Chapter 8

Dysfunctional Development Pathways of Information and Communication Technology: Cultural Conflicts

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This paper argues that there are three factors, which counter the inevitable movement towards globalisation. Firstly the incremental force of technology as illustrated by the growth stage model of the development of Information and Communication Technology (ICT) is flawed. This model implies a linearity of development and an inevitability of stage following stage. While this stage model may provide historic explanation for the development in the developed world and amongst the mature users, the model fails when used predictively for the developing nations or for the late adopters. Secondly the imperialism of technology overcoming all barriers fails to reconcile the cultural dimensions of both the developing context or the application domain. Technology is not culturally neutral but is developed in a cultural context and in the case of information rich applications carries that cultural within its design. Applications of culturally developed systems, such as office and management systems assume the user’s compliance with the design culture, but this inevitably leads to cultural clashes as we apply outside the design context. Thirdly the assumption of universality of economic access and development is incompatible with both the reality and development paths in both developed and developing countries. This inevitably will lead to a divided society split between the internationally mobile, technology-supported communities and those communities disadvantaged economically and technologically but culturally rich. The failure to bridge this gap may leave
society as a whole weakened through lack of access to ‘variety’. The paper discusses these perspectives and illustrates the case with evidence from NE Asia and the United Kingdom. In particular it focuses on software development and information-rich contexts.

TECHNOLOGICAL INEVITABILITY - GROWTH STAGE MODEL

Gibson and Nolan (1974) provide a growth stage model (GSM) of the development of Information and Communication Technology (ICT). The initial model had four stages: Initiation; Expansion; Formalisation; and Maturity.

Nolan (1979) extended this model to a six-stage model reflecting recognition that there were more sub stages reflecting the growth of knowledge and technology from the implementations. The model reflected not only a shift in the objectives being sought (explanation of budgetary expenditure on ICT) but the involvement of management and the control and orientation of the evaluation. The revised model (Figure 1) demonstrates a balance between slack permitting growth and innovation and phases of control ensuring cost effectiveness and integration. The rate of growth inferred in the graph below is quite gentle but for many the actual rate is explosive causing problems of control. The stages reflected distinct categories of evolution from batch processing through time-share data processing, to PC’s and networks of communicating processors. With hindsight that may have been the experience of the larger US companies who had been involved with computers from the early days. This could not be described as the experience of the later entrants often small and medium enterprises (SMEs) whose first foray into the arena came with turnkey and proprietary software or the more recent entrants with commodity based PC’s and software.

Figure 1: Nolan’s 6 Stage Model
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