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Space, Location and Knowledge.

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Perils of Predictions based on established practice

- **Every major US city will have a telephone**
 - *late C19 observation quoted Marvin 1988*
 - *electric telegraph taken as model*
- **“Internet” confined within US national boundaries**
 - *fictional treatment of cybercrime and surveillance*
John Brunner Shockwave Rider 1975

Three Approaches to Space, Location and Knowledge

■ **Globalisation**

- *textures*
- *dynamics*
- *chains and networks*

■ **Location, co-location and community**

- *physical and virtual co-location*
- *household, community and technology*

■ **Structure, infrastructure and marginalisation**

- *the abdication of the national state*
- *windows of opportunities for the margins*

Global Production/Global Consumption ?

- **Waves of capitalist development operating on a world-wide scale (David & Wheelwright, 1989).**
- **Unevenness of development within and between economies threatening sustainability (Welford, 1995)**
- **Three dominant super-regions, NE Asia, North America and Western Europe, the 'triad' described by Ohmae (1990)**
- **The rapid cross-diffusion of innovations within an emerging globalised economy dependent on the widespread use of information and communication technologies.**

ICTs as Peace Dividends?

- **Technocracy Won the (Cold) War**
 - *John L. King ICIS-2000 Conference Keynote*
- **USA - Jay Forrester**
 - *MIT Whirlwind computer to Club of Rome Report*
 - *via SAGE and SABER*
 - *air defence to airline reservation*
- **UK - Alan Turing**
 - *Colossus electronic computer (not revealed until 1974)*
- **Difference: US Openness + Resource Base**
 - *Silicon Valley Paradigm: start-up driven*
 - *via Route 128: larger, established companies*
 - *Creative Milieu (Castells 1989) built on a public sector infrastructure*

Realignments in a Global System

■ **Post-Cold War Era,**

- growing global economic integration
- disparate national and regional cultures increasingly interacting within networked and globalised organisations.
- facilitation through information technologies

■ **Unevenness of development threatens prospects for sustainability**

- complex layering of labour markets,
- internal and external to the developed economies driving this process.

Textures of Globalisation

- **Differences within individual national states**
 - as significant that those between developed and developing states.
- **Differences between centre and periphery, between large and small scale economic activity**
 - central to an understanding of the impact of globalisation and its supporting technologies.
- **In the post-cold war era difference and diversity are resources**

(Delamaide; 1994, Ohmae; 1995).

Dynamics of Globalisation

- **Newly industrialising countries**
 - catching up
 - development and growth synonymous.
 - sceptical of higher standards than applied by established economies at the equivalent stage
- **Excluded economies - excluded communities**
 - difficulty maintaining modest economic objectives.
 - excluded from policy making processes
 - no influence over the emerging global information system
 - reducing ability to negotiate sustainable exploitation of their own resources

Chains versus Networks

- **Global Production Chains replaced by Global Production Networks**
 - *linkages among members of the “Triad” of North America, Europe & N.E. Asia account for the majority of global trade (Dicken, 1998)*
 - *internal trade still dominates many major industrial countries (Krugman, 1996)*
 - *substantial areas and populations are excluded from the global cycle of technical innovation and improvement*
- **Moving along the Value Chain**
 - *higher value-added activities sought*
 - *distinction between products & services is eroding*
 - *closer adjustment to cultural variation among users & customers is needed*

Flexible Networking

■ **Network Enterprises**

- *flexible coalitions*
 - *within and between existing corporations (Castells, 1996)*
 - *between independent partners (Inoue, 1998)*
- *temporal and geographical boundaries*

■ **Example**

- *Siemens, IBM, Toshiba risk-sharing on pre-market microelectronics innovation while competing in numerous market places*

(Castells, 1996)

Repositioning Across the Web

- **The problems of technological leadership differ from those of catch-up**
 - *Organisational isomorphism (Orru, Biggart and Hamilton, 1991)*
 - *European and North America assimilate aspects of Asian strategies which themselves originated in the West*
 - *Creative Milieu (Castells ,1996)*
 - *captures the complex web of relationships necessary to the support of genuine innovation*
 - *complementary regional associations may cross national boundaries (Ohmae, 1995; Delamaide, 1994)*

Political barriers, economic corridors

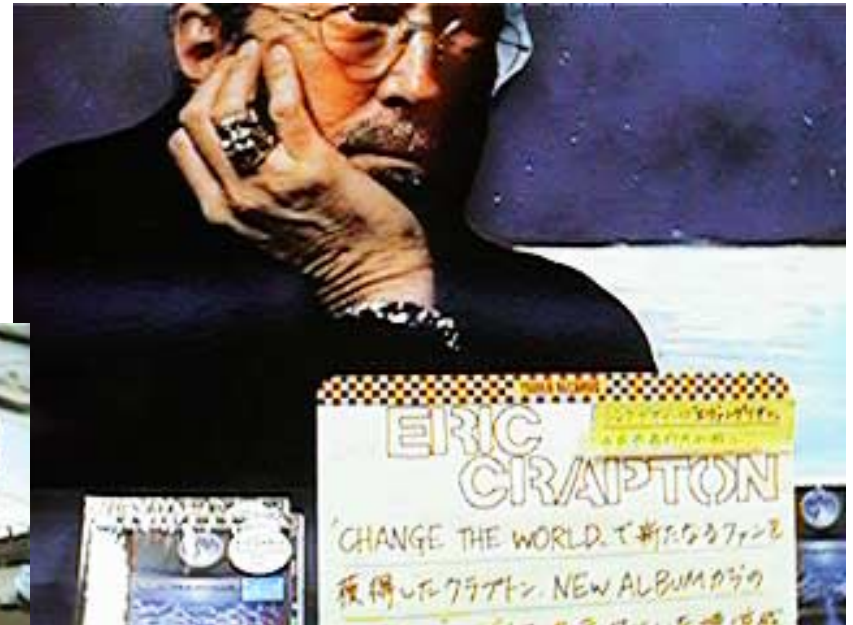
Development model of
Pudong Export Processing Zone:
Shanghai hosts companies from
all parts of the “Triad”



Mainland viewed from Macau:
the Pearl River Delta develops
across administrative boundaries

Different ends of a chain or nodes in a web?

- *Clapton in Tokyo*
 - *transliteration as co-optation by consumers*



- *Ricoh in Shanghai*
 - *external production for internal and external markets*

Geography is History is Geography

■ **Organisational & cultural segmentation**

- *cultural dimension to technical standards.*
 - *key innovations in ICT have succeeded where mapped on to existing cultural frameworks (Kaye & Little, 1996)*

■ **Language: an additional challenge**

- *English as a global language (Crystal, 1997)*
 - *historic lack of ICT support for non-Roman text*
 - *ASCII standard straightjacket*

■ **Organisational Learning**

- *informating versus automating (Zuboff, 1988)*
- *technical **and** social learning (Sproull & Kiesler, 1991)*
- *social & cultural interoperability (Kaye & Little, 1996)*

Taipei Observations: *physical co-location*

Metal bashing and mobile phone after-market accessories sharing the same space



*explanation: family relationships
result: flexible production*

Virtual Co-location

■ **Example: Texas Instruments**

- *Taipei and Austin*

- *corporate systems replicated at both ends of a broadband link*

■ **Place based community as a limiting case**

- *Webber's Non-place realm (1964)*

- *Castell's informational city of flows (1989)*

- *material and information*

■ **Knowledge Flows imply Physical Flows**

- *Virtual flows of intellectual capital create physical flows*

- *material*

- *technology*

- *labour*

Non-place Community

- **Accessibility, rather than the propinquity aspect of "place" is the necessary condition for this form of community (Webber, 1964 p.109).**
 - *Current conditions allow access to be non-physical*
 - *Accessibility does not require ownership*

*Japanese ISDN payphone
Makuhara, Chiba, 1996*



Community, Place and Network

- **"city as communications system"**
(Webber; 1964, p.84).
- **(Planners) "share a conviction that the physical and locational variables are key determinants of social and economic behaviour and of social welfare"** *(Webber; 1964, p.85).*
- **"dynamic, locational patterns of human communication that occur through space but transcend any given place"** *(Webber; 1964, p.90).*

Household and Virtual Community

Taking Webber's 'non-place urban realm from theory to practice

- **Physically mobile housing units linked to information infrastructure**
 - *"Pods" and "Cushicles"*
Archigram Group, '60s architectural speculation
- **Pilot Community Cable TV**
 - *Fishermead, Milton Keynes, '70s*
- **Pilot Domestic Broadband "Fibre-optic to Kerb"**
 - *Cordeaux Heights, NSW '90s*

Framing by Design - Inspirations

Speculative fiction offers insights through imaginative scenarios

■ **1984 William Gibson *Neuromancer***

- *cyberspace*

■ **1988 Bruce Sterling *Islands in the Net***

- *off-shore data warehousing, legal and extra-legal*

■ **1995 Neal Stephenson *Snow Crash***

- *sovereign suburbs*

Framing by Design - Interventions

C19 Domestic + Productive technologies developed in parallel

C20 Gendered domestic technologies

- *UK Parker Morris housing standard*
– *a gendered script*
- *brown goods - consumption*
- *white goods - reproduction*

C21 Domestication of the productive technologies of the new economy

- *electronic homeworking*
- *domestic SETI, domestic molecular modelling*

The Permeable Household

The household has maintained a public and private dimension:

■ **Pre-industrial Household**

- *locus of production*

■ **‘Modern’ Household**

- *locus of reproduction and consumption*

■ **Post-industrial Household**

- *locus of production and consumption*

Technologies and Permeability

The social reframing of established technologies:

- **White Transit (U.K.)/Toyota Van (Australia)**
 - *Textile Clothing & Footwear Homeworking*
- **Telephone**
 - *home sales, domestic-domestic*
- **Answerphone**
 - *asynchronous communication within an existing mode*
- **Internet**
 - *White collar homeworking*

Framing by Technology

Interchangeable public and private space

■ **Prison as Workplace**

- *credit checks,*
- *hotel reservations*

■ **Home as Prison**

- *electronic confinement*

Aungles 1992

National infrastructure minus redistributive function



Privatisation of public space and non-space

- **National telecom companies
have become international**

*the principle of equality of access
regardless of location is under threat*

Threatened species of technology:
Village call box, Breconshire, 2000

National infrastructure minus national agenda

- **National rail carriers have been corporatised and privatised**
 - *responsibility for national development has been jettisoned*



The construction of a trans-national railway was a condition of the accession of Western Australia to the Commonwealth of Australia in 1901

Access from the Margins

- **Divisions in both developed and developing countries present the less advantaged actors with a major problem**
 - *accessing or utilising technologies which have been shaped by other players towards the support of different priorities.*
- **Existing inequalities will be reinforced unless access to these technologies can be achieved.**

Access from the Margins

■ **Street Level Access to Cyberspace**



Catalogues of pirated software on sale in a Taipei street

Windows of Opportunity

- **How can “small” players influence an emerging new "techno-economic paradigm" (Perez, 1985) ?**
- **A window paradigm for globalising information systems**
 - *using available technologies without regard for their underlying assumptions*
- **“Windows of opportunity” may be inadvertently closed by the momentum of mainstream technical development.**

Computer Bulletin Board

(Earls 1990)

- **Use by population with severe difficulties with speech production to interact freely in an electronic community**
 - *maximised use of available mainstream technology*
 - *minimised use of relatively expensive small volume specialised hardware and software*
 - *aligned with emergent de facto standards.*
- **Window of opportunity**
 - *narrowness of communication bandwidth concealed identifying characteristics of the user group*

Tanami Network, Central Australia

- **Supporting the Aboriginal outstation movement.**
 - *traditional community decision-making without the need for physical proximity facilitated by domestic satellite communication systems*
 - *broader rural community benefits from the same technology*
 - remote provision of specialist support for local expertise, for example, in medicine and health care
- **Window of Opportunity**
 - *government desire to promote a technological paradigm*
 - *subsequent sustainability threatened by cost levels*

ODN: Outback Digital Network

- **Same objectives pursued through existing infrastructure**
 - *existing telecoms only*
 - *affordable PCs*
 - *sustainability a key objective*



<http://www.odn.net.au>

The Next Window?

■ **Next Generation Mobile Communications**

- *Switching from geostationary Earth orbits (GEOs) to medium Earth orbit (MEO) and low Earth orbit (LEO) satellites*
- *Eg proposed Teledesic system*
 - *840 broadband LEOs communicating directly with individual personal computers*

■ **Social Learning with Emergent Technology**

- *Social and Institutional Paradigm Shifts must accompany Technical Paradigm Shift*

References

- ⇒ Aungles A. (1994) *The Prison and the Home: A Study of the Relationship Between Domesticity and Penalty* The Institute of Criminology Monograph No.5, Sydney
- ⇒ Castells 1989 *The Informational City* Blackwells, Oxford U.K.
- ⇒ Castells M. (1996) *The Rise of the Network Society* Blackwells, Oxford U.K.
- ⇒ Crystal D. (1997) *English as a Global Language* Cambridge University Press, Cambridge U.K.
- ⇒ David A. & Wheelwright T. (1989) *The Third Wave: Australia and Asian Capitalism* Left Book Club, Sydney, Australia.
- ⇒ Delamaide D. (1994) *The New Super-regions of Europe* Penguin, New York, U.S.A.
- ⇒ Dicken P. (1998) *Global Shift: Transforming the world economy* (3rd ed) Paul Chapman, London U.K.
- ⇒ Inoue T. (1998) “Small businesses flourish in virtual village” *Nikkei Weekly* 26 Jan 1998, p.1
- ⇒ Kaye G.R. & Little S.E. (1996) “Strategies and Standards for Cultural Interoperability in Global Business Systems” *Proc HICSS-29: Hawaiian International Conference on Systems Science, Maui, January 1996 Vol.IV Information Systems* IEEE Computer Society Press, Los Alamitos CA, ISBN 0-8186-7451-2, pp.465-473
- ⇒ Krugman P. (1996) *Pop Internationalism* MIT Press, Cambridge, U.S.A.

References

- ⇒ Marvin C. (1988) *When Old Technologies were New: thinking about electric communication in the late nineteenth century* Oxford University Press, New York, U.S.A.
- ⇒ Ohmae K (1990) *The Borderless World: Power and strategy in the interlinked economy* Collins London U.K
- ⇒ Ohmae K. (1995) *The End of the Nation State: The rise of regional economics* Free Press, New York, U.S.A.
- ⇒ Orru M., Biggart N.W. & Hamilton G. (1991) “Organizational Isomorphism in East Asia” In Powell W.W. & DiMaggio P.J. *The New Institutionalism in Organisational Analysis* University of Chicago Press, Chicago, U.S.A.
- ⇒ Perez C. (1985) “Microelectronics, Long Waves and World Structural change: New Perspectives for Developing Countries” *World Development* 13(3) 441-63
- ⇒ Sproull L. & Kiesler S. (1991) *Connections: new ways of working in the networked organization* MIT Press, Cambridge, U.S.A.
- ⇒ Webber M. (1964) “The urban place and the non-place urban realm” in: Webber M.M. Dyckman J.W. Foley D.L. Gutenberg A.Z. Wheaton W.L.C. & Wurster C.B. *Explorations in Urban Structure* Philadelphia: University of Pennsylvania.
- ⇒ Welford R.J. (1995) *Environmental Strategy and Sustainable Development* Routledge, London U.K.
- ⇒ Zuboff S. (1988) *In the Age of the Smart Machine* Basic Books, New York, U.S.A.