

# **Telework: New Forms of Work and Employment Opportunities in the Caribbean**

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## **EXECUTIVE SUMMARY**

The convergence of telecommunications and information technology has brought about fundamental changes in the methods of work execution, work location, delivery, and work relationships in many countries. One of the offshoots of these changes is phenomenon of telework through which technology allows work to be carried out at a distance from where the work results are needed. Several studies have examined the impact of telework in the industrialized country context. However, there is a paucity of such research studies in developing countries. This is also the case in the Caribbean, where recent policy initiatives have resulted in both an expansion of the telecommunications access and of measures aimed at more flexible working arrangements. These initiatives have unleashed the dramatic potential for changes in work practices and employment relationships.

Building on earlier preliminary work done on telework within the Caribbean region, this qualitative research study sought to further address the issue by examining the prospect of telework to bring about significant changes in the way companies, governments and individuals conduct their work practices in the Caribbean. Carried out with the support of IDRC of Canada and The University of the West Indies (UWI) the project aimed to explore stakeholders' perceptions of the extent to which Caribbean technology infrastructure, labour policy framework and stakeholder attitudes support the growth of Telework in the region. The research project also sought to determine the extent to which teleworking practices hold the potential to expand opportunities for employment.

The approach combined primary research with documentary search for regional and global studies that exist on the telework. As a result, the study provides a wide ranging review of bibliographical sources on the subject. The study also encompasses the results of an extensive range of in-

depth interviews conducted among key informants in three Caribbean countries, namely Jamaica, Barbados and Trinidad and Tobago, in the latter part of 2006. Whereas the documentary search investigated pre-existing data on telework on the global and regional levels, the primary data-gathering effort sought to understand how Caribbean stakeholders view telework, to gauge the extent of its use and to evaluate their perceptions of the specific advantages and disadvantages that this type of work entails for the region.

The study found that while telework is not currently high on the agenda of major private companies or Caribbean governments, it is a growing practice in the region being carried out under a variety of names and forms. The potential for its growth becomes more evident with increasing traffic congestion, poor public transport, improving telecommunications infrastructure and the need to work across national boundaries within the spirit of the Caribbean Single Market (CSM) and the proposed integrated regional economy. Despite limited current uptake, therefore, telework is expected to grow as the level of global knowledge sharing on the subject increases.

The study found that leaders in labour ministries, trade unions and human resources departments will need to increase their own training and awareness of this alternative method of staff deployment. This includes capacity building and the skill to assist with identification and selection of staff members to be designated as teleworkers. The entire region will also need to increase awareness in the systems of monitoring and management of teleworkers. Among the crucial issues to be specifically addressed are:

- training at multiple levels
- developing mutual trust,
- measuring personal productivity,
- ensuring technology access and reliability,
- providing a stable power supply,
- maintaining information security
- ensuring content confidentiality, and
- monitoring telework-related occupational health issues.

As evidenced by the documentary research and stakeholder accounts in this study, telework is a vehicle with strong potential to contribute to increased economic competitiveness and productivity in the region. Its successful implementation, however, will depend on increased knowledge levels among stakeholders, changes in attitudes towards work culture and people management, as well as enhanced working tools for the telework environment.

Integration of discussions on telework into prevailing efforts to achieve greater flexibility in industrial working arrangements may well be the best point of departure for public engagement with the issue of telework. This project has certainly begun to raise awareness among a significant group of stakeholders, including those interviewed throughout the region and those who attended the regional public consultation in Jamaica.

As the most significant initiative on telework in the Caribbean region to date, this study represents a call for the continuation of research and action to determine the most beneficial form for wider implementation of this initiative.

## INTRODUCTION

This report is divided into three broad sections. In this introductory section we explore the concept of teleworking, the second looks at the Caribbean in particular and presents the results of field work exercise carried out in each country. The final section provides a synthesis of the findings by examining the key thematic issues emerging from research in the Caribbean.

### Research Design

The study was carried out in two parts. The first comprised of a review of studies and other documentary sources relating to telework in the region and internationally. The objective was to provide a general context for the study by focusing on the broader social and technological issues connected to teleworking. The second aspect of the study comprised of fieldwork involving a combination of in-depth interviews, “personal accounts” and focus groups. A total of 48 such encounters were arranged involving 63 key informants (see Appendix 1). These informants were drawn from among the following groupings:

- Government experts,
- Technology elites,
- Major telecoms providers,
- Major technology users and
- Non-governmental organisations.

The groupings were defined as follows:

**Government:** Respondents drawn from national governmental organisations whose role is to develop policy and or regulate the information and communications industry (ICT) or the work environment.

**Technology elites:** Respondents who are technologically oriented, who are exceptionally knowledgeable or who are involved in research, lobbying, advocacy or other approaches to influencing the direction of technology policy in the country or region. Among these were persons drawn from the national and regional ICT regulatory agencies, organisations of ICT professionals and educational and training institutions.

**Major telecoms providers:** Commercial organisations whose business is to provide the kind of telecoms services that can facilitate telework

**Major technology users:** Commercial, public sector or not for profit organisations that are service providers and major users of ICT. These organisations may be currently utilising teleworking or show the potential for utilising it in the future.

**Non governmental organisations:** Organisations whose primary purpose lies outside of the field of telecommunications but whose concern is to promote the role of particular interest groups. These included workers' organisations as well as non-governmental organisations focussing on women's issues and the issues of workers with disabilities.

Each respondent was asked a common set of core questions built around three central themes: their knowledge of and exposure to telework, within and outside of their own work setting, their perspective on its impact and their perspective on the future of telework in the Caribbean. Since information about the incidence and character of telework in the Caribbean is sparse, the project was unable to identify any well defined group of teleworkers in advance of the interviews.

### **The Concept of Teleworking**

The terms telecommuting and teleworking are defined in different ways. All of these definitions however display two common characteristics (a) work is performed at a

distance from the central or primary work-base and (b) information and communications technology devices provide the medium for facilitating the process. Accordingly, for the purposes of this research study, telework was defined as “distance working facilitated by information and communications technologies”. This definition, which was originally advanced by the International Labour Organisation (ILO) is broad enough to accommodate work that is performed by the worker at home, at a “telecentres” that is closer and more conveniently located relative to the home or at any location from which it is possible to connect to the primary office ([http://www.telework.gov/documents/tw\\_man03/ch1.asp#d](http://www.telework.gov/documents/tw_man03/ch1.asp#d), retrieved April 23, 2006, Di Martino, 2004). As technology advances, it is becoming increasingly feasible for an individual to work from anywhere. Speaking of employees, Heikes (2002, p. 1) makes this point when he observed that:

Telecommuting . . . allows an employee to perform assigned duties at an alternative site (usually home) during some or all of his/her scheduled work hours. . . .Telecommuting is the partial or total substitution of telecommunications technology for the trip to and from the primary workplace along with the associated changes in policy, organization, management, and work structure.

These basic features characterise a number of different approaches to work that are becoming increasingly significant as the use of computers, cellular phones, personal digital assistants (PDAs), and advanced communications links such as Integrated Service Digital Network (ISDN) and broadband access, systematically remove the physical barriers that once required people to work collectively in a central work site (STC, 2002). While this is not a settled issue, the definition of telework has been taken to encompass a range of possibilities including:

- Telehomeworkers – Employed or self-employed, home-based workers, private consultants or contract workers. These telehomeworkers may work for an employer in their own country or in any other country, either near or far from their own.
- Occasional teleworkers – Individuals whose main place of work is the centralised office but who may, for example, carry out overtime work at home or elsewhere either on a regular or ad hoc basis.
- Nomadic teleworkers - Field workers who travel in the course of work and who do not spend any significant amount of time working at a central base but who routinely access the organisations information resources, delivers work to a central location and may routinely interact with the employees of the organisation online.

The key feature of the above groups of workers is that they are in possession and control of technology that resides outside of a central work site and that they have the ability to work from a range of possible locations. A broader definition of teleworking may also encompass persons who (go to) work at a central location where they interact directly with a pool of other workers. These include:

- Community telecentres and satellite offices whose primary function is to permit work to be done at a location *closer* to home than the traditional workplace. Such centres may be established either by an employing organisation, by government or another private entrepreneur and satisfies many other purposes, including the need that some workers have to work in an environment away from home.
- Contract telecentres and call centres, the classic example of which involves business enterprises that are subcontracted to perform certain “back-office” operations for companies that are typically located in another country. One important way in which such workers are different from the standard teleworkers is that they go to work at a central location, provided by their direct employer. From a legal and industrial relations perspective as well, they are not significantly different from other workers.

## **The scope of Teleworking**

Reliable estimates of the extent of teleworking are rare, particularly for developing countries, with cross-national comparisons being particularly difficult. Some sources suggest that telework has become a major option for a significant percentage of the workforce in the United States and the United Kingdom and depending on how it is defined, is becoming commonplace among well established organizations around the world. The general consensus among writers is that the United States has the highest prevalence of telework (Lafferty, 2000; Dunn, 2005). A survey conducted by the William Olsten Center in 1998 showed that 51% of North American companies permitted some form of teleworking. Di Martino (2005) reported that in 2003 nearly a third of the US workforce was working regularly at home on at least a part-time basis. The same report also indicated that over 10 million workers telework on a regular basis in the UK, six percent out of a total workforce of 150 million. In Canada, teleworker numbers jumped from 4 percent of workers in 1997 to 1.8 million in 2005, 8 percent of all workers (Canadian Teleworkers Association, 2005). Similar trends are evident in Australia where the Bureau of Statistics reports that over ten percent of the employed labour force involved in some form of teleworking (cited by Canadian Teleworkers Association, 2005). While it is difficult to place much confidence in data drawn from a wide range of uncoordinated sources, what can be inferred with some degree of certainty is that teleworking is on the increase, and that given differential access to ICT, this trend is more prevalent in the developed than in developing countries.

There have been two major studies on the scope of telework in the Caribbean. Dunn (2000), investigated employment relations and working conditions in the English-

speaking Caribbean in the context of globalization, teleworking and trade unionism. This was the first study that focused on the effects of telework as a new form of work in the Caribbean. More recently, Palmer-Peart (2004) provides a detailed study of the inclination of Jamaican employees to telework. According to these findings more than 60 percent of workers surveyed were inclined to telework at least one day per week. This research project builds on the existing literature and provides an update on the prevalence and perceptions relating to telework in the Caribbean.

### **The Advantages and Disadvantages of Telework**

Di Martino (1991), a strong proponent of telework argued that telework brings net benefits to all stakeholders concerned: to employers, individual workers and to society at large. While some writers agree, others point out that telework is not without its disadvantages.

#### *For the Individual*

Writers (Hill et al, 1996; Hill et al, 1998; Johnson, 1999; Peters et al, 2003) seem to agree that for those with domestic responsibilities (such as taking care of children and the elderly) telework offers a balance between professional and personal life. In eliminating commuting time to the office, telework enhances an employee's ability to "control, predict and absorb change in work and family roles" (Higgins et al, as cited in Johnson, 1999). There is some empirical evidence suggesting that telecommuters are more satisfied than non-telecommuters with their ability to schedule child-care

arrangements and with the opportunity that telework offered to spend more time with family members (Nilles, cited by Hill et al, 1994).

While this important contribution to family life is viewed as a positive, researchers also recognise that it may be achieved at the expense of the close professional interaction and camaraderie associated with the traditional work environment. Some studies suggest that the growing use of the Internet has encouraged isolation, as workers are estranged from the work community where they can offer each other support or learn from each other (Oz 2002, p. 235; Fairweather 1999, p. 45). This is supported by Mills et al, who have observed that

. . . some customer-service or sales activities gain exponentially from the team spirit and motivation that is generated by the leaders and managers sitting in with the teams and “leading from the front.” A telework arrangement would not offer the same synergistic advantages. (Mills et al, 2002, p.52)

Furthermore, the issue of whether or not telework contributes positively to work-life balance is still contested. Some researchers (e.g. Hill et al, 1996; Johnson, 1999) maintain that the virtual office is a "cyberspace sweatshop" that blurs the boundaries between work and home life. One study (Olson et al, cited by Hill et al, 1998) concluded that because of the thin line between work and home life, telecommuters often exhibit characteristics of “workaholism”. It is argued that teleworkers may work harder than those stationed at the central office because of the lack of face-to-face supervision. For example, a study of AT&T reported that teleworkers end up spending an average of 11% more time at work than their counterparts (Oz 2002, p. 235). This can be attributed to the fact that teleworkers, unlike their office colleagues do not necessarily have a structured

work schedule. In addition to this, telework may appeal to people who are not fond of the traditional '9-5' structure, may work well on their own in a more personal and comfortable environment and hence, accumulate more hours than their office counterparts. Although this may be beneficial to employers, teleworkers often get no compensation for the extra hours worked or added productivity.

One of the most significant concerns relate to the status of workers who enter telework. Traditional labour and employment law distinguishes between two types of workers, those operating under a contract of indefinite tenure (a so called contract *of* service) and those operating under a fixed-term contract *for* service. The former is usually referred to as an employee and an extensive body of custom and practice, protective legislation as well as case law exists to define the relationship between this individual and the employer. Some point to a danger that a shift to teleworking may be accompanied by a conversion of employees into *contract workers*, operating ostensibly as self-employed persons and who therefore lack job protection and benefits (Ivancevich, 1998). According to some observers, telework may not only worsen the employment conditions and job insecurity of workers in certain occupational and social groups, but actually transfer to them the cost of infrastructure such as home improvement and utility costs. Such costs are extremely hard to quantify and generally not reimbursed. (Di Martino et al, 1990, Porter, 2004)

### *For the Organization*

Successful telework programmes can see employers benefiting through cost savings, improved motivation, increased productivity, skills retention, organization flexibility, flexible staffing, organisational resilience and flexible attitudes at the workplace (European Telework Online retrieved on February 28, 2006 from <http://www.eto.org.uk/faq/faq03.htm>; Di Martino, 1994).

Cost reduction for the company is a major impetus behind the growing interest in the virtual office. Employers in the developed countries such as the United Kingdom and the United States have reported significant savings from the introduction of telework. Telework can significantly reduce the amount of office space that employers require and minimized rental charges for office facilities (Fairweather 1999). Employers have also significantly reduced costs for heating, air-conditioning, car parks and lighting (Telework New Zealand retrieved February 28, 2006, from <http://www.telework.co.nz/BenefitsCorp.htm>). While the validity of the data is uncertain, claims of real estate savings are sensational (Hill et al, 1998). According to Cascio (2000), IBM saves 40 to 60 percent per site per year by eliminating offices for all employees except those who really need them. Similarly, the Canadian Telework Association (2005) reports that about 25% of IBM's 320,000 global workforce telecommutes from home offices, saving US \$700 million per annum in real estate costs.

Reduction in operational costs is not the only advantage of telework. There is also some empirical support for the proposition that teleworkers are more productive (Cascio, 2000; Hill et al, 1998; Ohno et al, 2004). According to the Canadian Telework Association (2005):

- American Express telecommuters handled 26% more calls and produced 43% more business than their office-based counterparts;
- Compaq Computer Corporation documented productivity increases ranging from 15 to 45%.
- Surveys and pilots conducted by IBM Canada (where about 20% of its workforce telework) indicate that employees can be as much as 50 percent more productive when they work in telework environments.

By facilitating telework, employers are entrusting their employees with the management of their workload without much physical supervision. According to some analysts, employees respond well to this autonomy and the result is generally increased productivity. Increased productivity also arises from the lack of distractions and interruptions that plague traditional working environments. Such distractions include office politics, inclement weather, and time wasted during the commute (Mills et al 2001; Fairweather 1999).

Another potential benefit to employers lies in the retention of skills. Employers may now be able to retain their highly skilled workers by making the option of working from home attractive to employees who may find this desirable (Fairweather 1999). Skilled female employees on maternity leave will be able to work from home and employees who reside long distances away from the workplace may now be able to simultaneously balance their careers and family relationships via telework. Such employees may then develop a greater sense of loyalty to the organization that has allowed them to lead this kind of lifestyle (Templer and de Job 2000).

Organisational resilience stems from several sources. Teleworking can enable continuous work without interruptions during time of restructuring and reorganization. A telework programme can assist the organisation in withstanding the challenges of strikes,

natural disasters and other emergencies such as acts of terrorism. In other words, telework is a means of managing unavoidable risks (European Telework Online Retrieved February 28, 2006, from <http://www.eto.org.uk/faq/faq03.htm>, Gill 2005; Normann 2000).

Although telework has many advantages, it also presents disadvantages for employers. One major example relates to the security of transmission of company data (Lafferty, 2000; Mills et al, 2001; Schneider 2004). The transmission of data on the Internet makes an organisation vulnerable to malicious software (malware) attacks that can potentially damage its hardware and software infrastructure. Another genuine threat lies in the possible dissemination of sensitive, mission critical information through acts such as industrial espionage. Employers often fear that competitors may intercept communications, such as email messages, from teleworkers for competitive gain. (Baratz & McLaughlin 2004; Schneider 2004)

Other disadvantages include the initial cost of establishing the IT infrastructure and the office environment in the workers' space. (US Dept of Transport, 2004). Finally, the widespread use of telework may also disrupt teamwork and organizational culture, leading to potential losses in productivity (Canadian Teleworkers Association, 2005).

### *For the Society*

Telecommuting is of particular interest, from the perspective of the society at large, because of its implications for transportation planning, fuel cost, air quality and congestion relief. Urban traffic congestion can cause personal stress, delays and corporate

productivity losses; general commuting, particularly in peak-hour congestion, is a major source of air pollution. While telework offers a solution to traffic congestion and pollution, its main attraction for policy makers and governments are the opportunities that teleworking offers for growth and sustainable development. Allowing companies to occupy less space and control the fixed overhead costs of their installations creates more profits and a spill-over effect for the economy. More importantly though, is the employment opportunities that telework presents to the society. Many researchers have explored the potential for telework to generate new employment opportunities, especially in rural areas of more developed economies and in developing economies of Latin America and the Caribbean (Martino, 2004).

Assuming that they are given adequate access to education and training, telework may also increase employment opportunities for the physically challenged (Johnson, 1999; U.S. Office of Personal Management Retrieved March 1, 2006 from [http://www.telework.gov/documents/tw\\_man03/ch1.asp](http://www.telework.gov/documents/tw_man03/ch1.asp)). The advancement and sophistication of technology has enabled people with disabilities to support themselves without the need for travel. Telework may also allow employers to retain skilled workers who are recovering from injuries and illness. In some countries the alternative would have been the loss of livelihood for an employee on the grounds on the grounds that the contract has been frustrated due to illness.

## **Telework and Developing Countries**

Compared to countries such as those in North America and most of Europe, those in the Caribbean are at a relatively low level of development. The expansion of Information and Communications Technologies worldwide has raised the hope that poorer countries will be able to develop rapidly, bypassing the traditionally accepted “stages” of economic development to narrow gaps in productivity and output that separate them from the industrialized countries (ILO, 2001). The potential for "leapfrogging" becomes even more promising due to the emergence of Internet technologies, which are supporting the global flow of information and expanding the possibilities of a global distribution of work (ILO, 200, Mitter, 2000). Telework in particular has been viewed as a growth enabling engine for developing countries in so far as it permits jobs to be effortlessly relocated from the industrialised to the less developed countries, where they can often be done more cheaply. Beyond the prospects of job creation directly related to the IT industry, ICTs can create new opportunities for employment for a broad range of people with different skills. The establishment of local telecenters in countries such as Barbados, Bangladesh, India, Vietnam, Ireland, Brazil and Senegal has created direct employment for thousands of local men and women.

Most developing countries however have to date been unable to take full advantage of these opportunities as the emergence of a yawning "digital divide" between them and the industrialized countries continues to reproduce existing patterns of inequality with regard to distribution and access to new technologies. Drawing on data compiled by the International Telecommunications Union (ITU), the International Labour Organisation (ILO, 2005) reports that access to ICTs remain very limited in much of the

developing world. More than 85 percent of the world's Internet users are in the developed countries, which account for only about 22 percent of the world's population. Internet access requires both communications links and information technologies, and while there is still much less access to telecommunications in developing countries than in industrialized countries, the current gap in access to computers is much greater than the gap in access to telephone lines or telephones (ILO, 2005). In 2003, high income countries had 22 times as many telephone lines per 100 member of the population as low income countries, but 96 times as many computers. This of course creates a direct impact on the possibility of telework, since without sufficient ICT infrastructure; telework can only be implemented on a limited scale, if any at all (ILO, 2005).

Another factor that may inhibit the growth of teleworking in developing countries like the Caribbean is general levels of literacy existing among the population. Much of the work that is possible through the medium of ICTs is relatively sophisticated knowledge work, so countries must present the right mix of skills, infrastructure, and policies in order to become important locations in global markets for intangible products or ICT products generally. As Mitter (2000) pointed out, "the possibility of generating employment through transnational networking thus depends on education and training to create the requisite skills" (p. 246). While technology can help there is really no shortcut to literacy and education, yet both are vital for reaping the greatest advantages from the emerging digital era (Hultin, 2003).

Technology transfer and as such the prospects for teleworking is also constrained by the distribution of access to resources between rural and urban areas in developing countries. Typically, a high percentage of developing country residents live in rural areas.

Since facilities are not likely to be evenly distributed throughout the country, poorer nations may be characterised by rural settlements without any communications infrastructure. Largely for these reasons, the prevalence of telework in developing countries is not as high as it is in the more advanced economies of Europe and North America, for example (Di Martino, 2004). Although there is the potential of using telework as a strategy for development, the World Employment Report of 2001 concluded that, up to the beginning of the twenty-first century, telework in developing countries continued to be “a rare occurrence” (ILO, 2001).

One of the best known examples of telework is the global provision of service by the burgeoning software industry in India, whose rapid development in the last decade or so has been largely attributable to the revolution in information and communications technology (Bibby, 1996). India has benefited particularly handsomely from the global trend towards outsourcing and offshoring. Now known as ‘the world’s back office’ India is the world’s most important offshoring point dominating the international market for the outsourcing of IT services and IT-based business processes (Deutsche Bank, 2005). For poorer countries of the world, the Indian phenomenon has become a symbol of optimism and is now viewed by some countries as a model to emulate in their search for a niche in the globalized information economy (Mitter, 2000).

In effect then India’s success lies in its effective combination of the factors necessary for telework diffusion and in its particular instance, in offshoring. Its key comparative advantages lie in its human resource capabilities (abundance of technically skilful, high quality, English speaking and low cost labour force), its regulatory environment and its robust infrastructure.

## **Telework and People with Disabilities**

The World Bank reported in 2005 that there are at least 50 million disabled people in Latin America & the Caribbean (LAC) or approximately 10 percent of the region's population. Data collection across the region vary greatly however and their sporadic nature results in a scarcity of reliable statistics on the number of disabled persons within individual countries. It is recognized though, that disability is an important cause and consequence of poverty with about 82 percent of disabled people in LAC living in poverty (International Disability Rights Monitor (IDRM) Regional Report of the Americas, 2004).

Disabled people tend to experience widespread exclusion from the social, economic and political life of the community, whether due to active stigmatization or to the neglect of their needs in the design of policies, programs and facilities. About 80-90 percent of disabled people in LAC are unemployed or outside the work force. In the same breath, most of those who have jobs are exploited, receiving little or no monetary remuneration (World Bank, 2005).

Since its inception, the Internet has opened up new avenues of economic inclusion for people with disabilities, with telework in particular enabling many disabled persons to make a positive contribution to their country's economy, assisting them to enrich their lives and reduce their dependence on public or charitable support (European Telework Online, 2005, AT&T, 2006). As Di Martino (2004) suggests, "instead of having to move to work in often inadequate means of transport and to perform in a working environment

not tailored to their special needs, disabled persons can work, without the hassle of commuting, from home or special workplaces designed to meet their specific needs.” (p. 35). They may also avoid the sustained exposure to prejudices and, because of the flexibility which tends to characterize telework, work at convenient times and in the way that best suits their disability (Di Martino, 2004).

Technology can also enable older persons disabled by the infirmities of old age, to function productively. Michael Burks, of AT&T WorldNet Service, uses the term ‘the inclusive workforce’ to cover people with social and physical disabilities in the typical sense as well as aging or retired personnel who can naturally be expected to have a higher incidence of visual, auditory and mobility impairments than their young counterparts. Since knowledge work is less physically stressful, workers can, and may want to be productive until much later in life (AT&T, 2006). According to the Midwest Institute of Telecommuting Education (2003), telecommuting can also be useful to companies with employees on extended medical leave who are able to perform all or part of their job at home long before they are physically capable of returning to the workplace. With telecommuting, these employees can be productive months before they otherwise could. Not only does this enhance productivity, but it also cuts down on long-term disability costs.

These potential advantages have to be placed against certain disadvantages that may apply to teleworking. One such problem is that the isolation of this group of persons may actually be deepened rather than diminished (Midwest Institute for Telecommuting Education, 2003). Companies as such must guard against using telecommuting to avoid face-to-face contact with people with disabilities, whether this is intended or not. The

Midwest Institute for Telecommuting Education (2003) also advises that when it is possible for employees with disabilities to work in the office some or all of the time, that option should be pursued. This option is being facilitated by the fact that ICT is increasingly removing the performance limitations that people with disabilities face with respect to certain jobs. In addition, supervisors must be sure that telecommuters with disabilities are not denied opportunities for promotion (Midwest Institute for Telecommuting Education, 2003).

Di Martino (2004) views the rapid development of call centres in LAC as offering a response to some of these concerns of isolation through telehomeworking, as call centres staffed exclusively by disabled workers become a growing reality. This too has its limitation as Di Martino (2004) himself admits, with “serious concerns for the entire area of conditions of work, including a variety of ergonomic and health issues that may be of specific relevance in the case of disabled teleworkers.....the risk of their relegation in a kind of new ghetto are also cause of concern” (p. 36).

### **Gender Technology and Work**

Women in all countries and in all strata of society share the common challenges that their biological and social roles as mothers, homemakers and care-givers tend to circumscribe their ability and opportunity to function on an equal basis with men in most economic spheres (Louadi & Everard, 2005). Women often find it more difficult than men to engage in new forms of self-employment (even in ICTs). This, according to Mitter (2004), arises from the fact that they have to face greater barriers than men in

obtaining education and training that can equip them with computer literacy, English literacy and business skills. The UNDP reported in 1995 that in no society in our world did women benefit from the same opportunities as men. In fact throughout the world, women are poorer, less educated and less valued than men (ILO, 2001). These disparities are present even in the developed western economies (where gender differences are generally less pronounced) and are particularly evident in the field of ICTs (Hafkin and Taggart, 2002). For example, women represent only 26% of computer scientists in Canada (Dryburgh cited by, Louadi & Everard, 2005) and only 21% of students enrolled in computer science programs are women (Statistics Canada, 2001). Rather than stabilizing or improving this trend in certain cases seems to be worsening. Herring (2003) believes that this largely stems from socialization factors, which lead men to become generally more comfortable with information technologies.

Experts suggest that in developing countries, similar disparities may constrain women's ability to take advantage of information and communications technologies (ICTs). The International Telecommunications Union (ITU) Working Group on Gender Issues (2003) was able to assert that from both observation and anecdotal evidence, "we know" that there is a gender gap in relation to access to ICTS in several developed and many more developing countries. Di Martino (2004) estimated that on average, only about 38 percent of web users in Latin America and the Caribbean were women.

In spite of the possible constraints based on access to technology, the dual roles of being economically active as well as maintaining family responsibilities makes telework, particularly attractive to women since it brings work into the home, where children are raised and the family unit is located (Armstrong, 2004). Ellison (2004) has suggested that

given their social and reproductive role, women are particularly drawn to the telehomeworking option because of the greater scope for balancing work and family life. While acknowledging these advantages however, Armstrong points out that telework may complicate, rather than simplify things in the home, since it may fuel women's tendency to adopt the 'superwoman' persona, embodying domestic homemaker and caregiver, as well as office worker concurrently (2004, p. 240). According to Templer and de Jong (2000) this may inhibit their performance, leading organizations to evaluate female teleworkers (particularly those with family responsibilities) as being less satisfactory than males. Thus instead of balancing women's work and personal responsibilities, telework may break down the boundaries between work and family through increasing stress levels and other negative transfers from work to home (Duxbury, Higgins & Neufeld, 1998).

## **PART 1: WORK TECHNOLOGY AND CARIBBEAN SOCIETY**

This section reports on documentary and field research into teleworking in the Caribbean. After a brief contextual overview of the region and the process of economic and political integration, we turn to consider the experience of each of the three focus countries in turn.

### **An Overview of the Caribbean and the Integration Process**

The 28 countries of the wider Caribbean constitute an aggregate population of just over 36 million, 22 of which have populations less than 1 million (Girvan, 2000). The English-speaking Caribbean consists of 15 small nations all at a relatively low level of development, whose collective population amounts to less than 6 million. Although size is not necessarily a binding constraint on economic development, much of the literature on Caribbean countries has recognised it as a limitation that contributes significantly to their openness and vulnerability (Wint 2003; Girvan, 2000, [http://en.wikipedia.org/wiki/List\\_of\\_Caribbean\\_island\\_countries\\_by\\_population](http://en.wikipedia.org/wiki/List_of_Caribbean_island_countries_by_population), retrieved, January 10, 2006). Most countries according to Girvan (2002) have traditionally specialized in a narrow range of products exported to a handful of metropolitan markets, notably in North America and the European Union (EU). The English-speaking Caribbean has also traditionally relied heavily on British preferential

treatment for its agricultural produce. The other significant sectors (minerals and tourism) have also come to rely on a narrow range of markets, primarily those in North America.

Due to the small size and vulnerability of these economies, regional integration appears as a viable option for successful engagement with the global economy. Accordingly the countries of the English-speaking Caribbean (led by Barbados, Jamaica and Trinidad and Tobago) have been involved in a process of economic and political integration beginning in the late 1950s, with the establishment of the West Indian Federation (Ross-Brewster, 2002). After an initial failure, a somewhat less ambitious integration efforts continued in the 1970s - with the establishment of a “customs union” in the Caribbean Community and Common Market (CARICOM). On January 1, 2006 the process culminated with the establishment of a ‘common market’ embodied in the CARICOM Single Market and Economy (CSME). By allowing the free movement of factors of production (particularly labour) among member countries, integration efforts have deepened with the objective of fostering more effective pooling of markets and resources, greater efficiency of production and trade and enhanced cost-effectiveness in the provision of common services.

Barbados, Jamaica and Trinidad and Tobago are the three largest and most influential of the English-speaking Caribbean economies among the CARICOM states. However, there are other important dimensions to the process of economic integration in the Caribbean region. One is increased cooperation across traditional linguistic barriers within the greater Caribbean region (Girvan, 2000). Thus, for example Haiti and the Dominica Republic have been included in the group of African Caribbean and Pacific states (ACP) and have joined with CARICOM for the purpose of trade and negotiations

with the European Union. Secondly, the Association of Caribbean (ACS) has been established, with membership covering all the independent states of the Greater Caribbean Basin. Thirdly, 34 of the 35 independent countries in the western hemisphere (Caribbean Sea islands, Central and South American countries, The United States and Canada) took the decision in December 1994 to move to the creation of the hemispheric Free Trade Area of the Americas (FTAA) beginning in 2005 and to promote economic cooperation in other areas, such as energy and transportation, science and technology.

Finally, it would be difficult to appreciate the contemporary economic relations among nation states within the Caribbean without reference to the Organization of Eastern Caribbean States (OECS) which according to Girvan (2000) represents one of the most successful regional integration bodies among either small or large states the world over. The OECS, a regional sub-grouping which brings together countries in the south-eastern part of the English-speaking Caribbean, is further along the integration continuum than CARICOM, progressing as far to an economic union, which consolidates strategic planning and macroeconomic management among member states. This deeper integration effort, according to Owen Arthur (2000) has improved the economic circumstances of OECS countries and contributed to their relative stability. The OECS came into being on June 18, 1981, when seven Eastern Caribbean countries signed the Treaty of Basseterre agreeing to cooperate with each other and to promote unity and solidarity among their members underpinned by a common currency and a common central bank. The OECS now consists of nine member states: Antigua and Barbuda, The Commonwealth of Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines, with Anguilla and the British Virgin Islands being associate members

(OECS, 2006). Its combined population is less than 600,000 people, with annual gross domestic product in the order of US\$ 1.9 billion ([http://www.bb.undp.org/pdfs/call\\_for\\_action.pdf](http://www.bb.undp.org/pdfs/call_for_action.pdf), retrieved December 26, 2006)

This forms the context in which the Caribbean information and communications technology industry as well as telework as a practice is evolving. Although Barbados, Jamaica and Trinidad and Tobago represent the largest and Caribbean economies, the emergence of the Caribbean single market and economy carries the potential for a broader and more co-ordinated framework for policy-making in relation to technology and work.

In the following sections each of the three target countries are examined in turn.

## **Barbados**

### *The Barbadian Economy*

Barbados is an island which has an area of approximately 431 square kilometres or 166 square miles. With a population of approximately 280,000, Barbados is the most densely populated country in the region. Barbados has a market based economy, however, and has historically relied exclusively on agricultural produce, primarily sugar as a source of economic survival. During the 1960s and 1970s the export sector was diversified to include assembly industries, food processing and tourism and Barbados registered an average annual economic growth of approximately 5% per annum (United States Library of Congress, 2005). More modest economic growth continued into the late 1980s. However, the decade of the 90s opened with three consecutive years of decline

during which real GDP growth plunged from 3.6% in 1989 to -3.3% in 1990, followed by growth rates of -3.9% and -7.2% in 1991 and 1992 respectively (Central Bank of Barbados, 2003) The economic decline was associated with an increase in the level of unemployment from 17.3% in 1991 to 24.3% in 1993, an accelerated rate of inflation to 6.1% in 1991 and 6.3% in 1992 combined with an expansion of the budget deficit. As a result, the government was prompted to seek assistance from the International Monetary Fund (IMF) through a Structural Adjustment Programme (SAP) which entailed a tightening of fiscal and monetary policy to facilitate proper economic management. Simultaneously, the government engaged the trade unions and the employers in a dialogue directed at building an export-oriented economy as well as sustaining a stable industrial climate and a stable currency.

**Table 1: Barbados, Selected Economic Indicators**

Economic Indicators	Year				
	2000	2001	2002	2003	2004
<b>Adult Population ('000)</b>	207.4	208.8	209.4	210.1	210.6
<b>Labour Force Male ('000)</b>	73.4	74.9	74.2	74.6	75.0
<b>Labour Force Female ('000)</b>	68.8	70.2	69.3	70.9	71.3
<b>Labour Force All ('000)</b>	142.2	145.1	143.5	145.5	146.3
<b>Labour Force participation rate all (%)</b>	68.6	69.5	68.5	69.2	69.5
<b>Labour Force participation rate male (%)</b>	74.9	75.9	74.9	75.0	75.3
<b>Labour Force participation rate female (%)</b>	62.9	63.8	62.8	64.0	64.2
<b>Consumer Inflation (%)</b>	2.4	2.6	0.2	1.6	1.4
<b>GDP Growth (%)</b>	2.3	-2.6	0.5	1.9	4.5
<b>Unemployment male (%)</b>	7.4	8.0	8.7	9.6	9.0
<b>Unemployment female (%)</b>	11.4	11.9	12.1	12.6	10.6
<b>Unemployment all (%)</b>	9.4	9.9	10.3	11	9.8
<b>External Debt Ratio%</b>	4.2	3.9	6.2	5.8	6.4
<b>BOP Current Account (\$M)</b>	-289.9	-221.1	-335.4	-338	-673
<b>Net international reserve (\$M)</b>	968.8	1413.7	1366.4	1503.3	1190.5
<b>Balance Of Visible Trade (\$M)</b>	-1.767	-1.619	-1.659	-1.891	-2269.4

**Source: Barbados Statistical Service (various issues), Barbados Labour Market Information System (labour.gov.bb), Balance of Payments of Barbados, 2005.**

The return to growth commenced in 2002 with increases in tourism spurring further activity in other ancillary services, mainly in the distributive trades, utilities, and business and other services industries (see Table 1). The granting of licenses to new telecommunication companies also helped to boost job creation in the general services, wholesale and retail sector as well as in the transport and communications industries. The Barbados economy continued its strong growth performance in 2005.

At the end of 2004, the labour force in Barbados stood at 146,300 with an overall labour force participation rate of 69.5 percent (Barbados Ministry of Labour, 2006). As in other Caribbean territories the service sector dominates employment and contribution to GDP, accounting for some 80 percent of overall domestic output (see Table 2).

Comment [NC1]: Fix

**Table 2 Percentage Contribution of Gross Domestic Product (Barbados)**

Sectors	Year				
	2000	2001	2002	2003	2004
<b>Agriculture</b>	7%	5%	5%	5%	4%
<b>Manufacturing</b>	9%	8%	8%	8%	8%
<b>Services</b>	81%	83%	82%	83%	83%

**Source: Barbados Statistical Service (various issues)**

### *The ICT Sector in Barbados*

The provision of telephone services in Barbados began in 1884 with the Barbados Telephone Company Ltd. Following the 1939 *Cable & Wireless (West Indies) Limited*

*Act*, the island telecommunications sector effectively became a monopoly under the control of Cable & Wireless (West Indies) Ltd (Cable and Wireless, 2004). Forty five years later, in 1984, the sector was nationalised with the formation of The Barbados External Telecommunications Ltd. (BET), which acquired the assets of Cable & Wireless (West Indies) Ltd and obtained an exclusive licence from the Barbadian government to provide international telecommunications services in the island. Seven years later the industry returned to private hands when the Barbadian Government decided to sell its interest to Cable & Wireless. (Cable & Wireless, 2004)

#### *Liberalisation of the Telecommunications Market in Barbados*

The liberalisation of the telecoms sector in Barbados actually began as early as 1996 with the appointment of a Technical Committee by the Prime Minister to develop a national telecommunications policy (King 2002). The work of this committee laid the basis for a three-phase liberalisation process of the Barbados telecommunications sector and paved the way for a Memorandum of Understanding (MOU) signed between the Government of Barbados and *Cable and Wireless Barbados Ltd* (BET and BARTEL) in 2001 (Gorringe, 2002). The signing of this Memorandum inaugurated, for the first time in its history, full-scale competition in all aspects of telecommunications services in Barbados and signalled the ending of an extended period of monopoly held by *Cable and Wireless*. In August of 2003, Phase One of the liberalisation process was completed when licences to operate in the cellular market were awarded to *Digicel Limited*, *AT&T Wireless Limited* and *Sunbeach Limited* (King 2002, Canute 2003, Bereaux, *et al*, 2006).

Central to the liberalisation process was the passing of the Telecommunications Act of 2001. The main purposes of the Act were:

- To authorize, regulate and manage the telecommunications services in Barbados.
- To encourage clean and fair competition and facilitate the delivery of a wide selection of services to consumers
- To encourage and maintain the development of telecommunication in Barbados.

Among the key provisions of the Act is an obligation on the part of the State to provide *universal access*. This implies, inter alia, that equitable, reliable and affordable telecommunications services ranging from plain old telephone services (POTS) to the new Internet based services should become available to every consumer in Barbados. On January 2, 2001, the Fair Trading Commission of Barbados (FTC) was established under the *Fair Trading Commission Act* to administer and enforce several pieces of legislation, including the *Utilities Regulations Act*, the *Telecommunications Act*, *Fair Competition Act* and the *Consumer Protection Act* (Fair Trading Commission, 2004).

A significant boost was given to the telecommunications sector with the entry of *Digicel* on February 11, 2004, after successfully winning its bid to secure a licence to operate within the island (*Digicel*, 2006). The liberalisation process continued in October 2004, with the award of fixed wireless access licences to *TeleBarbados Inc.*, *WIISCOM Technologies Inc.* and *Last Mile Holdings* (Bereaux, *et al*, 2006). *TeleBarbados*, a joint venture between *Barbados Light & Power Company* and *Antilles Crossing* as of June 16, 2006, was the first to confirm the launch of its service which initially targets corporate customers and in so doing became the first company to ever compete with Cable &

Wireless in the fixed line services market in Barbados. ([www.caribbean360.com](http://www.caribbean360.com), retrieved September 20, 2006)

Phase Three, the final and most important phase of the liberalisation process, began in February 2005 with the issuing of international licences. The initiation of this phase occurred when Cable & Wireless surrendered its exclusive international licence for a new nonexclusive one. Consequently, the Barbados government then issued additional international licences to *Cingular Wireless*, *TeleBarbados* and *Digicel (Barbados) Limited*. The awarding of these non-exclusive licenses allows each company to provide international telecommunications services in the island.

Barbadian policymakers expect that the completion of this final phase should significantly reduce the cost of international telecommunications, a very important area for an economy that is concentrated on providing services on an international scale. (World Trade Organization Secretariat, 2002)

### *Telework in Barbados*

It is fair to conclude that telework is not an issue that is high on the agenda of policy concerns in Barbados, nor has even been given serious thought by any of the groups targeted for investigation in this study. When prodded, respondents acknowledge that telework is inevitable, given the changes in technology and the rate at which government is promoting its adoption. Although telework may be largely desirable, it is not an issue with which they are currently concerned. Among the major reasons for this, is the fact that the enabling technologies (computers and broadband access) have

continued to be expensive relative to the alternative of commuting to work. The limited and uneven access to technology, combined with the uneven distribution of basic computer skills along socio-economic lines has supported a culture that has slowed the rate of all kind of innovation in the use of information and communications technology in the work environment.

### *Perceptions of the ICT Policy Framework*

One of the concerns expressed by respondents relates to the fragmentation and apparent lack of co-ordination of ICT policy in the country. According to a senior policy-maker:

The problem with the ICT issues in Barbados is that they have been too fragmented. It's all over the place in various ministries and departments. There is talk about having a Chief Information Technology Officer. But that probably will not happen in Barbados.

Some informants suggest that the process of introducing information and communications technology to the Barbadian public sector is ad hoc and disconnected. It is not clear which, if any department or ministry is responsible for making decisions about the hardware, the software or the network capabilities of government. One informed observer suggests that while the public sector is served by a central data processing unit that provides assistance to some departments, most departments simply “do their own thing” deciding independently what source to buy hardware and software from and sticking to these sources for service.

### *Developing Human Resource*

There is general agreement among respondents that the Government of Barbados, with the support of various private initiatives, is making considerable effort to increase the familiarity of Barbadians with information and communications technology. The most often cited examples of these official efforts are an initiative commonly referred to as the EDUTECH programme (directed at school age children) and the Community Development Programme (targeting the general population at the community level). Most respondents spoke in glowing terms about these programmes, expressing a belief that in spite of administrative glitches, government was making a concerted effort to introduce school children to information and communications technology through EDUTECH and to bring ICT education to persons of all ages through the Community Development Programme.

Barbados has been actively seeking to integrate computers into the educational system since the beginning of the 1990s. Until the introduction of the EDUTECH programme in 1998, however this effort was largely ad hoc and driven by a combination of the availability of grant funding and the commitment of individual teachers. There is some difference of opinion regarding the effectiveness of the EDUTECH programme, but there is a fair degree of unanimity about the considerable effort that is being made by the Government of Barbados to integrate information technology into the educational system and more recently, to bring IT training to a wide cross section of people. According to a senior trade unionist

There is a school of thought that . . . some people used the funding [provided through the EDUTECH programme] to . . . upgrade the [physical] infrastructure rather than technological infrastructure. That's why it has not reached all the schools as yet because of that situation but it is there in the pipeline. How long it takes to get there is another question. The government is getting a lashing from the oppositions for it. It has not really kicked off as one would have wanted but somehow I have found that the Community Development Program seems to be a hit now with even the [older folks] wanting to have a feel of the use of the computer so that seems to be going fairly alright.

A similar position was also expressed by a senior government scientific officer, who also notes that the efforts of the state are being supplemented by private initiative:

People of all ages are being trained through the Community Technology Program (run by the Ministry of Social Transformation). We are also thinking about a Mobile Internet Training Facility (again through the Ministry of Social Transformation). There is the EDUTECH program, and a number of private people . . . offer training in all aspects of IT.

Informed observers also point out that there has also been a substantial amount of ICT training at the TVET (Technical and Vocational Education and Training) level, involving the various community colleges and the Barbados Institute of Management and Production (BIMAP). There is however some concern about the pace at which this new-found knowledge is being translated into economic activity:

. . . even though a lot of people have a computer, the computers are not being used for any income generation or meaningful activity. [Some people] purchase a computer, and it's just like a television set in the house, for entertainment.

#### *The incidence of telework*

The general awareness of telework in Barbados is relatively low. There is no formal policy at the level of users, government, trade unions or any of the other non-

governmental stakeholders. We were unable to identify, either among our respondents or among entities of which they were aware, any structured programme directed at facilitating or managing telework. In a number of instances however, persons who had access to the technology, particularly those in senior executive positions in the private sector or in academia, or those whose work involved high technology content, engaged in telework in an ad hoc manner. Some spent a substantial amount of time doing it. In none of those cases was there any formal consideration of the impact of this emerging way of working on variables such as work life balance or on productivity. At the official level, no attempt has been made to count teleworkers, probably because of the relative novelty of enabling technologies and because the practice has simply not become popular enough to capture the attention of policy makers and labour advocates.

While we found no instance of a work organisation that had outlined formal policy for implementing or promoting telework in Barbados, it is clear that technology is rapidly and inexorably changing the way in which people work and this is being manifested in various ways. One way in which this is happening is through the use of in-house call centres or contact centres. As in other parts of the world an increasing trend in Barbados is towards the establishment of “in-house contact centres” by organisations (both single-national and multi-national) specifically geared towards the provision of service to their own customers. Such facilities exist in larger companies like *Sagicor* (a Barbados based financial corporation with offices in Jamaica and the United States) and *Cable and Wireless (Barbados) Ltd.* Their main purpose is to create an internal environment in which customers’ concerns can be expressed and resolved in the most cost-effective and efficient manner.

A similar practice is beginning to emerge in government as well. For example, the General Secretary of a major public sector trade union reports that the National Insurance Department in Barbados has been extensively computerised. Glitches associated with the switch from manual to computerised operations led to the setting up of a contact centre, to respond to the large number of queries being attracted by the organisation. The contact centre was manned by existing staff of the National Insurance Scheme who were asked to apply for the new positions. The facility represents for these employees, a different way of working in the sense that they would provide advice on the telephone and assist people in coming to grips with the new Internet based system for managing the National Insurance Scheme. However, the employees go to work at a central location every day.

While recognising the usefulness of such initiatives, the union anticipates that the need for “call centre” type services in the public sector will increase as e-government initiatives in the country expand and is concerned about the terms and conditions of employment of persons employed in them. While such employees are expected to be extremely knowledgeable about NIS benefits and operations, the unions are concerned to ensure that that officers who are transferred into such positions are not pigeon-holed in what could be dead-end jobs. The unions concern therefore is to ensure that it can protect its membership in the context of a work environment in which employees’ scope for advancement is perceived (rightly or wrongly) as being impaired by technology. Currently, the trade unions are in dialogue with the government of Barbados about the direction of this change. This discussion, however has not extended to the idea of working at home because even though computer education is becoming increasingly

commonplace in Barbadian schools, the public services is not seen as ready for the idea of working from home.

“Stand-alone” call centres have been studied in the Caribbean for some time (Bibby, 1996; Dunn, 2004). Barbados has long promoted investment in these enterprises, which specialise in carrying out the back office operations of one or more other corporations, usually located outside of Barbados. According to a major Barbadian trade union which has attempted to organise workers from this sector, however, this investment tends to be short lived as the companies have shown an inclination to depart at the first signs of an attempt by a trade union to organise their employees, often without making the required severance payments. The Barbados Workers’ Union has responded by proposing a policy to prevent this:

A few years ago the Barbados Workers Union suggested in [our] policy that where the offshore call centres come in through the [Industrial Development Corporation] they should be required to lodge money in a fund, so that when [the investors] are leaving, whatever it is that they owe could be paid from that. That was not supported by the government however, because they believed that our incentives were already not very attractive and to ask investors to put money in a fund would be too much. But we are very concerned about it.

Another example of technology transforming workplace relations in Barbados is the recent drive to implement a 24 hour work day. This arises partially from the requirements of working in contact centres but more broadly from the increasing interface of the Barbadian economy with economies in other time zones. This matter has been on the industrial relations agenda ever since an announcement was made by the Minister of Labour in May 2005 that Barbadian government was exploring a “principle position on the issue” (<http://www.caribbeannetnews.com/2005/05/02/workers.shtml>,

retrieved July 23, 2006). This is a source of some concern for the Barbados trade union movement, which is yet to arrive at a firm position on the issue:

What we don't understand is why the government is championing this, because this would essentially erode a lot of the things that we have fought for over the years. So even though there has not been a statement from the trade union that out rightly says that we are not talking, the union will get into engagement with a clear understanding of what our interest is. We are not saying no to the 24 hour [day], but where, how and under what conditions.

### *The drivers of telework*

From all indications it would appear that access to technology is the key determinant of teleworking. People who work in a high technology environment inevitably make use of the technology to telework whether there is a policy or not. The Caribbean Development Bank located at Wildey Hill in Barbados is a good example of an organisation where, in the absence of a comprehensive policy, telework is tacitly approved and routinely carried out by a staff comprised primarily of highly educated professionals. Though there is no policy and while telework has not been systematically introduced, it is widely understood to be happening and is in fact encouraged by the organisation. The Information and Communications Technology unit has developed a strategy to enable senior technical officers to obtain remote access to the office when travelling and as a spin-off to this the practice of telework has emerged. According to our respondent:

There is no policy on telework but from the technology point of view we sought to facilitate mobility. We are a regional organization but we have one office here [in Barbados] and we have a lot of officers and we travel a lot so we recognize the need to facilitate officers to get remote access.

This approach has taken the form of providing relevant officers with notebook computers that they can take home and by the installation of a system that allows secure remote access to the organisation's network. Up to the time of the interview, however, access was typically via dial-up. When employees work from home it is from their own telephone service. No member of staff is provided with a "home office environment" and nobody is expected to work at home on a full-time basis.

There has been no adjustment in the organisations human resource management system to accommodate this new form of working. As in the other cases that we encountered the approach is driven by the technology and has to date, taken very little account of human resource management considerations.

From the human resource standpoint there is no policy setup but we have flexibility especially among the senior staff (informal and ad hoc) . . . we have the technology available and we have a policy [which allows] every single staff member computer access and broadband access at work. [In addition] I can use my cell phone and dialup to here, the office, and . . . have [access to] everything on my desktop.

From all indications employees in this organisation find the idea of telework an attractive option: "You find more and more people now will use the excuse that they are under pressure to complete work".

*Sagicor Corporation* is another example of a Barbados based organisation in which telework has emerged as a spin off of new technology and the drive to cut cost. Formerly *Barbados Mutual*, the company re-branded in 2004 and developed as a result of a number of mergers and acquisitions involving five companies located throughout the Caribbean and one in North America. *Sagicor*, like a number of other international corporations operates with what they describe as the "shared services concept". The

objective of this approach is to remove redundant, outdated and incongruent processes, streamline the information, communications and technology services and provide them from a single integrated source. The shared services concept in fact embodies all of the elements and preconditions for telework, except for the fact that employees do not necessarily provide the services from home but from premises owned by the employer.

While, telework is emerging on an ad hoc basis as the technology develops, there is as yet no policy or programme in place and its formal expansion will ultimately depend on cost:

We're actually considering it as an initiative. One of our objectives is always to look at our cost. We've developed this whole concept . . . where we monitor our activities and the costs associated with these activities, because our objective . . . is to offer our services at a competitive price. We are therefore constantly looking for ways to drive our costs down and one way of doing that is to make people work from home

Perhaps as an index of the impact of the EDUTECH programme, pockets of teleworking were also found among Barbadian teachers, both those who were specialist in ICT, and those who specialised in other areas. One primary school teacher, who had been in the field for 27 years and currently teaches Mathematics and English to 9-11 year olds, indicated that she and her colleagues had embraced the new technology. She had a computer in her classroom as well as at home and she made use of it to prepare all types of teaching materials, including tests. She also estimated that some 60% of her students have computers at home or are able to access it through community centres or libraries. These are encouraged to use the Internet to carry out research, which they would then share with their colleagues who use to traditional approaches to research. Since the incidence of computers at home is higher than at school, the implication for teachers is

that more of their work is now removed from the school into the home, where it is carried out at their expense. While the technology allows the teacher to work from home, it does not obviate the necessity of going into school and there is little or no acknowledgement of the advantages that it offers to the educational system. There is as yet no formal recognition of this trend and no consideration of its implications for the individual worker. Teachers will continue to do it however, because it is convenient and it cuts down on some of the repetitive work that they have to do.

### *The prospects of telework*

Like the other Caribbean territories Barbados is, through a combination of technological advances and human resource initiatives, moving actively, if somewhat ponderously towards the point where telework will be widely possible for the majority of its knowledge workers. At the moment most respondents agree that it is technologically, even if not economically, feasible for telework to be carried out on a significant scale in Barbados. The constraints continue to be the cost of computers and broadband access, insufficient knowledge about technology, and cultural norms (primarily generational technophobia) and the perception among certain groups that effective work is best carried on at a designated collective workplace.

The attitude of trade unions in any country could have a significant bearing on the rate of progress of any work innovation. In Barbados the trade unionists interviewed were mixed both in their level of knowledge and awareness of telework and in their reaction to it. In the absence of a clearly thought out position on the issue and in the absence of

dialogue among government, trade unions and employers, the trade union's response could best be described as sceptical, particularly since the role of trade unions in a work environment individuated, splintered and fragmented by technology is uncertain. When asked about the likelihood that government employees would be working from home or other remote places in the near future the response of one senior trade unionist who services public sector workers was typical:

Not in the near future. The government is introducing computers, but they are still cognizant of the need to make sure that they won't institute policies that would . . . reduce the labour force. They are very cautious in that area because they are afraid of trade union opposition. They want to ensure that they do not use technology in such a way that it will reduce the levels of employment and there have been discussions about looking for ways and means for finding alternatives for those employees that were displaced by computers. They certainly must be matched by corresponding opportunities.

Similar attitudes are reflected among senior policy makers in the public sector, where it is clear that some people view telework as a prospect that is so far away in the future that it does not warrant any serious consideration at this stage. The result is that the policy-makers and agencies that operate at the cutting edge of technology have a difficult time enlisting the aid of their less aware counterparts in advancing an agenda for technological development. One illustration of this is that when a study of telework was proposed by the *National Council on Science and Technology* in Barbados, the idea was rejected by policy-makers in the Ministry of Commerce on the grounds that the country was not yet ready for telework. The rather pessimistic attitude towards telework appears to be an extension of a general reluctance to embrace technology that is also evident in certain quarters. According to one strong advocate of science and technology:

. . . businesses in Barbados are not ready [to embrace information and communications technology], . . . Some of them are not even interested in e-commerce and e-business. For example though they demand and have email access, businesses still rely heavily on the telephone for communication. Another issue is that of security . . . persons [are] afraid of using e-commerce, because they're buying the product and they can't see it before they get it. So people are afraid of the technology.

While the government of Barbados is actively encouraging e-commerce and the employers in particular are actively promoting flexible work arrangements, no attention has yet been given to the implications of telework for the rights of workers. For example while there has been strong advocacy, particularly among the operators of contact centres, for legal amendments to permit the designation of public holidays as normal work days, government officials as well as trade unionists acknowledge that no special consideration has been given to the need to vary legislation or to introduce legislation to cover the needs of potential teleworkers.

## **Jamaica**

### *The Jamaican Economy*

With a population of 2,650,900 people, Jamaica is the most populous of the countries in the English-speaking Caribbean. Jamaica is rooted in the same economic traditions as Barbados and followed a similar trajectory of diversification and growth during the 1960s. The 1970s inaugurated a period of sustained economic decline, marked by low growth, high inflation and high unemployment, and like Barbados, Jamaica underwent significant structural adjustment during the 1980s and 1990s. While Jamaica

has maintained a fair degree of social and political stability its economic fortunes have not been as bright.

Following a brief period of growth during the 1980s, the country survived bouts of high inflation in the early 1990s after the lifting of import controls in 1991. It also suffered from a massive banking sector crisis during the mid to late 1990s, and more recently speculative attacks on the J\$/US\$ exchange rate (Bank of Jamaica, 2004; Campbell and Barclay, 2004). The International Monetary Fund has described the decade prior to 2004 as one of “virtual stagnation”. On the other hand, the level of unemployment has been reduced from 16.5% in 1997 to 11.7% in 2004. With a relatively stable exchange rate over the last few years and increasing net international reserves (NIR), Jamaica seems poised to return to increased economic growth and single digit inflation barring further adverse shocks (IMF, 2005).

**Table 4: Jamaica - Select economic indicators**

	2000	2001	2002	2003	2004	2005	
Consumer Prices- Inflation (%)							Deleted: ¶
Annual Average	8.2	7	7.1	10.3	13.6	15.3	13.6¶
GDP Growth							11.7¶
(% Annual Average)	0.8	1.5	1.1	2.1	0.9	1.4	1194.8
Unemployment Rate	15.5	15	14.2	11.4	11.7	11.3	Deleted: 14.4¶
Labour Force('000)	1,105.3	1,104.8	1,208.2	1,189.7	1,194.8	1,197.5	1858.5¶
External Debt Service Ratio%	10.5	13.4	18	16.1	14.4		-
GDP Per Capita (\$000)	122.6	134.2	145.9	165.8	203.5	n/a	Deleted: 04.5
Net International Reserve (NIR)	970	1835.6	1597	1162.9	1858.5	2087.4	
Balance Of Visible Trade(Us\$ Million)	-1825.7	-2122.1	-2393.1	-2444.8	-2504.5	-2504.5	
Source: Bank of Jamaica and ESSJ 2005							Deleted: .

The heavy structural reliance of the Jamaican economy on the production of services has important implications for the prospects of teleworking (see table 4). The public sector is the largest single employer and the tourism industry is the largest earner of foreign exchange. As at July 2005 Jamaica's labour force stood at roughly 1.2 million persons which represented 45.1 percent of the population.

**Table 3: Percentage Contribution to Gross Domestic Product (Jamaica)**

Sectors	Years						
	2000	2001	2002	2003	2004	2005	
Agriculture	6.4	6.7	6.1	6.3	5.7	5.2	Deleted: 2004¶ 5.7
Manufacturing	14.2	14.1	13.9	13.4	13.7	13.4	Deleted: 13.7¶ 81.4
Services	71.9	70.8	71.6	71.8	71.9	71.9	Deleted: 80.9

Source: Statistical Institute of Jamaica (various years)

### The ICT Sector in Jamaica

Like most of the other Caribbean territories, Jamaica's telecommunications services evolved from the late 19<sup>th</sup> century under a *Cable and Wireless* Monopoly. At the end of the colonial period (1962) the monopoly control came to an end and by 1987 the Jamaican government had acquired 82.7% of the telecommunications industry with *Cable and Wireless* owning the rest (Smith-Hillman and Brathwaite 2004). However, as Dunn et. al. (2004) point out, the 1970s and 1980s brought a change in the global telecommunications order that introduced severe complications into the management, financing and control of the national telecommunications system. The result was a reversal of the policy of nationalisation and in 1988, the British company was granted a

25-year contract, involving exclusive rights over all local wired programs, both domestic and international (Dunn & Gooden 2005; Smith-Hillman & Brathwaite 2004).

### *Liberalisation*

In 1999 the Government of Jamaica began to re-negotiate the 25-year monopoly license with *Cable and Wireless* (Smith 2005). The liberalisation of the Jamaican telecommunications market was touted as a mechanism for providing cheaper and better telecommunications services, broadening the choice of consumers, fostering business growth, as well as promoting the wider use of information and communication technologies (ICT) in the public, profit-seeking and not for profit sectors (Government of Jamaica 2002). The process for deregulation of the telecommunications sector took place in three phases and is detailed by the Government of Jamaica (2002). The first phase opened with the passing of the *Telecommunications Act* of 2000 followed in March 2000 by the introduction of cellular services with the granting of two licenses. It continued with the reopening of the market for resale of data, international voice and Internet access.

Phase 2 involved the issuing of licenses to Cable TV providers for providing Internet services, while Phase 3, beginning on March 1, 2003, saw the widening of the voice services market and the opening of all telecommunications facilities to competition, including international voice and data services. (Smith, 2005)

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To ensure successful liberalisation of the Telecom sector in Jamaica, four regulatory bodies have been established: The Office of Utilities Regulation (OUR), The Spectrum Management Authority (SMA), The Broadcasting Commission and the Fair Trading Commission (FTC). The OUR was established in 1995 under the OUR Act with its chief responsibilities being telecommunications competition, economic regulation and consumer protection. The SMA, created by the Telecommunications Act of 2000, is responsible for managing radio frequency. The Broadcasting Commission's primary focus is on broadcast content and technical regulation while the FTC is responsible for competition issues and telecom matters in collaboration with the OUR (Smith, 2005). In addition, the Jamaica Telecommunications Advisory Council (JTAC) was established as authorized by Section 58 of the Telecommunication Act of 2000 to further assist in the liberalisation process (Government of Jamaica 2002). The Council's primary role is to advise the Minister on all matters concerning telecommunications and to make 'recommendations relating to reform of the local telecommunications industry, which is ongoing' (Government of Jamaica 2002). Stakeholders such as the Ministry of Health, operating companies and the National Environment and Planning Agency (NEPA) have also joined forces with JTAC in providing the public with information regarding Telecommunications Planning Guidelines that would then be turned into Government Policy (Government of Jamaica 2002). JTAC also has the role of advising consumers about the safe uses of cellular phones and the location of transmission towers, including cell sites (Government of Jamaica 2002).

The Telecommunications Appeals Tribunal was established under Section 61 of the Telecommunications Act, to hear the demands and requests of persons not satisfied

with the decisions made by the OUR (Government of Jamaica 2002). In addition to this, existing laws and regulations for telecommunications are being revised in order to provide a sector that allows for successful competition and a access for the population to both local and international telecommunications services (Government of Jamaica 2002).

### *Contemporary Advances in ICT in Jamaica*

One of the most significant developments consonant on the liberalisation process has been the emergence of the cellular telephone market and the most dramatic exemplar of this change is *Digicel Jamaica*. The company began its GSM mobile operations on April 1, 2001 and within 10 days had met its one year target of obtaining 100,000 subscribers. With its subscriber numbers rapidly increasing, *Digicel* had by 2005, surpassed the former monopoly *Cable and Wireless*, boasting 62% of the total mobile market share with approximately 1 million subscribers (*Digicel Jamaica* 2006). The balance of the cellular business was controlled by Oceanic Digital Jamaica Limited (ODJ); a subsidiary of New York based Oceanic Digital Communications (ODC) with 7% of market share (Smith 2005).

Up to 2004 the Office of Utilities Regulation (OUR) was estimating that only about 10 percent of Jamaica's 750,000 households had access to the Internet. At the time virtually all of that access was via ISDN running at a rated speed of 56 kbs. Broadband access, which was up to March 2004 available at some US \$93 per month, compared with US \$12 per month in Asia, was almost exclusively used by commercial agencies and educational institutions (<http://www.techjamaica.com/content/view/547/50/>, retrieved April 18, 2006). Since 2004, *Cable and Wireless* has introduced broadband Internet via

ADSL to household consumers and some Internet users have converted from ISDN. The most recent estimates suggest that less than 5% of Jamaican households currently have broadband access (Collister, 2006).

A number of very recent developments in the Caribbean ICT sector however promise important implications for the possibility of telework. In February 2005, the Government of Jamaica granted two licenses to *FibraLink Jamaica Limited*, a division of *Columbus Communications* in Trinidad, and *Trans-Caribbean Cable Company Limited* (TCCCL) (Caribbean Net News, 2005). With an expected investment totalling J\$5 billion, both companies are slated to establish undersea fibre optic links between Jamaica and the US mainland, bringing an end to the dominance of *Cable and Wireless* in this area. The *FibraLink* project is expected to reduce the digital gap between Jamaica and the United States and create high speed broadband Internet and other data services at prices, which would be at least 70 percent below those of February 2005 (Government of Jamaica, 2006; Collister, 2006). Richard Pardy, the chief executive officer of *Fibralink* is quoted as saying recently:

There is a digital divide and the bad news is that Jamaica is on the wrong side of it. In the U.S. broadband penetration is 30 percent, in Canada 35 percent, in Bahamas 40 percent, while in Jamaica only three percent of households have broadband. The submarine cable system we are installing will provide the infrastructure for Jamaica to be on the right side of the divide (Collister, 2006).

The Minister of Industry, Technology Energy and Commerce, Philip Paulwell, has hailed the new developments pointing out that the establishment of undersea fibre optics would officially put an end to the *Cable and Wireless* dominance over international telecommunications in the country and that “nationals could now expect

competition in the routing of data and voice traffic into Jamaica using non-satellite infrastructure, which is a significant achievement in the development of a knowledge-based society” (Caribbean Net News, 2005). The Minister also suggested that,

. . . with readily available and reasonably priced fibre capacity, local entrepreneurs could invest in the deployment of domestic fibre networks bringing retail services close to consumer homes and businesses, thus ensuring the availability and affordability of the necessary computer hardware and software (Government of Jamaica, 2006).

*Columbus Communications*, a CARICOM-based telecommunications provider, already serves 17 Caribbean countries (Collister, 2006). Trading under the name of *Flow*, its stated objective in the Jamaican telecommunications market is to offer digital landline service, ultra high speed Internet, and digital cable TV with over 250 channels from one service provider (Collister, 2006). In addition to this, the entry of *Flow* is expected to be associated with increased investment by *Cable and Wireless* in fixed line broadband infrastructure, plus additional capacity from the wireless providers. By the middle of 2007, experts predict that there will be three to four market participants in broadband Internet service, which should initiate a relatively rapid growth of broadband access to Jamaican households (Collister, 2006).

These recent and proposed developments promise to dramatically expand the e-readiness of major Caribbean territories by providing greater access to less costly broadband Internet service. This, in and of itself, provides a tremendous boost to the prospects of teleworking of various types. While there are obviously other constraints such as the price of computers and levels of ICT skill, broadband access is the most

binding. Once this is addressed, then organisations will be provided with a significant incentive to address the others.

In the following section we focus on the results of fieldwork conducted in Jamaica.

### *Telework in Jamaica*

There is general consensus that teleworking is technologically feasible in Jamaica; in other words, the broadband Internet access is available (both wired and wireless) and the technology exists to ensure secure remote access. The constraints are universal access to the Internet, the still high cost of computers, the cost of broadband Internet access and the human resource capacity to utilise technology. None of these are entirely binding constraints, large technology driven organisations have addressed them and while the study did not allow us to judge its extent with any accuracy, there is no doubt that teleworking is taking place in Jamaica. Aside from individuals working in the increasingly ubiquitous “in-house” call centres or customer care centres, an increasing number of persons are engaging in work from locations outside of a central work base. While some of this teleworking is as rudimentary as working on a computer in one location and e-mailing to another, much more sophisticated approaches exist in large private sector companies where there is a high degree of access to technology. The following example illustrates what is possible in a large high-technology commercial organisation:

As the Infrastructure Manager [in a private company] with offices all over the island, all of the people who work for me [are located at company headquarters]. We however have to resolve thousands of problems everyday all across the island. . . . the clientele we serve really don't see

the people who do the work. We resolve these problems remotely. Today I didn't go into the office until 10 am, but if my manager called my desk, he would be [unable to tell] that I was not there because he would have called the same extension and [gotten] me [but] on my cellular phone. [When I am away from my desk] my voice communication remains the same and my data communication remains the same.

Young, high technology respondents in particular tend to be highly optimistic about the prospects and possibilities of telework in Jamaica. The feeling is that the time is not far off when it will become a generally attractive and economically feasible proposition. The focus groups conducted with “technology elites” in Jamaica, not surprisingly, were among the most sanguine about the prospects of telework. According to one ICT consultant: “. . . we are now at a stage where it is very much becoming affordable to carry out these kinds of functions [because of] the lowering cost of ICT and connectivity.” While none of these people operated in an organisation that had established a formal telework policy, all had been exposed to it, all engaged in some form of teleworking from time to time and all knew of other persons who routinely engaged in it. This would tend to support the impression that telework was being driven by technology, that persons with high technology awareness, who worked in a “highly networked” environment and who had access to mobile equipment would inevitably telework and would most likely endorse it as a way of working.

#### *The drivers of telework*

In spite of recent massive investment in transport infrastructure, Jamaica's urban centres are highly congested and the cost of oil represents roughly one quarter of the

country's import bill, hovering in the region of US \$1 billion per annum. Information and Communications Technology experts in Jamaica identify the advantages of cost saving and increased productivity resulting from reduced travel time, reduced real-estate cost and more effective use of human resources as the key motivating factors for telework:

The application of telework will result first of all in increased productivity. You will spend less time travelling. You can easily waste one to two hours in the morning and the same in the afternoon in traffic. Secondly, companies and organisations will benefit [when] less office space [is] required. If you have an office with 20 persons where 10 persons have a job that require them to be at their desk all the time, rather than having spaces for 10 [additional] persons who don't necessarily need to be in office you will have maybe 3 to 4 [shared] computer workstations where persons could come into office to log in instead of normal office spaces.

More effective deployment of human resources encompasses the possibility that employees can work from anywhere at any time.

One of the main things that the region can benefit from is the multiple shifts in the workforce with telework providing the avenue where this can be achieved. [With telework] an organization can operate twenty four hours on three eight hour shifts, given the individual work hour preference without extracting them from their homes to provide this service.

A third advantage of telework identified by technology experts in Jamaica is that it promises the continued utilisation older persons who, though they may be technologically challenged are highly skilled in other areas:

. . . some of our best persons who would like to work from home are also older persons within the bracket of age 50 to 70 who have been forced into retirement, but who do not perceive themselves as [ready to be] retired. These persons have tremendous expertise in other areas but are often limited in their adoption of technology.

Similar benefits may also accrue from the increased ability to utilise the skills of disabled individuals whose mobility might be limited, but who with the assistance of technology might be just as productive as able bodied individuals. One IT consultant explains:

. . . some of the work I do is to set up computer labs for schools that teach children with disabilities how to use computers. At one of the organizations I work with, Caribbean Council for the Blind, the majority of workers in the organization are visually impaired but they communicate through email with software programs that enlarge the text or generate speech from the text. They have no different level of productivity from people who have all their abilities. One of the social implications is that persons with disabilities can be brought into the workforce; I wouldn't expect a visually impaired person to travel daily [the 15 or 20] kilometres from Portmore to Kingston, but if they can get up and get on their laptop and work. I know they will work.

Some respondents feel that teleworking could bring important benefits to families and individuals that could ultimately also benefit society. In considering potential benefits most persons focussed on the daily commute. Persons who work in and around Kingston point out that many commuters are required to get up very early in the morning in order to avoid the worse effects of traffic congestion, but still end up spending two or more hours on the road travelling to and from work. They argue that the ability to work from home would not only save them the cost and time of travelling but would ultimately lead to a reduction in the country's bill for imported fuel. Some even argue that the opportunity to avoid waking children at unsociable hours in the morning may bring trans-generational benefits:

[Telework] would definitely improve family life for parents, [both] mother[s] and father[s]. I know people who live in Spanish Town [ 20 kilometres from the capital city of Kingston] and wake up at 4:30 am to do some prep [sic] work before the children wake up and leave by 6:00 am. I

think that destroys family life. Some of that time could be spent with family. The social benefits I think are long term and it could take generations to really realize them, but it is a starting point to improving social conditions.

While the benefits of telework are strongly endorsed however, some Jamaican respondents point to the need to be cautious about its adoption. One who had been exposed to telework stressed that before an organisation enters into such an arrangement, care must be taken to determine, how employees will be monitored and how performance will be measured.

. . . There certainly are some pitfalls involved in it. My personal experience [suggests a need to consider] how individuals will be monitored; how productivity will be measured? [Instead of productivity increasing] the reverse may happen and productivity may actually decline.

From all indications the telework is driven by technology mediated by the initiative of technology elites and senior executives who are looking for technology to complement their work norms. There is little or no evidence of a planned or structured approach to the introduction of telework. In response to the question as to whether or not his organisation had a telework policy, an ICT manager for a large financial institution said:

It is primarily driven by need and it so happens that the technology is now available and it is very cost-effective to be using telework. We don't have something that is a formal process in place in terms of how it is to be implemented.

In an organisation involved in the marketing of technological services a respondent indicated:

The change is driven by the technology largely. There was a time when there were no laptops and no personal computers. People worked from terminals [attached to a mainframe]. Nowadays people have PCs at home and at work, some have laptops. In addition the Internet and broadband access in particular allows designated workers to get access the entire . . . global network from home. Over the last 5 years in particular we have moved to provide all workers with laptops. Once their computers are upgraded they receive a laptop.

In some cases then telework is emerging as a corollary to the upgrade of technology in organisations. In this case for example there was, up to the time of the interview, no planned or structured introduction of telework, but it was being embraced by employees who faced high and increasing work intensity, environmental constraints adding to the cost of commuting and who valued the convenience of being able to do more of their work from home. In other cases individual employees or groups of employees (teams and units) will make a demand for mobile technology and different levels of remote access depending on the nature of the work and the status of the employee. Information technology specialists typically have access to the latest equipment that the organisation can afford; this is usually the same for executives. In relation to other employees this demand is usually rationalised in terms of the need to better serve customers. As one respondent noted “[t]he drive is not only coming from technology. It is [also coming from] people observing what is possible . . . asking for [the technology] and they are justifying the [need] to have it.” One senior ICT manager at the local branch of a large multi-national corporation explains:

There is no established or formal policy on teleworking . . . However a high proportion of the employees go home every night and gets onto the network and work. Everyone has a defined work space at the office, so this work at home is a matter of convenience. There was a time when people worked [here], you could pass here at virtually any hour of the

night and someone would be here working. Some of those who used to stay late are now going home to work. So there is less working at the office late at nights or on weekends.

### *The Constraints on Telework*

Even those who endorse telework as an alternative way to work, recognise that there are a number of factors that inhibit its adoption. Historically, the nature of the technology infrastructure has posed a problem; teleworking requires the cost-effective transfer of voice as well as data. Until recently the local communications infrastructure could support data communication to only a marginal extent. Voice communication (which is critical) has remained fairly expensive. Companies have therefore had to look very closely at cost-control and may be reticent to provide facilities to employees that might not have been used for company business. Contemporary development, particularly the arrival of broadband technology promises to bring about significant changes:

With the improvement of the technology, in particular broadband, you can condense multiple media forms into this one pipe at a flat rate, thereby reducing the cost. Thus, we should now see greater adoption of telework in the next couple of years.

It is generally agreed that the technological/infrastructural issues have been addressed and that technology costs are going down, leading to a greater incentive to utilise telework. In the view of technology elites however human resource and “cultural” issues continue to be a binding constraint. According to one expert:

Infrastructural issues are being addressed especially with the deregulation of the telecommunication sector. I see it as more of a HR [human

resource] concern. HR practices do not support [the idea of employees working] away from the office. There is also . . . a cultural constraint with persons believing that in order to be a part of an organization [one has] to be physically present.

This is not only a matter of perception or belief, however. Some managers recognise that the introduction of telework demands an entirely different approach to management. The following observation was made by the Chief Executive Officer of a local branch of an international organisation, which is contemplating telework as an option:

One of the issues I face is that 90 percent of the persons that report to me don't need to come into the office, so right away my organization can realize tremendous savings on real estate and air conditioning etc, but that is not the total equation. Managing an employee [who] sits inside your office is totally different [from] managing a mobile employee. The rules are different and the expectations of you and the employee should therefore be different. If I move those persons out of the office I have a responsibility to create environments in which they can work. They have to have proper seating at home, fax machines and computers and high speed lines. Plus balancing work and family may also pose a disadvantage.

Respondents see “cultural constraints” operating at the level of customers, employees and managers.

Culturally in Jamaica, we are a society where a lot of our traditional customers tend to prefer coming into [the business place to transact business]. They like the face to face. . . . You have to deal with the culture of the staff because we have been accustomed for all these years to getting up in the morning, ride in the traffic to get to work.

A similar response was received from a senior executive of a major financial corporation. This organisation is fully networked and the technology is in place to provide all employees with secure access to their local area network. At the moment

however, the facility is provided on the basis of need or status. This means that the facility (mobile computers and remote access) is available to field agents, ICT professionals and senior executives. In response to the question as to why access is not broadened the senior executive responded: “I think managers right now prefer to have workers right here.”

Speaking of her own findings in her interview with the project team, Sandra Palmer-Peart, one of the few scholars who have carried out research on telework in the Caribbean agrees:

From the individual level one of the greatest things we saw is isolation. This is a negative in that there are some things that workplace brings to the table, it is not just about performing the task because there are other things that go with work: building a culture, building a shared vision, camaraderie , talking around the water cooler. You will miss that and people tend to feel isolated. And they have to be getting emails and video clips from the office to feel a part of what is going on. Persons who are employed and never become a part of the physical work space don't tend to share the same values and the same emotional attachment to the company and to the job. The artefacts, the stories all those things that become a part of you after time, you will miss that.

A senior academic in the field of information and communications technology, however reminds us that if this becomes necessary there is already huge potential for supervision inherent in the networked environment:

In today's electronic world [there is far more scope for supervision than is generally understood]. For example the click streams on the web is ensuring that people can access where you went, what you did, how long you stayed at a site . . . and in fact marketers have been making use of that kind of information. So that could be a method of effecting some kind of electronic supervision to the extent that the teleworker will need such supervision.

Even though the research has not yet been done some senior managers feel that employees will not necessarily like the idea of working from home:

Ownership of a space is very important to some employees, [some employees like to feel] that they have their space to come to work. Because [if they were asked to work from home, some] people would want to say look how long I have been working here and they are trying to put me out.

Repeated reference was made in our interviews to the suitability of certain employees for teleworking. Few people seem to believe that teleworking could apply to all knowledge workers in any organisation.

I would say one of the success factors is to have [people] who [have] the motivation to work by themselves who does not need a great deal of guidance. In our society we are getting there but I don't know if we are there.

Others are of the view that it is not employees but employers or “technologically challenged” managers who will pose the constraint on the possibilities of working at a distance:

It's not whether or not telework can work in principle but whether employers are willing to trust their employees. And while there are ways of measuring output, some people believe that if you are not at your desk you are not being productive. I'm not sure if it is a policy framework that is required or some kind of public education [programme] to get buy-in from both private and public sectors that persons can be productive if they work from home. Managers with old-style thinking will [offer the greatest resistance to the introduction of telework]. . . .

On the other hand ICT professionals, who manage people, for the most part tend to take a different approach:

. . . in my area . . . [an employee] would call and say they were working on something from the night before, they want to sit and finish it and they

will work from home for a couple of hours and then come in at midday and I will be OK with that.

Similarly when asked about his openness to having his reports telework one ICT manager expressed the following view:

I would have absolutely no problem with it because I actually do it sometimes but just for short periods [when] I have something specific to work on. My philosophy is that . . . people [should be] given clearly defined objectives and clearly defined time frames. For me if I give a deadline, as long as you meet my deadline I don't care if you did it at 2:00 in the morning. But I am saying that of persons with the kind of mentality where they are self motivated and will do that if that is what it takes. So my openness to telework is based on my having persons who I think would be productive teleworking, and also having the necessary measurements in place for timeliness and production of what is required, etc.

Even in cases where there is no permanent arrangement there might be advantages to be tapped into:

. . . at varying times in a person's work life there might be instances where they might need to work from home. And there needs [to be] something in place that will facilitate such an activity. I have seen where women have to stay home when they are having a bad pregnancy [such a flexible teleworking policy would allow them to maintain an income and the company to maintain its output.]

### *The Incidence of Telework*

A substantial involvement in telework is predicated on secure remote access to an organisation's network. The cost and the technical expertise required to provide this capacity is not inconsequential. In Jamaica these facilities are therefore most likely to be available in large private sector companies, in technology driven organisations or in

universities. Even in these organisations however, remote access is not the norm, it tends to be a privilege granted to ICT specialists and executives. At one major financial organisation for example one respondent reports:

For the last 2 or 3 years, we have been doing some aspects of teleworking where [certain staff members have been able to access] resources from home and also when they travel. This is done securely by the Internet. However, the last 2 years or 18 months we have moved on especially at the Information Systems Centre where the support staff is also provided with facilities to work from home.

In this, as in other instances we have noted, teleworking is ad hoc and occasional. It does not replace the commute but rather acts as a supplement to it. So, for example, persons (especially executives) are able to check their e-mails remotely via a web-based e-mail account and IT professionals are able to provide technical support at any time from any remote location.

For organisations to have a systematically thought-out policy on telework is more the exception than the rule. One organisation that has given some thought to teleworking put it within the general framework of flexible working arrangements but had not gone very far with it.

Two years ago, one of the areas that we looked at was . . . flexible work arrangements where they could work a 40 hour week and in some instances they could work from home. Of course it would depend on the technology. We really didn't get very far with that [but] we know that it is something that the employees are looking at [favourably] because it came up in our survey.

Even in the absence of formal policy, the evidence is that employees in major Jamaican organisations routinely engage in teleworking, using a combination of their and their employer's resources. This is particularly the case when these employees are

knowledge workers at a senior level, or are engaged in the field of information technology.

### *Gender and telework*

We sought to sharpen our understanding of the gender related issues emanating from telework by holding a focus group comprising of five women drawn from a range of women's organisations. While this group was not representative of women's organisations in Jamaica, they were not-for-profit, primarily non-governmental, included some of the more visible opinion-makers in the country and in at least one case (Women's Media Watch) regularly brought women's perspectives to the forefront of national debates on social and political issues.

The dominant conclusion which emerged from this discussion was that to date there has been little or no effort to bring a gendered perspective to ICT policy. This is significant because as one of the respondents noted, women use technology in different ways from men and social attitudes to technology tend to assume and support greater technological awareness and a greater interest in technology among male children than females. As such the process of socialisation and in particular the process of education embodies significant gender biases. While there has been no rigorous empirical research, Women's Media Watch reports that systematic observation and participatory research suggests certain distinct trends in Jamaica:

. . . we are picking up on a [gender-based] digital divide very early in that boys are heading towards the technology much earlier and faster than girls. We have a little exercise that we use all the time in some of our gender workshops. We ask parents, what birthday gifts you would

typically give to a boy or a girl? The gifts to girls are still consistently traditional – jewellery, little bubbles, books and dolls. For boys [it is] consistently football, Nintendo and other type of things that are related to computer and technology. So that tells us a little about the digital divide that is beginning to take place already. [Computer games are] perceived to be something that boys get involved in because it is technical.

None of the women’s organisations represented in our focus group had any stated or cohesive policy position on ICT or telework though there was certainly a “generalised perspective” that, they argued, could be brought to bear on any aspect of social analysis. This came as little surprise, very few organisations, groups or individuals had given much thought to the implications of working at home or engaging in other forms of teleworking, even those who were so involved.

While Jamaican women’s organisations have not developed any clear policy relating to technology and work, they are not oblivious of its impact and some are making active use of technology in their work. For example, the Women’s Media Watch is updating its training manual to include a gendered perspective on the socio-economic impact of technology. This organisation also reports important changes in the way in which it communicates with and works with its membership. The advocacy group, at the time of the study, was involved in creating a website. The creator of the web-site, who was a Canadian volunteer located in Jamaica, was doing so with the assistance of another member of the organisation who currently lives in the United Kingdom

One of the important points that arise from a gendered consideration of work and information technology is the gender-differentiated constraint imposed by limited access to computers and affordable broadband Internet access. The problem is particularly acute among lower socio-economic groupings in Jamaica’s urban inner-city regions. One

respondent (a voluntary social worker living and operating in one of the inner city areas of Kingston) indicated that none of the various organisations with which she interfaces has any computers. The women's groups also point out that computer awareness is increasing in schools, but for the majority of the Jamaican population this is neither matched by access at school nor in the home. So, while students (especially those attending secondary schools that serve students from diverse socio-economic backgrounds) are increasingly asked to carry out Internet searches and other forms of work on computers, access continues to present a problem. One social worker attached to a government agency points out:

Some of the persons that we have worked with both in the rural areas and in the community where we are based don't have access to a computer, don't know how to use the computer and don't know how to use the Internet. So we are actually doing a training course for them now and we are training some of their children. One of the things that we have realized is that the schools – High Schools and Primary Schools – are increasingly asking students to do their homework and get stuff off the Internet . . . [while] a majority of the students don't have access to a computer much less the Internet.

In spite of the constraints identified, the female activists in the Jamaican leg of our study are fairly positive in their appraisal of the potential impact of technology on the working lives of women. In the first instance it is argued that improved technology provides women with information.

. . . traditionally . . . it is the woman [who] stays home and is often more isolated than the man who goes out into the world. What technology has brought to her is more information. The use of cell phones and television help gets rid of the isolation as they are no longer [confined to] their community but they are experiencing the world . . . I would think women more than men would gain more knowledge.

The women also favoured telework for its potential to enable them to earn an income while taking care of traditional duties.

. . . women have to work [outside of the home] but they still have to be at home and stay home for longer periods of time because of the children and other duties. Her ability to work at home or wherever she has to . . . gives her much more potential. In addition, women's entrepreneurial spirit [has] enabled them to start small businesses. Jamaican women have a very strong entrepreneurial spirit and if they can learn and become more computer literate. Not just brown middle class women but the average Jamaica women.

One female activist from a strife-torn inner city community, while having no prior exposure to the idea of telework, was particularly optimistic about the potential of technology to assist women to generate an income while taking care of domestic responsibilities complicated by the need to raise children in a high crime environment.

. . . after hearing about [telework] for the first time, I see a lot of potential especially for single mothers who are the care givers in the family. It gives them more quality time to spend with their children. I have been looking at the situation where mothers have to go out and work, it is not like before. The crime and violence situation has escalated so much because mothers are no longer at home and the children are so good at what they do, that mothers would never know that their sweet little angels are capable of doing wrong when they are not there. They know the time when you are to come home because you have a 9-5 and they time you because you take the bus and they know exactly when you will be home and everything will be sorted out by then.

If you have a telework job where you don't have to go to the workplace, you can catch the child off guard and stop him in his tracks. So telework would enable us to better parent our children and [contribute to reducing] crime and violence . . .

### *Telework and the public sector*

For purposes of this study focus groups were conducted at the ministry responsible for labour administration (Ministry of Labour and Social Security) and the ministry responsible for technology (Ministry of Industry, Commerce and Technology).

Perhaps the first observation to be made about government ministries is that despite the recent e-governance initiatives, they would typically not be as well-equipped with information and communications technologies as a business organisation of comparable size. For example the Ministry of Labour and Social Security is equipped with a local area network which allows staff at its 18 branch offices island-wide to access a centrally located server and perform their duties. Remote access however is limited to ICT specialists. Whereas private sector organisations typically boast a one to one ratio of computers to employees, officials complain that the Ministry is “woefully short of computers” that machines are generally outdated and that staff, who have limited computer skills frequently, use them as word processors. One Section Head at the Ministry of Labour explains:

In my section, there are twenty workers but only 8 computers. We are field workers, but even though we mostly work in the field, we have lots of letters to write, which we draft by hand. We are short of computers, because we have one officer each in Montego Bay, Mandeville and St Ann’s Bay and . . . there is only one computer in each of these offices and they hardly have access to them. One of them has to take his work home and do it there on his personal computer, while the other two send theirs to Kingston to be done and wait for their return.

In addition mobile technology is limited. “Executive Managers would be assigned a lap top. This amounts to less than ten persons in the entire Ministry [of Labour]”.

Among the issues explored in these conversations was the existence of a telework policy on the part of the Jamaican government. Our findings made it clear that as yet, telework has not become the subject of government policy. In fact, it is fair to say that at this point the ministry responsible for labour legislation and labour administration has not begun to think about telework and its implications for work in Jamaica. Not only is this the case, but while the Government of Jamaica has been actively developing ICT policy and pursuing the liberalisation of the ICT sector, while this promises important implications for the way in which people work, and while telework is indeed emerging on an ad hoc basis in various Jamaican workplaces, there has been neither consultation or co-ordination between the Ministry of Labour and the Ministry of Industry, Technology, Energy and Commerce on the issue.

The position in respect of telework in the public sector is well articulated by a senior regulator at the Ministry of Labour:

Generally, I do not think the public sector is . . . prepared at this time to deal with telework. Just the matter of differential hours alone, I don't think it is widely accepted that people can work differential hours. You may find a few organisations who take their own initiatives to do it but it is not a policy. With telework, you are totally away from the base for one or two days of the week. Generally I don't think the public sector at this time is ready.

The fieldwork carried out at the Ministry of Industry Technology Energy and Commerce (MITEC) confirms many of the above conclusions about telework in the Jamaican public sector. There is no policy, there is no co-ordination across ministries, there is little co-ordination between the work of the government in ICT policy and the work of other interest groups in the labour market, but telework is happening; it is just

impossible to say to what extent. In response to a question about the extent of teleworking in the Jamaican public sector a senior ICT professional attached to the Ministry of Industry Technology Energy and Commerce made the following observation:

. . . I have no hard data but I see people teleworking, particularly consultants to the ministry . . . those persons [who are] hired to complete a certain job over a period of time. [Other] employees of the government and specifically this ministry . . . work from home but I don't think it could be classified as telework.

. . . there are a lot of people, mainly at the senior management level who do work long hours and who do work from home. It is very difficult in the government to have sufficient time to attend to certain priorities due to the number of meetings and the number of calls from internal and external customers. So there is a need to have uninterrupted time to concentrate and to develop policies and strategies. Typically that is after work

So employees work at home, as an alternative to working late, they do so because they generally have more work than can be accommodated in the working day, but they do it on their own volition, with no support from the employer and at their own cost.

#### *The Trade Unions and Telework*

Among the institutions that would be most dramatically affected by any substantial shift towards telework is the trade union movement. The functioning of the traditional trade unions is predicated on the existence of a collection of workers operating from one single location. As the Internet has developed, trade unions throughout the world have tried to employ the technology in service of their objectives. For example the Communication Workers Union of Ireland reports on its web site that since 1996 it has been facilitating flexible work by organising a “virtual branch” for teleworkers, both

employed and self-employed (<http://www.cwu.ie/html/telework.htm>, retrieved September 14, 2006). While it is not entirely clear what model of representation is going to be appropriate for workers who essentially function on their own, it is clear that in order to serve workers who operate in a technology driven environment, the unions themselves have to be engaged with the technology.

As in other parts of the world various workplace functions are being computerised in Jamaica. In sectors of the economy such as shipping and finance, dramatic changes have taken place in the use of technology. In most other areas of the economy the level of utilisation of information technology is increasing. Some of these are sectors that have been traditionally unionised, so trade unions in the public sector and in banking and finance for example, have come to represent workers who work with technology. Jamaican trade unions however show little evidence of familiarity with the technology that their membership employs.

For the time being as well, the vast majority of union members continue to work from the central workplace. According to one trade union respondent:

In as far as workers working from home, [this is] very minimal at this point and. For the most part the sections that I represent, there is not too much of that phenomenon of work away from the central work place. Most of the work takes place at the work place

Working remotely, particularly from home, as the dominant way of working, is very much seen as the exception rather than the rule. For example when one trade unionist was asked about members working from home he spoke about the way in which

workers coped with the overflow from their normal workload. Trade unionists concur that it is informal, ad hoc and executed at the expense of the worker.

There are some persons who do work from home. These are mostly in the white collar category and [they] justify it by saying that the amount of work that they have to do and the stress of the conventional work environment will not allow them to be as productive and therefore in the wee hours of the morning they can do a lot of work and be more productive. So they do engage in a form of teleworking.

The trade unionists suggest that much of the teleworking that they observe is a function of “work overload”; the deliberate strategy on the part of management to expand the scope of work of employees in certain categories:

It is more required of supervisors or white collar workers. It is expected that they perform the task realizing of course that the task assigned cannot be completed within the conventional work hours. So it is expected that they will have to do some work from home and they have to work overtime.

This additional work is generally uncompensated:

One of the things that the companies argue is that once you have reached the level of the white collar worker, your remuneration package incorporates some contingency for those type of things

Trade unions in Jamaica have no stated policy on teleworking. While individual trade unionists recognise that it has important implications for the labour movement, it is not something that has been discussed at the level of the central organising body of trade unions; the Jamaica Confederation of Trade Unions, or at the level of the tripartite Labour Advisory Council. Part of the reason is that the incidence of telework is low, there is little knowledge about its prevalence and where it takes place it generally occurs outside of the framework of collective industrial relations. According to one trade unionist:

. . . at this point in time, . . . telework [appears more or less as a] convenient type of arrangement between an employee and employer and it is usually a reciprocal type situation where they both work out a particular agreement. At this point in time, I don't know if there is a wide enough proliferation [to warrant union attention].

Another factor underpinning the lack of attention to telework is the relatively limited appreciation that trade union leadership tends to have of technology and the limited use made of it in their own and organisations or in their day to day work. Typically Jamaican trade unions operate with very limited access to technology. Unions are small, fragmented and under-resourced. The incidence of computers per employee is low, union field officers do not usually have access to mobile technology (beyond personal cell phones or privately owned and provided notebook computers) and even the use of e-mails by union officials is a rarity. Neither of the two union officials (negotiating officers) interviewed could identify more than one other official who used a mobile computer in carrying out their jobs. On the other hand they acknowledged that they were routinely faced with a bank of notebook computers on the other side of the table and that union delegates (shop stewards) are more likely to operate with notebook computers than were union negotiating officers. In none of the known cases in which union negotiating officers used notebook computers were they furnished with this equipment by the union. At the time of the interviews (mid-2006) only one Jamaican trade union (Jamaica Association of Local Government Officers) had a web site ([www.jalgo.com](http://www.jalgo.com)).

### *Strategies for implementing telework*

Given the fact that telework was taking place in Jamaica in an ad hoc manner, at a rate that was uncertain but clearly and inexorably increasing, the project team sought to obtain a perspective from respondents as to whether steps needed to be taken to rationalise its development. Respondents felt that such interventions were warranted at the organisational as well as the national level.

Firstly, organisations needed to address a combination of “cultural” and “human resource constraints”. Respondents stressed the fact that an appropriate selection strategy was a necessary aspect of implementation since not every person would necessarily do well as a teleworker. Human resource interventions would also need to take account of the fact that some individuals might desire the social networking that emerges from a collective work setting.

The role of the trade union is a critical issue to be addressed at both the national and organisational level. Aside from their own lack of understanding of where the technology is taking workplace and employment relationship, trade unionist are concerned that the existing framework of labour legislation is inadequate to deal with the situation in which individuals work from a remote location. Not having thought a great deal about teleworking they have no idea about what it will mean for such “. . . issues such as health benefits [and] overtime work. . .”

Most of the respondents in this study felt that the way for organisations to approach teleworking is by implementing a pilot project. One expert for example argued that a programme of teleworking stood a better chance of success if it was piloted by a group of persons who voluntarily decided to participate. Once others had been able to

observe how the social challenges had been addressed then a more full-scale implementation would be possible.

A final element of a successful teleworking scheme is to address some of the concerns about managing performance. Traditionally Jamaican workers are compensated on the basis of the amount of time that they spend at the employers' premises, where performance is managed by more or less strict supervision. It may be argued that telework demands a performance management that is driven by "project based work" compensated on the basis of well-established performance criteria.

### *Summary*

Even though Jamaica is considered to be the most advanced in the Caribbean in the liberalisation of its ICT industry, and this had dramatically opened its mobile market, access of the population to the Internet is low. Increasing competition is expected with the entry of *Columbus Communications* with its *Flow* brand. This new telecommunications company represents for the first time serious and effective competition for the monopoly provider in the wired communications sector. *Flow* is promising to provide broadband technology at a highly competitive rate, some argue at a give away rate. If *Flow* is successful, the level of broadband access could dramatically increase over the next five years.

Even if it is accepted that Internet penetration is low at both the business and domestic level, it is undeniable that there is a small but significant number of large organisations with access to the type of technology that can allow telework to take place and that there is an increasing trend towards carrying out work at home or at locations

remote from the central workplace. The study was not, however, able to identify any organisation which had an established system of teleworking for any group of employees in Jamaica. Even when individuals regularly work from home or elsewhere, this arrangement tended to be sporadic and informal. In the vast majority of cases employees were expected to show up at a central workplace on a daily basis and most of their work was carried out at this central location.

It would also appear as well, that for the majority of Jamaican teleworkers, the technology that drives telework is access to computers at home. Teleworking is rudimentary and may amount to no more than working from home and e-mailing or taking work to and from the central workplace on a portable hard drive (flash-drive). Remote access through a secure connection and the ability to function as if one was in the office is a much less common “privilege” and is generally available only to ICT professionals and top executives in major organisations.

As far as we were able to gather in our research project, neither government nor trade unions, nor the employers have begun to pay much attention to telework as a serious alternative to traditional forms of work.

## **Trinidad and Tobago**

### *The Trinidadian Economy*

The twin island republic of Trinidad and Tobago has been one of the Caribbean’s most prosperous nations since its independence from the UK in 1962. This is in part due to its petro-chemical industry and its oil and gas exports. With an estimated population of

1.3 million people, the country had a population growth rate of 0.3% in 2005. Spanning a total area of 5,128 square kilometres, Trinidad and Tobago occupies the 57th position on the global Human Development Index and ranks 51st on the Economist Intelligence Unit's quality-of-life index in 2005. This represents a decline in its 2004 ranking at 49th.

Trinidad and Tobago's recent growth performance has been outstanding with 13 percent growth in 2003 and 6½ percent during 2004. This growth is associated with a continuous fall in unemployment. Whereas the unemployment rate stood at about 17.2 percent in 1995, it was 12.2 percent in 2000 and had fallen to about 8 percent in 2004, the lowest in decades. The non-energy sector has remained dynamic registering growth of just under 6 percent during 2004, due largely to an expansion in government spending fuelled by the windfall in oil earnings.

**Table 6: Key economic indicators (Trinidad and Tobago)**

Indicators	Years				
	2000	2001	2002	2003	2004
Consumer Inflation (%)	3.6	5.5	4.2	3.8	3.7
Annual GDP growth (%)	5.7	4.1	2.7	3.3	4.4
Unemployment rate male (%)	12.2	10.8	10.4	10.5	8.4
Unemployment rate female (%)					
Unemployment rate – all (%)					
Labour Force ('000)	572.9	576.5	586.2	596.6	613.5
GDP Per Capita (Market Prices \$000)	40.7	43.4	46.6	52.8	
External Debt Service Ratio (% of GDP)	6.9	3.7	4.4	3.8	
Net International Reserve (USM\$)	1387.8	1858.4	1907.3	2241.8	2976.7
Balance Of Visible Trade(\$TT Millions)	6081.6	4509.4	1189.3	8098.9	9544.1

Source: Central Statistical Office, Trinidad and Tobago (various years),

Trinidad and Tobago is endowed with large energy reserves and its energy sector accounts for one-third of real GDP or about 37 percent of government revenues. While this sector represents more than four-fifths of total export receipts, it accounts for only about 3 percent of total employment (Trinidad and Tobago Central Bank, 2006).

Inflationary pressures are beginning to emerge. After three years of modest increases averaging about 3.5 percent, inflation rose to 5.6 percent in 2004 and to 7.2 percent in 2005. The main driver of inflation was the movement in food prices which rose from an average rate of 10.3 percent in 2001-2003, to 20.6 percent in 2004 and 22.6 percent in 2005. This was in spite of the fact that core inflation, which excludes the impact of food prices, went from 2 percent in 2004 to 2.7 percent in 2005 (Central Bank, 2006). A major factor underpinning the rising inflationary pressures has been the increase in government spending and its impact on the non-energy fiscal deficit. With government spending increasing from the equivalent of 24.9 percent of GDP in 2003-2004 to 27 percent of GDP in 2004-2005, the non-energy fiscal deficit rose from 7.7 percent to 9.7 percent of GDP over the period (Central Bank, 2006).

#### *Labour Force*

Trinidad and Tobago's labour force stood at 623,300 persons in 2005. Of the total workforce 255,400 are female with the remaining 367,900 being male. The number of jobs in the twin island republic increased by 28,200 and the labour force increased by 17,000 between the 2003 and 2004. The major employment sector in Trinidad and Tobago is in community, social and personal services which accounted for 50 percent of

employment in both 2004 and 2005. The other major sectors of employment are the wholesale and retail trade, restaurants and hotels, and construction.

**Table 7: Percentage Contribution to Gross Domestic Product (GDP) in Trinidad and Tobago**

	Year					
	2000	2001	2002	2003	2004	2005
<b>Agriculture</b>	1%	1%	1%	1%	1%	
<b>Manufacturing</b>	7%	7%	8%	7%	7%	
<b>Services</b>	61%	64%	63%	58%	52%	
<b>Mining (Petroleum)</b>	31%	28%	28%	35%	34%	

**Source: Continuous Sample Surveys of Population, Central Statistical Office, Trinidad and Tobago (various issues), and Continuous Household Sample Survey**

#### *The ICT Sector in Trinidad and Tobago*

Telephone services were introduced to the Trinidad market in 1883 but it was not fully developed until 1898 at which time the *Telephone Communication Ordinance* was passed (TSTT 2006). Up to the 1960s telephone services evolved under private ownership. Following a strike lasting some 1124 days (over 3 years), the government purchased the telephone company and the *Trinidad and Tobago Telephone Service* was formed. In 1969, *Trinidad and Tobago External Telecommunications Company* (TEXTEL) was incorporated as a limited liability company and was granted a license by the government to provide international telecommunications services in the country. In 1989 TEXTEL and TELCO merged to form the *Telecommunications Services of Trinidad and Tobago* (TSTT) and they were granted a new license which allowed them to

provide international telecommunications services to member of the general public (TATT 2004).

### *Liberalisation of the Telecommunications Market*

The Government of Trinidad and Tobago began to make tentative moves towards the reform/modernisation of the telecommunications sector in the late 1990s. In 1997, a report for the National Policy on Telecommunications for Trinidad and Tobago was done. This report highlighted four stages which the telecommunications sector in the country should follow on the road to modernisation (Stern & Green 1997).

- Confirmation of market opening in the telecommunications sector
- Formation of a Telecommunication Steering Group (TSG)
- Creation of a Telecommunications Authority
- Identification of resources to implement policy changes

In the wake of this report a number of important pieces of legislation were passed with the objective of creating a modern legislative and regulatory framework to facilitate the expansion of the telecommunications sector. Among the most crucial were:

- **The Computer Misuse Act 2000** seeking to prohibit any unauthorised access, use or interference with a computer.
- **The Electronic Transfer of Funds Crime Act 2000** which regulates the transfer of money by the use of a debit or credit.
- **The Trinidad and Tobago Telecommunications Act of 2001**, providing for an open market for telecommunication services, including conditions for fair competition at the national and

international levels. The Act was passed in order to facilitate the progression of Trinidad's growth in the Information Age.

Contemporary ICT development in Trinidad and Tobago is being driven by the government's Vision 2020 Strategic Plan. This plan embodies the vision of Trinidad and Tobago becoming a fully developed country by the year 2020 with all citizens enjoying a high quality of life in all areas of social welfare and economic well-being. A major facet of Vision 2020 is the development of a strategy to facilitate the transformation of the country into a knowledge-based society through the effective use of Information and Communication Technologies (ICT). This National ICT Strategy, dubbed 'Fast Forward' has the vision of the nation being in a "prominent position in the global information society through real and lasting improvements in social, economic and cultural development caused by deployment and usage of information and communication technology" (<http://www.fastforward.tt/aboutffwd/vision.asp>, retrieved December 22, 2006)

#### *Key ICT Indicators*

In 2003, National E-readiness Report prepared by the Ministry of Public Administration and Information noted that Trinidad and Tobago had slipped from a position of 46th to 58th in the World Network Readiness Index (WNRI), published annually by the World Economic Forum. In 2005, the WNRI report lists Trinidad and Tobago in the 74th position. In view of these movements, the National e-readiness Report of Trinidad and Tobago observes that while "the country is making progress in terms of

connectivity, it is not progressing quickly enough, or with sufficient coordination to avoid being overtaken by other nations.” The National ICT strategy is thus seen as a means of “accelerating the country’s connectivity agenda and should assist in strengthening its Network Readiness Index Ranking in the coming years.” ([http://www.fastforward.tt/plan/documents/Chapter\\_Four.pdf](http://www.fastforward.tt/plan/documents/Chapter_Four.pdf), retrieved December 22, 2006)

It is estimated by the Economist Intelligence Unit that 78 percent of households in Trinidad and Tobago have telephones, while 450, 000 adults or 50% of adult population uses mobile phones. Only nine percent (9%) of population can be considered “regular Internet users” defined by use several times a week.

Nine Internet Service Providers (ISPs) cover the twin-island nation and the cost of Internet usage is relatively high. ISP costs can vary from \$125 TT (roughly US\$20.00) per month through Internet cafes at up to \$10 TT (roughly US\$ 1.50) per hour. Sixteen percent (16%) of households have computers, with high cost being the main factor limiting computer acquisition.

According to the report of a survey carried out on behalf of the ICT Secretariat of the Ministry of Public Administration and Information (2003), one in three persons has used a computer; with the 15-19 year age group displaying the highest usage (54 percent). The majority of the rural population (75 percent) live more than 15 minutes away from public access centres. The total number of IT professionals in the country amounts to 3,000. All companies in Trinidad and Tobago have access to telephone lines, but only about 80 percent of companies have Internet access. The survey estimated that about 40,000 businesses have computers, yet only nine percent of individuals in these

organisations have regular Internet access. In 2003, only half the government ministries operated a website and half of that amount offered downloadable forms. None offered online services.

### *Telecommunication Sector of Trinidad and Tobago*

In 2005, the telecommunication sector in Trinidad and Tobago was officially opened up to competition. The main provider, TSTT, is fifty-one per cent owned by the Government and forty-nine per cent by the *Cable and Wireless* company. This competition however is confined to the areas of mobile, cable and Internet services; TSTT still maintains a monopoly over land line services. The emergence of competition in the telecommunications sector has been slow, giving the incumbent TSTT the opportunity to streamline its operations for the competitive environment. As a result, the new entrant *Digicel* is yet to see the kinds of results in the Trinidad and Tobago market that it did in the other Caribbean countries of like Jamaica, Barbados, Grenada, Antigua and Barbuda, St Vincent and the Grenadines, Haiti and St Lucia. The situation in the newly-liberalized Trinidadian market, does not quite mirror those of other former monopoly-run markets *Digicel* has entered. TSTT, the incumbent operator in the country, was a monopoly until this mobile auction. However, unlike *Cable and Wireless Jamaica*, at the time *Digicel* entered this market in 2001, TSTT had already adopted and aggressively expanded its GSM network offerings.

Another factor that may impede the success of *Digicel's* entry into the Trinidad and Tobago market is the simultaneous entry of another licensee *Laqtel*. *Digicel* has

established itself as one of the strongest mobile operators in the Caribbean, but it has never entered into a market without the advantage of being the only operator offering GSM or the only new entrant.

### *Telework in Trinidad and Tobago*

In this section we present the result of 10 in depth interviews conducted in Trinidad and Tobago.

#### *The incidence of telework*

The fieldwork suggests that in Trinidad and Tobago, telework is being practiced in a limited scale primarily on an informal basis. According to a consultant with over 24 years of experience telework is growing but it has not yet reached the stage where a substantial proportion of the workers in an organisation will come into the office only 2 or 3 times per week. “We are still a work society where you come into the office.” This requirement to “come into the office” continues to apply even in the case of the most high technology companies. According to the same respondent:

“[In] my own TSTT [Telecommunications Services of Trinidad and Tobago] experience for example, you still had to go into the office most of the time [even though] the technology also allowed us to do work from home and keep contact when travelling.”

This position is supported by another respondent, an expert in the field of information and communications technology who expressed the view that while telework is considered a viable option by investment promotion organisations like Jamaica

Investment Promotion Corporation (JAMPRO) in Jamaica and the Tourism Development Company (TDC) of Trinidad and Tobago, it has not taken off for people who live and work in Trinidad. According to this respondent, “I have not read of any Telework programmes in Trinidad. The Telework arrangements locally usually take the form of informal arrangements between an employee and Management.” He illustrated this by reference to his work with Fujitsu ICL (a multinational ICT company) during the 1990s:

I used to [telework] as [an employee] at Fujitsu ICL. If I had a really big [project] to do, I would stay home and get the work done. [Management] didn't care as long as I was bringing home the beef. They don't really care where you are.

There was no “formal arrangement” no telework programme, simply “the ability to take a computer home”.

Perspectives vary about the prospects of telework in Trinidad and Tobago. One respondent suggests that telework thrives in an environment where labour is scarce and expensive and capital is cheap. Trinidad and Tobago represents a low labour cost environment

I don't think a local company will perceive that there is a local advantage to Telework, because in T&T labour is relatively cheaper than capital. There is no need for local companies to bend over backward to accommodate workers.

Another while admitting that the technology is clearly in place, did . . .

. . . not see it taking off in any real and measurable way. Currently there are a few call centres which practice this form of work. The very traditional mindset of employers who want to see employees on a daily basis may impede telework.

At The University of the West Indies, St Augustine Campus, flexible work arrangements for academic staff pre-dated the technology that facilitates telework. Not surprisingly, this, like other university campuses is one of the first to take advantage of the option for telework. One respondent (an academic) pointed out that she and most of her co-workers, have flexible work arrangements. In fact, she told us that only the receptionist in her unit worked the “normal schedule”, arriving at 8:00 am and leaving at 4:00 pm from Mondays to Fridays. The Masters Degree programme in Telecoms, delivered from this campus, is offered online to three (3) cohorts of students in over thirty (30) countries. Both students and especially instructors regard their activities as mainly teleworking. The Distance Learning Coordinator for the Masters in Regulation Programme (MRP) does most of her work from home. This is made possible by a number of factors: the Director’s willingness to allow for flexible work arrangements, confidence in the reliability of the relevant employees, the availability of high-speed Internet, and the nature of the jobs being performed. In addition it is less expensive for the organisation and fits in with lifestyle requirements of the employee.

Perhaps the most comprehensive programme of teleworking was found at the Tourism Development Company (TDC) of Trinidad and Tobago. The TDC is one of the 14 Special Purpose Companies attached to the Ministry of Tourism. The company comprises of 56 employees who operate in a “highly computer literate environment”. A high degree of travel is involved in the work of the organisation and the ability of travelling officers to communicate with the office is critical. Managers are outfitted with laptops and other mobile communications devices and all are able to access the office computers via a virtual private network. TDC plans to make this option available to most

workers in 2007. In addition plans are afoot to implement voice over Internet protocol (VOIP) to enable voice communications as part of a more comprehensive package of solutions to facilitate telework. The proposal is to implement flexible work arrangements that would enable workers to begin their work day at home thus avoiding the lengthy commute during rush hour. The need to supervise a workforce may be a challenge for persons who wish to telework.

#### *The drivers of telework*

The fieldwork conducted in Trinidad and Tobago suggests that a number of the pre-conditions necessary for the adoption of telework are in place. Most of the respondents held the view that the technology (high speed Internet, virtual private network and other security arrangements, as well as other soft-ware to permit remote access of computer networks) is in place for the adoption of telework. The study was able to identify a number of examples of such facilities being used, notably at The University of the West Indies, St Augustine Campus and at the Tourism Development Company. This kind of technology was also at the core of the work of an entrepreneurial start-up called *EZneTT*, which provides technical support services to a handful of clients in both Trinidad and Tobago primarily by accessing their network systems remotely and essentially “taking over” their computers or networks. The continued liberalisation of the telecommunications market and the reduction in the cost of high speed Internet services is expected to add significantly to this trend.

Another important driver of telework in Trinidad and Tobago is traffic congestion. The capital of Trinidad and Tobago, Port-of-Spain, is a highly congested city. Regular complaints of citizens spending up to 4 hours in traffic daily are now commonplace and this does not include the commute faced by employees who hold travelling positions such as sales representatives.

All respondents agreed that the growing situation of traffic is a significant push factor toward the possible adoption of telework in Trinidad. According to one expert in information technology, “the streets are becoming more congested everyday. I think that anything that can be put in place to reduce the amount of commuting at rush hour should be encouraged and I think telework could be used for this”. Closely connected to the issue of urban congestion are the environmental issue of pollution and the unnecessary consumption of finite natural resources.

Respondents also cited the problem of crime and concerns about personal security as an important factor that could drive a shift towards telework. Increasingly the Trinidadian population is becoming concerned on this matter with the rise in kidnappings, murders and robberies over the past few years.

#### *Constraints on teleworking*

Several factors emerged from the interviews that stand in the way of the adoption of telework in Trinidad and Tobago. At the time of the study the high cost of local and international calls as well as Internet services continued to be seen as a limiting factor. Greater liberalisation in the local telecommunications market would be welcomed to

facilitate a vibrant and more competitive environment. Computer costs can also be inhibiting. This may be a problem because employers are sometimes tardy in supplying needed office equipment. In addition funding may be a problem for companies who would like to institute telework but cannot afford the necessary infrastructure.

Respondents agreed that the most significant obstacle to telework as a new paradigm, was that of trust; both on the side of the employer and the employee. Traditional mindsets about work still permeate the work environment, sometimes creating distrust and uncertainty about the productivity of the employee who works away from the workplace. Most respondents agreed that the implications of this form of work include the transformation of internal managerial and administrative practices.

Respondents were aware that in this new paradigm, different Human Resource strategies and organisational systems would have to be applied to telework. Human resource managers will have to think differently about the fresh challenges this new type of work will bring. They will have to find ways to reach out to the teleworker, especially since distance may cause a feeling of detachment from the organisation.

The matter of social security and occupational safety for teleworkers is also a consideration. A prominent academic explained that telework:

. . . may just be a means of cutting social security and benefits already gained by labour. It transfers responsibility for these social security benefits from the company to the home worker, redirecting the costs associated with productivity and force down labour costs. [Workers] could have lower [levels] of social security.

Telework may also reduce the effect of trade unions as one respondent notes: “part of their strength is in having workers on the job especially for strike action and mobilization”.

### *Conclusions*

In the overall assessment, different degrees of telework exist in Trinidad and Tobago from formal to informal arrangements and from irregular to regular teleworkers. Our respondents seem to be, for the most part, receptive to telework with most welcoming the idea. It must however be noted that nine of the thirteen respondents fell in the categories of Technology Elite or Technology Provider. Their immersion in technology may have led to a greater understanding of its potential and have influenced their affinity towards telework. Advances in technology along with end-user training are factors expected to promote penetration of this new form of work. The strongest stimulus for telework, however, will be the need for increased productivity in the services sector and the appreciation that this productivity can be facilitated using remote working. To the extent that productive work and work hours are affected by urban traffic, many employers may wish to use telework to stem this loss.

Although telework has been taking place on the small scale since as far back as the early 1990s there is no national policy on how to deal with telework and teleworkers. This is an inadequacy that needs to be addressed. Organisations should be required to define their policies for telework as it becomes increasingly prevalent.

## **PART 2: MOVING FORWARD – CHALLENGES AND PROSPECTS**

Very little is known about teleworking in the Caribbean and some of the studies that have been done in the past focussed on offshore data processing rather than telework per se (Pantin, 1995, Bibby, 1996, Dunn and Dunn, 1999). Ten years ago, the technological prerequisites for teleworking were either non-existent or scarce and prohibitively expensive. Recent advances in the information and communications technology industry, has opened up the scope for teleworking and it has assumed broad significance beyond offshore data processing and similar rudimentary activities. Very little work has sought to understand the way in which this process is developing in the Caribbean. As a consequence, recent figures with regards to the extent of teleworking in the region are very scarce. Di Martino (2004) reports though that this new approach to work is spreading rapidly in Latin America and the Caribbean, with countries like Argentina, Brazil, Chile, Jamaica and Mexico taking the lead. Still, as it is on the international scene, only a small percentage of the Caribbean populace is as yet actually engaged in telework. This section explores some of the important themes that arise from a comparative analysis of the research, both documentary and primary carried out on the three target countries.

### *E-readiness in the Caribbean*

While there is evidence that telework is taking place in the region, the scale and scope of its adoption is small. First and foremost teleworking requires access to sophisticated information and communications technology (notably broadband Internet service and mobile computers). To date that access continues to be limited in the Caribbean as a result of a combination of the high cost of technology and low levels of computer literacy. Empirical evidence of computer and Internet access is sparse, inconsistent and for the most part appears optimistic.

The results of a study in Barbados (National Council for Science and Technology, 2003) suggest that this country is well ahead of both Jamaica and Trinidad and Tobago in this regard. Computer usage was noted to be as high as 56.7% of individuals, though it tended to be highly skewed in favour of younger, more educated and more affluent people. Despite this 30.8% of the population over 50 years of age claimed to use computers. An amazing finding in respect of the Barbados survey was that some 70% of these respondents have access to computers at home (NCST, 2003). Average usage amounted to 19 hours per week with only about 20% using it for more than 40 hours per week. Of critical interest was that while 90% of computer users had access to the Internet, the vast majority of those with access (98.4%) were still obtaining it via a dial-up modem.

In 2003, the Jamaican government reported on a study which indicated that the country boasted some 95,000 Internet subscribers in the six parishes where Internet subscription was highest. Based on an estimate of seven users per Internet subscription, the study concluded that approximately 674,000 Jamaicans aged 15 and over made use of

the Internet in those parishes. On this basis recent ITU estimates of over 1 million users (roughly 40% of the population) in 2006 would appear to be fair (<http://www.jamaica-gleaner.com/gleaner/20030702/business/business2.html>).

In the case of Trinidad and Tobago, the Ministry of Public Information and Administration reported a study in July 2003, which revealed inter alia that:

- 78% of homes have telephones;
- 50% of adult population uses mobile phones (450,000 phones);
- One third of the population has “Internet access” but only 9% of the population is considered ‘regular Internet users’ (uses the Internet several times per week).

### *Technology policy*

An important precondition for the expansion of telework in the Caribbean is cohesive policy both within and across countries in the region. As a collection of small, open economies, the Caribbean is somewhat unique. In total the population of the English-speaking Caribbean is approximately 6 million people. The land area of each territory is small, but the islands are dispersed across thousands of square miles of ocean. This means that the establishment of technological infrastructure is relatively expensive and the market for telecoms services is relatively small. The challenges posed by these factors are multiplied by the fact that each small territory is independently pursuing its own telecommunications policy. All three countries under study are following a similar pattern of liberalisation, however Jamaica appears to be the most advanced, with Barbados following closely behind and Trinidad being the least advanced. While there is some amount of ad hoc cooperation, there is no formal coordination of ICT policy either

among the three countries or within the CARICOM region as a whole. The result is that the progress of policy development is probably slower, more time consuming and more expensive than it needs to be.

The irony is that the Caribbean has in place a number of regional agencies that focus in one way or another on ICT policy. The Caribbean Telecommunications Union is one example. On its web site it is described as “a Caribbean intergovernmental organisation dedicated to facilitating the development of the regional telecommunications sector.” Its vision is to: “To position the CTU to be the prime catalyst facilitating regional cooperation, economic, social and cultural development of the peoples of the Caribbean through the provision of efficient and advanced information and telecommunication services.” However the Secretary General frankly admits that prior to 2003, the organisation was moribund and during the fieldwork phase of the study, one knowledgeable informant while acknowledging its resurgence, seriously questioned its effectiveness.

“The CTU went from a non-existent entity to a very active one. But lack of expertise is a problem for the CTU. The region has a lot of very intelligent telecoms engineers and ICT specialists, but they happen not to be in the CTU.”

There is no cohesive regional ICT policy, in fact the regional approach to ICT policy seems to be just as disjointed as the individual national efforts. At CARICOM, Information and Communications Technology falls under the office of the Deputy General Secretary. It is not clear however what effect CARICOM can have even with this clear indication of how seriously the organisation views the issue. One highly placed informant observed the ambassador (Applewaite) is the only person from CARICOM that

he has ever met at a CTU meeting. A similar problem exists in relation to the representation of Caribbean countries at broader international decision-making fora:

“All CARICOM countries are members of a body called CITEL [Inter-American Telecommunication Commission]. This is an OAS body, and right now the only people who attend CITEL meetings are the ‘big three’; Barbados, Trinidad and Jamaica. There is the problem of lack of coordination due to a lack of representation in international conferences. Therefore CARICOM’s interests may be relegated to the backburner because there is usually better representation from US, Canada and the South American countries, which push forward the policies that [are consistent with] their interest. One problem is the lack of finance to send people to these conferences, but Caribbean governments could coordinate and combine finance to send adequate representation.”

Aside from the lack of cohesion, some experts suggest that there is a lack of serious attention to ICT policy in the region:

I think last year there was a meeting held in Barbados for Ministers responsible for ICT and I think only about two Ministers came. At CARICOM I don’t know if there is a desk or an officer responsible for ICT. The other bodies again are . . . fragmented with each institution trying to be the one responsible. So no one is working together. There is huge possibility for telework in the CSME, but there is no coordination. There is also the fear of the technology.

### *Competition*

Another precondition for the expansion of telework in the region is cheap and accessible broadband Internet service. The region, led by Jamaica is slowly breaking loose of the stranglehold of monopoly over its ICT infrastructure held for decades by a single company, *Cable and Wireless*. The dominant and common feature of Caribbean information and communications technology policy is the drive to increase competition. This objective is being pursued primarily through a process of liberalisation aimed at

breaking the dominant monopoly position of *Cable and Wireless*. But there is a lot more that can be done. One expert points to the fact that the strategy of “local loop unbundling” is an excellent way to increase competition which has not been implemented anywhere in the region with the exception of the Dominican Republic. Local loop unbundling (LLU) refers to new regulatory provisions requiring the incumbent local exchange carrier (ILEC, e.g. *Cable and Wireless*) to sell access to their telecommunications infrastructure (local loop) thus enabling new entrants to provide services such as ADSL (asynchronous digital subscriber line). In other parts of the world where such a strategy has been employed the effect has been to dramatically cut the cost of ADSL.

Aside from this strategy, two others suggested by Caribbean experts is “number portability” and “universal access”. In a context where persons retain a provider in order to keep their phone numbers, “number portability” gives the consumer more choices and would form another competitive element in the mix of strategies directed at reducing the price of broadband Internet access. Universal access is perhaps the most important mechanism for bridging the digital divide. This process is being assisted in the Caribbean a combination of technology, private initiative and public policy. In relation to private initiative, the business strategy of *Columbus Communications*, which has begun to establish a substantial alternative presence to *Cable and Wireless* in the region, is a good example. In relation to public initiatives, the Government of Jamaica has taken the lead in the region by establishing the Universal Access Fund Limited (UAFL) to finance “the national e-Learning Projects by way of a levy charged on international telephone calls that terminate in Jamaica. According to Minister of Industry Technology and Commerce:

The levy was implemented [to foster]. . . the creation of a knowledge-based society, with particular emphasis on our youth. This will involve the expansion of Internet access over a national broadband network to persons and communities that could not ordinarily access these services. ([http://www.mct.gov.jm/uaf\\_collection.htm](http://www.mct.gov.jm/uaf_collection.htm), retrieved July 13, 2006)

### *Incidence of telework*

It is impossible, in this type of study, to make any accurate assessment of the incidence of telework; however, it is possible to meaningfully speculate about the types of circumstances in which telework is likely to be found and the manner in which it is practiced. We found a higher incidence of telework at the top of knowledge work environments characterised by higher instance of technology use and a higher concentration of “technology elites”. In the Caribbean this means that large private sector companies and institutions such as the University of the West Indies were the most likely environments in which to find teleworkers. The case of EZneTT in Trinidad and Tobago also illustrated an important point, that telework appears to be the preferred mode of operation of a small emerging body of techno-entrepreneurs and consultants. The study did not target small private sector companies but it is unlikely that these would have the degree of access to technology that would promote telework, except in cases where such companies were providers of technology service. A similar observation could be made about non-governmental organisations including workers’ organisations which tended to be marked by limited use of information and communications technology.

Major private sector companies such as *Sagicor Corporation* (a Barbados based conglomerate, with subsidiaries in Jamaica and the United States), *Bank of Nova Scotia Jamaica Ltd* and *IBM* operate with some variation of a “shared services concept”. Through the use of ICTs they are able to integrate their business processes and offer key services from remote locations that IBM refers to as centres of excellence. Private sector organisations that are committed to creating efficiencies through such integrated services tend to invest heavily in the latest secure ICT network environments. The case of the Tourism Development Company in Trinidad and Tobago, and the Caribbean Development Bank, in Barbados, suggests that there is potential for public agencies to go a similar route, especially when they are new. Employees of companies and organisations which allow telework or (as in the case of the Trinidad and Tobago Tourism Development Company) actively promote it, tend to operate with computers on ratio of one machine per person, a higher than average proportion of these employees tend to operate with laptops (and sometimes with Internet ready cellular phones), computers are networked together and networks are typically characterised by some level of security. The result is that at least some of the employees are regularly able to communicate with the office network and are able to work from home. In general this is true for all employees who work in the field of information and communications technology and all top executives of these organisations. Employees such as these would typically telework on a daily basis, but rarely are they exclusively or primarily teleworkers and in the vast majority of cases maintain their primary office environments at a central integrated workplace.

One respondent reported:

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I worked with CARICOM for 7 years up to 2004. There was nothing institutionalized for telework. You were required to come into work everyday but you [could] negotiate with your supervisor and say you are staying home today or for the week because you can concentrate on the work from there better.

Similar ad hoc arrangement existed at the Caribbean Development Bank, at various campuses of The University of the West Indies and to varying degrees in a number of private sector organisations.

Despite well publicised e-government initiatives in some Caribbean countries (certainly in Jamaica) the ICT environment is significantly behind those found in leading Caribbean business enterprises. The typical government office is a knowledge-work environment and the ratio of computers to employees is often one to one or close to it. However, computers are often outdated, are not networked, there is typically no scope for remote access, there is limited or no access to the Internet and for a substantial proportion of employees the computer is used for a narrow range of basic processes, very much like a sophisticated type-writer. Mobile computers are typically not provided except for persons at the highest levels and remote access to the workplace computers is generally not available.

#### *Attitude towards telework*

In none of the interviews did we find an attitude of outward rejection of telework. There is however a general lack of awareness. For the most part it is something that has, to date, simply not been given much thought. There is a general recognition that it is a phenomenon that is emerging with technological change and that it is in some sense inevitable, but some groups raise concerns about its possible impact. Older persons and

those with a limited understanding of technology, question the feasibility of a supervisory model in which the employee works outside of the line of sight of the employer or his representative. On the other hand, the young techno-elite embrace it as an eminently desirable corollary to high-tech gadgetry and at the extreme dismiss any scepticism as, at best ignorance and technophobia and at worse, vestiges of “colonialism and slavery”.

While technology and environmental factors such as traffic congestion, competition and the need for efficiency in the service sector were key drivers of telework, respondents were fairly unanimous in their view that “culture” was a major inhibiting factor with respect to the introduction of telework. As one respondent put it: “[b]osses still like to see people. They don’t feel that their workers will work effectively if they are at home. I think we are still very much in that culture in the Caribbean.” While a greater degree of flexibility is permitted in workplaces dominated by “professionals”, there appears to be a general perception that persons falling outside of that category need to be closely supervised:

As a professional I think you have a little bit more flexibility. You can call in and say look I am on my report from home and they will accept that. But I don’t know if it would be accepted from 1) a non-professional and 2) on any long term basis even for a professional. Probably a couple days a week or something but not on an ongoing consistent basis.

### *The Regulation of Telework*

Appropriate ICT and competitive policies are important as a foundation for the development of telework, however, it also becomes necessary to regulate telework itself. We found no evidence, in this research that any of the important stakeholders in the

region, government/regulators, non-governmental organisations (labour unions, employers), major technology users or technology providers, have given any serious thought to a framework for regulating the human side of telework. As far as we have been able to discern, there is little or no dialogue between the “human” and the “technology” side of teleworking, either at level of the work organisation or at the national level. No legislation or legislative amendment is being considered in any of the countries investigated. This is no doubt connected to the absence of formal telework programmes among employing organisations, the relatively low incidence of teleworking overall and the location of telework among a class of workers (high tech knowledge workers and executives) who would not normally be organised by a trade union.

At the moment telework is done on an ad hoc semi-voluntary basis mainly by techno-elite knowledge workers with access to broadband Internet service at home. Currently it is the workers who bear much of the hidden cost of the transition that is taking place. In general the employers’ role is confined to introducing the appropriate technology (broadband Internet access and a secure networked environment) into the workplace and providing the employee with the necessary devices for remote access. We found no case in which the employers’ role extended to the provision of a “teleworking environment” (office or Internet access) at home. To date there has been no suggestion that telework constitutes or may in the future constitute a social issue that may warrant legislation and there is very little hint of an appreciation of the special challenges posed by the management of teleworkers.

It is clear however, that people are working remotely and that as access to home-based technology (computers and broadband Internet) expands, more and more people

will work at home at least on an occasional basis. Indications are that increasing traffic congestion, increasing cost of commuting and increasing cost of office accommodation are combining to motivate employers to consider telecommuting as an option. At least three major companies encountered in the fieldwork exercise indicated that this option was being considered and would likely be piloted within a short time. One of them, an international company with head-office outside of the Caribbean, indicated that its head office had a well developed policy on teleworking and that it was widely practiced abroad.

### *Telework and people with disability*

The project paid special attention to the potential of telework to affect the working lives of people with disabilities. Persons with disabilities face important challenges in the workforce. There is in general less access to schooling and training, there is considerable amount of social isolation, and anecdotal evidence suggests that the unemployment rate among such persons is substantially higher than in the general population. The study thus sought to obtain preliminary insights into how telework was understood by persons with disabilities. This involved an understanding of their level of access to technology, how they used it and the difference that it made to their ability to obtain a livelihood. We also sought to understand the extent of their involvement in telework and how they viewed the prospects of further involvement.

From the perspective of people with disabilities, ICTs provide a mixed blessing. The potential for employment is appealing. On the other hand a focus group of persons with disabilities held in Barbados, expressed the strong concern that this should not

emerge as a mechanism for their continued social isolation. Disabled respondents raised the issue of social and occupational mobility and expressed unease with the “tokenism” which tends to attach to the employment of disabled persons. They argue that even when they are employed they tend to be overlooked for promotional opportunities and often remain in the same positions doing the same things for many years. They want to use technology for empowerment, but they wish to function in the mainstream of work life. This they feel can be accomplished through training and retraining backed up by the adaptation of technology to suit the requirements of persons with disabilities. For example to the extent that cash registers can now be programmed to minimise the amount of actual calculation necessary in making change in a business setting, persons who are mentally impaired can be hired in such positions. Instead of employing medical redundancy in cases where persons become visually impaired, such individuals could be given the option of re-training with screen reading programmes so that they can maintain their effectiveness in a work setting.

Persons with disabilities also look to the possibility of the technology providing them with opportunities for entrepreneurship. One example is the scope for transcription through the use of the job access with speech (JAWS) for Windows screen reader software. In Jamaica we spoke to the Minister of State in the Ministry of Labour and Social Security who uses that programme and who does a considerable amount of his own research. According to the Minister when he employs that programme he is at no disadvantage relative to a sighted person.

In order to facilitate the integration of persons with disabilities into the workforce, persons outside of the disabled community, in particular those in businesses, government

and trade unions need to have greater awareness of the issues concerned with disability. There is need especially for dialogue around the scope for enabling technologies to facilitate employment for disabled persons without disadvantaging the employer or the person to whom the disabled is contracted. One clear opportunity is for tax incentives to be provided to businesses that employ disabled persons and for government itself to develop and implement a clear and non-discriminatory policy in relation to the employment of people with disabilities.

### *Gender and telework*

The literature suggests that impact of technology on women will be different from its impact on men. Both field and documentary research conducted for this project suggests that little or no attention has been paid to the issue of gender in the development of ICT policy. Whereas all three target countries have a “Gender Bureau” established, ostensibly to bring a gendered perspective to socio-economic policy, they tend to be small, under-resourced and remote from the centres of policy-making. A plethora of women’s groups exist and there is a well established tradition of gender studies in the region. There has, therefore been no lack of focus on the socio-economic issues that concern women. Only recently has gender studies begun to accommodate the concerns of men. Despite this, academics in the field of gender studies as well as representatives of women’s groups complain that ICT policy making has proceeded without any consideration for gender equity.

Women in the Caribbean see both advantages and disadvantages in new approaches to work that would allow women to work at home. According to an expert in gender relations:

There is both a positive and negative side [to these changes]. The positive would [arise from the fact that] women do perform a disproportionate amount of household chores such as child rearing, household cleaning etc. If such technology was available to them, they would be able to combine . . . [paid and unpaid work] in the home. But that can also be a disadvantage in the sense that we would be suggesting that we institutionalize that phenomenon of women having that disproportionate responsibility. [This would be diametrically opposed] to the position coming out of all the women's conferences . . . , [which is that] we want to move to a [situation] where . . . both men and women accept responsibly [for unpaid work in the home].

There is therefore the concern that if a disproportionate number of women were to take the option of working at home it might negatively affect their career prospects regardless of their level of skill or capability.

If we still have that dominant culture that dictates that you're only legitimately a worker and an excellent worker if you are at the office and again if you have more women taking up that option to work from home, then it places them at a disadvantage in terms of promotion etc. because the men are going to be in the office and women at home. Now I take your point there could be potential for men as well to take up that option but it is going to be difficult given the culture. Even in countries that are considered more advanced, traditions die very hard.

One theme that emerges from the discussion with women across the Caribbean is that there appears to be a tendency for technology to reinforce traditional gender stereotypical roles and female subordination. For example, an activist intellectual in Jamaica suggested that there is a tendency revealed in interaction with Jamaican families to socialise male children to engage with technology, while girl children were socialised

towards nurturing roles. Thus while boys tended to receive toys in the form of computer games for example, girls tended to receive traditional toys such as dolls. On the other hand our research in Barbados suggests that where training is offered in information and communications technology, it is the women who tend to avail themselves of it. Such training however, is not designed to equip them with high level skills and therefore provides them with little advantage in the labour market.

#### CONCLUSIONS FROM THE TELEWORK CONSULTATION WORKSHOP

The final stage in the Telework research project was the evaluation stage which consisted of a workshop which held in Jamaica. The results of the project were presented to an audience of about 30 stakeholders and comments were invited. During the discussion of the findings, workshop participants reinforced many of the key points that have emerged in the project. Among these are:

- the need to build human capacity in ICTs;
- the need for good IT governance in organizations to minimize information security risks;
- the sensitivity and carefulness required in selection practices to decide who will telework in an organization and who will not;
- prevailing culture and attitudes to work as inhibitors to adoption; and
- the expense of rollout as a hindrance to adoption.

However, new issues arose as participants began to dissect the problematic aspects of telework. For example, one participant was keen to point out that organizations need to be careful that they do not alienate customers who prefer human contact. Also, telework can potentially be hindered by some residential zoning laws that restrict

commercial activity in certain complexes. Additionally, participants recognized the potential for telework to be a vehicle for job creation and therefore assist in improving the rate of unemployment in the region.

The issue that became a central theme was that of labour policy. It is an important point of departure when it is considered that telework requires “self-regulation” and the possibility of non-performance is very real. Issues of occupational safety will also come to the fore as organizations consider who will be responsible for ensuring the occupational health of the teleworker.

It is also necessary to take into account responses to similar labour policy shifts that have taken place in the recent past. Efforts to enact a policy for flexible working hours underwent significant resistance in Jamaica from a number of sectors including trade unions and church groups. Overall, the attitudes towards labour policy need to change among all stakeholder groups for the region to reap the benefits of telework such as greater productivity.

Participants felt that a pilot project for telework was needed to establish a model for organizations who are interested in pursuing the option. This may even involve the development of practical reference documents to outline infrastructure needs, relevant regulatory provisions and technical capacity required for telework operations.

Telework needs to be championed. As it exists now, technology elites and users are driving telework adoption without the involvement of human resource personnel. Dialogue between these “techies” and human resource professionals is integral to the adoption of telework. A value proposition may be effective if HR persons are presented with evidence of increased productivity and job retention as well as reduced attrition.

Based on this evaluative exercise it can be surmised that much of the research goals have been achieved as we were able to confirm what people are thinking, feeling and saying about telework in our qualitative analysis. The scope for further research on telework in other countries, as well as quantitative studies, should be investigated. However, a clearly identified pilot project on telework, perhaps within the public sector, could provide an exemplar to help other organizations make decisions to adopt telework and to provide concrete evidence of the potential benefits of telework in the region.

### **Summary of Conclusions**

This project represented an important intervention into the regional discussion about the impact of technology on work practices, flexible work arrangements, new challenges to the practice of trade unionism and new thinking for policy makers and labour ministries.

Teleworking is a growing practice in the region carried out under a variety of names and forms but the extent of its adoption will continue to be limited by wider access

to the enabling technologies. In addition, operational telework faces the challenge of conventional human resource personnel not being aware and confident about the implications of telework for the enterprise. This includes concerns about identification and selection of staff members to be designated as teleworkers, issues of trust and productivity, issues of technology reliability and power supply, information security and confidentiality.

Persons described as technology elites, though mostly male, are increasing in the use of telework, in part for own account enterprises and for consultancy services. Employers are cautiously attracted to the notion of telework but would be concerned about cost of equipment and facilities and with issues of accountability.

Matters of telework shade into public policy discourses about flexi-time and flexible work arrangements. The use of technology from home or remote locations could provide options for policy makers about deploying flexi-working strategies as they may relate to concerns from the church about working on Sundays and/or Saturdays (Sabbath).

Major issues of motor vehicle traffic and long working hours is serving to make telework a more attractive alternative to commuting for organizations and individuals with the ability to take advantage of telework.

Going forward, this project could contribute to increased academic and journalistic output concerning telework, greater knowledge by a wide range of stakeholders in the region of the benefits and global significance of telework and more sustained efforts made in the development of dialogue with policy makers about the usefulness of telework to enhance public policy goals. It will provide the Caribbean

region with a basis to engage global counterparts and stakeholders in discussions on these issues including participation in telework symposia.

### **Recommendations: Creating an enabling framework for telework**

Development economist and technology expert Professor Norman Girvan, who was interviewed for this study, issued strong words of caution about the potential dangers of directing policy at the expansion of telework without giving serious consideration to the parallel human development issues. These words of caution are well worth noting, but it does not appear to be a matter of choice. It seems clear that whether there is active macro-policy involvement or not, telework will happen. It is happening now. It therefore becomes important for the appropriate policy framework to be created to ensure that telework can have a positive impact on the economy and society. Among the policy initiatives that arise from the study are:

- The need for co-ordination between ministries responsible for technology and those responsible for labour policy within each country and across the region in the development of a policy on telework. The Ministry responsible for transport also needs to be linked to this initiative as does the ministries/agencies responsible for education and training in the field of ICT.
- The need to coordinate ICT policy initiatives within one single centralised entity in contrast to the fragmentation that is currently evident in all three countries.
- The need to have a single ICT regulatory body in each country
- The need to co-ordinate ICT policy across the region. It would seem fair to say that if the region were to develop a more integrated policy on ICTs, this would enhance the prospect of reduced telecommunications costs and universal access to the Internet in respective countries. This in turn would make the prospect of

transborder telework more feasible. The challenge is to identify one or more regional institutions that are capable of advancing this role. Among the institutions that have been mooted are, the University of the West Indies, the Caribbean Development Bank and CARICOM.

### **Recommendations for further Research**

In an exhaustive search of documentary sources on technology and work in the Caribbean, we were able to uncover little research into the broad interface between ICTs and work and into telework in particular. This study has taken the first few tentative steps towards a better understanding of these issues but much more needs to be done. Firstly, there is a need for a clearer understanding of the scope of telework in the region. We do not yet know, with any degree of confidence who the teleworkers are what industries they work in and how many there are. We do not know much about the possible impact on Caribbean integration especially the extent of transborder teleworking in the Caribbean. We know virtually nothing about the impact of teleworking on the Caribbean lifestyle. While this study has tentatively concluded that telework is driven by a combination of technology, the knowledge, orientation and attitudes of a younger generation of technophiles and by environmental factors (e.g. traffic congestion) more needs to be known about the pace of adoption and the other factors that motivate adoption in the Caribbean context.

Consonant with the fact that telework is currently being driven by technology and technophiles, is the fact that the human development implications are not being considered. Work needs to be done on the implications for the framework of labour legislation of the expansion of telework. In addition, the early work of Bibby (1996) and

Dunn (1999) that examined the implications for collective labour relations needs to be updated.

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## APPENDICES

### Appendix 1: List of Respondents

ORGANIZATION	COUNTRY	TITLE	FIRSTNAME	LASTNAME	POSITION
Ministry of Commerce, Consumer Affairs and Business Development	Barbados	Mr	Chelston	Bourne	Chief Telecommun Officer
Ministry of Labour and Civil Service	Barbados	Mr	Victor	Felix	Asst. Chief L: Officer
National Council for Science and Technology	Barbados	Mr	Lennox	Chandler	Director Gen
Fair Trading Commission	Barbados	Ms	Sandra Sealey		Director, Utili Regulations
Alexandria School	Barbados	Mr	McAllister	Burrowees	
St Albans Primary	Barbados	Miss	Margaret	Bryan	Teacher of IT
University of the West Indies	Barbados	Mr	James	Corbin	
Caribbean Development Bank	Barbados	Dr	Kathleen	Gordon	Deputy Direc Information a Technology
Sagicor Life	Barbados	Mrs	Susan	Boyea	Vice Preside Shared Servi
National Union of Public Workers	Barbados	Mr	Dennis	Clarke	Deputy Gene Secretary
Gender and Development Dept, UWI	Barbados	Miss	Jemma	Tang-Nain	Actg Head
	Barbados	Miss	Nalita	Gajadhar	Program Offi the Bureau o Affairs.
Youth Employment Scheme	Barbados	Mrs	Selma	Husbands	Executive Dir
Barbados Secondary Teachers Union	Barbados	Mrs	Mary	Redman	President
Barbados Employers' Confederation	Barbados	Miss	Sandra	Codogan	Negotiating C
Barbados Union of Teachers	Barbados	Ms	Karen	Best	President
Barbados Workers' Union	Barbados	Mr	Robert	Morris	Deputy Gene Secretary
Barbados Council of the Disabled	Barbados	Mrs	Bonita	Phillips	President
Barbados Labour College	Barbados	Dr	Ulric	Sealey	Principal
Barbados Workers' Union	Barbados	Mrs	Veronica	Griffith	Deputy Gene Secretary (R
Ministry of Industry Commerce and Technology	Jamaica	Mrs	Karlene	Francis	Director Gen
Ministry of Labour and Social Security	Jamaica	Mr	Gresford	Smith	Consultant
Office of Utilities Regulators	Jamaica	Mr	J. Paul	Morgan	Director
Spectrum Management Authority	Jamaica	Mr	Michael	Thomas	Director, poli Strategic Pla
EMOQUAD Internet Services	Jamaica	Mr	Hugh	Campbell	Director
IBM Jamaica	Jamaica	Mr	Garfield	Campbell	IT Manager
Jamaica Public Service	Jamaica	Mr	George	Stewart	Enterprise Sy Manager

SSP APTEC Ltd	Jamaica	Dr	Sandra	Palmer-Peart	Director
University of the West Indies	Jamaica	Prof.	Evan	Dugan	Lecturer in Information S
University of the West Indies	Jamaica	Mr	Kevin	Duncan	IT Administra
University of the West Indies	Jamaica	Mr	Noel	Kelly	Webmaster
University of the West Indies	Jamaica	Mr	Craig	Perue	Manager, MI
IBM Jamaica	Jamaica	Miss	Lilieth	Dilworth	Staff Human Resources Professional
Life of Jamaica	Jamaica	Mrs	Bernita	Locke	Human Reso Manager
Trade Union Congress of Jamaica	Jamaica	Mr	Barrington	Dawes	
Bustamante Industrial Trade Union	Jamaica	Mr	Clayson	Panton	
Women's Center of Jamaica	Jamaica	Mrs	Beryl	Weir	Director
Women's Media Watch	Jamaica	Ms	Hilary	Nicholson	Director
WROC	Jamaica	Mr	Stephen	Hutchinson	Director
Kingston Action Forum	Jamaica	Ms	Arlene	Bailey	Vice President
Ministry of Labour and Social Security	Jamaica	Sen	Floyd	Morris	Minister of Sc Security (Representat from the Disa Community
Bank of Nova Scotia (Ja)	Jamaica	Mr			IT Manager
Bank of Nova Scotia (Ja)	Jamaica	Mrs	Nadia	Gordon-Sobers	Human Reso Manager
	Jamaica	Mr	Arvel	Grant	IT Consultant
Spectrum Management Authority	Jamaica	Miss	Suzette	Cameron	Administrativ Assistant
	Jamaica	Mrs	Grace	Martin-Hall	Independent Consultant in Distance Edu
Women's Resource and Outreaach Centre	Jamaica		Stephanie	Hutchinson	Director
Office of Utilities Regulators	Jamaica	Mr	Courtney	Jackson	Consultant
IBM Jamaica	Jamaica	Mrs	Janet	Gibson	Director of Information Technology
IBM Jamaica	Jamaica	Mrs	Jenifer	Blake	Manager, Hu Resource
Women's Media Watch	Jamaica		Eryn	Lyster	Volunteer IC Consultant
Digicel	Jamaica	Mr	Richard	Brown	Head of Netw Development
Telios	Trinidad	Mr	Ronald	Hines	
Caribbean Technology Union	Trinidad	Mr	Nigel	Cassimir	IT Consultant
Caribbean Technology Union	Trinidad	Mrs	Bernadette	Lewis	Director
Espirit Consulting	Trinidad	Mr	Rabindra	Jaggernaut	IT Consultant
EzneTT	Trinidad	Mr	Gregory	Mohammed	
Tourism Development Company of Trinidad and Tobago Limited	Trinidad	Mr	Allan	Nelson	IT Manager
University of the West Indies	Trinidad	Mr	Simon	Fraser	Lecturer in Information S

University of the West Indies	Trinidad	Prof.	Norman	Girvan	Caribbean Ec and Former I of the Accoci Caribbean St
University of the West Indies	Trinidad	Miss	Kim	Mallalieu	Director, Mas Regulations c Telecommun Program
Caribbean Research Institute (CARIRI)	Trinidad	Mr	Hayden	Charles	Webmaster/S Analyst

## **Appendix 2: REPORT ON TELEWORK CONSULTATION WORKSHOP**

Blue Mahoe Room, Courtleigh Hotel, Kingston, Jamaica – October 11, 2006 – 9:30 am

### **Presenters:**

- Dr. Hopeton Dunn (HD) – Project Consultant, Presenter and Workshop Chair
- Dr. Noel Cowell (NC) – Project Consultant, Presenter
- Sen. Floyd Morris, Minister of State, Ministry of Labour and Social Security – Guest Speaker

### **Attendees:**

- Prof. Evan Duggan, Professor of Management Information Systems, Mona School of Business, UWI
- Michelle Commosioung, Lecturer in Economics, Mona School of Business, UWI
- Clayson Panton, Negotiator, Bustamante Industrial Trade Union
- Chris Hayman, Director of Business Services, Digicel and Chair, IT Committee, PSOJ
- Peter-Paul de Goeij, Head of Legal & Regulatory Affairs, Northern Caribbean, Digicel
- Beryl Weir, Executive Director, Women's Centre of Jamaica Foundation
- Nigel Cassimir, Caribbean Telecommunications Union Secretariat, Trinidad
- Shelly Vernon, Director of Industrial Relations, Ministry of Labour and Social Security
- Tanya Ralph, Legal Officer, Ministry of Labour and Social Security
- Marlon Mohan, IT Unit Manager, Ministry of Labour and Social Security
- Karen Cadie, Jamaica Information Service
- Halcyon Lawrence, Researcher, Trinidad and Tobago
- Christine Marrett, UWI Distance Education Centre (UWIDEC)
- Audrey Flowers-Clarke, Assistant Vice President, Shared Services IT, Life of Jamaica
- Dr. Grace Martin-Hall, Independent Consultant and Part-time Lecturer at UWI

- Joan Barnaby, Human Resource and Facilities Manager, CPTC
- Alton Grizzle, Programme Officer in Communication and Information, UNESCO
- George Stewart, Manager of Infrastructure and Enterprise Systems, Jamaica Public Service Company
- Hugh Campbell, Chief Executive Officer, EMOQUAD
- C. Courtney Jackson, Deputy Director-Telecommunications, Office of Utilities Regulation
- Douglas Webster, Senior Economist, Ministry of Industry, Technology, Energy and Commerce
- Maxine Lettman, Technical Support Department, Mona School of Business
- Allison Brown, Research Assistant, Mona School of Business
- Craig Perue, Mona Information Technology Services, UWI
- Taffi Bryson, Researcher, UWI

## KEY POINTS FROM PRESENTATION BY DR. HOPETON DUNN

Dr. Dunn welcomed participants and invited them to introduce themselves. He then presented the following overview and background to the Telework Project.

### Overview of the Project

- Project Title is Telework – New Forms of Work and Employment Opportunities in the Caribbean
- The fieldwork was conducted between May and July 2006 in Jamaica, Trinidad and Tobago and Barbados
- Commissioned by the International Development Research Centre (IDRC) in Canada
- Being jointly undertaken by the Department of Management Studies, UWI, represented by Dr. Noel Cowell and the TPM Programme of the Mona School of Business, UWI, represented by himself.
- 

### Background

- The Global Context:
  - Innovations in ICT, mobility and technology convergence
  - social challenges to conventional work practices
- The study examines Telework and the prospect of major changes in the way work is done in the region and globally
- The Research Methodology involved a combination of documentary searches, specialist interviews and focus groups, as well as this Public Consultation and Data Evaluation

### Prior Regional Research

Significant work in the past was done by:

- Hopeton Dunn. 2000. Globalisation, Teleworking and New Trade Union Strategies. In *Telecommunications and Information Technology: Their Impact on Trade Unions in the Caribbean* – The first regional examination of the subject.
- Sandra Palmer Peart. 2004. A Study on the Inclination of Jamaican Employees to Opt for Telework: A Comparison with Findings for

United Kingdom Employees. DBA Dissertation for Graduate School of Business, Nova Southeastern University.

- Vittorio DiMartino. 2004. Telework in Latin America and the Caribbean. A Research Study for IDRC.

### **Telework: Definitions**

- No universal definition, but several sectoral definitions.
- International Labour Organization (ILO): A form of work in which (a) work is performed in a location remote from the central office or production facilities, thus separating the worker from personal contact with co-workers there; and (b) new technology enables this separation by facilitating communication
- According to Palmer Peart (adapted from Mokhtarian and Sato, 1994) Telework is “paid work performed away from the main office, at home or from a location closer to home, during regular work hours or outside of regular working hours; whether part-time or full-time which utilizes some aspect of information technology.”
- Alternative terms include Telecommuting, Remote Working, Home-working, Mobile Working, Off-site Working, Flexible Work Arrangements, Virtual Workplace, Distributed Work Arrangements
- Telecommuting is “the partial or total substitution [with] telecommunications technology [of] the trip to and from the primary workplace along with the associated changes in policy, organization, management, and work structure”. (Heikes. 2002. Managing the Virtual Worker / Telecommuter. *Society for Technical Communication*.)

### **Global Applications to Telework**

- The US has the highest prevalence of Telework
- Other countries where it is prevalent include the UK, Canada and Australia
- In use in varied forms by many other countries including those of the Caribbean

## Some Challenges

- For Teleworkers
  - Isolation
  - Occupational Health Risks
  - Potential for longer work hours
  - Challenges to home life
  - Domestic Distractions
- For Society and Employers:
  - Potential for increased occupational and health problems
  - Cost of acquiring increased equipment and facilities
  - Disposal of increased Technology Hardware

## Key Benefits of Telework

- Cost Savings with significant reductions in office space, heating, air-conditioning, car parks, lighting
- Case: About 25% of IBM's global workforce telecommutes, saving US \$700 million per annum in real estate costs. *Source: Canadian Telework Association, 2005*
- American Express telecommuters handled 26% more calls and produced 43% more business than their office-based counterparts. *Source: Canadian Telework Association, 2005.*
- At IBM Canada employees can be as much as 50% more productive when they work in telework environments. *Source: Canadian Telework Association, 2005.*
- Skills Retention especially among workers on maternity leave and mothers with young children
- Helps balance work and family life
- Could be helpful for persons with disabilities
- Organisational Resilience – Telework enables continuous work without interruptions during time of restructuring or emergencies

## Advantages for Developing Countries

- Facilitates the relocation of jobs from the industrialised to the less developed countries, where they can often be done more cheaply.
- The establishment of local Telecenters in countries such as Jamaica, Barbados, India and Senegal has created direct employment for thousands of local men and women.

- Relief from urban traffic congestion
- Facilitates SMEs and self-employment

### **Goal of the Research Study**

To determine the potential of Telework in enhancing the competitiveness of Caribbean economies.

### **Project Research Objectives**

- To determine the extent of penetration of Telework within the Caribbean and to explain the factors that inhibit or promote its adoption
- To determine the extent of understanding of Telework among key stakeholders
- To determine whether and to what extent Caribbean employers, governments and employees perceive Telework as a viable alternative work practice and a mechanism for enhancing competitiveness
- He then introduced Dr. Noel Cowell to report on key findings of the study so far.

## KEY FINDINGS OF TELEWORK STUDY, AS PRESENTED BY DR. NOEL COWELL

Dr. Cowell presented the following points on the conduct and results of the study so far.

### Methodology

- The methodology involved documentary research, in-depth interviews and focus groups
- We identified five target groups –
  - Government Regulators: Those involved in ICT Regulation and Policy and those at different levels in the Ministry of Labour.
  - Tech Elites: Practitioners of ICT or academics in the field, experts
  - Major Telecom Providers
  - Major Technology Users: Universities and major commercial entities that made heavy use of technology
  - Non-Government Organizations

### Overview of Findings

- Telework is not on the agenda of major stakeholders (employers, government and trade unions). Most of them hadn't thought about it or had any policy perspective or done any research.
- Very little is known about it, and no legislation is contemplated to accommodate the changes that it might bring to the employment relationship.
- We found no employer with a formal policy on Teleworking. But there are a few examples of workers who work remotely on a continuous basis – mostly from the offices of various clients.
- There are numerous examples of occasional Teleworkers – who telework from home, these are either tech elites or high level knowledge workers.
- This was not a survey so we are not in a position to accurately say how many people are engaged in telework. Any speculations would be premature.

- We know that early adapters began to do it when the technology became available.
- For NGOs there was little or no evidence of it taking place. Remote Access to worksite through technology was absent.
- Overall, people often stop staying at work until 9:00 pm but take the work home instead. That is a transition that is taking place. But we must remember that the home environment may not be as good ergonomically as the work environment.

## **Who Does Telework in each of the groups studied?**

### **Government/Regulators**

- Tech environment
  - Low tech, low mobility, low internet access
  - Low to very low broadband access
  - Low security, highly restrictive remote access
  - High concentration of tech elites on “Technology side”, small corps of tech elites on the labour/HRM sides.
- Dominant culture – technophobia and resistance to change.
- Telework norms - selective/restrictive, little or none

### **Telecoms/ICT Providers**

- Tech environment
  - Hi tech, high mobility, high access to broadband internet
  - High concentration of tech elites
  - High security, extended remote access.
- Dominant culture is “technophilia” (gadget culture) – early adapters, strong change orientation.
- Telework norms - Comparatively high use of telework (more institutionalised, but characterised by low HRM intervention)

### **Major Technology Users**

- Tech environment
  - Selective high tech
  - High PC per capita, selective mobility, selective internet (broadband) access, selective remote access.
  - A small exclusive corps of tech elites
- Dominant culture – tech-neutral being driven to change by tech elite

- Telework norms – selective, non-institutionalised/ad hoc telework, little or no HRM intervention.

### **Non-governmental organisations.**

- Tech environment
  - Low tech (very low PCs per capita)
  - Low mobility, low internet (broadband) access
  - Low security, no remote access
  - No discernible tech elites
- Dominant culture – tech-naïveté
- Telework norms – Low to non-existent

### **Technology elites**

- Spread across all sectors of economy
- Tech Environment
  - Uniformly high tech
  - High pc per capita
  - High mobility
  - High internet (broadband) access
  - High security
  - High level of remote access.
- Dominant culture – “technophilia”/technocentric driving change
- Telework norms – Universal, non-institutionalised / ad hoc telework, little or no Human Resource Management intervention.

### **Drivers of Telework**

#### **Technology Infrastructure**

- Fairly sophisticated ICT technology exists in large commercial entities, in large government agencies and in universities.
- The majority of knowledge workers have access to computers, less access in government agencies and in NGOs.

### **ICT Policy**

- All three countries are following similar programmes of liberalisation of the ICT market and encouraging competition. Jamaica seems to be the most advanced, followed by Barbados and T&T.

- There are a number of regional agencies connected to ICT policy, but there is little coordination and together they do not appear to have the power to craft a comprehensive ICT policy for the region.

## **Constraints on Telework**

### **Technology Policy**

- There is still insufficient access to computers, broadband internet and mobile technology. Broadband internet access is not common in workplaces and less common at home.

### **Human Resource**

- Inadequate training and exposure to ICT
- Culture
  - Resistance to change - “Legacy generation” of technophobic policy-makers who are in charge.
  - Existing norms of supervision
  - Employer concerns about information security

## **Policy Implications**

### **Policy Recommendations**

- Co-ordination between ministries responsible for technology and those responsible for labour policy. (The ministry responsible for transport also needs to be linked to this initiative as does the ministries/agencies responsible for education and training in the field of ICT).
- The need to coordinate ICT policy initiatives within one single centralised entity in contrast to the fragmentation that is evident currently.
- The need to co-ordinate ICT policy across the region. If the region were to develop a more integrated policy on ICTs, this would enhance the prospect of reduced telecommunications costs and universal access to the internet in respective countries. This in turn would make the prospect of trans-border Telework more feasible. The challenge is to identify one or more regional institutions that are capable of carrying out this role. Among the institutions that have been mooted are, the University of the West Indies, the Caribbean Development Bank and CARICOM.
- Pay more attention to gender issues in the crafting of ICT policies in the respective countries and in the region

- Pay special attention to the possible impact of ICTs on persons with disabilities.
- Develop national and regional policies on telework
- Amend or introduce labour legislation to take into account the rights of Teleworkers.

#### **Further Research areas to be explored**

- Telework research is virgin territory
- There is need for quantitative data on how many Teleworkers there are.
- We need to know who are the Teleworkers and we need in-depth studies of the impact of Teleworking on their lives
- More needs to be known about what motivates the adoption of telework.

## **COMMENTS, THOUGHTS INVITED FROM THE AUDIENCE:**

**Alton Grizzle – UNESCO**

**AG: Is there any particular reason for the selection of these three countries:**

**Jamaica, Barbados and Trinidad? I find these are more developed and I wonder if the results will be somewhat skewed.**

HD: Based on our project design and costing, we didn't have sufficient funding to perform a larger study. Other areas such as the Eastern Caribbean and rural can be included in another phase of this study. Also we can think about a more quantitative survey so there is scope for more research to be done.

**Christine Marrett – UWIDEC**

**CM: Did we give any consideration to the clientele, the customers, because people sometimes prefer to have someone to speak to?**

HD: The customers of different enterprises would be part of the groups consulted in terms of the tech elites who are major customers for telecom providers. In terms of the domestic consumer, they didn't gravitate to Telework. On the basis of the data gathered it is not very active in the minds of many domestic telecommunication users.

NC: In terms of customer service, we have been going through a period for 10-15 years where you call an office and you are taken through a recording. There was a time when people wouldn't speak to the machine. But the younger generation is more into these things. There is a certain adaptation to the technologies that young

people can adjust to easily. There are now shared services where customer service operations for business organizations are centralized. You do talk to a person in those cases. Even when you call Dell that is what happens. So the old paradigm is beginning to change. But some companies still need to offer the old type of customer services. One of our banks stated that customers still need face to face contact but it is offered to bigger clients.

**CM: What is the possible impact on residential zoning laws? Although there may be no national laws for example in apartment complexes there may be regulations that bar persons from commercial activity.**

HD: We are documenting these questions for things we will take another look at. So that is an important point that will be noted. What will be the implications in terms of human and vehicular traffic in residential areas? It didn't come up in our data but it is very important.

**George Stewart – JPSCo**

**GS: Just wanted to give you some background on one particular company who has gone all the way technologically but still has not considered Telework. In terms of JPSCo:**

- **About 75% of employees sit before a computer everyday.**
- **About 20% of those are mobile computers (laptops)**
- **Remote access – secure VPN, remote access to email, broadband access and even voice capability**
- **Since 2000 they had remote dialing capabilities to the office**
- **A Security officer has been in place for about 5 years**
- **The infrastructure is there**

**GS: Telework is not a part of the formal HR policy but we have an IS policy that speaks to remote access and part of the requirement for every manager is to have this capability. However it is not formally within the HR policy. I'm curious to understand why.**

**GS: Work is now a behaviour-based contract. You are paid for your behaviour, coming to work and staying there for 8 hours. It is not primarily "outcome-based", agency theory explains that. We need to rethink how we formulate our employment contracts. We need to look at having more outcome-based instead of behaviour-based work arrangement or we will not be early adapters of telecommuting.**

**Michelle Commosiung - MSB**

**MC: There is a fine line between Telework and running a business from home.**

**HD: The technology facilitation and remoteness are what define telework so I'm glad we realize there is a distinction, where the home business does not have a reporting relationship to another remote office.**

**MC: I think the culture is important here. That is why it is not adopted as quickly here as in other countries. We don't believe that people can "self-regulate". We feel we have to be regulated. What did you mean by engendering ICT, Dr. Cowell?**

**NC: We spoke to different groups including Women's Groups. There were complaints that policy didn't address the differential impact of ICTs and Telework on women**

as opposed to men. The research suggests that ICT continues to be dominated by men. Particular issues related to women, for example, the women who have to run a career while performing all domestic duties.

**Chris Hayman – Digicel**

**CH: I have some exposure to seeing telework in practice. JPS is a shining example of good IT governance, but this isn't the case across corporations, so there is a high security risk of remote working. There should be these policies across the board and the PSOJ may be a way to begin that process. That is the biggest weakness I think to adoption.**

**CH: The greatest drawback in the UK though was the company's ability to manage telework and the policies that surrounded it. Employers had problems with the rollout. It is very expensive in terms of rollout. There would be customer problems with inappropriate persons teleworking, which led to a downturn in performance instead of the upturn we were expecting. So policies and management processes for telework are vital. This is where IBM has an excellent record.**

HD: How do we manage the remote employee and what are the challenges? Particularly in Trinidad, one of the concerns was trust, for managers to provide facilities and time to an employee he or she will not be able to see. A part of it is also managing the reaction of other employees who are not Teleworking. These are issues that need to be teased out.

**CH: I really don't see a role for ICT regulation. The technology will be coming to Jamaica but it must be a decision on the part of the entities.**

HD: We don't see it as an important part of the infrastructure for Telework to happen but more for ICT adoption in government and business agencies. Regulation will arise mainly in terms of Universal Access, e.g. Service standards to inner city communities or rural areas.

**Peter-Paul de Goeij – Digicel**

**PD: We should start where access is no problem, for example in Kingston where there is access. This can be through tax cuts to companies offering work at home or to give the workers tax cuts if they need buy things like an ergonomically-safe chair.**

HD: The aim of Universal Service or Universal Access is precisely not to round up the usual suspects in terms of those already with access. Incentivising telework is a good idea, but I myself not being from Kingston, I do want the network to be expanded early beyond urban areas, although we do have to make a start somewhere.

**Halcyon Lawrence – Researcher**

**HL: I'm concerned about incentivising especially at the government level because there the penetration is so low. Telework needs a champion. It is not being championed at the government level.**

**HL: What has come out of the research is that technology elites and users are driving it but HR is not getting on board. The gap needs to be bridged. Tech Elites know what is possible but are not bound by implications. Dialogue should be established between Tech Elites and HR if Telework is to happen.**

**Christine Marrett - UWIDEC**

**CM: Telework will impact the job description of the person left behind in the office.**

**It will not be the manager that the walk-in customer will see. The roles of the persons left in the office will change.**

**Hugh Campbell – EMOQUAD**

**HC: In terms of Telework, specific goals and specific targets for Teleworkers at IBM eliminated problems of trust; this was from ten years ago. In terms of Jamaica, cost issues are a concern but they are now being addressed. There is a computer for less than J\$10,000 although it has Linux. And DSL (256MB) is about J\$2,000 per month. Cost is not really a barrier anymore. Resistance is more from the people end. They do not believe that it is a viable way for people to operate.**

**HD: For a lot of people cost is a factor even at the rate you are talking about. Younger entrants and persons not in full time employment will have trouble meeting those costs.**

**Grace Martin Hall - Consultant**

**GMH: I've been a Teleworker for the last 5 years, I operate from home. Some things affect what I do so I have to educate my clients that the quality is the same from my home. But in this study why was the focus only on organizations and why didn't you look at outsourcing. There is a large population of persons who work as consultants and one of our problems is Government's lack of recognition in terms of tax implications.**

**GMH: I still have problems with discipline of persons working from home because the discipline to be self-managed is a problem in the Caribbean.**

**GMH: In terms of zoning, it depends on the model, that may make it easier.**

**GMH: Why haven't we started to look at a pilot or champion for Teleworking?**

**Marlon Mahon – Ministry of Labour**

**MM: On the matter of regulation: labour laws are vital, and that is tackled by the Pay and Conditions of Employment Branch of the Ministry of Labour. There are issues of persons not performing. Also, in terms of occupational safety, we may have to make home visits to ensure everything is ok because essentially people are being paid for work so employers may be responsible to some extent.**

**HD: Also, the role of the trade unions is vital and I looked at it in a previous study. What will be the future of trade unions if they find strength in a body of workers being physically present at a worksite? How will the Trade Unions see themselves in that new context?**

**Alton Grizzle – UNESCO**

**AG: If we are to make it with telework we should look, not only in terms of efficiency, but also from the point of view of job creation, especially for individual contractors and entrepreneurs. What are the opportunities for reducing unemployment? Can it create jobs that are available within and outside of the region?**

HD: I agree that individual Teleworkers are important players. We have to mix the local and the global experiences to see what will work for us.

NC: Yes it would be another step to look at independent contractors so we will want to contact you as we look at that.

**Nigel Cassimire – CTU**

**NC: With Telework, companies will have employees scattered across the country and, even further, around the Caribbean. From the perspective of the CTU, Governments are now concerned about the development of their countries and they realize that the world is moving towards services with knowledge workers so they are interested in universal service and infrastructure. With regulation, governments are finding that in order to better facilitate this development they may want to use wireless technologies, especially since we now have convergence and in terms of the CSME there are more opportunities for inter-island collaboration and business.**

**Beryl Weir – Women’s Centre**

**BW: One of our observations is that majority of workers in our call centres in Jamaica are women and we are wondering if this is going to be another low-paying job for women.**

**HD: That is a concern that we have registered in our study about remuneration and kinds of benefits that can flow from certain types of telework.**

**Clayson Panton – Bustamante Industrial Trade Union (BITU)**

**CP: Historically, labour has been considered a derived demand. As such, unions address workers’ issues when they emerge. In case of telework, it comes with the perspective of the call centers but it carries wider implications, because most of these services are required by transnational companies. Once the cost of labour goes up, they will move their business. That is an issue: do we have workers who are employed or do we have them employed and securing all their rights?**

**CP: But outside of the call centers telework would really be done by managers, consultants and executives who would not form the base of the trade union anyway, so unions wouldn’t be required to be involved. At the same time the union should be proactive. Going forward we will need some legislation as telework increases in penetration.**

HD: My unit at Mona School of Business is now concerned with strategic planning for the ICT sector. In your perspective, how would the unions respond if a large body of its workers became involved in this type of work?

**CP: It should come back down to systems and structures of workers, we now need to speak to standards, uniformity and some minimum levels you would not want to go below. That has a lot to do with interaction with the management to co-determine how that can be achieved. If we look at the global picture the pressure is coming from without. It is how we get the systems to work so it benefits the entire nation.**

**CP: In terms of the selection of persons to work in Teleworking roles, we will have to take into account the feelings of those who remain in office. We will need to determine that the decisions of who will Telework are made equitably. It is inevitable that we are going in this direction, but we have to take another look in terms of uniformity and equitability.**

**George Stewart – JPSCo**

**GS: As we consider change, employees' roles will change. Union arrangements and work conditions are not uniform across the company. So I don't think it is much of a leap, but there will be some adaptation in the union's approach. There may just be some basic standards in terms of what should be provided, e.g. a chair, a computer. In HR we must begin to think about this and not just be reactive but proactive and look at the adjustments we will have to make.**

**Chris Hayman – Digicel**

**CH:** Anyone who travels in the Kingston and in the Caribbean can see the relevance because Telework could help us in terms of the traffic. But perhaps people will start thinking that if workers don't need to be in office they won't need to be in Jamaica at all. We need to look at how competitive Jamaica is in terms of outsourcing so that Knowledge Management doesn't move out of the region completely and the human capacity and training benefits that comes with it.

**Evan Duggan - MSB**

**ED:** In terms of selection, Telework works best where it is an option for all persons and it must make sense for the organization. That is what happened in New Zealand. It is justified by the type of work being done. Infrastructural costs would be as an extension of the workplace so it would be provided by employers.

**ED:** It is not surprising that HR people shy away from Telework. We can make a proposition to them that is potent if we say that productivity increases, it has a positive impact on attrition and on job retention, and training costs go down. That value proposition would be useful rather than to stress the importance of technology.

**ED:** It is useful to consider group work and so we need to look at virtual teams, virtual communities of work and so groupware is important.

**Grace Martin Hall - Consultant**

**GMH: I think we also need to remember the regulatory environment, especially in terms of the resistance we had to flexi-time by various stakeholders and even the unions because Telework is a form of flexi-time.**

HD: They can go together hand in hand but issues of days of worship and so on are part of the resistance as well.

**Alton Grizzle – UNESCO**

**AG:Are we at the point we need to be for Telework in human and technical capacity?**

HD: We will continue to hold seminars to get the country where it needs to be for Telework and, as such we are keenly looking for partners who will be able to take this project forward in that way.

**Clayson Panton – BITU**

**CP: Telework and Flexi-time do go hand in hand but the concern for the union, outside of religion, was: Are there flexible employment opportunities? In the sense of consultants that is not an issue but for other types of staff it is an issue.**

**Hugh Campbell – EMOQUAD**

**HC: Both flexi-time and Telework will be driven by the management and business interests. If companies believe it is more economical to have these**

arrangements it will happen in the same way that a lot of the manufacturing of the US is done in China because it is cheaper. Unions need to be more proactive. They need to look ahead and try to secure job interests for citizens.

**Michelle Commosiung - MSB**

**MC:** What we need is a definition of Telework because people think of different concepts of what it is. There can be different types of Telework and different frameworks. And then we have to fashion a form that is suitable to us.

**Douglas Webster – Ministry of Industry, Technology, Energy and Commerce**

**MC:** Globally, Telework seems to be market driven in terms of the allocation of labour. The Government is a facilitator, so in terms of telecom policy, now with the saturation of voice communication, the focus is now on building out data networks. We also have to think about education and training. That will be considered, in terms of e-learning, we will need to develop Telework-ready individuals through training.

**Chris Hayman – Digicel**

**CH:** I think the responsibility for training is becoming less that of employer and more that of the employee. It may be a bit of a deterrent if Telework is implemented before management and employees truly understand the roles required of them.

HD: Yes, even that can be a basis for conflict if it is not properly managed.

**C. Courtney Jackson - OUR**

**CCJ: We need to look at the models for Telework and which ones are most relevant for use in the Caribbean. Maybe as the next phase we could develop practical reference documents for businesses that want to take this on. The documents could outline what are the infrastructural needs, relevant regulatory provisions (in terms of labour and so on) and capacity (what performance does one require in the national telecoms network if you will transmit voice/video and do we have appropriate infrastructure?)**

HD: Yes, and that would be a good outcome of our work. I will conclude this section by saying there are several models, however, we need to choose the model that is right for us and look carefully for opportunities for competitiveness. We have had a diverse and thought-provoking range of comments which we have documented in various ways and they will flow into the final report and the actions that will follow in this study.

Thank you all very much. Minister of State in the Ministry of Labour and Social Security, Senator Floyd Morris has joined us. Welcome Minister. We will now invite the Minister to address us.

**ADDRESS BY SENATOR FLOYD MORRIS, MINISTER OF STATE  
IN THE MINISTRY OF LABOUR AND SOCIAL SECURITY:**

Good morning all,

I am pleased to be here to discuss the important topic of Telework. Over the past few years we have seen a significant transformation in terms of the global environment. Firstly, there has been a change in the geo-politics which has led to the collapse of communism. That was the basis for the explosion of modern communication technology. The Internet for example was available for a long time but used only for military purposes. After the collapse of communism it has come to mass availability.

The use of the internet and the computer has transformed the labour market and how we do business. The computer and the telephone are essential tools of workers. Over the past ten years, Jamaica has made significant inroads in transforming the telecommunications sector because we understand that we have to be on the cutting edge for competitiveness and efficiency. The modernization of the Telecoms Act has made it possible for what we see today. For example, over 2 million Jamaicans have access to telephones.

When I was growing up I could only make a call when I went to the call box. Now most people have cell phones and can make phone calls at the touch of a button. We have seen the improvement in telecommunications and we are at about 15% in terms of access to computers, although that information might be dated. It speaks to access though. Both technologies when combined enhance the possibility of Telework.

### **Labour Laws and Flexi-work**

To capitalize on this new phenomenon, we have to change significantly in terms of attitude and in our labour laws. I was pleased to hear mention of flexible work-week arrangements because Telework can increase income within the society. But to reap significant benefits there must be adjustments in terms of how we approach labour. So the issue of the flexible work-week must be addressed with some urgency. There are some outstanding issues with the church on flexi-time and there has been dialogue but we hope to soon sign off on the enactment.

There will be no single flexible work-week law but there will be a whole raft of legislation on the books that must be amended to facilitate the process. I think there are about nine pieces of legislation. We need to take some decision as to what constitute the maximum number of work hours per day. We are looking at between 10 and 12 hours. But we are in dialogue with unions and business. If workers have a flexible work week, they may be able to participate in personal business opportunities. So flexi-time is critical if we are to benefit from the gains of Telework.

The issue of productivity comes into question. Recent studies of national productivity indicate that productivity has fallen off in the last 50 years. Jamaican labour productivity is at 1.5%, significantly lower than our counterparts in the region Trinidad and Tobago and Barbados who are at 3.5% and 3.17% respectively. In the 1950s we were at 8.3%. That has implications for the standards of living and quality of life. Telework is a chance for the quality of life to be improved if we can get more persons to complete prescribed tasks within a given time. It will provide individuals with the opportunity to do other things.

### **Creating Opportunities**

I am concerned about trends relating to tertiary graduates who are complaining that they are not able to find employment. Certainly in the global economy of which we are a part the service industry is the one where we are bound to make the most money and Jamaica has been transformed into a service economy through telecommunications, tourism and transportation. There are significant opportunities available. With the introduction of broadband technology, we will see greater prospects through Telework. Tertiary graduates should leave the University with the skills to use computers. And their mindset should not be to wait for someone to provide a job for them because they can use technology to create their own jobs. There are policies so that computers can be brought in duty free and micro-credit is available for small businesses. So with that available, there are opportunities for the creation of employment.

There is also a grouping that is important to me and that is the disabled community. That community is poised to benefit the most from Telework. Most companies are inaccessible because the buildings are not designed with facilities for persons with disabilities. So they may not be able to go to the physical office but they can stay at home, do the work and transmit it to the office. There is now no excuse for employers anymore because the technology is there to facilitate the process.

In terms of the population of the disabled in Jamaica which stands at between 8 and 10 per cent, only less than one per cent of those 250,000 persons are significantly employed. Therefore, the majority of disabled persons are among the poorest in the

country. They do not want handouts but opportunities where they can contribute meaningfully to production. Telework is a good means to get them involved.

### **My Experience**

I am a living testimony of how technology can enhance the efficiency of my work. Sometimes people ask me what I do at work, but I don't need papers. I have a paperless office. I work on my desktop but I have a laptop for backup assistance when there are power cuts. As a blind person I can interface with the computer with modern technology, software called Job Access With Speech (JAWS). When that software is added it enables a blind person to do anything a sighted person can on the computer. I can surf the internet, I can send and receive emails. I can enter Microsoft Word and Excel. You can't read pictures but software is being developed that will describe the picture to a blind person.

So the technology is there to enable persons with disabilities to operate as effectively as any able-bodied person so they can participate in the workforce but what has to happen is that employers have to have an open mindset with employing persons with disabilities. Some people believe that persons with disabilities should be treated in a welfare mode. What we have is a vast array of citizens who are under-utilized and if they were brought into the productive capacity of the country there will be significant profitability for companies.

I would like to take the opportunity to commend the researchers, Dr Dunn and Dr Cowell for the role they have played in bridging the gaps in knowledge on this very new concept and field of Telework. I hope the recommendations of the study will not be

confined to the libraries of the universities and public libraries but rather something used to enhance the improvement of the quality of life of our people, our productivity and the lives of all in the region. I wish you the best in continuing your study. Thank you.

(APPLAUSE)

### **CLOSING REMARKS**

HD: Thank you very much, Minister Morris, for sharing your thoughts and vision with us. The question of vision is not simply a physical matter and that was an inspiring perspective of what can happen. We will build on the inputs from this exercise. We have had a very productive morning so we will break up for lunch at this time. So thanks once again, to everyone and we will be in touch.