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JAMAICA: IMPLEMENTING THE NATIONAL ICT STRATEGY THROUGH POLICY AND INITIATIVES

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Abstract

The paper explores the diffusion of information and communications technology (ICT) in the country of Jamaica, and within the context of the national strategic plan for information technology. Further it discusses some policies and initiatives undertaken in support of the plan. Moreover it seeks to give a footprint of the steps taken by the Government of Jamaica since the conceptualization of the national strategic plan and the process of implementation. Jamaica's harmonized approach is specifically relevant to small island states in the Caribbean since there are a lot of similarities among the countries, especially members of the Caribbean Community (CARICOM). This paper contributes to the discourse on the importance of developing countries having explicit national ICT plans and informs the ways in which these plans can be implemented by strategically utilizing international donor agency programmes.

Keywords

Jamaica, ICT, developing country, Internet, policy

Introduction

In today's world, the use of email, for example, enables users to communicate with each other irrespective of their location or time zone and the Internet can enable organizations to appear to be operating twenty-four hours per day. According to Hanna (2003) the impact of information and communications technology (ICT) on competitiveness and all aspects of life in advanced economies and its potential to impact on social and economic development cannot be denied. It is against this background that international, regional and national bodies have advocated for developing countries to use ICT as a catalyst for economic development and a strategy for sustainability. As a result ICTs are being touted as central to economic development, and the alleviation of poverty among the world's less developed countries. Countries like Jamaica, with emerging economies, have been encouraged to make ICT an integral part of their strategy for economic growth and development. A national plan for ICT enables a coherent and cohesive approach to policy formation and project initiatives undertaken by governments under bilateral and multilateral agreements with regional and international agencies. The purpose of this paper is to retrospectively examine key areas of the Jamaican national plan for ICT and its implementation through key initiatives.

Literature Review

This literature review will examine the value of ICT-based policy to the development process. Academic theories relating to ICT in developing countries are sparse and according to Walsham and Sahay (2006) there is a need for theory building. Scholars, policymakers and development specialists subscribes to the view that by harnessing the benefits of ICTs, developing countries can leapfrog stages of development experienced by developed countries (Annan 2000; Steinmuller 2001). More specifically, Jalava and Pohjola (2002) believe that ICT can enhance economic growth by making other sectors of the economy more efficient, aid capital accumulation and as an industry ICT can be used a vehicle to boost investment. For developing countries, Internet technologies, especially e-business offers a potential to overcome some of the spatial barriers such as isolation and access to global markets that have traditionally impeded their international economic interaction. However there are constraints faced by developing countries that present obstacles to the effective utilization of these technologies. The absence of appropriate infrastructure and regulations, cost of access and lack of human capability are examples of some of these constraints. These issues affect individuals, organizations and institutions, thus a national approach can affect changes that place the country in a better position to harness the benefits from ICT.

According to Odera and Madon (1993, p.9) “a national policy can play a crucial role in the development of IT by motivating and guiding activities in this area. Supporting legislation can be used to implement this policy through appropriate policy mechanisms and the establishment of institutions to advise and/or support the development of IT”. The UNCTAD model for national policy development stresses that ICT-base policies should cover key components such as infrastructure, legal and regulatory framework, development of human resources, and also promote e-business, e-government, trade, investment and innovation (UNCTAD 2003). As discussed further in this paper, the Jamaican national strategic plan for ICT incorporated these recommendations and sought to maximize them by utilizing a harmonized approach to the implementation of the plan. Further, in order to embrace ICTs as tools for sustainable development ICT policies should be fully integrated within national development or poverty reduction plans. Developing countries are also encouraged to put in place ICT strategies for development, ICT policies for poverty reduction as well as pro-poor ICT policies (UNCTAD 2006). There is evidence that ICTs bring changes to the livelihood of people living in poverty, as in the case of Bolivia where agricultural and market price information shared through radio and the Internet is giving small producers more negotiating power and making their production methods more efficient (IICD 2005). Mainstreaming ICTs into development and poverty reduction policies means examining ways in which ICTs can assist with the achievement of secondary education objectives, help with the development of key economic sectors and how they can facilitate national governance. Harris (2004) highlights the case of Brazil where 25,000 young students are trained every year in ICT skills giving them better opportunities for jobs, education and life changes. This discussion highlights the importance for developing countries to take a national approach to diffusion and adoption of ICTs. Also developing countries should seek to take advantage of donor programmes that can provide financial and technical support to the implementation of their ICT plan.

Jamaica’s National Strategic Plan for ICT

In 1996 the Jamaican government formulated the National Industrial Policy (NIP) as a blueprint for economic advancement. The NIP embodies a 15 year vision and its four main components of macroeconomic policy, industrial strategy, social policy and environmental policy are to be realized by strategically targeting specific clusters to gain competitiveness. The NIP is focused on creating an attractive investment environment in Jamaica and increasing productivity and trade by building the appropriate infrastructure and educating the labour force so as to harness the benefits from human resource development. One important feature of the NIP is the holistic and comprehensive approach to policy development across the strategic sectors identified. Within this holistic framework, ICT is seen as critical to this integrated approach, not only as a tool to be used by other sectors to improve productivity and efficiency but also as a sector to boost foreign direct investments and increase foreign exchange earnings.

The Government of Jamaica (GOJ) presented its five-year strategic plan for information technology in 2000. It projected that the IT sector would become a major source of job creation within the life of the plan (GOJ, 2002). The sector would increase the variety of services on offer beyond the established data entry services. The overall objectives of the national strategic plan included:

- **Infrastructure and access** – creating a competitively priced nationwide public information and communication technologies network,

- **E-business** – promoting the development of electronically transacted business,
- **E-government** – using information and communication technologies to provide efficient government services to the public and
- **Economic development** – using the Internet to facilitate growth in International trade

Human resource development - ICT skills - was another targeted area in order to harness the potential from the investments in the industry. Policy formulation, guided by best practice, and the genesis of initiatives in partnership with international agencies would support these goals. The Central Information Technology Office (CITO) was established to take ownership of the plan. The role of CITO is to coordinate the implementation of the strategic plan by providing recommendations about appropriate policies and liaising between local and overseas public and private sector organizations with a view to forming partnerships (GOJ 2002). By 2002 some key policies for telecommunications, e-government, legislations and regulations were implemented at the macro level to mobilize the plan and provide an enabling environment for its long term objectives to be achieved. As a result of these actions there has been US\$700 million invested in the ICT sector (GOJ 2006). These policies and their impact are discussed below.

Infrastructure and Access

Facilitating development and growth in telecommunications is an essential antecedent for ICT development. The commitment to bridge the digital divide has resulted in initiatives by international organizations responsible for development, regional and local governments, as well as private sector organizations. Developed countries such as the United States and United Kingdom have proven that deregulation and liberalization of telecommunications resulting in increased competition causes market forces to react, which can in turn drive down the cost of access to the individuals and businesses. Hence developing countries have been subjected to subtle coercion by international lending agencies to adopt policies for the privatization and liberalization of telecommunications, as well as regulatory and trade reforms in computer industries. The result of the first macro policy enacted was a major reform of the telecommunications industry with the passing of a new Telecommunications Act in 2000. This effectively saw the cessation of what was a monopoly for both fixed and mobile telephone services. This was a significant step because the then monopoly, Cable and Wireless Jamaica had been granted licences in 1988 for 25 years with an option to renew in 2013. A new agreement in 1999 between the government and the company led to a phased liberalization of the telecommunications industry over a three-year period. Subsequently, the industry has become more competitive and there are currently two additional mobile service providers. It is in this arena where there has been phenomenal growth; in 1999 there were approximately 90,000 mobile subscribers, by 2003 this number had increased to 1.2 million. At the end of 2004, there were 2.11 million telephone lines in Jamaica with mobile lines accounting for 1.7 million (Paulwell 2005).

Similarly licences have been granted to other companies to provide wired telephone services but growth has been minimal. The absence of growth in fixed lines may be due to persons opting to have mobile phones instead of the former, which is in keeping with the global trend. However, this may also be due to the financial outlay needed to construct the infrastructure for the provision of these services. Therefore, despite the fact that the number of players in the industry has increased, the former monopoly still has control because they own the infrastructure utilized by the other companies, and this has implications for provision of other types of services in the sector. That situation is likely to change soon since licences have been granted to two new companies to install undersea fibre-optic cables into the country to provide additional access channels. The first channel is scheduled to be completed by early 2007. These are positive steps taken towards the expansive deployment of broadband technology, which in turn is seen as crucial to the successful implementation of e-business by companies. The government's belief is that the introduction of alternative choices will drive down the prices of broadband Internet to consumers and data service providers (Paulwell 2005).

The push for universal access saw GOJ following through on plans to impose a tariff on telecommunication companies in order to create a fund to finance the implementation of broadband infrastructure. The Jamaican Universal Service Fund was started in 2005 with the collection of tariffs on calls terminating in the Island. The charges are US\$0.03 per minute on calls terminating on fixed line networks and US\$0.02 per minute for those on mobile network (GOJ, 2006). The fund is to be used to finance the e-Learning Project contrived to ensure the availability of Internet access in schools and also through libraries and post offices, which will serve as community access points. The fund earned J\$1.3 billion in the first eleven months and J\$16.5 million has been disbursed from the fund to establish the Universal Access Fund Company, which will oversee the e-

Learning project. The use of income from the telecommunications sector to fund the e-Learning project is a direct strategy to improve the quality of education. The outcome of the strategy is bipartite with the hope also being that universal access will increase the demand for data related services and provide job opportunities via the Internet for citizens. The policy augmenting broadband deployment puts GOJ in line with the European Union (EU). The EU promotes the importance of broadband connectivity for the economic development of member states through a dynamic e-business environment in its eEurope 2005 Action Plan (European Union 2005).

E-Business

While telecommunications and information infrastructure are a big part of ICT development, there are other areas albeit supportive that are crucial to the growth and use of ICT. Policies that champion the creation of an enabling environment for the diffusion and adoption of ICT are necessary as developing countries seek to use ICT as a catalyst for economic growth. The usual suspects such as a skilled labour force, conditions that are absorptive of the knowledge and technology being transferred and an attractive atmosphere for foreign direct investments are usually emphasized, but the birth of the Internet and its increasing use by all aspects of society has opened up the need for regulatory and legislative reforms. Issues of privacy and security are important for the diffusion of business-to-business (B2B) and business-to-consumer (B2C) e-commerce as well as the offering of online services to citizens by governments. Therefore policies regarding other sectors in the economy should complement those that directly affect the ICT sector.

In keeping with the mandate of creating an attractive investment environment for foreign companies, GOJ has also taken steps to improve its legislative and regulatory framework for new economy practices. An Electronic Transactions Policy (ETP) has been drafted, which details the Government's intention to establish the appropriate policies to facilitate the growth of e-commerce. This was explicitly addressed in GOJ (2003, p:5) "government must also ensure, as a priority, that legislation covering areas such as digital signatures which may hinder the growth of electronic commerce, be reviewed and revised to reflect the new technology... and the establishment of a transparent regulatory framework consistent with, and adaptable to, the emerging electronic business environment, covering areas such as privacy, protection of intellectual property and digital signatures". There have been other activities in the regulatory arena. Spectrum Management Authority (SMA) was established in 2001 with the responsibility of managing the radio spectrum of Jamaica; the Office of Utilities Regulations (OUR) and the Fair Trading Commission (FTC) have increased their focus as regulators in the telecommunications industry. Further the Jamaica Intellectual Property Office (JIPO) was formed with the purpose of ensuring Jamaica's compliance with international standards for Intellectual Property Rights and to administer intellectual property laws in support of other national policies. The Government, however, has not been timely in enacting all the necessary regulations to sustain an e-business environment. Three years after its first draft the Electronic Transactions Policy, regenerated as an Electronic Commerce Bill, was tabled in Parliament in November 2006.

E-Government

The national strategic plan for ICT stipulates GOJ intention to provide its citizens with efficient government services through the use of ICT (GOJ 2002). The government views its own use of technology as critical to the diffusion and adoption of Internet technologies by both businesses and individuals, and aims to become a model user of these technologies. There have been a few e-government initiatives undertaken in its bid to provide government to citizens (G2C) services online. The Public Sector Modernization Programme (PSMP), funded by GOJ and International Development Partners (IDP); the World Bank, European Union (EU), Canadian International Development Agency (CIDA) and the Department for International Development in the United Kingdom, is a large scale effort to improve public sector services and make the entities more efficient. Since the inception of PSMP ICT related tasks completed under the initiative include the computerisation of operations for some ministries and agencies. The acquisitions of computer hardware and software as well as the provision of technical support have resulted in a few of the entities offering online services. Eight key government departments have been transformed to Executive Agencies with another nine targeted for conversion. Becoming an executive agency means that institutions are required to contribute a percentage of their annual budget from income generated by their activities and the remaining percentage supplied by the government.

Another pertinent initiative is the ICT project, jointly funded by the Government of Jamaica (GOJ) and the Inter-American Development Bank (IDB) that was launched in 2002. It has been instrumental in helping government agencies in achieving their goals of providing online services. This GOJ/IDB ICT project was initially planned to last for three years with an IDB loan of US\$17 millions but the project has been rescaled and will continue for five additional years but the loan component has been reduced to US\$8.5 million (Paulwell 2005). The Project's main objectives are to accelerate Jamaica's e-readiness and help attain international standards of performance and efficiency in both the public and private sectors, while reducing the cost of services to customers, promoting convenient access and enhancing their quality of life. A complementary policy environment that encourages growth in the information and communication technologies sector supports these initiatives. In 2002, the Government in a review of tax policy removed all duties and sales tax from computers. Development incentives such as an Encouragement Act for the ICT sector granting investor's exemption from income and dividend taxes for up to fifteen years, and exemption from import duties on ICT machinery and equipment during the incentive period.

Trade Facilitation

Jamaica, as a small open economy is heavily dependent on international trade as a conduit for economic growth and stability. The country's challenges in this information era are to increase competitiveness and exports. A definitive goal of the national strategic plan is to use ICT to overcome these challenges GOJ (2002, p.16) states: "the use of ICT to increase international trade by: a) providing user-friendly electronic access to import/export information, market research reports, customs duties, information on international financial assistance; b) developing a system of standardize trade and transportation data; c) utilizing paperless trading". This renewed commitment to increasing exports and provide capacity building to local exporters have resulted in a new institutional framework. The trade support network comprises of key public and private sector entities representing a holistic approach to national trade issues, and ICT forms the base of the supporting structure for this network. The Jamaica Trade Point (JTP) portal is the result of this coordinated model to provide trade facilitation services via the Internet. Via JTP the business community access services intended to make trading a seamless and integrated exercise by incorporating information on each of the components of the trade facilitation model. The portal was formed in partnership with Jamaica Customs, the Trade Board, JAMPRO, the Shipping Association of Jamaica and the Port Authority of Jamaica. JTP represents a comprehensive end-to-end trading process for the import/export community that can eventually prove to be invaluable to existing and prospective companies. The establishment of JTP has great implications for the export sector, of which majority of the companies are SMEs, because it provides a community of potential partnerships with local and international companies. The possibility exists for there to be capacity building and thus increased competitiveness for the users of the portal. Table 1 lists some important initiatives that have supported the national strategic plan for ICT.

Table 1 Initiatives supporting the ICT Plan

Organization	Objectives/Outcomes	International Development Partner
E-Government Initiatives		
Jamaica Customs	Online processing of customs documentation and EDI via the Internet with custom brokers	Canadian International Development Agency
Jamaica Trade Board	Processing of import and export licenses online	United Kingdom, Department for International Development
Registrar General Department	Registration of births, deaths and marriages, application and payment for birth, death and marriage certificates via the Internet	European Union World Bank
Inland Revenue Department	Online filing of tax returns, application and payment for motor vehicle licensing, registration and payment of traffic tickets	International Development Bank (IDB)
Planning Institute of Jamaica	Computerization and online transactions (selling publications online)	United Nations Development Programme

Organization	Objectives/Outcomes	International Development Partner
Ministry of Labour & Security	Labour Market Information Systems. Online posting of jobs and resumes. Also search engine for vacancies in Jamaica	Caribbean Development Bank
ICT Skills Training Initiatives		
Caribbean Institute of Technology	Established to provide ICT skills training in the areas of software engineering, telemarketing and web development	Idusa, Furman University, International Development Consortium
HEART/NTA CISCO Academy	Provide training for CISCO certification to persons working in IT	CISCO
Business Facilitation Initiatives		
Jamaica Tradeport	Online portal for import and export community. Also gateway for foreign companies wanting to invest in Jamaica or form new partnerships with local companies	UNCTAD, United States Agency for International Development, IDB
Jamaica Exporters Association	GOJ to fund a Information Technology centre, complete with Internet access, to be used by small and medium sized exporting companies	N/A

The Impact on SMEs – An Example

Small and medium-sized enterprises (SMEs) are considered important to countries because of contributions to economic growth and employment. As the main source of employment for poor regions and rural areas, micro and small businesses play an essential role in poverty reduction in emerging and transitional economies. The actions of GOJ come against the backdrop of an international trend for support policies and initiatives aimed at the SME sector. The reality faced by SMEs; barriers to financing, high interest charges on loans, inadequate business environment, tax burdens and inability to exploit technology, have resulted in regional bodies prompting governments to take actions by improving institutional support for the sector. The NIP recognizes the importance of the SME sector and stresses its strengthening to support economic growth. One of the national initiatives that exemplify how government can aid diffusion is the use of electronic data interchange (EDI) technology between the Jamaica Customs Department and Customs Brokers, which is comprised mainly of SMEs. The system known as Customs Automated Services (CASE) was first launched in 1997 with manual and electronic features. It involved brokers completing electronic customs entries or forms and then transporting the information via floppy disks to the Customs Department to be uploaded onto their system. CASE has evolved through a phase where brokers were able to email the file containing their completed entries to the current stage where the Internet is used as the backbone to a completely electronic system that allows brokers direct access to the Customs Department. The result is that there is no practical alternative for the brokers. Compliance is now almost one hundred percent, and has resulted in more brokerage companies getting access to the Internet. An offshoot was that once the companies got Internet access, the next step was the exploration of how it could be further incorporated within their businesses. For some companies it has led to innovation and the creation of new services to be offered to their customers.

When CASE was initially implemented in 1997 the aim of the system was to decrease processing time and increase efficiency, the vision for utilizing the Internet and e-payment was absent. The compliance rate was low, with brokers shying away from using the system. This changed in 2005 when an Internet platform was adopted by government whose vision for CASE has changed since the development of the national IT plan, and it is now integral to the e-government system linking the various government departments to form a portal for import and export trade. From the perspective of the businesses, the introduction of CASE has served as somewhat of a catalyst for their venture into technology adoption. One brokerage firm that employs 1 full-time and 3 part-time staff acknowledged that they only recently adopted the Internet in response to the need to comply with CASE. The attitude towards technology has made a positive shift since, and there are plans to utilize IT more by automating daily processes and creating a website. The newer version of CASE with direct access to the Customs Department has enabled another firm, which has been using computers since 1989, to be even more innovative by using data from Customs to provide new services to their clients. CASE is an example of one of the ways in which the Government of Jamaica has successfully used the Internet to provide more efficient services. It also illustrates how policymakers can use intervention to aid the diffusion and adoption of ICT.

Implications for Diffusion of ICT in the Caribbean Community

Table 2 below provides some indicators for countries in the Caribbean Community and Common Market (CARICOM). Jamaica is the top country for mobile penetration but the statistic for Internet penetration is dismal. This is basically reflected in all the other countries. Within CARICOM, Bahamas, Grenada, Jamaica and Trinidad and Tobago are the only countries that currently have an approved national policy for ICT. For CARICOM countries there are lessons from the Jamaican experience with ICT planning. The value of a nationally agreed plan, the importance of integration across government departments and the need for carefully planned initiatives to implement policy are well evidenced in this six-year retrospective reflection. So too is the importance of partnerships, both local and international, to finance or progress the initiatives. Further, the emergence of the Caribbean Single Market Economy (CSME) implies the need for regional policy development and the opportunity for implementation through regional initiatives for ICT that could be beneficial across CARICOM.

Some initial statistics may suggest that a cohesive national plan for ICT has been beneficial to Jamaica. The Global Information Technology Report for 2004/05 ranked Jamaica 49th out of 104 countries in terms of networked readiness. This ranking is the highest achieved by an English-speaking Caribbean country and is exceeded only by the United States, Canada, Chile and Brazil from the Americas. For the first time Jamaica was included in the 2005 e-readiness rankings produced by the Economic Intelligence Unit of the Economist; the country was ranked 41st and according to the report Internet penetration has nearly tripled since the liberalization of the telecommunications sector in 2000 (Paulwell 2005). There has been significant movement since market liberalization of telecommunications. Twenty-two new licenses were issued in 2002 for Internet companies, and the number of Internet hosts rose from approximately 300 in 1999 to 1,472 in 2000 – 2003. The Information Economy Report 2006 lists Jamaica among the top ten developing countries exporters of computer and information services. Since 2000, when the strategic plan was introduced, the above progress represents a strong performance. Political stability and coordination across government agencies has been crucial to the national strategic plan. E-government initiatives have resulted in a number of agencies providing online services and integrating e-business with their operations. For example, via the online tax payment portal of the Inland Revenue Department, \$9 million were collected for the quarter ended March 2006 and there are currently approximately 5,000 users registered on the system (Paulwell 2005).

Table 2 Some Statistics for CARICOM Countries

CARICOM Member State	Population 2004	Per Capita GNP 2004 (US\$)	Status of National ICT Plan	Penetration Rates 2004	
				Mobile Phones	Internet
Antigua and Barbuda	77,000	11,000	In Progress - ICTs Draft Policy	70.1	24.8
Bahamas	317,000	17,700	Approved 2003 - Policy Statement on E-commerce and the Bahamian Digital Agenda	58.7	29.2
Barbados	271,000	14,400	Under development in 2005 – National ICT Strategic Plan	73.9	55.8
Belize	26,100	6,500	N/A	37.5	13.2
Dominica	71,000	5,500	Under development in 2005 – Estrategia Nacional para la Sociedad de la Informacion	58.9	26.1
Grenada	103,000	5,000	Approved 2002 – ICT: A Strategy and Action Plan for Grenada 2001-2005	42.1	7.8

				Penetration Rates 2004	
Guyana	767,000	3,800	Under development in 2001 – Draft Guyana IT Policy	18.8	19.3
Haiti	8,437,000	1,500	N/A	4.7	5.9
Jamaica	2,676,000	4,100	Approved 2000 – National Strategic Plan for IT	82.2	40.4
Montserrat	9,300	3,400	N/A	N/A	N/A
St. Kitts & Nevis	50,000	8,800	N/A	20	N/A
St. Lucia	150,000	5,400	N/A	62	34.5
St. Vincent & Grenadines	121,000	2,900	N/A	47.1	6.8
Suriname	439,000	4,300	N/A	48.5	6.7
Trinidad & Tobago	439,000	4,300	Approved 2003 – National ICT Strategy	49.6	12.3

Regarding implementing national ICT policies, other CARICOM countries should seek to adopt best practices but be mindful of the fact that it is not a matter of one-size that fits all. In particular, it is important for countries to exercise care and caution when using policy implementation to achieve certain results under market conditions. The range of stakeholders; their interests and agendas can produce unintended outcomes. In Jamaica, the failure to create sufficient jobs in the ICT sector is an example. In 2007 it is safe to assume that the strategic ICT vision for Jamaica remains unchanged, but the difficulties of implementation are better appreciated. While mobile telephony has increased dramatically, the diffusion of the Internet has been sluggish. Supporting sectors such as financial institutions have been slow in their decisions to offer services to SMEs and citizens that could foster e-commerce. Some companies have had to seek solutions from overseas providers to circumvent the challenges faced by this lack of support.

Conclusion

The contribution of this paper is firstly to populate the body of literature on ICT diffusion in developing countries, but more importantly to illustrate how ICT policy can be implemented through initiatives. Developing countries should seek to become parties to initiatives from international donor agencies that support and are aligned with national policies for growth and socio-economic development, and try locally to develop initiatives that are characterized by local knowledge and by ICT technical and managerial competence. More generally, the Jamaican experience shows that a comprehensive national strategy for ICT can help harness the benefits to be gained from the technology and thereby promoting economic development. Such a strategy is operationalized through specific initiatives and it is here where the implementation difficulties arise. Jamaica has had both good and poor experiences. For other developing countries, specifically CARICOM member states, there are lessons from the Jamaican experience with ICT planning. The value of a nationally agreed plan, the importance of integration across government departments and the need for carefully planned initiatives to implement policy are well evidenced in this six-year retrospective reflection. So too is the importance of partnerships, both local and international, to finance or progress the initiatives.

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