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Vevek Ram

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FOREWORD

This book is a collection of papers presented at the National Research and Development Conference of the Institute of Computer Scientists and Information Technologists, held on 26 & 27 September, at the Interaction Conference Centre, University of Natal, Durban. The Conference was organised by the Department of Computer Science and Information Systems of The University of Natal, Pietermaritzburg.

The papers contained herein range from serious technical research to work-in-progress reports of current research to industry and commercial practice and experience. It has been a difficult task maintaining an adequate and representative spread of interests and a high standard of scholarship at the same time. Nevertheless, the conference boasts a wide range of high quality papers. The program committee decided not only to accept papers that are publishable in their present form, but also papers which reflect this potential in order to encourage young researchers and to involve practitioners from commerce and industry.

The organisers would like to thank IBM South Africa for their generous sponsorship and all the members of the organising and program committees, and the referees for making the conference a success. The organisers are indebted to the Computer Society of South Africa (Natal Chapter) for promoting the conference among its members and also to the staff and management of the Interaction Conference Centre for their contribution to the success of the conference.

On behalf of the Organising Committee
Vevek Ram
Editor and Program Chair
Pietermaritzburg, September 1996

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List of Contributors

Vladimir B Bajic
Centre for Engineering Research,
Technikon Natal,
P O Box 953
Durban 4000

C N Blewett
Department of Accounting
University of Natal
King George V Avenue
Durban 4001

Justin Cansfield
Department of Accounting
University of Natal
King George V Avenue
Durban 4001

Tom Considine
Apron Services (Pty) Ltd
P O Johannesburg
International Airport
1600

Eric Cloete
School of Electrical Engineering
Cape Technikon
Box 652
Cape Town

I Cloete
Computer Science Department
University of Stellenbosch
Stellenbosch
7600

O A Daini
Department of Computer Science
University of Botswana
Gaborone
Botswana

Nirvani Devcharan
Umgeni Water
Box 9
Pietermaritzburg
3200

P J A de Villiers
Department of Computer Science
University of Stellenbosch
Stellenbosch
7700

Ruth de Villiers
Department of Computer Science and
Information Systems
UNISA
Box 392, Pretoria, 0001

G J Erwin
Business Information Systems
University of Durban-Westville
Private Bag X54001
Durban 4000

G Ganchev
Computer Science Department
University of Botswana
PBag 0022
Gaberone, Botswana

J Geldenhuys
Department of Computer Science
University of Stellenbosch
Stellenbosch
7700

Louise Gibson
BIS, Dept Accounting & Finance
University of Durban
Pvt Bag X10
Dalbridge 4014

Mike Hart
Department of Information Systems
University of Cape Town
Rondebosch
7700

M. Hajek
Department of Computer Science
University of Durban-Westville
Pvt Bag X54001
Durban 4000

A C Hansen
Dept of Agricultural Engineering
University of Natal
Private Bag X01
Scottsville 3209

J M Hattingh
Department of Computer Science
Potchefstroom University for CHE
Potchefstroom 2520

Boris Jankovic
Centre for Engineering Research
Technikon Natal
P O Box 953,
Durban 4000

Paula Kotze
Department of Computer Science and
Information Systems
UNISA
Box 392
Pretoria, 0001

J W Kruger
Vista University
Soweto Campus
Box 359
Westhoven 2124

A C Leonard
Dept of Informatics
University of Pretoria
Pretoria
2000

Ben Laauwen
Laauwen and Associates
P O Box 13773
Sinoville
0129

Mari Le Roux
Information technology, development: project
leader
Telkom IT 1015
Box 2753
Pretoria 0001

P W L Lyne
Dept of Agricultural Engineering
University of Natal
Private Bag X01
Scottsville 3209

Rose Mazhindu-Shumba
Computer Science Department
University of Zimbabwe
Box MP167
Harare, Zimbabwe

Meredith McLeod
Centre for Engineering Research,
Technikon Natal,
P O Box 953
Durban 4000

D Moodley
Computer Management Systems
Box 451
Umhlanga Rocks
4320

Andrew Morris
P O Box 34200
Rhodes Gift
7707

R C Nienaber
Technikon Pretoria
Dept of Information Technology
Private Bag X680
Pretoria 0001

E Parkinson
Department of Computer Science
University of Port Elizabeth
Box 1600
Port Elizabeth 6000

Don Petkov
Department of Computer Science and
Information Systems
University of Natal
PBag x01
Scottsville 3209

Olga Petkov
Technikon Natal
Box 11078
Dorpspruit 3206
Pietermaritzburg

N Pillay
Technikon Natal
Box 11078
Dorpspruit 3206
Pietermaritzburg

V Ram
Department of Computer Science and
Information Systems
University of Natal
PBag x01
Scottsville 3209

Melinda Redelinghuys
Department of Computer Science and
Information Systems
UNISA
Box 392
Pretoria, 0001

Karen Renaud
Computer Science and Information Systems
UNISA
Box 392
Pretoria, 0001

H N Roux
Department of Computer Science
University of Stellenbosch
Stellenbosch
7700

T G Scott
Department of Computer Science
Potchefstroom University for CHE
Potchefstroom
2520

T Seipone
Department of Computer Science
University of Botswana
Gaborone
Botswana

Derek Smith
Department of Information Systems
University of Cape Town
Rondebosch
7700

Anette L Steenkamp
Department of Computer Science and
Information Systems
UNISA
Box 392
Pretoria, 0001

T Steyn
Department of Computer Science
Potchefstroom University for CHE
Potchefstroom 2520

H. Suleman
Department of Computer Science
University of Durban-Westville
Pvt Bag X54001
Durban 4000

A Vahed
Department of Computer Science
University of Western Cape
Private Bag X17
Bellville 7530

A Van der Merwe
Computer science and Informations Systems
UNISA
P O Box 392
Pretoria,0001

Tjaart J Van Der Walt
Foundation for Research and Development
Box 2600
Pretoria, 0001

K Vavatzandis
Department of Information Systems
University of Cape Town
Rondebosch
7700

Y Velinov
Dept Computer Science
University of Natal
Private Bag X01
Scottsville 3209

H Venter
Department of Computer Science
University of Port Elizabeth
Box 1600
Port Elizabeth 6000

H L Viktor
Computer Science Department
University of Stellenbosch
Stellenbosch
7600

R Von Solms
Department of Information Technology
Port Elizabeth Technikon
Private Bag X6011
Port Elizabeth 6000

A J Walker
Software Engineering Applications
Laboratory
Electrical Engineering
University of Witwatersrand
Johannesburg

P Warren
Computer Science Department
University of Natal
P/Bag X01
Scottsville 3209

Max Watzenboeck
University of Botswana
Private Bag 0022
Gaberone
Botswana

INDUSTRY-ACADEMIC-GOVERNMENT COOPERATION TO BOOST TECHNOLOGICAL INNOVATION AND PEOPLE DEVELOPMENT IN SOUTH AFRICA

Tjaart J van der Walt
Executive Director: Industry
Foundation for Research Development
P.O. Box 2600, Pretoria, 0001

Abstract

Cooperation between industry, academia and government is increasingly viewed to be of key importance for economies to be globally competitive. In a world where research and technology development, and the diffusion and commercial exploitation of their outputs, form an important backbone to economic and social advancement, South Africa is challenged to realign its research, educational and industrial sectors to join hands in developing an appropriately skilled human resource base that will enable South African Industry to compete effectively in the world.

As an integral part of the paper, emphasis is placed on the unique challenges facing the "New South Africa" in terms of developing an innovative technological human resources base, within the framework of the Government of National Unity's Reconstruction and Development Programme (RDP). Special attention is given to capacity building among the disadvantaged through corrective actions, and the promotion of technology within the small, micro and medium enterprise (SMME) sector.

Furthermore, the paper provides an overview of the vision for a National System of Innovation (NSI) in South Africa in its role to boost technological innovation within an increasingly competitive global economy. Knowing that close cooperation between the business, Government and Educational sectors is key to the development of a vibrant and competitive workforce, hence a competitive economy, the paper also contains a perspective on the status of cooperative research in the natural sciences, engineering and technology (SET) in the development of leading and forefront expertise.

The two existing national technological innovation programmes are described, *viz.* The Support Programme for Industrial Innovation (SPII) and the Technology and Human Resources for Industry Programme (THRIP). Special attention is given to the latter programme, being a Joint Venture initiative between all key stakeholders in technology promotion in South Africa and managed for the Joint Venture by the Foundation for Research Development (FRD) together with the Department of Trade and Industry (DTI). THRIP is critically reviewed and its expanded vision contextualised within the NSI. Some factors and mechanisms are discussed to increase the gross national investment in research development, by both the public and private sectors. Such an effort should contribute to advancing market focus on the research and technology supply side, as well as promoting the involvement, ownership and long term vision of the market for technology and human resources in research.