

# KNOWLEDGE TRANSFER AMONG INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FIRMS FOR INNOVATION IN MALAYSIAN TECHNOLOGY PARKS: THE CHALLENGE OF MACRO STICKINESS

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*Garden of Knowledge and Virtue*

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  - Master of Science in Entrepreneurship

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# ABSTRACT

- Macro stickiness (MS) influences knowledge transfer (KT) for innovation among ICT firms.
- MS occurs from vague and inadequate guidance in the policies for innovation and economic development.
- ICT firms are the participants to encourage innovation vis-à-vis KT in Malaysian Technology Parks (MTPs).
- Interview results show MS in KT, but not impossible to reduce MS.

# INTRODUCTION

- Assumption: MTP [Malaysian Technology Parks] promotes KT [knowledge transfer] for ICT firms.
- KT contributes to capacity building and source of sustained competitive advantage.
- Innovation-based economic policies: 1 Malaysia – People First Performance Now, ETP, GTP, PTP, NEM are meant for increase in wealth, wellness, welfare and wellbeing.
- Innovation eco-system supports derivatives (ideas, thought, creativity).

# LITERATURE REVIEW

## ○ **Five parts**

1. Nature of Macro Stickiness (MS)
2. Sweeney (1996) Model for learning
3. Government roles for KT
4. Technology Parks (TP) roles for KT
5. Economic Transformation Program (ETP)

## ○ **Research questions**

1. What factors used in formulating economic policies for KT?
2. Why plus three (national unity, FDI, and economic growth) included in economic policies for KT?
3. How MTPs assist KT for among ICT firms?



# LR, PART 1: NATURE OF MACRO STICKINESS (MS)

- MS is a phenomenon that reduces the effectiveness of knowledge transfer for innovation.
- MS occurs at national policy formulation and implementation levels.
- MS caused by external forces (political, economic, social, technology, legal, competition).
- MS-political/legal caused by public policies that are inadequate to support knowledge transfer and innovation.

# LR PART 2, SWEENEY (1996) MODEL

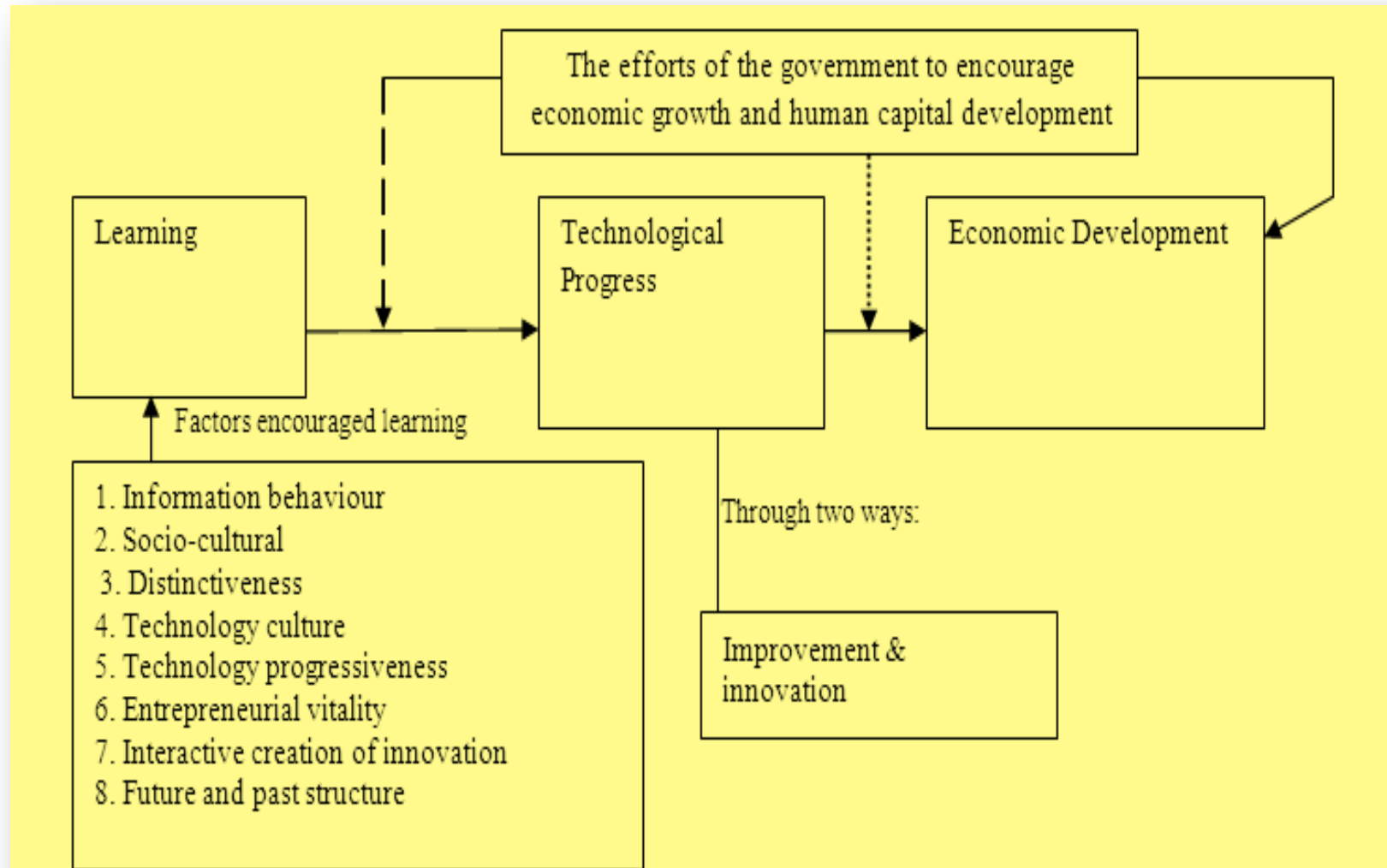


Fig 1. Sweeney (1996)'s model of human capital development under the influence of "macro" level stickiness

## LR Part 3, Government roles for KT

- Provides eco-system for learning
  - Improve the existing ways of doing things in organisations
  - Introduce new ways of doing things in organisations
- Promotes KT to generate economic growth and capacity building through increasing the intensity of technology development.
  - The change resulting from pressure on firms to adopt new technologies (“technology push”).
  - The pressure from the market to produce new technologies (“market pull”).
- Typical effort by governments: provides essential facilities, such as science or technology parks, to encourage innovation.

## LR PART 4, TECHNOLOGY PARKS AND KT

- Technology parks as instrument to promote knowledge transfer between ICT firms.
- ICT sector is highly knowledge intensive.
  - ICT is a dynamic industry requires ICT firms to be proactive with respect to innovation.
  - Technology parks to assist firms in acquiring knowledge.
- Enhance intensity in technological development.

# LR PART 5, ECONOMIC TRANSFORMATION PROGRAM (ETP) AND MALAYSIAN INNOVATION ECONOMY DIRECTIONS

Table 1: Malaysia Plans and other Development Planning Documents

Plan Title	Duration	Date Tabled	Concern areas
Outline Perspective Plan (OPP) 3	2001 – 2010	3 Apr 2001	Various sectors of industrial investment
Eight Malaysia Plan	2001 – 2005	23 Apr 2001	ICT industry
MTR Eight Malaysia Plan	2001 – 2005	30 Oct 2003	ICT industry
Ninth Malaysia Plan	2006 – 2010	31 Mar 2006	ICT industry plus human capital development
Tenth Malaysia Plan	2011 – 2015	10 June 2010	Economic prosperity and social justice, driven by 1Malaysia: People First, Performance Now with Government Transformation Programme (GTP) and Economic Transformation Programme (ETP) premised on high income, inclusiveness and sustainability.

Note: MTR- Mid Term Review.

Source: Government of Malaysia (2001a, 2001b, 2006, 2010)

# 1 MALAYSIA ON GOVERNMENT POLICIES: NEM AND ETP

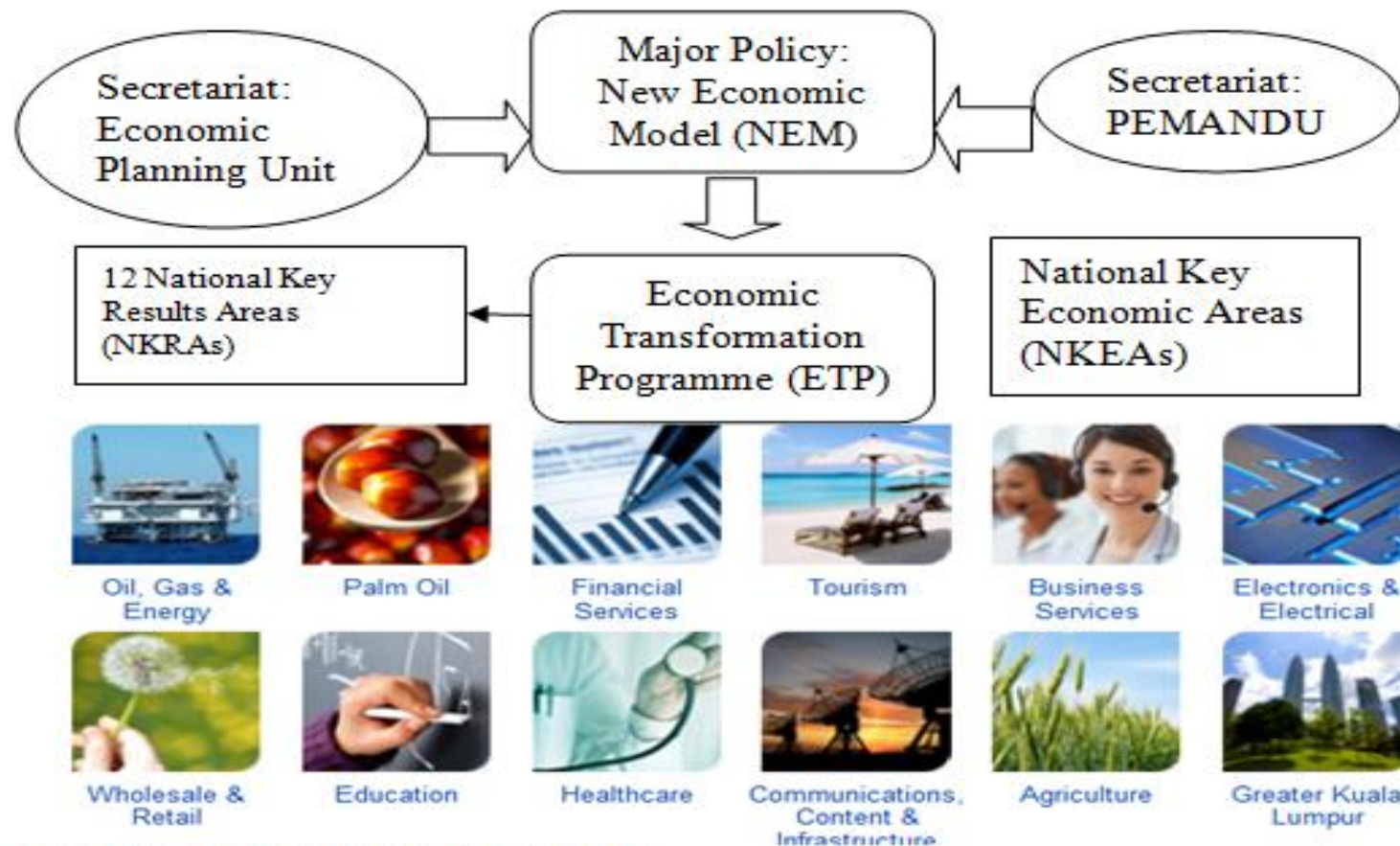


Figure 3: New Economic Model and ETP  
Source: PEMANDU (2010)

# PROGRESS OF ETP

Table 2: Progress of Economic Transformation Programme (ETP)

Date of progress reporting	No of Projects	Worth of Investment (in RM)	Worth of Gross National Income (GNA)	No of jobs created
19 April 2011	12	11.16b	16.62b	74,457
8 March 2011	23	14.75b	20.1b	88,354
11 January 2011	19	67b	32.5b	52,404
30 November 2010	9	8.3b	84.5b	70,500
25 October 2010	9	5.3b	100m	13,100

Source: PEMANDU (2011b).

# CRITICAL SUCCESS FACTORS

- ETP uses six secrets to enable it mobilizes and achieves the targets, namely
  - (1) the game of impossible,
  - (2) KPI anchorage,
  - (3) discipline of action,
  - (4) situational leadership,
  - (5) winning coalitions, and
  - (6) divine interventions.



# METHODOLOGY, FINDINGS AND DISCUSSIONS

- Qualitative research, personal interview with two (2) policy makers, three (3) government officers, and fifteen (15) executives of ICT firms in Malaysian technology parks.
- Factors contributes to increase/decrease KT:
  1. economic and business advantages,
  2. employment opportunities,
  3. skill enhancement,
  4. sustainable wealth, and
  5. good quality of life.

# SUMMARY OF RESEARCH QUESTIONS, ANSWERS AND INFORMANTS

Research questions	Answers	Informants
Q1. What are the factors that have been considered by the government when formulating economic policies to encourage knowledge transfer for innovation among knowledge workers of ICT firms?	Economic advantages, employment availability, national unity, good economic growth	Two policy makers, three government officers and 13 out of 15 firms
Q2. Why does the government include the national agenda in economic policies which are supposed to encourage national level knowledge transfer among knowledge workers of ICT firms?	National interest, political interest, and social interest	Two policy makers, three government officers and 9 out 15 firms (6 firms pointed out strongly on political mileage)
Q3. How do Malaysian technology parks assist knowledge transfer among ICT firms that operate in Malaysian technology parks?	Business networking, collaboration, and assistance from the government	Two policy makers, three government officers, 12 out 15 firms.

# REVISED SWEENEY'S MODEL

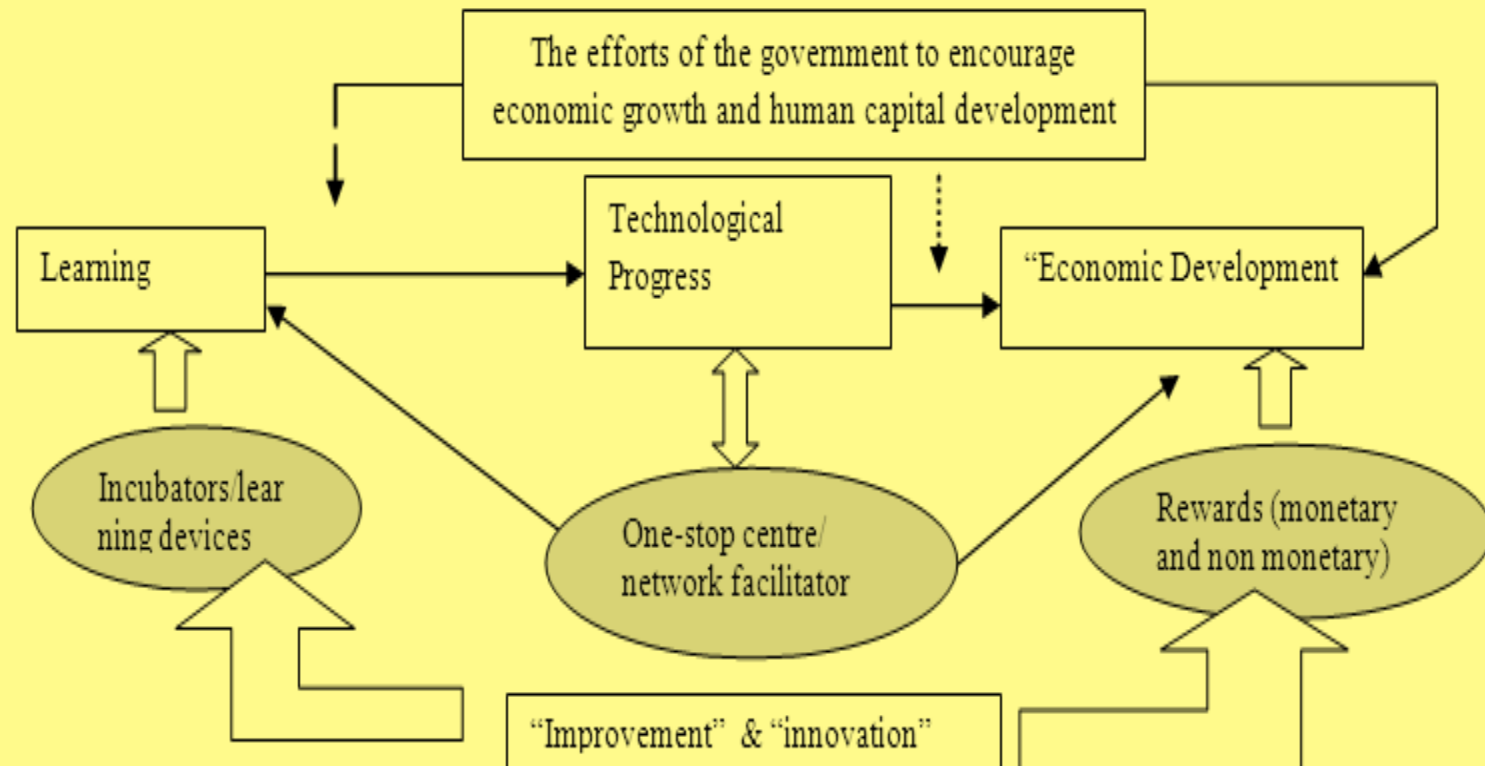


Fig 2. Modified Sweeney (1996)'s model of human capital development under the influence of "macro" level stickiness

# CONCLUSION

- Government cannot exclude three major elements: national unity, foreign direct investment and sound economic growth via innovation and economic policies.
- The industry wanted clear and real roles and about profitability to motivate them to do less.
- This study suggests that the government and ICT firms should work closely and strategically to facilitate knowledge transfer for innovation among ICT firms locally and other places.

## PARTICIPANTS

- Multimedia University (MMU)
- International Islamic University Malaysia (IIUM)
- Multimedia Development Corporation (MDEC)
- bSure Solutions Sdn Bhd
- IIUM Printing Sdn Bhd

# FEEDBACK FROM THE PARTICIPANTS

- ICT firms
  - More grants for innovation
  - Governments should try software produced by ICT firms
  - Serious assistance to ICT firms, not only innovation grants for selected ICT firms
- Government agency
  - Academics and industry are not aware of government's innovation initiative and encouragement
  - Grants are limited; merit applies
- Academics
  - Did not get support from the industry and the government
  - Theoretical instead of practical
- Recommendations
  - Create innovation eco-system
  - Digital enterprises
  - Free access to data