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The Telecom-Economy Nexus: Innis and Du Boff Revisited

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Introduction

The telecom sector has been undergoing profound changes around the world. Technological progress has lowered the barriers of time and space. Institutional reforms have resulted in ever-greater contributions to national economies. Demand from individuals and businesses has become increasingly sophisticated. With its capabilities of governing and guiding the activities of agents, telecom has become the strategic underpinning of modern society.

As telecom-related services have become important media in modern society, the focus on point-to-multipoint associated with mass media has gradually shifted to point-to-point. The social-science study of telecom, however, lags behind the rapidity of change of the object of study. The field of telecom studies has tended to produce numerous mosaic stories, especially in the case of institutional reform of telecom. Attempts to systematically comprehend the phenomenon have failed adequately to identify its dynamics. Furthermore, policy research tends to focus on immediate issues, neglecting long-term consequences.

Telecom is fundamentally a connecting mechanism. It requires broader, context-driven research (Cho 1998). Understanding the telecom phenomenon in the context of economic activities is imperative. However, linkages between economic activities and communications (telecom, in particular) have not received adequate attention, with the significant exceptions of the work of William Melody (e.g., 1985c; 1990a; 1996b), Richard Gabel (1969), David Gabel (1987), and Dallas Smythe (1981).

Long before the recent wave of institutional reform, Harold Adams Innis and Richard Du Boff conducted significant studies on communication and its long-term social and economic effects. This contribution examines some relatively neglected aspects of their research in relation to research on institutional reform.

Harold Adams Innis' Perspective

The significance of Innis to the field of communication has mainly been seen through *The Bias of Communication* (1951) in which he attempted to reinterpret

the entirety of Western civilisation related to the transformation of communication media. Innis, was first and foremost an economic historian whose early work was on the emergence of Canada as a nation state from the perspective of political economy. Later, Innis extended his analysis beyond any specific country or region. The later Innis articulated the preconditions for the existence of systems in space and time in terms of the dialectically related concepts of control over space and control over time. Control over space is related both to the territorial extension of control by a system and to the degree of organisation of the means of maintaining territorial control by the system. Similarly, control over time is related both to the systematic intensity of an agency over time and to the adaptability or flexibility of the agency in response to changes in its environment. The dichotomy is somewhat arbitrary and has been challenged. The concepts were developed from his studies of the Canadian staples trade, a part of his work that is relatively little known.

Although the notion of two Innises may be misleading, on balance, there is value in a focus on the early Innis. Two major works of the early Innis – *A History of the Canadian Pacific Railway* (1923) and *The Fur Trade in Canada* (1930/1962) – are instructive for the examination of the influence of communications in the shaping of social systems. According to Innis (1923), the pace and direction of the growth of Canadian civilisation were largely dominated by the communicative aspects of its physical characteristics: the geological formation, the climate and the topographical features. As a result, the country was divided into three drainage basins. According to Innis,

> Early civilisation was confined by these limits to three distinct areas. The Canadian Pacific Railroad was tangible evidence of the growth of civilisation beyond these boundaries (Innis 1930/1962: 2).

> Civilization had developed almost alone. It had grown and expanded beyond the boundaries set by topographical features. Politically these sections were united but economically the barriers proved to be of a character which tested severely and almost to the breaking-point the union which had been consummated (Innis 1923: 74).

Innis provides meticulously detailed accounts of how the development of communication facilitated the staples trade. Canada developed in directions and at a pace permitted by such communication media as waterways and railways. Canada's evolution was bounded by the possibilities of effective communication. Changes in the technology of communication influenced the transformation and extension of the country.

The existence of Canada, according to Innis, was tied to certain features of the landscape relevant to the staples trade. Boundaries – whether national or regional – were not tied to the land but rather tied to the mechanisms of communication. In Innis' view, the media of communication do not simply constitute a causal nexus but are an integral element in the way distinct realities arise out of the economic activities. He noted that the utilisation and the deployment of communication media are central to economic development. He argued that communication technologies are the most important building blocks for the shaping of social systems. At the same time, he recognised that economic incentives and market forces have powerful influences on the development of communication media. It should be emphasised that Innis was unique among his contemporaries in recognising the strong interrelationship and interdependence between economics and communication and in adopting the long-term historical approach for the study of communication.

Richard Du Boff's Perspective

Du Boff's object of study was the influence of modern communications on the formation and development of economic institutions. Du Boff examined the impact of the earliest form of telecom, the telegraph, on the early economy of the United States. Du Boff (1980: 459, 60) claimed that the business revolution of the mid 19th century occurred because of 'technological advances of the 1840s... the railroad and telegraphy'. Du Boff (1980: 463) explained that 'the discovery of the railroads as the nation's first big business has overshadowed the role of telegraph industry, which preceded the railroads ... in holding out the promise of wider market reach ... '. The telegraph and the railroad developed on the same geographical lines and common commercial interests were the basis of their reciprocal relationship.

> Ultimately, each was necessary for the other: telegraphs without railroads would have found customers, but social savings would have been less as installation of telegraph poles and lines would have been costlier withoutpreviously cleared railroads right-of-way ... ; and demands for telegraph services would have grown more slowly in the absence of the mass-distribution and mass-production revolutions the railroads did so much to unleash (Du Boff 1983: 255).

The major customers of telegraphy were profit-seeking organisations that operated in competitive environments. Even though the development of the market was constrained by the capacity of communication networks, the development of communication was what made it possible for the exploitation of economies of scale to become an institutionalised practice.

> [The telegraph] influenced the structure of the economy itself through subtle links that connect technology and markets. The impact of the telegraph on allocative efficiency and markets was intermingled with contemporary changes in transportation, scale of production, and general technical progress (Du Boff 1984: 254).

On the other hand, the connecting mechanism of telecom also promoted mass production: 'The telegraph, in tandem with the railroad, opened the way toward such cost savings, which virtually invited the centralization of executive powers [of firms]' (Du Boff 1983: 266).

Du Boff's main focus was on the impact of communication on the formation of economic institutions, and he drew out the long-term consequences of communication technologies. 'Increasing market size helped "empire builders" widen initial advantages which at first may have been modest' (Du Boff 1983: 270). In other words, he claimed that communication technologies tend to concentrate market power in the hands of a few dominant firms which adopt the new communication technologies.

In summary, telecom was the most vital element in the formation and spread of nation-wide business practice in the United States in the mid 19th century. Although transportation (railroad) has been credited as the driving force of economies of scale, telecom (telegraph) proved to be, according to Du Boff, as important an element. Du Boff demonstrates with Innis, the contribution that a context-driven understanding of telecom network development can make.

Conclusion

The premises of the Innis and Du Boff projects, that communication and information activities are carried out within social systems at both the economic and political levels, have contemporary and global relevance. Their work, and especially that of Du Boff, illuminates endogenous relationships existing within a single system. Yet, the fundamental connecting nature of communication can extend beyond the boundary of a given state or system, as Innis showed.
The principal institutional artefacts of capitalism have been, in many instances, created by technological advances. Thus, the histories of business and of technology cannot exist in isolation if they are to remain vital areas of inquiry. The insights of Innis and Du Boff show us that long-term and context-driven perspectives are necessary.