EMBARGO

The contents of this report must not be quoted or summarized in the press, on radio, or on television, before 6 February 2008, 19:00 hours GMT

United Nations Conference on Trade and Development

INFORMATION ECONOMY REPORT 2007-2008

Science and technology for development: the new paradigm of ICT

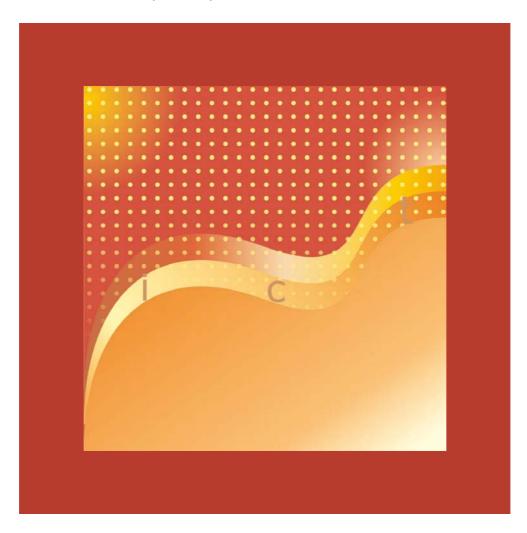




INFORMATION ECONOMY REPORT 2007-2008

Science and technology for development: the new paradigm of ICT

Prepared by the UNCTAD secretariat





Note

www.unctad.org/ecommerce

UNCTAD/SDTE/ECB/2007/1

UNITED NATIONS PUBLICATION

Sales No. E.07.II.D.13

ISBN 978-92-1-112724-9

Copyright © United Nations, 2007

All rights reserved

Foreword

The world economy is increasingly driven by technological innovations. If developing countries are to seize the opportunities this implies, and also to address emerging global challenges, they will have to harness those innovations and the knowledge that comes with them.

UNCTAD's Information Economy Report 2007-2008: Science and technology for development: the new paradigm of ICT analyses the current - and potential - contribution of ICT to knowledge creation and diffusion. It looks at how developing countries use technology to generate innovations that improve the livelihoods of the poor and support enterprise competitiveness. And it examines the impact of ICTs on productivity and growth, international trade and employment in developing countries.

But mastering technology is not enough; it must, as the Report also stresses, be complemented by government policies to develop the ICT sector - by providing incentives, for example, and by building national institutional capacity for knowledge creation and diffusion. At the international level, more effective technology transfer and knowledge-sharing are needed, which can be achieved through more flexible intellectual property rights regimes, open access to knowledge and international partnerships. Development partners, in turn, can also help close the digital divide, including through technical assistance and funding of ICT infrastructure.

We are now at the midpoint in the timeline set by the international community for achieving the Millennium Development Goals. The eighth goal – developing a global partnership for development – included making available the benefits of new technologies, especially information and communication technologies, in cooperation with the private sector. This Report makes an important contribution to our understanding of how to achieve that.

Ri Mour Ban

Ban Ki-moon

Acknowledgements

The *Information Economy Report 2007-2008* was prepared under the overall direction of Anh-Nga Tran-Nguyen, Director of UNCTAD's Division for Services Infrastructure for Development and Trade Efficiency (SITE). It was written by a team supervised by Geneviève Féraud, Chief of the ICT and E-Business Branch, until her change of functions on 1 October 2007, and consisting of the following UNCTAD staff members: Cécile Barayre, Dimo Calovski, Scarlett Fondeur Gil, Angel González Sanz, Muriel Guigue, Rouben Indjikian, Diana Korka, Marta Pérez Cusó and Susan Teltscher. The Introduction was drafted by Anh-Nga Tran-Nguyen.

The UNCTAD team acknowledges the contribution to chapter 8 by Chris Connolly of the consulting company Galexia, and by the ASEAN secretariat, whose material was based on a project funded by the ASEAN Australia Development Cooperation Program (AADCP) through the Australian Government (AusAID).

The team also wishes to thank the following individuals for their contributions to, and comments on, various parts of the Report: Carolin Averbeck, Claire Buré, Carlo Cattani, Florencio Ceballos, José Luis Cervera Ferri, Diane Coyle, Charles Geiger, Benedict Hugenschmidt, Martina Metzger and Ugo Panizza, as well as staff from telecentre. org. Participants in the expert meeting "In support of the implementation and follow-up of WSIS: using ICTs to achieve growth and development", which was held jointly by UNCTAD, OECD and ILO in Geneva on 4 and 5 December 2006, provided useful inputs that were considered in the preparation of this Report.

UNCTAD appreciates the sharing of statistical data by the National Statistical Office of Thailand, the Egyptian Information Technology Industry Development Agency (ITIDA), ITU, OECD and Eurostat, as well as the National Statistical Offices that responded to the UNCTAD 2007 questionnaire on ICT use by enterprises and on the ICT sector. The UNCTAD Central Statistics and Information Retrieval Branch provided valuable advice and support in the analysis of trade data.

Research assistance was provided by Bjorn Griesbach, Laura Harbidge, Jackie Lee, Giulia Quaia, Iulia Teodoru and Lidia Villalba during their internships with UNCTAD.

Administrative and secretarial support was provided at different times by Karima Aoukili, Elvira Chudzinski, Marie Kamara, Monica Morrica and Janaki Venkatchalam.

The Report was edited by Graham Grayston. The overall layout and desktop publishing were done by Christophe Manceau. Diego Oyarzùn Reyes designed the cover and formatted the charts.

The financial support of the Governments of Finland and France is gratefully acknowledged.

Contents

Fore	eword		iii		
Ack	nowle	dgements	iv		
List	of bo	xes	xi		
List	of ch	arts	xii		
List	List of tables				
Lisi					
Exp	blanate	ory notes	xxi		
Ove	rview		xxiii		
i.	Introduction:				
	Scie	ence and technology for development: the new paradigm of ICT	1		
	Α.	Science and technology in development	2		
		1. Role of technology in growth and development	2		
		2. Technology and institutions	4		
		3. Knowledge diffusion and technology transfer.	5		
	В.	ICT as a general-purpose technology	8		
		1. New paradigm	8		
		2. Some policy implications of ICT for development	11		
	C.	Harnessing ICT for development	13		
	Ref	erences and bibliography	16		
	No	tes	18		
1.	Trends in ICT access and use				
	Α.	Introduction	21		
	В.	ICT access and use by individuals	21		
		1. Mobile phones as the breakthrough ICT in developing countries	21		
		2. The Internet gap is closing slowly	25		
	C.	ICT access and use by enterprises	29		

vi CONTENTS

		1. Mobile phones are valuable business tools	30
		2. Internet use by businesses is slowly growing	31
		3. E-Business is facilitated by government.	33
		4. E-Commerce remains limited in developing countries	35
	D.	Conclusions	42
	Stat	tistical Annex	43
	Ref	erences	96
	No	tes	98
2.	The ICT producing sector and the emerging South		
	Α.	Introduction	101
	В.	ICT market, value added and employment	103
		1. Overview of the ICT market	103
		2. ICT sector value added	105
		3. ICT sector employment	109
	C.	Trade and investment in ICT goods and services	114
		1. Overview	114
		2. ICT goods	115
		3. ICT services.	120
	D.	The role of the ICT sector in the growth of China and India	123
		1. Overview	123
		2. China's ICT manufacturing	123
		3. India's ICT and ICT-related services	125
	Ε.	International and national environment and policymaking	129
		1. Government policies on the ICT sector	129
		2. Multilateral trade agreements relevant to the ICT sector: the ITA ten years later	129
	F.	Conclusions and policy recommendations	133
	Anı	nex 2.1: Trade in ICT goods	135
	Anı	nex 2.2: ITA members as of September 2007	148
	Ref	erences	149

	Not	tes	151
3.	Measuring the impact of ICT on production efficiency		
	Α.	Introduction	153
	В.	Economic impact of ICT at the macroeconomic level	154
		1. ICT capital, ICT use and growth	154
		2. The ICT-producing sector and the ICT using sectors	157
		3. ICT impact on total factor productivity growth	159
	C.	Firm-level impact of ICTs	161
		1. ICT use and firm labour productivity	162
		2. Complementary factors explaining the ICT-productivity relationship	163
		3. Impact of specific ICTs on productivity	164
		4. ICT investment, soft technologies and total factor productivity gains	165
	D.	Measuring ICT use and productivity in Thai manufacturing firms	166
		1. Background and objectives of the project	166
		2. ICT use by manufacturing firms in Thailand	167
		3. The model and a few theoretical considerations	170
		4. Results	171
	E.	Concluding remarks and policy issues	180
	Anr	nex 3.1: Summary of literature on ICTs and productivity at the firm level	183
	Ref	erences	185
	Nice		100

预览已结束, 完整报告链接和二维码如下:

 $https://www.yunbaogao.cn/report/index/report?reportId=5_10070$

