards telecommuting within the Federal Public Sector has been variable. This is attributable to management scepticism and reluctance to change (Wheeler & Zackin 1994, pg 56). Low participation rates are also due to the absence of accessible information and the harsh and arbitrary judgements about the short term costs of a telecommuters absence.

What do you look for when considering individuals for telecommuting (individual requirements)?

<u>Individual Requirements</u>	<u>Management</u>
Self Motivated	3
Well Disciplined	3
Work Autonomously	3
Meet Deadlines	1
Meets Productivity Targets	2

Table 4.5 Frequency of Individual Telecommuter Requirements

Figure 4.8 Individual Telecommuter Requirements



Both Table 4.5 and Figure 4.8 indicate that the individual requirements considered for telecommuters as provided by management surveyed include being self-motivated, and well-disciplined workers who can work autonomously and meet productivity targets. Being able to meet deadlines was the least mentioned characteristic, but this can be encompassed in meeting productivity targets.

Currently, individual telecommuters are managed by regular meetings in the office with both management and staff, through emphasis on flexibility and attention to outcomes.

Telecommuters and other bodies were not asked this question on their survey.

The above requirements are also supported in the literature which revealed that telecommuters must enjoy responsibility and conform to a trusting relationship (Caudron 1992, pg 5). Obviously an individual who cannot be trusted would not be given the opportunity to telecommute as management would assume that the time spent working, would infact not be.

How do you as management decide what jobs are best for telecommuting?

Jobs best suited to telecommuting as suggested by management surveyed are where outcomes are clear and customer contact can be primarily determined by the staff members (nature/time/direction), and also where low level of employee interdependence exists.

Other bodies also agree that the best jobs suited to telecommuting include administration jobs with no face to face contact required. Jobs where output can be clearly defined, jobs which are not dependent on use of files or information at the main office, knowledge workers and middle management.

Telecommuters were not asked this survey question.

The indication that the jobs best suited for telecommuting includes research and administration is also evident within the literature which suggests that suitable jobs for telecommuting involve tasks that are easily measured, tasks that require relatively little unscheduled face to face contact and tasks that don't require frequent access to files, equipment or supplies (Kelly & Gordon 1986, pps 52-53).

The literature also revealed that within the Federal Public Sector, in particular with relation to the Homebased Interim Award, those types of jobs and characteristics/criteria which should not exist and is not considered appropriate for telecommuting, are those

which include such characteristics as those tasks which require a high degree of supervision or direct face to face client contact (Public Sector Union 1994, pg 8)

What do you see as the driving force of telecommuting?

Driving Force	Telecommuters	Management	Other
Technology	2	-	3
Workplace Flexibility	7	2	4
Balance of Work & Home	2	1	3
Economic Influences	-	-	2
Productivity Gains	-	-	1

Table 4.6 Frequency of Occurrences Of Driving Forces of Telecommuting

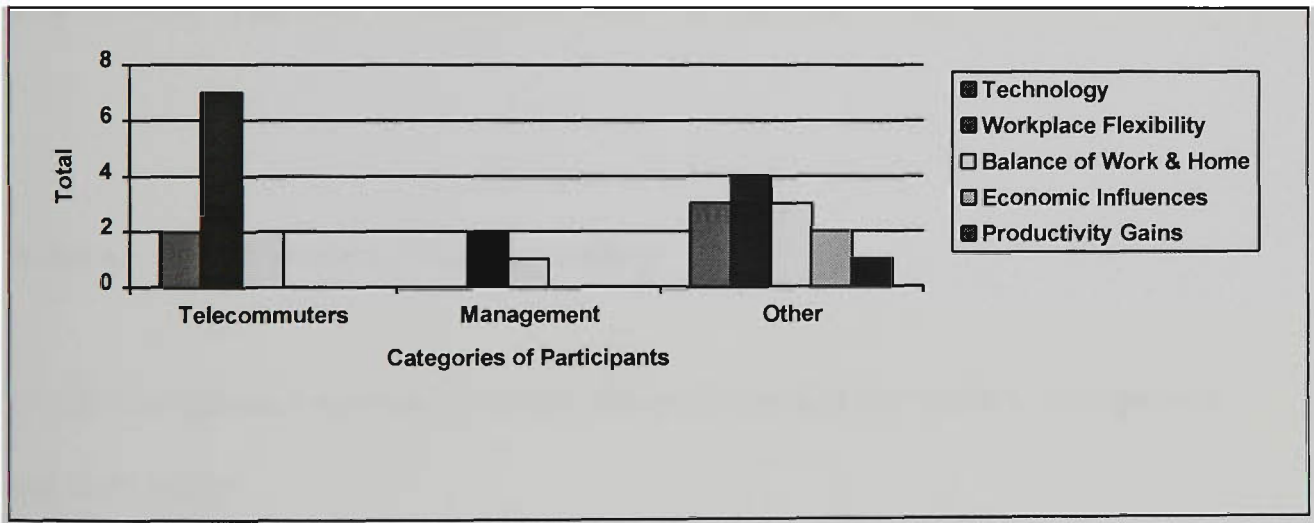


Figure 4.9 Driving Forces of Telecommuting

Telecommuters surveyed believe that the primary driving force of telecommuting is workplace flexibility, followed by balancing work and home, and finally technology, as seen in Table 4.6 and figure 4.9. It is no surprise that the driving force of telecommuting is workplace flexibility. Flexibility is a great asset over conventional office work.

Telecommuters agree that not only is the quality of life substantially improved because

of flexibility but it also enables the ability to balance home and work life more appropriately to suit individuals needs, and makes it easier to combine family responsibilities. Management also agreed with the selection made by the telecommuters, but suggested that technology in particular enabled telecommuting and is therefore not seen as a driving force. Other bodies surveyed also included workplace flexibility and balancing work at home but also indicated economic influences, technology and other productivity gains as driving forces.

The literature agrees that technology has made telecommuting possible, but it is workplace flexibility, the balance of work and home, and economic influences that are considered driving forces (Wheeler & Zackin 1994, pg 56).

What are the advantages of telecommuting?

The following tables represent the preference rankings of telecommuters, management and other bodies.

Telecommuters

Preference Rankings							
Advantages	1st	2nd	3rd	4th	5th	6th	Calc
Increased Flexibility	6	0	0	0	0	0	6
Increased Motivation & Commitment	0	1	0	3	1	1	25

Advantages	1st	2nd	3rd	4th	5th	6th	Calc
Reduced Commuting Time	0	4	0	1	1	0	17
Increased Productivity	0	0	1	0	3	2	30
Limits Work Distractions	0	0	3	1	1	1	34
Greater Job Satisfaction	0	1	3	1	0	1	21

Table 4.7 Preference Rankings of Employee Advantages

Highest to Lowest ranked order:

- (1) Increased Flexibility
- (2) Reduced Commuting Time
- (3) Greater Job Satisfaction
- (4) Increased Motivation & Commitment
- (5) Increased Productivity
- (6) Limits Work Distractions

Management

Preference Rankings										
Advantages	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	Calc
Improved Employee Productivity	1	2	0	0	0	0	0	0	0	5
Lower Overheads	0	0	0	0	0	0	0	3	0	24
Support for Workforce Diversity Issues	0	0	1	0	1	1	0	0	0	14
Retention of Valuable Employees	0	0	2	1	0	0	0	0	0	7
Reduced Stress	0	0	0	0	2	0	1	0	0	17
Increased Work Quality	0	0	0	1	0	1	1	0	0	17
Improved Recruiting	0	0	0	0	0	0	0	0	3	27
Reduction of Office Space	2	1	0	0	0	0	0	0	0	3
Decline in Absenteeism	0	0	0	1	0	1	1	0	0	17

Table 4.8 Preference Rankings of Employer Advantages

- Highest to Lowest ranked order:
- (1) Reduction of Office Space

(2) Improved Employee Productivity

(3) Retention of Valuable Employees

(4) Support for Workforce Diversity Issues

(5) Increased Work Quality

(6) Decline in Absenteeism

(7) Reduced Stress

(8) Lower Overheads

(9) Improved Recruiting

Other

Preference Rankings					
Advantages	1st	2nd	3rd	4th	Calc
Productivity Increases	3	1	-	-	5
Quality Increased	-	1	3	-	11
Less Stressed Workers	-	-	1	3	15
Lifestyle Flexibility	1	2	-	1	9

Table 4.9 Preference Rankings of Perceived Advantages of Telecommuting

- Highest to Lowest ranked order:
- (1) Productivity Increases

(2) Lifestyle Flexibility

(3) Quality Increased

(4) Less Stressed Workers

The advantages of telecommuting represented in Table 4.7, as seen by the telecommuters surveyed include increased flexibility, reduced commuting time, greater job satisfaction and increased motivation and commitment, limits work distractions and increases productivity. Telecommuters as employees are more concerned with flexibility rather than productivity and as such the highest ranking advantage was *Increased Flexibility*.

The greatest advantages of telecommuting programs as seen in Table 4.8, and agreed by management surveyed from highest to lowest ranking include reduction of office space, improved employee productivity (potentially), retention of valuable employees, support for workforce diversity issues, increased work quality, decline of absenteeism, reduced stress, lower overheads and improved recruiting. Other bodies as seen in Table 4.9, see the greatest advantages of telecommuting programs being productivity increases, better balance of work and home, improved lifestyle issues, employee satisfaction, cost saving (office and travel time), quality increases, less stressed workers.

These advantages coincide with many researchers ie Maynard (1994, 61), Brown (1994, pg 61), Lockwood (1994, pg 14) and Weiss (1994, pg 51) who agree that most advantages stem towards the telecommuters, but obviously before any department undertakes telecommuting as an alternative work option they would expect to also reap benefits.

What are the disadvantages of telecommuting?

Telecommuters

Downside of Telecommuting	Telecommuters
Isolation	4
Decrease of Visibility	4
Loss of Networks	1

Table 4.10 Frequency of Employee Downside of Telecommuting

Management

Disadvantages	Preference Ranking					Calc
	1st	2nd	3rd	4th	5th	
Loss of Direct Control	3	0	0	0	0	3
Distraction Leading to the Decline of Work Output	0	1	2	0	0	7
Public Perception	0	0	0	2	1	13
Training & Counselling Costs	0	2	1	0	0	7
Maintaining Workforce Cohesiveness	0	0	0	1	2	14

Table 4.11 Disadvantages of Telecommuting as seen by Management

- Highest to Lowest ranked order:
- (1) Loss of direct control

(2) Training & Counselling costs

(3) Distraction leading to decline of work output

(4) Public perception

(5) Maintaining workforce cohesiveness

Other

Disadvantages of Telecommuting	Others
Staff Not Readily On Hand	4
Unaccessible Office Records	4
Overhead Duties	4
Loss of Work	4
Loneliness	4
Supervision Difficulties	4
Loss of Control	4

Table 4.12 Frequency of disadvantages of Telecommuting as seen by Others

Telecommuters as depicted in Table 4.10, see the downside of telecommuting to be isolation, decrease of visibility and damage to career objectives. They also noted loss of

networks (interpersonal) as a downside. The items which appears to be the greatest downside to telecommuters were isolation and decrease of visibility.

The major disadvantages for management as seen in Table 4.11, and ranked from highest to lowest are loss of direct control, training and counselling costs, distraction leading to decline of work output, public perception and maintaining workforce cohesiveness. Management counteracts loss of control (recognised as a disadvantage) by establishing clear work objectives, maintaining frequent contact and by permitting only reliable employees to telecommute.

The major disadvantages as seen in Table 4.12, by other bodies surveyed are that staff are not on hand to meet short term fluctuations in the office, office records must be accessible electronically from teleworkers home, those who are not teleworking bear an unfair share of the office overhead duties, loss of work, loneliness, supervision difficulties and loss of control.

These points are also agreed upon by various researchers ie Fryxell (1994, pps 18-19) and Brown (1994, pg 27), and given that these disadvantages are known best allows telecommuting to thrive as these issues can then be addressed. Obviously even though these issues may be addressed does not indicate that they still wont occur, but being able to make more informed decisions is an advantage in itself.

A manager who may perceive loss of direct control as a disadvantage could combat this by addressing and having more of an indirect control by managing by results.

Why do some people abstain from telecommuting?

Reasons of abstaining	Telecommuters	Management	Other
Security Concerns	1	-	2
Reliability Concerns	-	-	1
Maintenance Concerns	1	-	1
Technical Barriers	-	2	2
Liability Concerns	1	-	1
Regulatory & Policy Issues	1	-	3
Social Change	-	-	1
Cost	3	-	-
Elimination of Office Environment	1	2	-
Perceived Isolation	3	-	-
Occupational Health and Safety	1	-	-
Jobs Not Suitable	1	-	-
Manage Workloads	-	2	3
Unknown	2	-	-

Table 4.13 Frequency of Reasons for Abstaining from Telecommuting

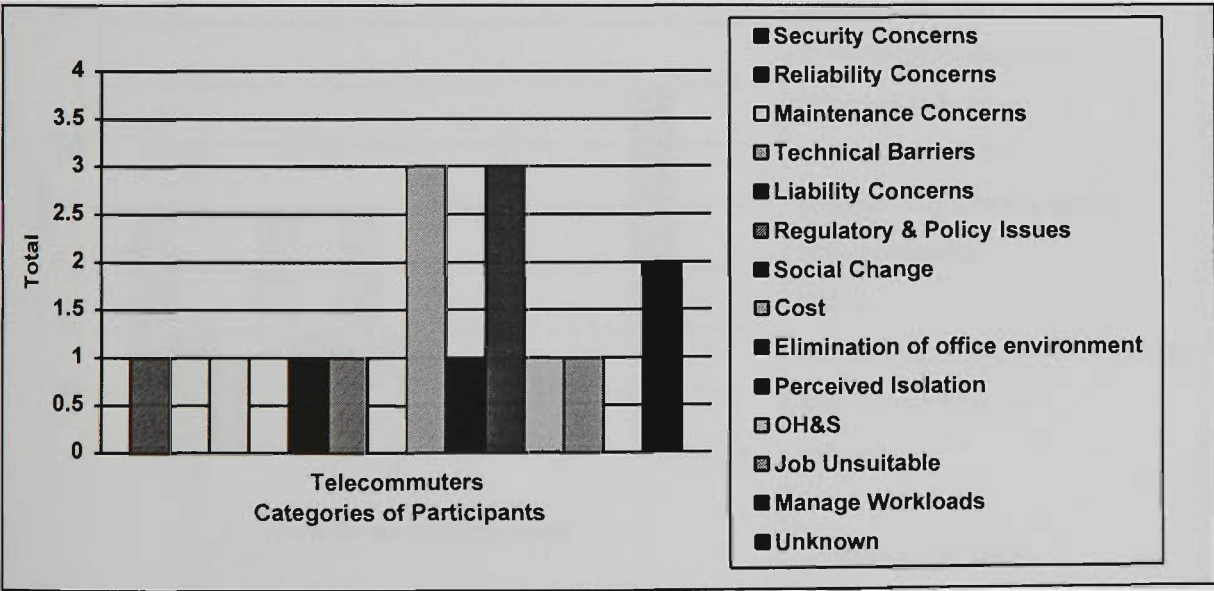


Figure 4.10 Telecommuters Reasons for abstaining from Telecommuting

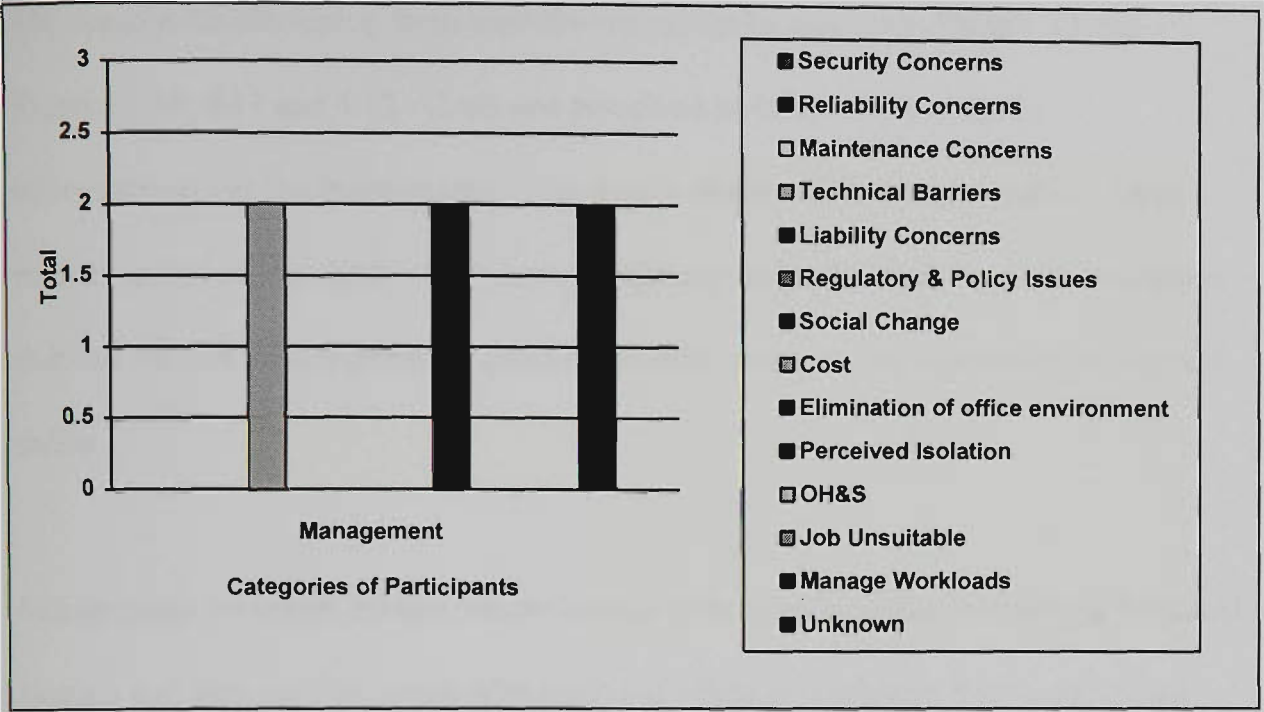


Figure 4.11 Managements Reasons for abstaining from Telecommuting

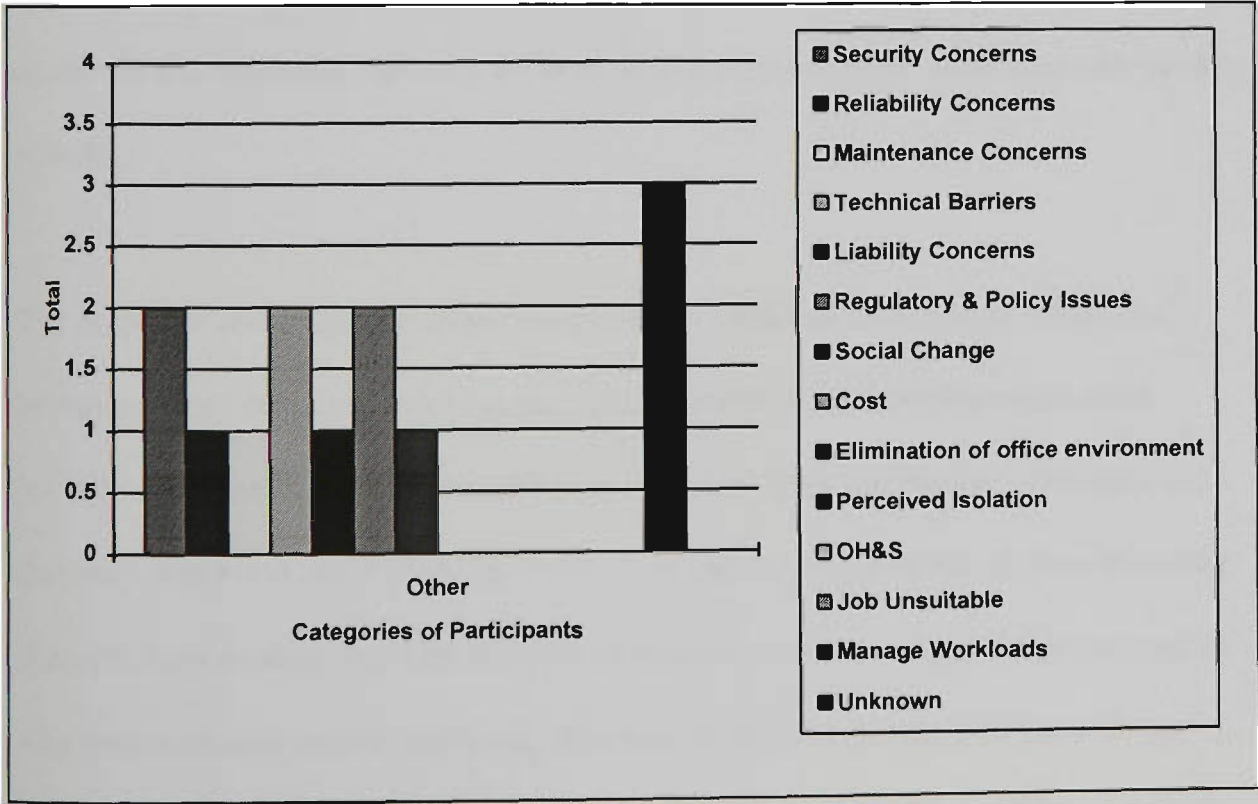


Figure 4.12 Other Bodies Reasons for abstaining from Telecommuting

The reasons for abstaining from telecommuting can be seen from Table 4.13 and Figures 4.10, 4.11 and 4.12. Costs and perceived isolation are seen by the telecommuters as the major reasons why people abstain from telecommuting. Other reasons included maintenance concerns, regulatory and policy issues, jobs not suitable, reduced contact with colleagues, liability, security concerns and operational health and safety.

Management surveyed felt that people abstain from telecommuting because of technical barriers and because they prefer stimulation of office environment from a social and work point of view and also management of workloads. Other bodies surveyed also agree with the technical barriers aspect but also include the inability to manage or predict short term work loads, trust in employees, regulatory and policy issues, security concerns, and reliability concerns for both people and equipment as reasons why people abstain.

The corporate and employee security concerns in particular as indicated within the literature reveal that a number of remote-access products have implemented good security within products with the inclusion of special keys, encryption techniques and dial back features (Currid 1992, pg 374), which can lessen the extent of telecommuting if people have confidence in the technology/products they are using. Often the reasons why people abstain can be combated, after time is spent becoming familiar with the issues and seeking possible alternatives. This is especially so with regulatory, policy, operational health and safety concerns, as generally departments can make educated decisions once all information is brought before them.

Do you perceive that some of your co-workers resent the fact that you telecommute?

	<u>Yes</u>	<u>No</u>
Total	7	1
Percentage	88%	13%

Table 4.14 Perceived Resentment of Co-workers

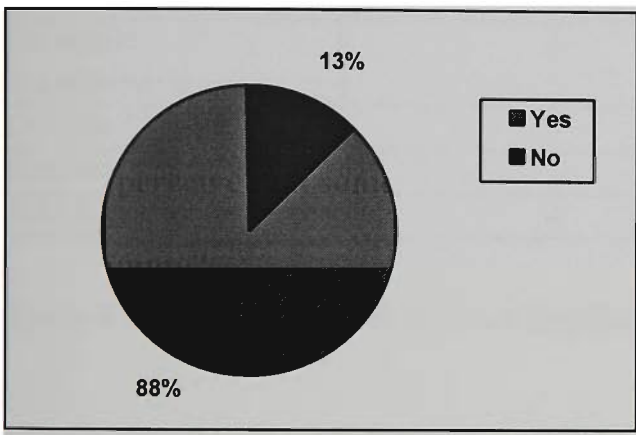


Figure 4.13 Perceived Resentment of Co-workers

This question was directed solely at the telecommuters surveyed. As seen in Table 4.14 and Figure 4.13, all but one person suggested that the co-workers do resent the fact that they telecommute. No particular reasons were supplied.

Resentment is a concern among colleagues. As those who are not directly participating in telecommuting may perceive telecommuters as a privileged group. There is also a possible adverse effect on the moral of employees who are not selected for telecommuting. If there is a general perception by employees who do not telecommute that telecommuters are a privileged group, that could be a source of dissatisfaction (The Worklife Report, 1992, pg 2). If employees left in the office often are asked to do small

favours for the telecommuter, this could build resentment (Lockwood 1994, pg 14). This can obviously be combated through education of both parties as long as those who telecommute are not treated or shown to be treated in any manner different to those remaining in the office.

Resources regularly used?

Resources	Telecommuters Use
Video-conferencing	-
Online databases	1
Facsimile Transmission	3
Cellular Phone	-
Electronic Mail	1
Telephone	4

Table 4.15 Frequency of Resources Regularly used by Telecommuters

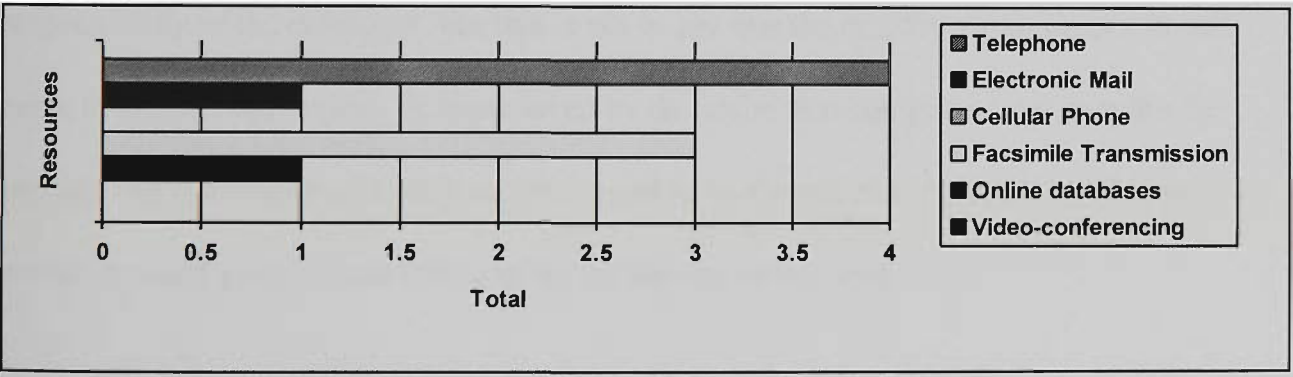


Figure 4.14 Resources Regularly used by Telecommuters

As depicted in Table 4.15 and Figure 4.14, telephone and facsimile transmission are resources most regularly used by those telecommuters surveyed, apart from the obvious equipment such as personal computers. One particular telecommuter indicated that he

was not able to undertake telecommuting if he was not able to supply his own personal computer. Management and other bodies were not asked to answer this question.

Clearly, communication between work and home is an important facet of telecommuting and access to information is equally important. Obviously the telecommuter must be able to undertake his/her normal work duties in order to successfully telecommute. These days hardly any occupation can do away with not using technology in some way.

Basic requirements for a telecommuter include workstation, communications link, application software and other resources relevant to the position (Benhamou & Saal 1995, pps 21-23). The Hombased Interim Award (Public Sector Union 1994, pg 9) indicates as a term and condition that equipment and supplies should be the responsibility of the employer, but this is not to say that the employer/employee can not come to another agreement. It is preferred by the union that equipment and supplies be provided by the employer as it is easier to meet security and loss, damage, maintenance procedures and professional advice of an accountant re tax laws.

Do you think the addition of visual capability to telecommunications technology would increase the number of workers who telecommute?

	<u>Yes</u>	<u>No</u>
Telecommuters	4	3
Management	0	3
Other	2	2
Total	6	8

Table 4.16 Response to the Addition of Visual Capability

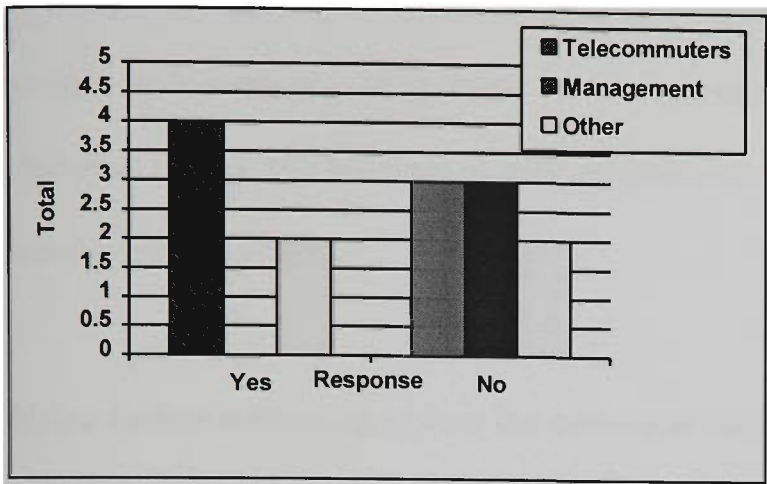


Figure 4.15 Addition of Visual Capability

There was no clear indication given by the telecommuters surveyed as to whether visual capability would enhance or increase the number of workers who telecommute. As can be seen in Table 4.16 and Figure 4.15, four indicated, that it would increase the number of telecommuters while three others indicated that it wouldn't. One telecommuter did not answer the question.

All the managers surveyed indicated that the visual capability of telecommunications technology would not increase the number of workers who telecommute. Other bodies followed in the same light as telecommuters, as there was no distinct view either way towards it increasing the number of telecommuters.

The literature suggests that adding visual capability to telecommuting would enhance this alternative work arrangement and eliminate many of the managerial problems inherent in the current generation of telecommuting allowing managers to come to terms with the ability to see their employees. (Petty 1994, pps 16-17). This is not currently a

viable option if it was just used to alleviate managements fears because of the current cost of technology. Currently telecommunications carriers such as Telstra and Optus are moving towards providing online services through Hybrid Fibre Coax systems being motivated by pay-TV, but costs of such services will remain above that considered feasible for some time.

Major factors militating against the success of telecommuting?

Militating Factors	Telecommuters	Management	Other
Shortage of Equipment	2	-	1
Better Tax System	-	-	1
No Federal Clean Air Act	-	-	-
Strong Tradition of Interventionist Industrial Laws	-	-	1
Management Attitudes	5	3	4
Adapting Current Work Practices	1	-	-
Social Difficulties	-	-	1

Table 4.17 Frequency of Militating Factors

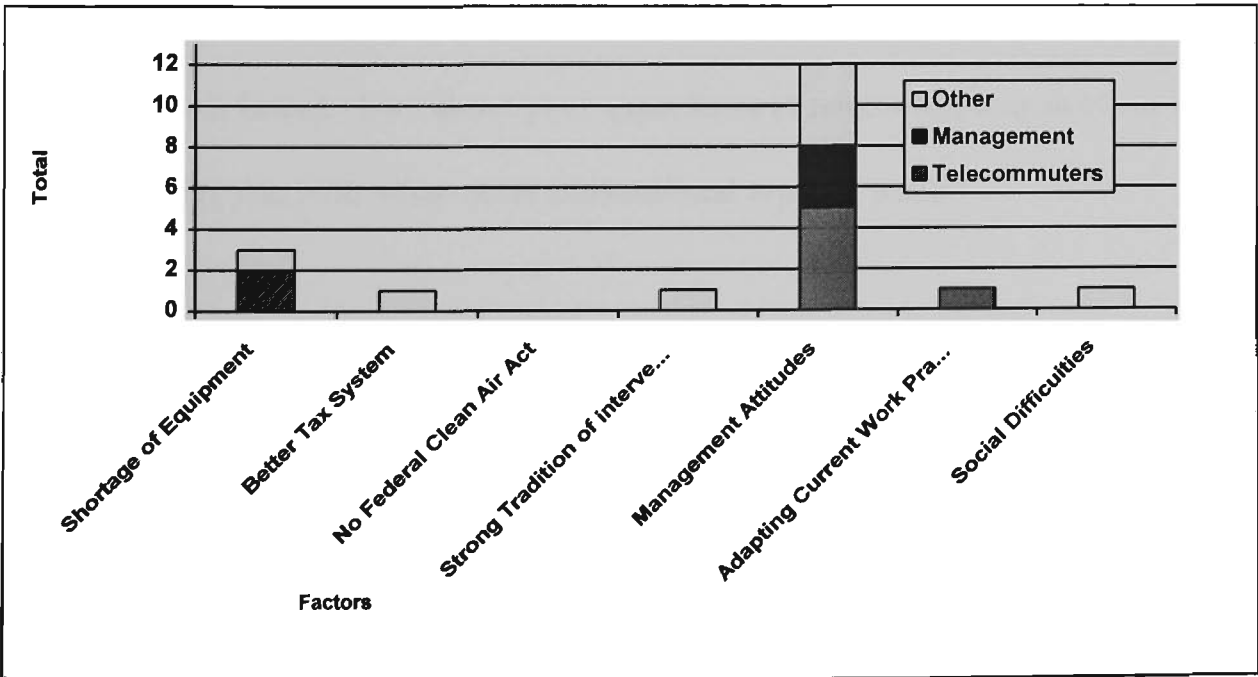


Figure 4.16 Militating Factors

Table 4.17 and Figure 4.16 indicate that telecommuters surveyed have suggested that management attitudes are seen to be the major factor militating against the success of telecommuting. Shortage of equipment in Australian households and adapting current work practices to home based workers were also considerations which effect telecommuting. Management along with other bodies surveyed also recognised that management attitudes effect the success of telecommuting. Other militating factors as seen by other bodies include social difficulties in workplace ie. isolation from mainstream of job advancement training “office politics”, the inability of telecommuters accessing information from their main workplace, strong tradition of interventionist industrial laws and better tax system.

Managements attitudes in particular can be drawn from managements lack of understanding of both the advantages and processes (The Yankee Group Asia-Pacific 1994, pg 7).

What are your broad views about your experience of telecommuting and how does it compare for you with other more conventional types of work?

The broad views of telecommuters about their experience of telecommuting include flexibility as being a great asset provided over conventional office work, with less distractions at work offering significant flexibility. Quality of life is also substantially improved. Most felt that telecommuting could be a positive experience, if it was assisted by having a supportive manager. Others felt feelings of isolation - not being

part of the office culture. Another view was that telecommuting enabled combining family responsibilities and work.

Managements broad views brought about by telecommuting experience include effective promotion of clear goals with a high level of trust and self management. Methods of work with emphasis on communication require new practices but no more difficult than conventional approaches. Success is more in terms of staff morale than improved productivity.

This question was not addressed by other bodies.

What is the greatest challenge of telecommuting programs for employees?

<u>Challenges</u>	<u>Telecommuter</u>
Negative Attitudes	1
Communication	3
Self Discipline	4

Table 4.18 Frequency of challenges faced by Telecommuters

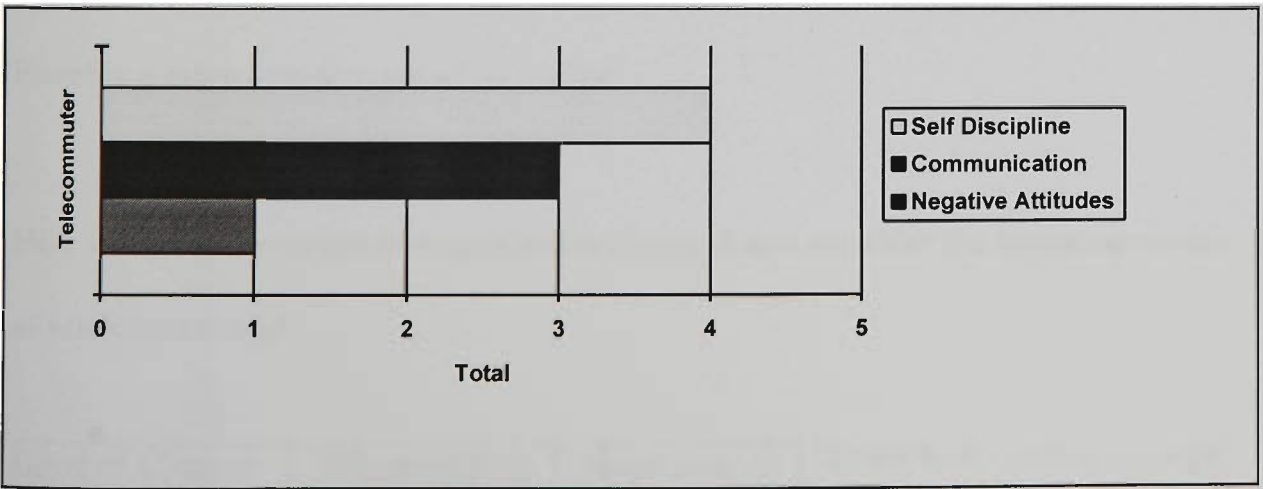


Figure 4.17 Challenges faced by Telecommuters

The greatest challenge for employees as seen in Table 4.18 and Figure 4.17, indicated by the telecommuters surveyed include controlling negative entrenched attitudes, establishing adequate communication with employees, and self discipline, applying themselves to a consistent daily routine and getting information on changes, considered as the dominant challenge.

Management and other bodies were not asked this question. There are many challenges when undertaking a new work initiative, but over time the negative attitudes can be overwritten once the benefits/advantages and unknowns are addressed. Establishing adequate communication is not only a technology aspect but one that management clearly needs to address in terms of techniques used to manage telecommuters.

Obviously management can no longer walk outside the office and expect the person to be at their desk. Mind set changes needs to occur. Self discipline plays a part in selecting suitable individuals. Obviously those who are able to work by themselves in isolation would be able to provide better self discipline as they would not require to be told when and how to do tasks. Obtaining information on changes needs to be clearly addressed and communicated by management. This should occur on a regular basis. Possibly a more formal approach is needed.

How has your department/organisation changed as a result of the implementation of telecommuting?

Level of Change	Telecommuter	Management
No Change	5	0
Some Change	3	3
Drastic Change	0	0

Table 4.19 Level of Change within dept/organisation

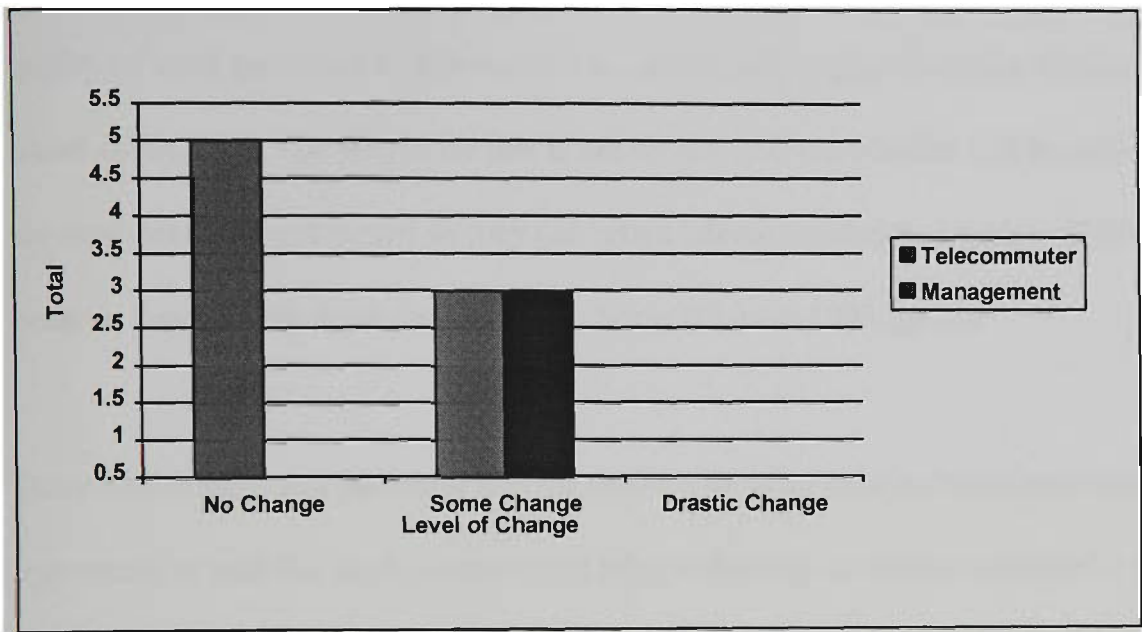


Figure 4.18 Level of Change within Dept/Organisation

Most telecommuters surveyed as depicted in Table 4.19 and Figure 4.18, indicated that very little if any change had occurred as a result of the implementation of telecommuting. No adoption was apparently made towards desk sharing, nor has the adoption of technology been sought to advance telecommuters, for example certain telecommuters explained that their access to online data was restricted because of security concerns. Most telecommuters recognised a slight change in attitude since telecommuting was implemented but the program was still seen as being in a transitional stage.

Those managers surveyed indicated that as a result of the implementation of telecommuting a greater emphasis/formality is on creating opportunities for communication with staff and team meetings. Management also acknowledged that

undertaking telecommuting has resulted in a possible increase in productivity. This is also supported by evidence in research studies, which suggests that the productivity and quality of work produced by teleworkers is significantly higher than that of their office based colleagues. The reason for this is not clearly known, whether it is because people are motivated to work harder so they can retain telecommuting as a perk or if it is because they are free from distractions at home (Eisman 1993, pg 12)

Other bodies surveyed indicated that the major effects on existing businesses and opportunities with the implementation of telecommuting include reduction of overhead costs (office space, parking), more contracted workforce, change of management to accommodate teleworkers into the corporate operating plan, productivity increases, quality increased and less stressed workers.

As backed up by the literature (TELECOM 1996, pg 68) there does not appear to exist any one model of telecommuting which can be readily applied from one situation to the next.

What strategies were used to implement telecommuting?

The strategies used to implement telecommuting as suggested by those telecommuters surveyed indicate that they were of an ad hoc and untimely nature. Policy and guidelines were developed after first applications were lodged in response to the new Award. Implementations were mostly employee driven and department implemented Operational Health & Safety and security strategies to assess concerns. In general, issues were sorted out between employees and management on an ad hoc basis and

these have become accepted precedents rather than strategies being purposely devised. One telecommuter in particular indicated that only employees prepared to use their own personal computers could participate in the telecommuting program. Mr Ehrlich, the Asia Pacific research manager for the Yankee Group, believes that government departments and private sector employers were not willing to duplicate technology for workers in their home and office and therefore relied on employees providing those resources (Yankee Group Asia-Pacific 1994, pg 7).

Management on the other hand indicated that the strategies used to implement telecommuting include consultation with staff and management, pilot period and review of practices. Models from external organisations are being examined as part of a process of establishing best practice in telecommuting.

Other bodies were not asked this question on their survey.

What has made telecommuting possible, and what is its effect?

	<u>Telecommuters</u>	<u>Management</u>	<u>Others</u>	<u>Total</u>
Technology	5	3	4	12
Supportive Management	3	1	-	4
Public Service Award	1	-	-	1
Changing Workfoce	1	-	-	1

Table 4.20 Frequency of Items which have an Effect on Telecommuting

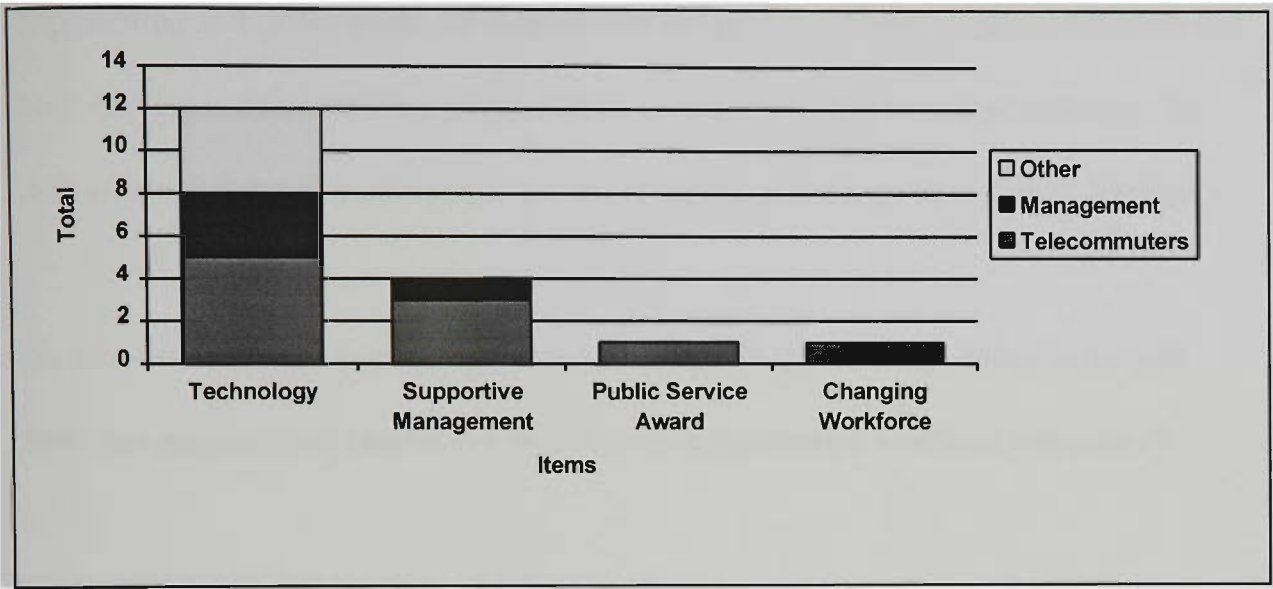


Figure 4.19 Items which may Effect Telecommuting

As depicted in Table 4.20 and Figure 4.19, issues as seen by telecommuters surveyed as making telecommuting possible include: technology, having the necessary equipment at home, supportive management, applying good personal organisational skills, changing workforce - inevitability of restructuring and new public services award. Also pressure by union and employees on management. Effects of implementing telecommuting were less personal stress, more flexibility and increased productivity.

Technology and a change in management approach - promoting management by outcome has made telecommuting possible in managements eyes. Also flexibility and case management which reduces interdependence supports this alternative work arrangement.

Other bodies indicated that new technology makes it easier and possible but it is still a people lifestyle change. Telecommuting has always had a place for some industries ie.

copywriting and direct sales. Its extension to the general clerical/professional areas has been made possible by telecommunications and networked information systems. As well as lower costs of personal computers, modems and improved technical literacy.

Do you think the introduction of the Australian Public Service Interim Award 1994 has encouraged employees to utilise this alternative work arrangement?

	<u>Yes</u>	<u>No</u>
Telecommuters	8	0
Management	2	1
Other	4	0
Total	14	1

Table 4.21 Frequency of Introduction of APS Interim Award 1994

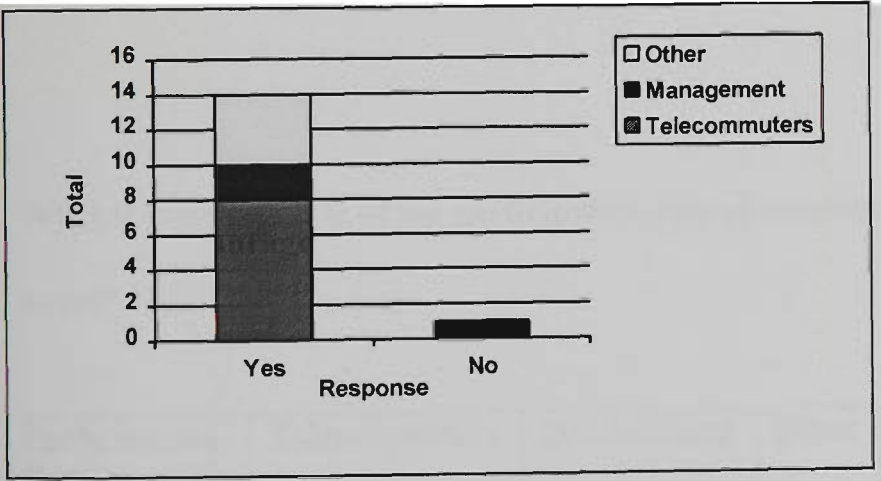


Figure 4.20 Introduction of APS Interim Award 1994

As seen in Table 4.21 and Figure 4.20, all telecommuters surveyed agreed that the introduction of the Australian Public Service Interim Award 1994 has encouraged employees to utilise this alternative work arrangement. The main hurdle faced by the employees was not knowing about it, or being informed that this arrangement existed. To date telecommuting had not been encouraged by others.

Management believed that the introduction of the Australian Public Service Interim Award 1994 has encouraged employees to utilise this alternative work arrangement as staff were seeking more flexible work arrangements and work increasingly suited the home based environment. The other bodies surveyed also revealed that the introduction of the award is seen as having formalised a raft of informal arrangements previously in operation. It has encouraged employees to utilise this alternative work arrangement, but middle management is not seen as supporting the initiative.

The Award provides appropriate guidelines for those seeking to undertake telecommuting within the Federal Public Service. In particular it addresses those job characteristics which are not considered appropriate for homebased work (Public Sector Union, 1994, pg 8)

What is your estimate of the participation rate of telecommuters in the next 5 years?

<u>Participation Rate</u>	<u>Telecommuters</u>	<u>Management</u>	<u>Other</u>	<u>Total</u>
0-25%	1	-	4	5
26-50%	4	1	-	5
51-75%	-	2	-	2
76-100%	1	-	-	1
Unknown	2	-	-	2

Table 4.22 Estimated Participation Rate

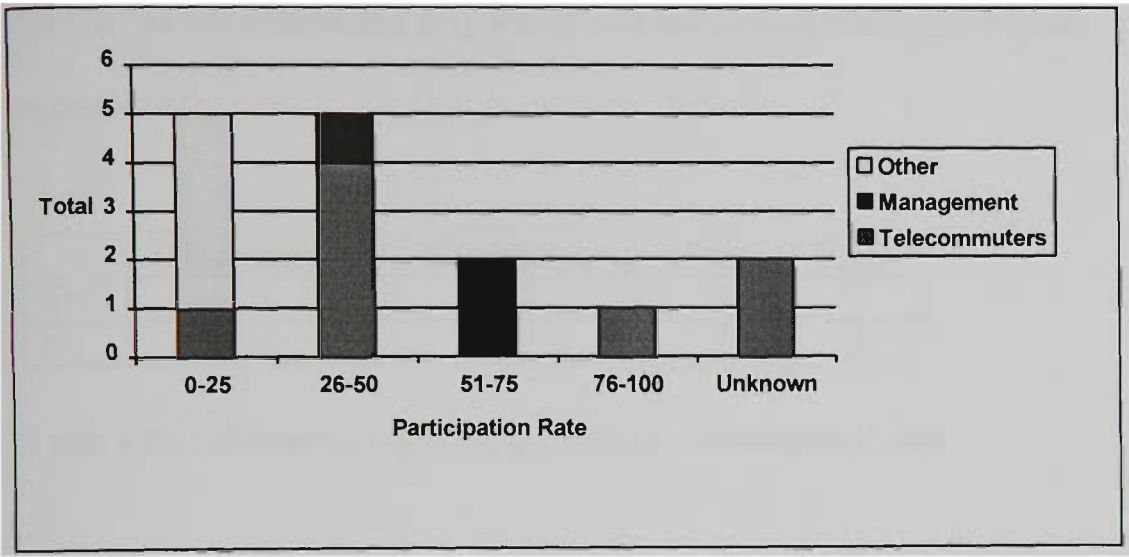


Figure 4.21 Participation Rates

Table 4.22 and Figure 4.21 indicate that most telecommuters surveyed indicated that the estimated participation rate in the next five years of telecommuting would range between 26 and 50 percent. Participation rates are seen to increase in the future, but at this point it will not be widespread until departments start to make gains through desk sharing and reduced accommodation costs depending on the work area.

The Department of Immigration and Multicultural Affairs in particular, estimate that more than 50% of Onshore Refugees case workers within the department will telecommute by the year 2000. Again, this is obviously variable depending on the work area. In general management indicated that the likely participation rate of telecommuters would be between 51 and 75 percent.

All other bodies surveyed agree that the estimated projected number of telecommuters in the next five years will be between 0 and 25 percent.

Do you see telecommuting playing an ever increasing role in tomorrows workforce?

	Telecommuters	Management	Others	Total
Yes	6	3	4	13
No	2	0	0	2

Table 4.23 Telecommuting Playing a Role in Tommorows Future

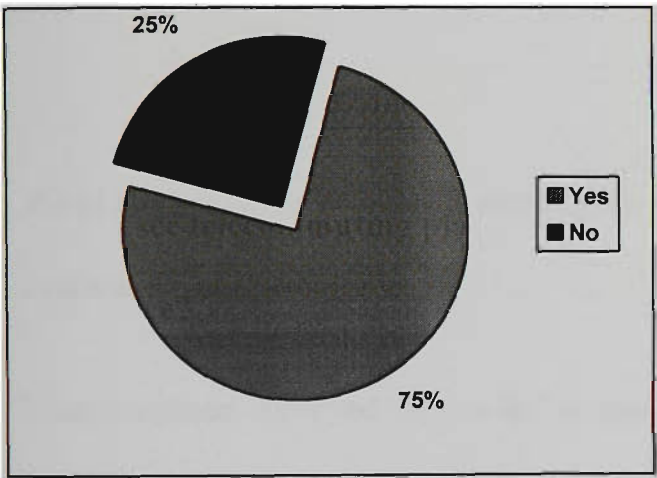


Figure 4.22 Telecommuting Playing a Role in Tommorows Future

There is an expectation from those telecommuters surveyed that telecommuting will play an increasing role in tomorrows workforce, depending on the type of job the person is in and as benefits become appreciated, as depicted in Table 4.23 and Figure 4.22.

Telecommuting is seen by management as playing an ever increasing role in tomorrows workforce because of staff needs and the nature of businesses changing. Management and staff are jointly confronting obstacles/difficulties associated with the necessary changes required for effective telecommuting.

Other bodies also indicated that telecommuting is seen as having an increasing role in tomorrow's workforce. Telecommuting is a natural evolution of the way in which we work, giving workers more choice and flexibility supported by developments in communications and networked information. Re-engineering will focus on decentralising. Telecommunications is ideal to reduce contracted functions, giving more people flexibility of where and when they work, especially if they don't like commuting.

What do you see as the future acceptance of telecommuting to be within the Federal Public Sector?

Telecommuters surveyed believe that a steady gradual acceptance of telecommuting within the Federal Public Sector will take place in the future. One telecommuter went so far to say that probably 100% of workers will be telecommuters within 150 years! Current reluctance towards telecommuting will also lessen as managers see that telecommuting does work.

This question was not asked of management. There was no specific reason why management was not asked this question, it was an oversight.

Other bodies indicated that the future acceptance of telecommuting is seen to be about 15 percent of the workforce and is expected to increase exponentially as the acceptance increases and culturally more technically literate persons enter the workforce.

Telecommuting will work well in industries/job types where outputs can be clearly

defined and work loads predictable to some degree, and where peak loads can be effectively transmitted to teleworker locations.

Do you see external organisations playing a part to the adoption of telecommuting?

	<u>Telecommuters</u>	<u>Management</u>	<u>Others</u>	<u>Total</u>
Yes	4	0	4	8
No	0	2	0	2
Unknown	4	1	0	5

Table 4.24 Frequency of External Organisations Playing a Part in Telecommuting

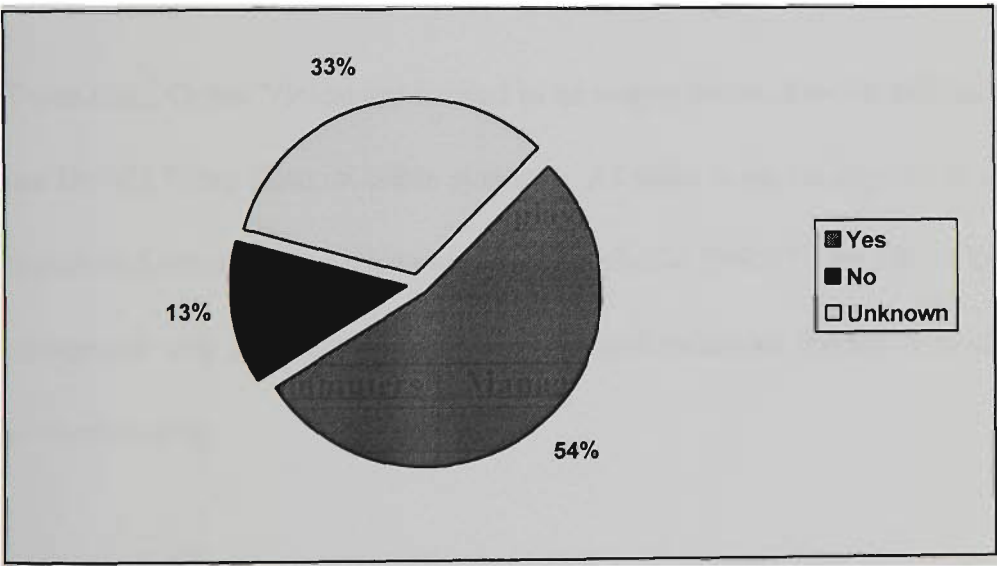


Figure 4.23 External Organisations Playing a Part in Telecommuting

Table 4.24 and Figure 4.23 indicate that telecommuters in particular do see external organisations playing a part in the adoption of telecommuting. Telecommuters surveyed see both Optus and Telstra, as those external organisations which play a part in the adoption of telecommuting, by developing low cost and secure fast data lines, as

well as developing better data search engines for the internet. Management on the other hand does not feel that any external organisation plays a part in the adoption of telecommuting, although models from external organisations are being examined as part of a process of establishing “best practice” in telecommuting.

Other bodies believe and follow along the same lines as telecommuters, that external organisations such as telecommunication carriers and service providers are seen as playing a part by providing access to services at a reasonable rate. Other external organisations are also playing a part for example, by changing social norms and by changing top managements vision of the workplace. Also as companies trace information technology more organisations will follow trend.

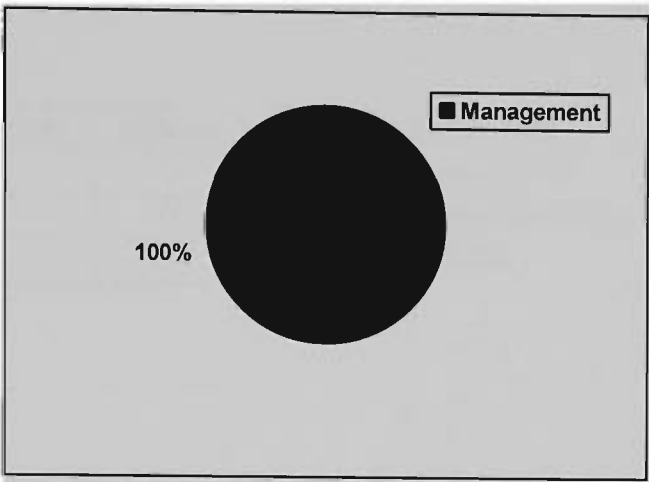
Telstra and Optus Vision are locked in an unprecedented multi-billion dollar race to roll out Hybrid Fibre Coaxial cable systems. At stake is leadership in the delivery of broadband services to Australian homes (Whittle 1995/96, pg 59). These services will change the way people conduct their lives and enhances the move towards telecommuting.

Is the incidence of telecommuting going to increase within your organisation in the future?

	<u>Management</u>	<u>Other</u>	<u>Total</u>
Yes	3	4	7
No	0	0	0

Table 4.25 Increase of Telecommuting within Organisations in the future

Figure 4.24 Increase of Telecommuting within Organisations in the Future



As depicted in Table 4.25 and Figure 4.24 management surveyed believes that the incidence of telecommuting is being seen to increase in the future as technology increasingly facilitates this work alternative, but it will always be limited by the need to have direct client contact.

Other bodies also see the incidence of telecommuting increasing within the Federal Public Sector in the future given more flexible attitudes to work, as access becomes cheaper, as organisation accept telecommuting culturally and re-engineer functions for telecommuters, and also because of social pressure on the family and the possibility of integrating family roles at different stages of career/family cycle.

Telecommuters were not asked to respond to this question.

Do you think telecommuting has been slow to adopt by the Federal Public Sector?

	Telecommuters	Management	Others	Total
Yes	8	1	3	12
No	0	1	0	1
Unknown	0	1	1	2

Table 4.26
Adoption of
Telecommuting
by FPS

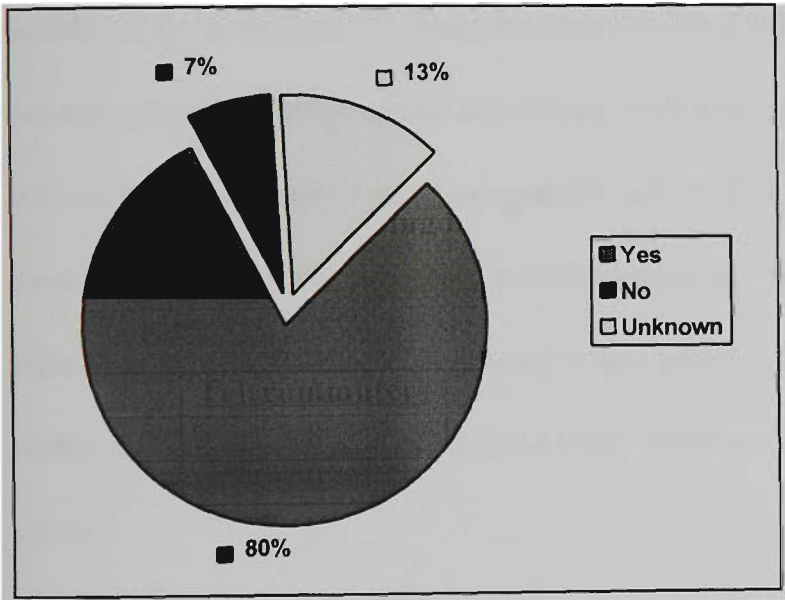


Figure 4.25 Adoption of Telecommuting
by the FPS

All telecommuters surveyed as depicted in Table 4.26 and Figure 4.25, agree that the adoption has been relatively slow by the Federal Public Sector. The reason being managements fears of loss of control, cost of providing equipment, wary of benefits and slow adoption to change as any change is difficult to accept.

Management surveyed indicated that the adoption rate has been variable attributable to management scepticism and reluctance to change. An example of quick adoption of telecommuting includes the Onshore Refugees Operations within the Department of Immigration and Multicultural Affairs.

Other bodies indicate that telecommuting is seen as having been adapted too slowly by the Federal Public Sector because of management attitudes, the absence of accessible information and the harsh and arbitrary judgements about the short term costs of a teleworkers absence.

The literature agrees that telecommuting has been slow to be adapted by departments because issues and benefits are unknown, procedures undefined and manager employer suitability unrecognised (National Business Bulletin March 1995, pg 55). As more and more employees indulge in this alternative work arrangement more of the unknowns will become manageable and management will be able to make more informed decisions and be in a better position to determine its viability. Obviously telecommuting will not work for every single person. The Award helps management within the Federal Public Sector make these informed decisions as guidelines have been set out.

What might be the constraints that hold up its progress, and the positive factors that could accelerate it?

Constraints

<u>Constraints</u>	<u>Telecommuters</u>	<u>Management</u>	<u>Others</u>
Costs	7	-	3
Technology Security	1	1	-
Attitude	1	-	1
Management Inflexibility	1	-	-
Lack of Understanding	-	2	-
Loss of Control	-	-	1

Table 4.27 Frequency of Constraints

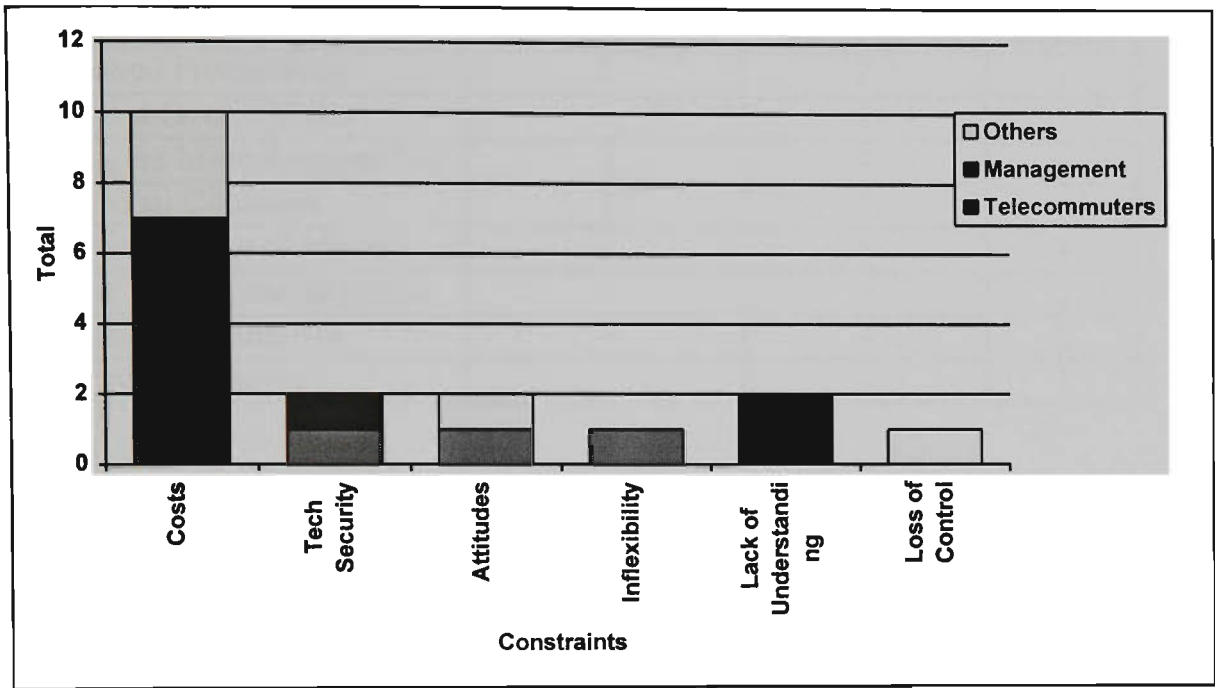


Figure 4.26 Constraints

As seen in Table 4.27 and Figure 4.26, the constraints that hold up telecommutings progress as noted by the telecommuters surveyed include costs, technology, security, attitude and management inflexibility. Costs being the major constraint.

Management surveyed has indicated that the constraints that hold up telecommutings progress are lack of understanding of advantages and processes and technology security. Other bodies indicated that the major constraint was cost followed by attitude and middle managers who fear losing control and who like to see their people working at their desks.

Positive Factors

Positive Factors	Telecommuters	Management	Others
Improved Productivity	2	2	-
Reduced Overall Costs	2	-	-
Managers More Responsible	4	-	-
Individual Contracts	1	-	-
Growing Range of Models	-	1	1
Better Telecommunications	-	-	2
Access to Technology	-	-	2
Improved Lifestyle	-	-	1

Table 4.28 Frequency of Positive Factors

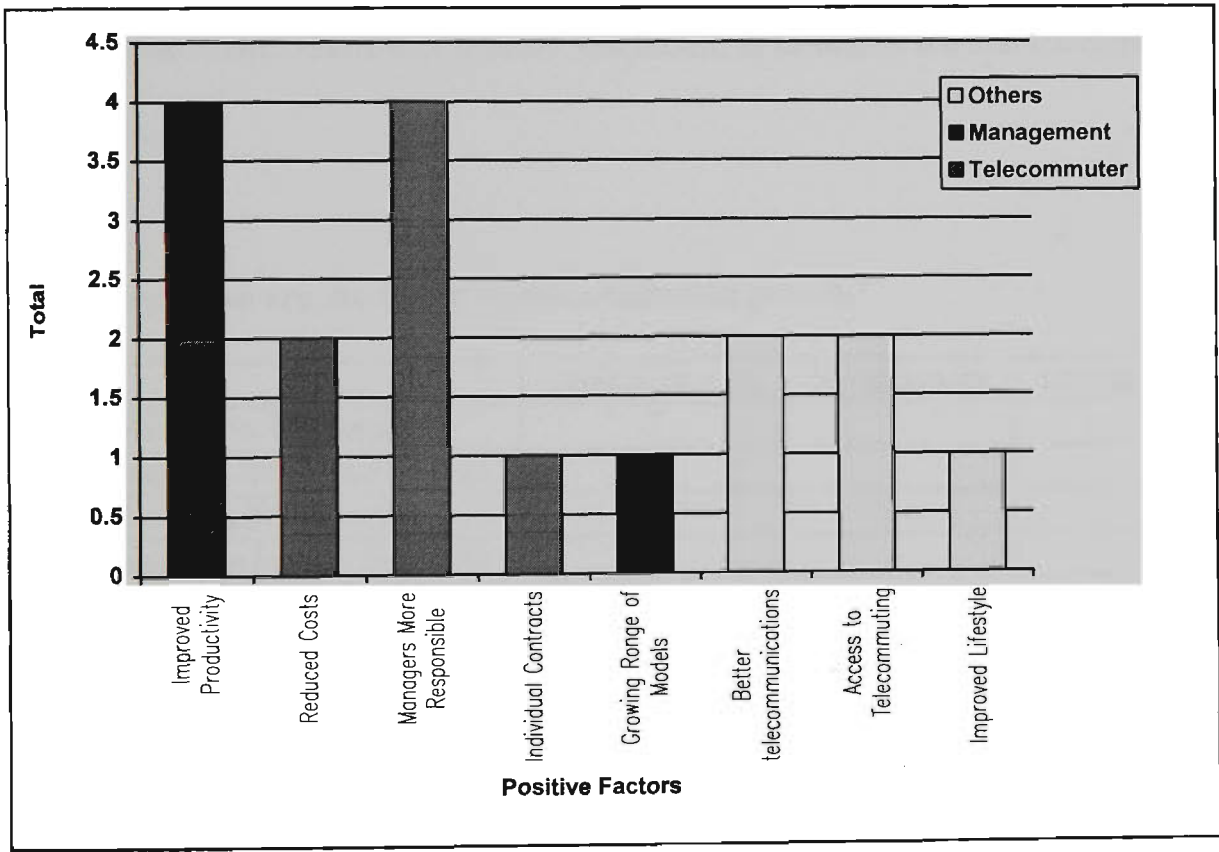


Figure 4.27 Positive Factors

Table 4.28 and Figure 4.27 indicate the positive factors which could accelerate telecommuting as seen by telecommuters, management and other bodies. The positive factors that could accelerate as indicated by telecommuters in particular include improved productivity, individual contracts as part of changes in Industrial Relations laws and reduced overall costs.

Management has indicated that the growing range of positive models could accelerate telecommuting and other bodies indicated that the positive factors that could accelerate it include an improved combination of work and family/personal life as well as better telecommunications for data transfer and access to technology. Telecommuting can further be enhanced by top managers who accept that a telecommuter is a legitimate team member and who do not penalise middle managers who cannot instantly respond to short term difficulties covered by the absence from the office of a telecommuter. A steady gradual acceptance of telecommuting is expected within the Federal Public Sector in the future. Current reluctance will lessen, as managers see that telecommuting does work.

What do you see are the trends in telecommuting growth?

<u>Trends</u>	<u>Telecommuters</u>	<u>Management</u>	<u>Others</u>	<u>Total</u>
Greater Access to Information	3	3	2	8
More Creative Use of Technology	2	-	-	2
Greater Community Acceptance	3	-	-	3
More Phone/Conference Facilities	2	-	-	2
Greater Use	-	1	-	1
Telecottages	-	-	1	1
Change in Work Culture	-	-	2	2

Table 4.29 Frequency of Trends in Telecommuting Growth

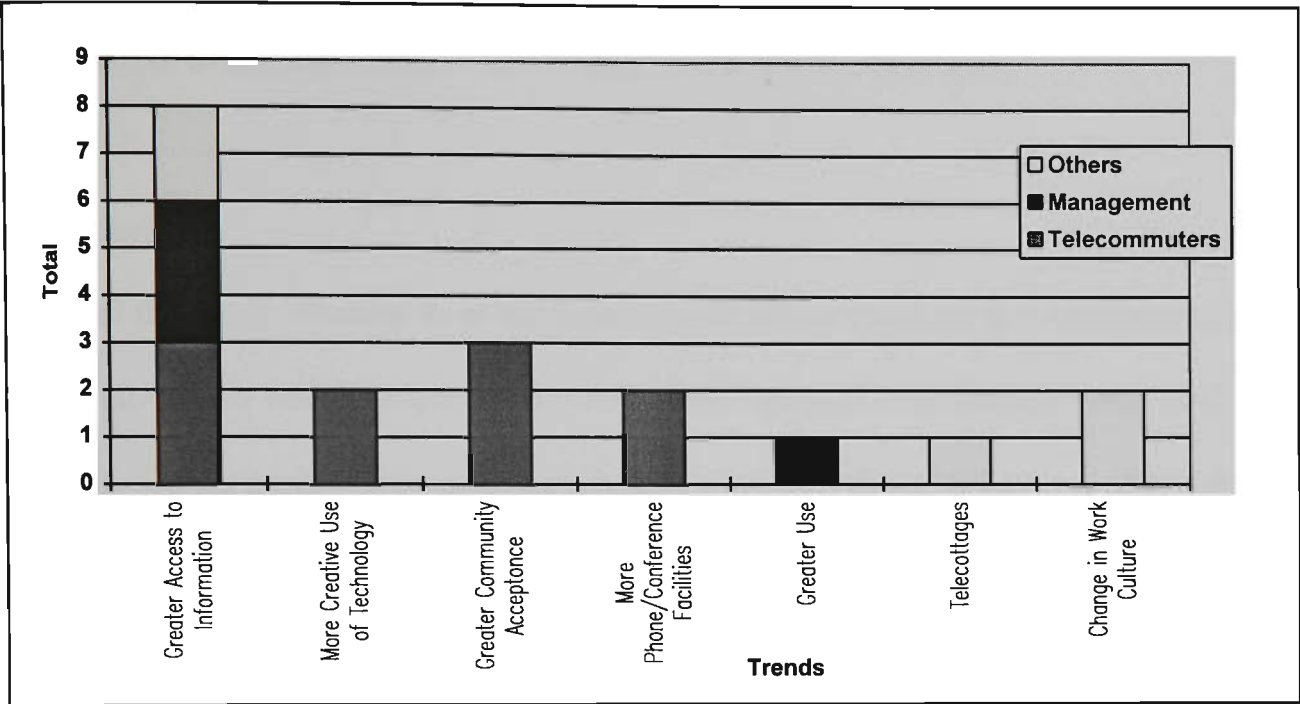


Figure 4.28 Trends

Table 4.29 and Figure 4.28 depict the likely trends as seen by the telecommuters, management and other bodies surveyed. The trends in telecommuting growth as indicated by the telecommuters surveyed involve greater access to information through improved phone/conference facilities and increasing more creative use of technology (greater community acceptance).

Management surveyed feels that there is a trend towards a greater use of telecommuting as clarification is made by bodies about the overall objectives and refinement of application of telecommuting.

The trends as seen by other bodies in telecommuting growth involve a slow variable change until the work culture of most parts of the public service changes. If telecommuting is not viewed favourably what ambitious worker wants to be seen as

supporting something which is privately viewed as outside the mainstream and slightly embrassive to the organisation. Trends also exist towards telecottages.

Conclusion

Overall the results obtained from the three separate surveys indicate that telecommuting as an alternative work arrangement has both advantages and disadvantages associated with it. On the positive side, even though the current penetration and participation rate is low within the Federal Public Sector there is favourable indication toward acceptance of telecommuting and its gradual implementation will enhance work practices within those areas. The major advantage driving telecommuting is its flexibility. It is also clear that for telecommuting to thrive technology and managements attitudes needs to be addressed as they have been highlighted as those areas which influence telecommutings growth within the Federal Public Sector.

Telecommuting is a natural evolution of the way in which we work, giving workers more choice and flexibility supported by developments in communications and networked information will provide the alternative work base which employees desire.

The growth of telecommuting within the Federal Public Sector appears to be growing at a slow pace. Both management and external bodies indicated that telecommuting will have an increasing role in tomorrows workforce and that future acceptance is gradually increasing, with the resurgence of technology.

The chapter has produced the findings and analysed the results of the survey obtained. The following chapter will explore the findings with a view to answering the research question.

CHAPTER 5 - CONCLUSION

This paper has examined critical issues, described the current and future status of telecommuting and provided an insight into strengths and weaknesses of this alternative work arrangement, in an attempt to determine whether the incidence of telecommuting has increased in the Federal Public Sector, and if so, at what rate of growth.

Unfortunately, no definitive conclusion can be drawn from the survey results, due to the poor response rates received. There were a number of reasons as to why the participation rates were low. The main reason revolved around the difficulty in locating possible participants. In particular, it was difficult to obtain information from the government departments when it concerned their personnel or their work arrangements - both which were critical to this survey - especially where a central personnel section existed for these departments.

Another reason for the poor response rate includes, the use of terminology unfamiliar to persons within government departments. For example, telecommuter was not a word which the workers could identify with. Persons were more likely to understand homebased worker rather than telecommuter. The terminology was altered, to accommodate this lack of understanding.

The final reason for the poor response rate was that not all individuals who by definition would be considered as a telecommuter, view themselves as a telecommuter. A number of individuals informally telecommute, but do not recognise that they do participate in a telecommuting arrangement.

Despite the limitations of the survey and the inability to draw conclusions from the survey results, there still remains positive factors within the literature and the responses received from those who participated in the survey, that indicate that the incidence of telecommuting has increased within the Federal Public Service at a slow growth rate.

The survey shows that the introduction of the Australian Public Service Interim Award 1994, is one such factor which has encouraged participation within telecommuting. It has provided guidelines and enforced recommendations for this successful work alternative. At this point in time, Australia remains the only country with a Public Sector Industrial Award covering telecommuting. All telecommuters surveyed agree that the introduction of the Australian Public Service Interim Award 1994 has encouraged employees to utilise this alternative work arrangement. Apart from the Award, technology, supportive management, and a changing workforce are also factors which have attributed to the successful implementation of telecommuting. Technology in particular is important and external organisations such as telecommunications carriers are playing a more vital role in telecommutings success. Currently the telecommunications services such as Telstra and Optus are those organisations in particular which provide individuals with the ability to access information away from the office environment and are those organisations which are influencing the direction of telecommuting.

A number of developments are likely to enhance teleworking possibilities over the next few years, these include: personal computers which spread into the home, ISDN, internet phones and cable modems. In particular the internet, ATM switching, video

servers and Hybrid Fibre Coaxial networks are likely to transform the way many Australians conduct their personal business lives.

Other factors which are critical to the successful implementation of telecommuting include government intervention in the form of incentives, environmental legislation and adaptation of current work practises. The most prevalent factors, as determined by the survey results were management attitudes and technological equipment.

Telecommuting has come along way with the assistance of technology.

As indicated in both the literature and survey results, the reasons for implementing telecommuting can vary depending on the categories of respondents. Under the telecommuting arrangement employees reduce commuting time, have increased flexibility, have the ability to capitalise on personal peak productivity periods, increased physical comfort, reduction of costs, and reduced stress. Also greater job satisfaction, better work environment and increased employment opportunities contribute to employee rewards, towards undertaking telecommuting.

Management on the other hand see telecommuting benefits as being able to attract and retain top quality employees, respond to changing lifestyles needs, support workforce diversity, reduction of office space, improved employee productivity, lower overheads, reduce turnover and improve morale as well as lower absenteeism.

As with reasons for implementation there are also impediments associated with telecommuting. Telecommuters indicated that isolation, decrease of visibility and the

loss of networks as the greatest disadvantages of telecommuting. Management on the other hand noted loss of direct control, training and counselling costs, distraction leading to the decline of work output, maintaining work cohesiveness and public perceptions as impediments. Other issues include relationships with supervisors suffering, sense of resentment from other employees and childcare dilemmas.

Telecommuting implemented appropriately, provides business enterprises with many benefits including significant increases in worker productivity and quality of work produced, and more motivated workers. It can provide workers with flexibility and choice, enabling them to live and work where and when they choose, seeing work as only one component of a rich and varied lifestyle.

Telecommuting, if used effectively can also spur whole new industries, give economic vitality to neglected regions, support workforce diversity initiatives, increase work quality, prolong service hours, and help temporarily disabled workers stay at work.

The survey has indicated that different types of telecommuting options have been available for many years. These include working at home or satellite office/neighbourhood work centres where the staff work entirely from remote locations. The results obtained from the survey indicate that all telecommuters were homebased workers and that those who have undertaken telecommuting have done so on an informal basis where the conditions have been worked out by the supervisor and telecommuter between themselves as opposed to formalising an agreement. The Federal Public Service has found that the jobs best suited to telecommuting within the current

environment are those which have clear outcomes and a low level of interdependence. Administration and research type jobs have been classified as those most suitable.

Telecommuting is comprised of four components: work, people, technology and management. The work which can be predominantly home based, is assessed by results only, well defined and easily measured. The people component of telecommuting is made up of telecommuters and their line supervisors (management). Technology, services the needs of the telecommuter, allowing them to continue to complete their work tasks away from the work base area. Finally, the issues faced by management include security, services, equipment, communication and interaction. These four components must come together to form the complete package if successful telecommuting is to take place within any organisation.

Previously, telecommuting participation rates within the Federal Public Service were low, issues and benefits unknown, procedures undefined and manager employer suitability unrecognised. At present, participation rates of telecommuting within the Federal Public Service are low, and fall between 0 and 25 percent. This can be attributable to managements scepticism and the reluctance for both management and departments as a whole to change. The low participation rates are also due to the absence of accessible information and the costs associated with the employee being away from the office. Currently programs are initiated by the employee and the strategies used to implement telecommuting are of an ad hoc and untimely nature and these have become accepted precedents rather than strategies purposely devised.

All respondents expect that a steady gradual acceptance of telecommuting will take place in the future. Current reluctance will lessen as managers see that telecommuting does work. It is expected that telecommuting will increase exponentially as the acceptance increases and culturally more technically literate persons enter the workforce. With the emergence of individuals requiring more flexible work alternatives due to social pressures on the family and the possibility of integrating family roles at different stages of their career, allows the incidence of telecommuting to increase within the organisations. The incidence will also increase with more flexible work attitudes, access becoming cheaper and organisations accepting telecommuting culturally and re-engineering their functions. Depending on the type of job and the benefits appreciated, telecommuting will play an ever increasing role in tomorrows workforce. Most respondents acknowledge that the estimated participation rate in the next five years will be between 26 and 50 percent of workers within the Federal Public Service.

Although, participation rates are predicted to increase it will not be widespread until departments start to make gains through desk sharing and reduced accommodation costs depending on the work area.

Telecommuting is an alternative work arrangement which provides a means of addressing the changes in work culture. These changes are also reflective within other sectors external to the Federal Public Service. As compared to other sectors acceptance has been slow as has the nature of change. Due to the minimal number of people attempting telecommuting, the impact is low, and therefore, employers are reluctant to change the structure of any departments in order to accommodate only two out of

thousands who undertake this alternative work arrangement. Obviously, the Federal Public Service is becoming aware of employees' changing needs, otherwise there would not have been a need to establish an Award such as the Homebased Interim Award for this mode of work. The trends in telecommuting growth involve a slow variable change until the work culture of most parts of the Public Service changes.

The results found within this research can also be indirectly applied to other industries, particularly with respect to implementations. Other industries can learn and adapt this alternative work arrangement - telecommuting - and gain more of the same benefits as those which apply to the Federal Public Service.

At present considerable research studies has been conducted regarding the productivity and quality of work produced by telecommuters as opposed to their office-based colleagues [APTA 1994, pg 8]. However, further research would be encouraged in the conducting of formal implementation programs which exist regarding alternative work arrangements. In particular an examination into the Federal Public Service Award would assist with recognising the effects and associated possibilities that telecommuting can bring.

The incidence of telecommuting will increase and steadily grow as the Federal Public Sector accepts, acknowledges and adapts to this alternative work arrangement. With the various types of government departments the scope is wide to undertake telecommuting as a viable work alternative for flexible individuals.

APPENDIX A - TELECOMMUTERS SURVEY

TELECOMMUTING SURVEY
(For Telecommuters)

A look into *Telecommuting* -as an alternative work arrangement - within the Federal Public Sector. Your responses to the questions asked below will provide valuable information into telecommuting, its current penetration and future outlook.

I thank you for the time taken to complete the questionnaire and look forward to receiving your reply.

Rosa Vari

Please answer the following questions in the spaces provided, where advised rank options in appropriate order, otherwise please ✓ a relevant box.

1. Sex:
☐ Male ☐ Female

2. Job Title:

3. Name of company:

4. How many hours will you work outside the office per week?

5. Type of work (marketing, finance, engineering, research etc):

6. Who was the telecommuting program initiator?
☐ Employee
☐ Management

7. What do you see as the driving force of telecommuting if any?
☐ Technology
☐ Workplace flexibility
☐ Balance of work & home
☐ Economic influences
☐ Other:

8. What do you see as the advantages of telecommuting for employees?

(Please rank 1- 6)

☐ Increased flexibility
☐ Increased motivation & commitment
☐ Reduced commuting time
☐ Increases productivity
☐ Limits work distractions
☐ Greater job satisfaction
☐ Other:

9. Why do some people abstain from telecommuting?

☐ Security concerns
☐ Reliability concerns
☐ Maintenance concerns
☐ Technical barriers
☐ Liability concerns
☐ Regulatory & policy issues
☐ Other:

10. What do you see as the major downside to telecommuting?

- ☐ Isolation
☐ Decrease of visibility - damage to career objectives
☐ Other:
-

11. Which resources do you regularly use?

- ☐ Video-conferencing
☐ Online databases
☐ Facsimile transmission
☐ Cellular Phone
☐ Electronic Mail
☐ Telephone
☐ Other:
-

12. Do you think the addition of visual capability to telecommunications technology would increase the number of workers who telecommuter?

- ☐ Yes ☐ No

13. What do you see as the major factors militating against the success of telecommuting?

- ☐ Shortage of equipment in Australian households
☐ Better tax system
☐ No Federal Clean Air Act
☐ Strong tradition of interventionist industrial laws
☐ Management Attitudes
☐ Other:
-

14. Do you perceive that some of your co-workers resent the fact that you telecommute?

- ☐ Yes ☐ No

15. How did you become aware of telecommuting?

16. What are your broad views about your experience of telecommuting and how does it compare for you with other more conventional types of work?

17. What is the greatest challenge of telecommuting programs for employees?

18. How has your department/organisation changed as a result of the implementation of telecommuting?

19. What strategies were used to implement telecommuting?

20. What has made telecommuting possible, and what is its effect?

21 (a). Do you think the introduction of the Australian Public Service Interim Award 1994 has encouraged employees to utilise this alternative work arrangement?

[] Yes [] No

(b) Why/Why not?

22. What is your estimate of the participation rate of telecommuters in the next 5 years?

23. Do you see telecommuting playing an ever increasing role in tomorrows workforce? If so in what way?

24. What do you see as the future acceptance of telecommuting to be within the Federal Public Sector?

25. Do you see external organisations playing a part to the adoption of telecommuting? Who & Why?

26. Do you think telecommuting has been slow to adopt by the Federal Public Sector, If so why?

27. What might be the constraints that hold up its progress, and the postive factors that could accelerate it?

28. What do you see are the trends in telecommuting growth?

Thank You for your co-operation

APPENDIX B - MANAGEMENTS SURVEY

TELECOMMUTING SURVEY
(For Management)

A look into *Telecommuting* -as an alternative work arrangement - within the Federal Public Sector. Your responses to the questions asked below will provide valuable information into telecommuting, its current penetration and future outlook.

I thank you for the time taken to complete the questionnaire and look forward to receiving your reply.

Rosa Vari

Please answer the following questions in the spaces provided, where advised rank options in appropriate order, otherwise please ✓ relevant box.

1. Sex:

[] Male [] Female

2. Job Title:

3. Name of company:

4. Who was the telecommuting program initiator?

[] Employee
[] Management

5. What is the current participation rate of telecommuting?

[] 0 - 25%
[] 26 - 50%
[] 51- 75%
[] 76 - 100%

6. What do you look for when considering individuals for telecommuting (individual requirements):

[] Self-motivated
[] Well-disciplined
[] Work autonomously
[] Meet deadlines
[] Other:

7. What is the greatest advantage of telecommuting programs for employers?

(Please rank 1-9)

[] Improved employee productivity
[] Lower overheads
[] Support for workforce diversity issues
[] Retention of valuable employees
[] Reduced stress
[] Increased work quality
[] Improved recruiting
[] Reduction of office space
[] Decline in absenteeism
[] Other:

8. What are the major disadvantages of telecommuting programs for employers? (please rank)

[] Loss of direct control
[] Distraction leading to the decline of work output
[] Public perception
[] Training & counselling costs
[] Other:

9. How do you counteract loss of control? (please rank)
- ☐ Establish clear work objectives
- ☐ Permit only reliable employees to telework
- ☐ Maintain frequent contact
- ☐ Other: _____
10. Why do some people abstain from telecommuting?
- ☐ Security concerns
- ☐ Reliability concerns
- ☐ Maintenance concerns
- ☐ Technical barriers
- ☐ Liability concerns
- ☐ Regulatory & policy issues
- ☐ Social change
- ☐ Other: _____
11. What do you see as the driving forces of telecommuting if any?
- ☐ Technology
- ☐ Workplace flexibility
- ☐ Balance of work & home
- ☐ Economic influences
- ☐ Other: _____
12. Do you think the addition of visual capability to telecommunications technology would increase the number of workers who telecommute?
- ☐ Yes
- ☐ No
13. What do you see as the major factors militating against the success of telecommuting?
- ☐ Shortage of equipment in Australian households
- ☐ Better tax system
- ☐ No Federal Clean Air Act
- ☐ Strong tradition of interventionist industrial laws
- ☐ Management Attitudes
- ☐ Other: _____

14. How are individual telecommuters managed?

15. How do you decide what jobs are best for telecommuting?

16. What are your broad views about your experience of telecommuting and how does it compare for you with other more conventional types of work?

17. How has your department/organisation changed as a result of the implementation of telecommuting?

18. What strategies were used to implement telecommuting?

19. What has made telecommuting possible, and what is its effect?

20. What might be the constraints that hold up its progress, and the positive factors that could accelerate it?

21 (a). Do you think the introduction of the Australian Public Service Interim Award 1994 has encouraged employees to utilise this alternative work arrangement?

[] Yes [] No

(b) Why/Why not?

22. Do you see external organisation playing a part in the adoption of telecommuting?

23. Is the incidence of telecommuting going to increase within your organisation in the future?

24. Do you think telecommuting has been slow to adopt by the Federal Public Sector, if so why?

25. What is your estimate of the participation rate of telecommuters in the next 5 years?

26. Do you see telecommuting playing an ever increasing role in tomorrows workforce? If so in what way?

27. What do you see are the trends in telecommuting growth?

Thank You For Your Co-operation.

APPENDIX C - OTHER BODIES SURVEY

TELECOMMUTING SURVEY

A look into *Telecommuting* -as an alternative work arrangement - within the Federal Public Sector. Your responses to the questions asked below will provide valuable information into telecommuting, its current penetration and future outlook.

I thank you for the time taken to complete the questionnaire and look forward to receiving your reply.

Rosa Vari

Please answer the following questions in the spaces provided, where advised rank options in appropriate order, otherwise please ✓ a relevant box.

1. Sex:
[] Male [] Female

2. Job Title:

3. Name of company:

4. Who do you think should be the telecommuting program initiator?

[] Employee
[] Management

Why?

5. What do you perceive as the current participation rate of telecommuting?

[] 0 - 25%
[] 26 - 50%
[] 51- 75%
[] 76 - 100%

6. Why do think some companies abstain from telecommuting?

(Please rank)

[] Security concerns
[] Reliability concerns
[] Maintenance concerns
[] Technical barriers
[] Liability concerns
[] Regulatory & policy issues
[] Social change
[] Other:

7. What do you see as the driving forces of telecommuting if any?

[] Technology
[] Workplace flexibility
[] Balance of work & home
[] Economic influences
[] Other:

8. Do you think the addition of visual capability to telecommunications technology would increase the number of workers who telecommuter?

[] Yes
[] No

9. What do you see as the major factors militating against the success of telecommuting?

- ☐ Shortage of equipment in Australian households
- ☐ Better tax system
- ☐ No Federal Clean Air Act
- ☐ Strong tradition of interventionist industrial laws
- ☐ Management Attitudes
- ☐ Other:

10. What is your estimate of projected number of telecommuters in the next five years?

- ☐ 0 - 25%
- ☐ 26 - 50%
- ☐ 51- 75%
- ☐ 76 - 100%

11. What jobs do you think are best suited for telecommuting?

12. What do you see as the greatest advantage of telecommuting programs?

13. What are the major disadvantages of telecommuting programs?

14. What do you see as the major effects on existing businesses and opportunities with the implementation of telecommuting?

15. What might be the constraints that hold up its progress, and the postive factors that could accelerate it?

16. What has made telecommuting possible, and what is its effect?

17 (a). Do you think the introduction of the Australian Public Service Interim Award 1994 has encouraged employees to utilise this alternative work arrangement?

[] Yes [] No

(b)Why/Why not?

18. Do you think the incidence of telecommuting is going to increase within the Federal Public Sector in the future. If so, why/why not?

19. Do you see external organisation playing a part with the adoption of telecommuting? If so, in what way?

20. Do you think telecommuting has been slow to adopt by the Federal Public Sector. If so why?

21. Do you see telecommuting playing an ever increasing role in tomorrows workforce? If so in what way?

22. What do you see as the future acceptance of telecommuting to be?

23. What do you see are the trends in telecommuting growth?

Thank You For Your Co-operation.

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