

Intermediate Structure Economic Dynamics: The Television Industry

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Abstract

This paper presents a system dynamics simulation model of the interrelationships among firms competing in the entertainment industry. The model integrates ideas from strategy design, organization design and new technology adoption to describe exactly how the diffusion process of new hardware and software technologies into the entertainment industry is changing the power and stability of syndication firms, the dynamic changes in the extant production capacity of TV networks, and the investment opportunities in basic cable networks and cable system operators.

The economic organization and regulation of TV networks broadcasting vary substantially from country to country, but having a mixture of public and private enterprises placed under the supervision of a government agency is a common arrangement. TV networks and affiliates in the United States represent a clear manifestation of government regulation. The granting of licenses and promulgation of rules pertaining to cross-media ownership enabled independently owned affiliates to carry regularly scheduled programming produced by the networks or by outside contractors. Except for news and sports programs, TV networks currently do not participate significantly in the ownership of production. Yet, this situation has been changing through modifications stemming from the financial interests and syndication rules presently in effect.

A team of managers and planners from a group of syndicators met to discuss current events and the changing structure of the entertainment industry. Changes stem from the moves of major pay cable channels, TV networks, basic cable networks and cable system operators, each responding differentially to the diffusion of new signal-transmission technologies into their industry. A broad discussion culminated into a system dynamics simulation model of the interrelationships among firms competing in the entertainment market. The model produced new insight into the power and stability of syndication firms, the dynamic changes in the extant production capacity of TV networks, and the investment opportunities in basic cable and networks and cable system operators.

Intermediate Structure Dynamics in the TV-Related Industry

Introduction

What makes firms succeed or fail has preoccupied the strategy field since its inception four decades ago. Inextricably bound up in questions such as why firms differ, how they behave, how they design strategy and how they are managed, the reasons why firms succeed or fail are often raised. Yet, despite the considerable progress in developing static models that explain competitive success, far less developed is our understanding of the dynamic processes by which firms perceive and attain superior competitive positions over time (Porter 1991). The traditional answers of strategy research to why firms succeed or fail embody crucial assumptions about the nature of firms and the business environment. The rationality assumption, for example, used to be the defining characteristic of economics (Lucas, 1986). During the last twenty years, however, at least five monkey wrenches have been thrown at the economist's neoclassical model of the firm. They are: *uncertainty*, *information asymmetry*, *bounded rationality*, *opportunism* and *asset specificity*. These phenomena violate crucial axioms in the neoclassical model of the firm - a smoothly running machine in a world without secrets, without friction or uncertainty, and without a time dimension (Rumelt, Schendel, & Teece, 1991).

Proponents of the cross-sectional strategy perspective continue framing the determinants of superior firm performance as a static chain causality, assuming that the dynamic processes pertinent to creating competitive positions are logically posterior to such a chain. So, the argument goes, to understand the dynamics of strategy, one must move further back in the static chain of causality. The cross-sectional view also highlights the managerial choices often lying behind the initial conditions internal to firms, the *distinctive competencies* (Selznick, 1957) and competitive positions of which result from past decisions that entail hard-to-reverse *commitments* (Ghemawat, 1991). Ghemawat posits that the analysis of such decisions should begin with cross-sectional models but, in choosing competitive positions, he stresses the need to examine their *sustainability* over time as well as the effect of uncertainty on the chosen investments. Ghemawat brings a broader perspective on sustainability than is generally present in, say, game theory models. Brams' (1993) essay is one exception in game theory that interjects time to assess outcome sustainability. Sustainability is relevant to system dynamics because of its proximity to *scenario-driven planning*, which allows assessing resource investment decisions from a strategic perspective while, at once, bounding strategic uncertainty to create informational asymmetries, i.e. good managerial choices (Amara & Lipinski, 1983; Georgantzas & Acar, 1994; Godet, 1987; Porter, 1985).

Changes in the environment, technology and in strategy prompt firms to seek sustainable cooperative relationships with other firms, while mergers and acquisitions (M&As) represent expeditious ways to keeping the pace, particularly when firms need new assets and competencies (Barney, 1988; Lippman & Rumelt, 1982; Singh & Montgomery, 1987). Alternatively, pursuing cooperation because of reciprocal dependencies may cause firms to opt for contract-based governance. The contract-based governance forms which firms use because of reciprocal dependencies include strategic alliances, partnerships, coalitions, franchises, research consortia and network organizations (Jarillo, 1988; Powell, 1990; Ring & Van de Ven, 1992).

Egressing from Williamson's (1975) extensions of Coase's (1952) transaction cost analysis of the firm economists have formed a branch of organizational economics now known as transaction cost economics (TCE). TCE rests on the conjunction of bounded rationality (Simon, 1957), asset specificity and opportunism. It explores governance options, such as discrete market contracts, recurrent contracts, relational contracts and hierarchies (Jarillo, 1988; Lippman & Rumelt, 1982; MacMillan & Farmer, 1979; Powell, 1990; Ring & Van de Ven 1992). Although it operates on the assumption that economy is the best strategy, this does not mean that strategies which distribute risk and deter rivals with clever ploys and postures are unimportant. In the long run, however, the best option is to design efficient strategy and to implement it efficiently (Williamson, 1991). TCE extensions view M&As as a hierarchical response to market imperfections, positing that it is more economical for firms to overcome impediments to market

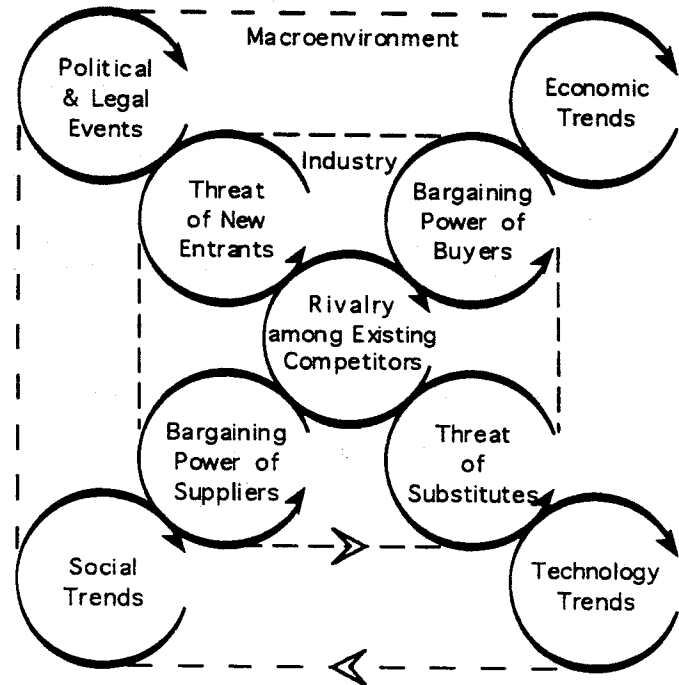
exchange by establishing internal markets than to incur the prohibitive transaction costs of the external one. Among subfields of economics, TCE has the greatest affinity with strategy, partly because of a common interest in governance forms, including the Chandler-Williamson M-form hypothesis, and the shared concern to legitimize inquiry into institutional details. Within strategic management, Rumelt et al (1991) find in TCE the ground where economic thinking, strategy and organization theory meet. Indeed, considerable research was carried out in the '80s on vertical supply arrangements in industries (Masten, 1988; Monteverde & Teece, 1982), multinational firms (Hill & Kim, 1988; Kogut, 1988; Teece, 1982), sales force organization (Anderson & Schmittlein, 1984), joint ventures (Hennart, 1988; Pisano, 1990) and franchising (Klein 1980).

The above arguments support using TCE in evaluating alternative governance options to explore strategic dependencies among firms. Yet, TCE suffers from several weaknesses. Excluding the MNE (multinational enterprise) model of Hill & Kim (1988), TCE analysis is static (Ring & Van de Ven, 1992), paying little attention to the dynamic effects of a firm's internal cost of control on its choice of a governance mode. Also, by focusing on the transaction cost implications of different governance modes, TCE research overlooks the effects of each on revenue and profitability (Contractor, 1984; Teece, 1983). In highly uncertain, risky situations, when reliance on trust is possible, hierarchies begin to look like clans and networks of contracts (Ring & Van de Ven, 1992; Sinchcombe, 1990). The dynamic M&A model developed during the intervention project described here partially overcomes these flaws. The model incorporates organizational innovation and internal control costs, the primary determinants of the M&A activity in the TV-related industry. The following section briefs our intervention in two syndication firms, emphasizing the divergence-convergence sequence of a dialectical-inquiry (DI) interchange that let participants' attention shift from individual cognitive biases to re-perceive the structure and implications of their strategic situation. An overview of the TV-related industry follows. Computed scenarios allow assessing the sensitivity of syndicator profitability to M&As. The simulation results show the dynamic evolution of governance forms that might create alternative futures for independent syndication firms competing in the TV-related industry. These results point to the potentially rich contribution of system dynamics to exploring governance forms beyond the ideal-type forms of markets and hierarchies that dominate TCE.

The Intervention Process

Under the aegis of Onyx Media Group's Managing Director and Vice-President of KJM3, eight managers volunteered to participate in this project. They thought it was critical to reach a better understanding of the potential synergy among syndication 'products' while exploring the relationship between syndication profit and the M&As in the industry. They wanted to refine and jointly formulate the strategic situation of the TV-related industry. Their aspiration was to make profit or profit potential the basis for future performance evaluation. Their professional complementarities as well as their time schedules and constraints determined their voluntary assignment to two teams. Initially, each team worked *separately* to ease the development of two alternative formulations of the situation. To provide a mental space for participants to 'hang' ideas about the industry, we juxtaposed Porter's (1980) five forces and the industry's political and legal events, and socio-economico-technological trends (Fig 1). During these *divergent sessions*, the *accounting & finance team* built a causal map that we termed "Syndicator-Centered View". In a second round of divergence, we worked with the *marketing & planning team*. We called the map that this team contributed "M&A-Centered View."

Fig. 1
Dynamic interdependence of industry forces and macroenvironmental events and trends.



The Ackoff-Ozbekhan *reference* scenario idea, ie., the time development of system behavior a firm would have had if there were no significant changes in its strategy and environment (Ackoff, 1981; Ozbekhan, 1977), helped to focus the modeling effort of the planning teams. Each team's *reference scenario* or *reference behavior pattern* (Randers, 1980) served as a tangible manifestation of system behavior portrayed by the smallest possible set of cause and effect relationships among the variables pertinent to the situation. The two alternative formulations contained several common variables, but the relationships among the variables were different. The two diagrams looked more complementary than similar. Each view of the situation focused on one of the two basic determinants of profit growth. The M&A centered perspective focused primarily on environmental variables associated with revenue generation. The syndicator centered view looked more closely at internal variables conducive to streamlining operations.

In our *convergent* sessions, we worked with both teams and Onyx Media Group's Managing Director and Vice-President KJM3. During these sessions, each team first presented its causal map to the other, without dialogue during the presentations other than, of course, clarification points. The Director and V-P, who had not participated in the divergence phase of modeling, asked most of the questions. It was encouraging and extremely helpful to watch them repeat or rephrase answers to questions, ensuring that everyone in the room shared the meaning of each variable and arrow on causal maps. Once the initial presentations were over, the Managing Director and V-P interjected reflections, following the causal links expressed in each team's map. These reflections reinforced and thereby preserved the divergences or *plural rationality* in interpreting various elements on each map. Next, we walked the entire group through a series of scenarios computed on system dynamics models built from each team's causal map. This first generation of computed scenarios gave the group a better sense of the long-term implications of each alternative view. This first set of scenarios captured the behavioral patterns of profit growth, showing the potential synergy among syndication services while exploring the relationship between syndicator profitability and M&As in the TV-related industry. The planning teams started to anticipate the dynamic implications of their divergent mental models.

Singer (1991; 1992) tackles the vexing question of plural rationality in individuals, groups and organizations. His work justifies the use of a divergence-convergence scheme in strategic planning by contrasting monothematic conventional *universes* of traditional rationality with the *multiverse*-directed view of modern plural rationality. In counterpoint, Morecroft's (1985)

system dynamics model of a sales organization traces the dysfunctional implications of intended singular rationality that often permeates decision making. We reaped the benefits of nurturing plural rationality when we engaged all participants in a dialectical form of group dynamics. We asked the members of the marketing & planning team to interpret the model of the accounting & finance team to the satisfaction of the latter, and *vice versa*. This dialectical-inquiry (DI) interchange aimed at unearthing critical assumptions and prominent cognitive biases (CBs). It enabled participants' attention shift from individual CBs to re-perceive the structure and implications of their strategic situation. The DI interchange moved participants closer to a shared understanding of the system structure underlying the situation. Extending the work of Mason & Mitroff (1981), Georgantzas & Acar (1994) give a comprehensive treatment to the consensus building DI interchange process. Our project participants exchanged creative thoughts and used many examples to clarify their perceptions of the strategic situation. The underlying dynamic within the combined team and the natural dialectic between the two alternative views led to a synthesis. An aggregate map (Fig 2) and a system dynamics model (Fig 3 & Fig 4) captured the 'convergent' view of the project participants. Our intervention at Onyx and KJM3 helped translate, refine and jointly formulate a strategic situation from the managers' own mental models. Also, it provided training in strategic situation formulation for everyone involved. This training was not in abstract ideas, but tied to each participant's job.

The TV-related Industry

The economic organization and regulation of the TV-related industry may vary from country to country, but a mixture of public and private enterprises under the supervision of a government agency is common. TV networks and affiliates in the US represent a clear manifestation of government regulation (Vogel, 1991). The granting of licenses and promulgation of rules pertaining to cross-media ownership enable independently owned affiliates to carry regularly scheduled programming produced by the networks or by outside contractors. Except for news and sports programs, broadcast TV networks currently do not participate significantly in the ownership of production. Yet, this situation has been changing along with the financial interests and syndication rules presently in effect. In the US, at least five industries comprise the TV-related industry, namely cable and other pay TV services (SIC-4841), TV broadcasting stations (SIC-4833), communication services (SIC-4899), motion picture and video production (SIC-7812), and motion picture and tape distribution (SIC-7822). In the late 1940s the community antenna (CATV) systems were being installed where over-the-air TV signals were difficult if not impossible to receive. As the industry grew, firms were able to offer a wide variety of programming not being offered on local broadcast TV, such as sporting events and recently released movies. Recently there have been proposed changes that could invite more players, especially the telephone firms (Telecoms: Fig 2), into the industry and increased rivalry, especially in pricing. Unlike over-the-air radio and TV broadcasting, cable TV is a closed communication system in which homes are collectively wired by coaxial cable to a central originating source. The system is closed in that cable firms enter into a contractual arrangement with their audiences or subscribers, and they typically negotiate private agreements with local municipalities for the delivery of their services. There is much outside involvement with this industry and broadcast TV or theatrical studios and syndication firms. These related industries furnish much of CATV's product. Additionally, strong technology-related ties exist between this industry and other communications services (Fig 2).

Modeling the M&A Activity in the TV-related Industry

Our initial meetings were about the industry's consolidation (thick arrow in Fig 2). and its potential effects on the profitability of independent syndication firms (Fig 2 & Fig 4). Viewing the TV-related industry players as collections of value-added activities between customers and suppliers allowed applying TCE ideas rigorously to activities within organizational functions and functional subcomponents. Porter's (1985) value-chain framework decomposes the firm into distinct activities, while TCE makes the specific kind of repeated activity the unit of analysis. MacMillan & Farmer (1979) distinguish between supplier charges and cost to the buyer (including transaction costs). Firms will integrate an activity if the external supplier charges plus the

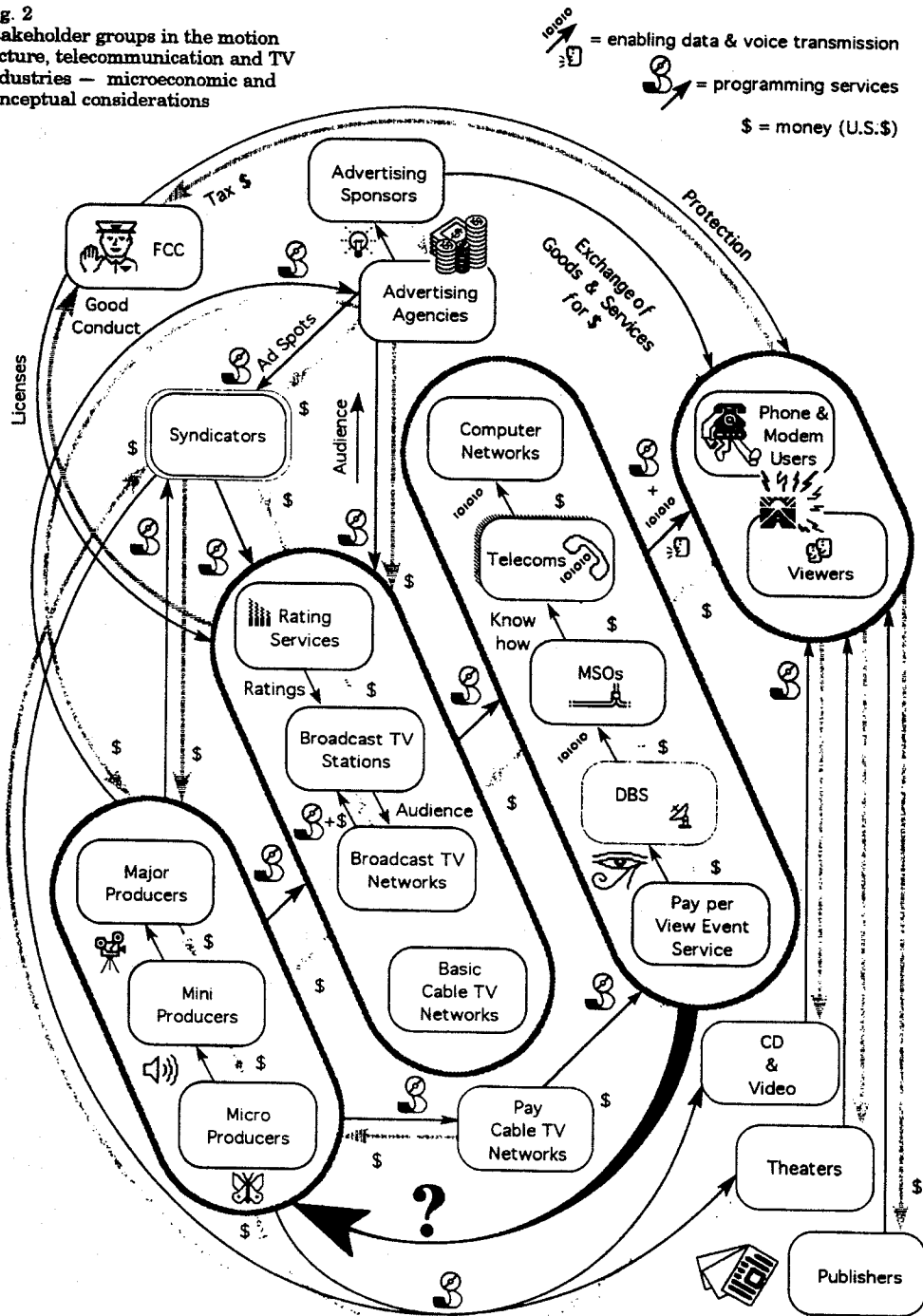
transaction costs exceed the internalization cost. If, however, a firm lowers transaction costs down to a point where the internalization cost exceeds the external supplier charges plus the transaction costs, then the firm will not integrate the activity to remain competitive. This is the rationale behind each M&A (fig 3) and contract-based governance form, such as the network organization (Jarillo, 1988).

Porter (1991) finds the connection between resources and activities fundamental because resources represent an inherently intermediate position in the cross-sectional perspective's chain of causality. Resources arise either from performing activities over time, acquiring them from outside, or some combination of the two. Both reflect prior managerial choices. Performing an activity or group of linked activities over time creates competencies and routines which accumulate. It also can create external assets. A firm's reputation, for example, could be a function of the history of its marketing and customer service activities. Assets and technology depreciate, however, unless reinvigorated through organizational-technological and administrative-innovation (Gerogantzas & Shapiro, 1993). The rate of depreciation appears to vary widely across different types of assets and technology, but can be rapid. Firms, then, have accumulated differing resources because of differing strategies and configuration of activities. Resources and activities are, in a sense, dual of each other.

Williamson (1991) contends that if strategic management is to unlock the sources of long-term competitive advantage, and if it is going to rely on economic thinking to assist it, then it ought not to rely so uncritically on economic perspectives that appeal to market power (strategies that restrict product competition) as the source of competitive advantage. Rather, the field should develop more of an efficiency perspective - that being good at what you do and avoiding waste is more important than exploiting switching costs or playing oligopoly games. Williamson's *economizing* firm differs from Porter's *low-cost producer*, the *economizer* is not necessarily efficient at production, but in a broad range of business functions. For example, the economizer may be very efficient at managing the transition from design to production, or at tailoring products to local tastes. Williamson's position on this issue is at variance with the traditional (economic) assumption that firms are 'on their cost curves.' If firms are assumed to be technically efficient, the problem is simply to determine the level of output. Williamson, by contrast, sees the fundamental challenge as organizing and governing activities so as to eliminate waste. Coase recognized that markets often deviate from the neoclassical ideal, creating impediments to market exchange. Monopoly, uncertainty or difficulties associated with price determination can cause market failure. Payoff (Fig3) stems from overcoming impediments to market exchange, including the transaction costs of (a) drafting, negotiating, monitoring and enforcing a comprehensive claims contracts, and (b) firm-specific knowledge dissemination attributed to opportunism by licensees.

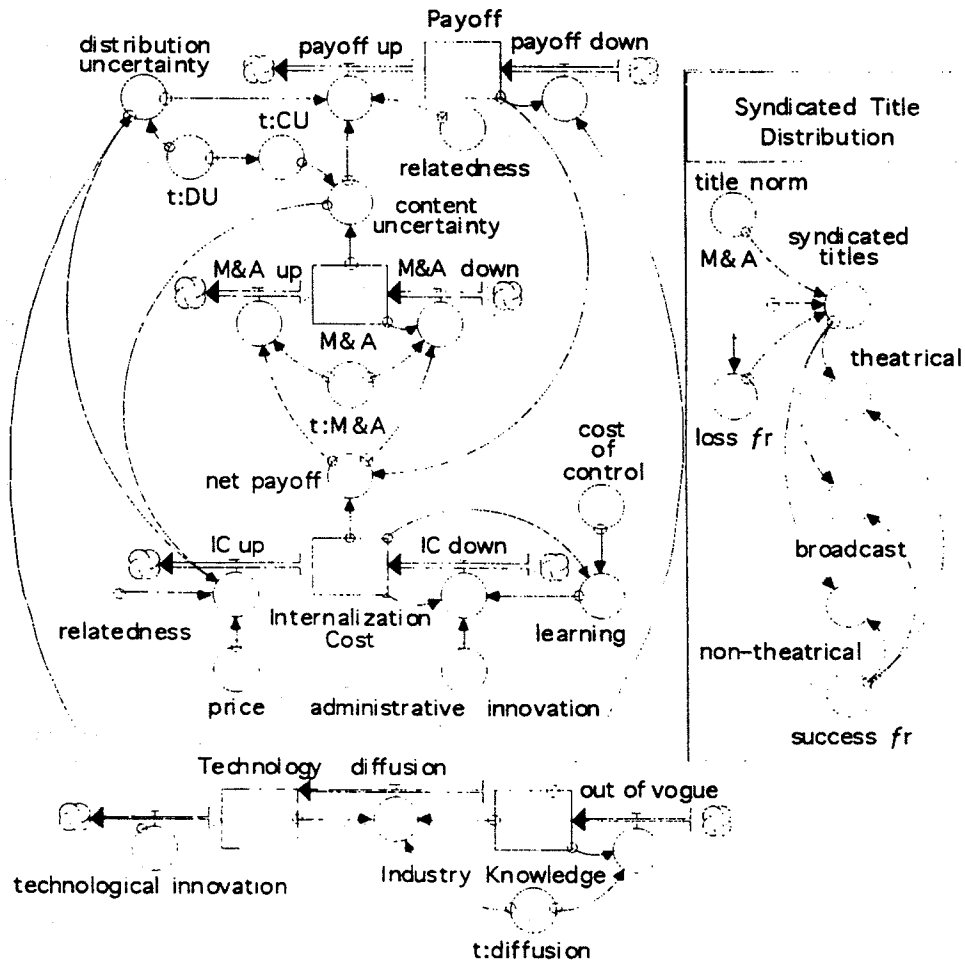
The distribution (D), content (C) and computer merger and acquisition (M&A) activity in the TV-related industry affecting the distribution of syndicated titles. Changes in the extant capacity and investment opportunities of basic (ie advertiser supported) cable TV networks, pay cable TV networks and multiple system operators (MSOs) have caused consolidation of the industry since the early '80s. Currently, 90% of homes in the US have cable TV, slowing down the penetration rate of cable firms. Yet, technological innovation creates the technology behind new MSO products through fiber optic cable, digital compression and interactive TV, while *major, mini and micro* producers are constantly introducing new and different TV programs or products (Fig 2). Within the last five years new shows and channels such as Pay-Per-View, and shopping networks have extended the breadth of the product line. M&As have become increasingly popular between MSOs and telecoms, and MSOs and broadcast TV, responding to distribution uncertainty (Fig 3). Broadcasters and cable systems are forming local partnerships across a broad range of business functions to capitalize on existing overhead and to expand distribution coverage. MSOs can live up to their local service commitments, while keeping rates down and building revenues from local ad sales. Once the initial outlay to build the system is complete, internalization costs are associated with controlling the expanded organization (Fig 3). Operating costs are low and cash flow from operations is high, but net income is negative for the first few years because of the large depreciation expenses associated with capital expenditures. TV has become a more diverse instrument with many choices,

Fig. 2
Stakeholder groups in the motion picture, telecommunication and TV industries — microeconomic and conceptual considerations



especially in the news area where CNN and C-SPAN as well as expanded local and regional cable newscasts are introduced. Yet, the ownership of media has become more concentrated in response to content uncertainty caused by the distribution driven M&A activity. World-wide, five global media giants, namely Germany's Bertelsmann, Rupert Murdoch's Australian based News Corporation, France's Hachette, and America's Newhouse Communications and Capital Cities/ABC already control the world's magazines, book publishers, newspapers, book clubs, record firms and broadcasting outlets. The top five American cable firms dominated nearly a third of all

Fig. 3
The distribution (D), content (C) and computer merger and acquisition (M&A) activity in the TV-related industry affecting the distribution of syndicated titles.



cable sets, and within a few years TCI controlled nearly one-quarter of all cable hookups and own pieces of cable-programming services that entered 50 million homes. Mergers of this magnitude were sought to achieve economic efficiencies.

Computed Scenarios

Six computed scenarios capture the dynamic evolution of alternative governance forms that might create alternative futures for independent syndication firms. The shaded area in Fig 5 represents the difference between the payoff of overcoming impediments to market exchange and the internalization cost associated with controlling the expanded organization after a M&A . Over time, technological diffusion drives the M&A payoff down, while administrative innovation reduces the cost of internalization. As long as *net payoff* is positive, three waves of M&As may occur, with dire consequences for independent syndication firms.

Fig. 4
The subsystem of a 'typical' syndicator.

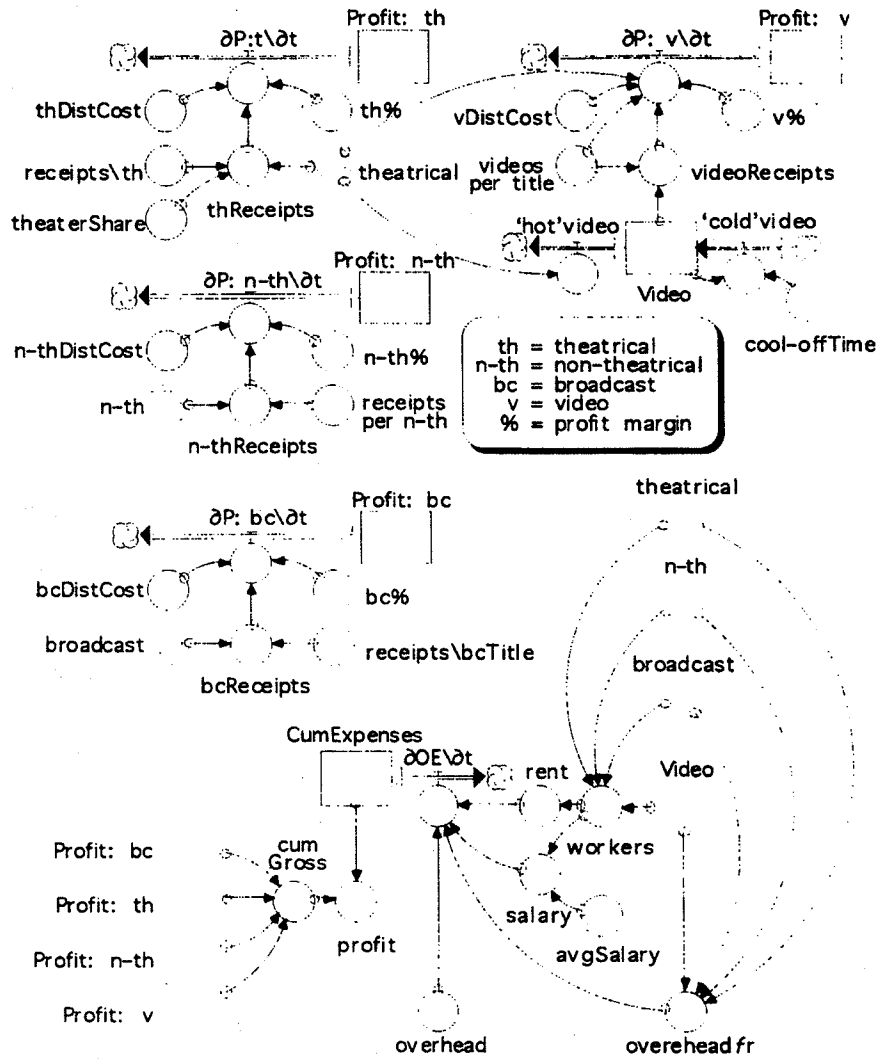
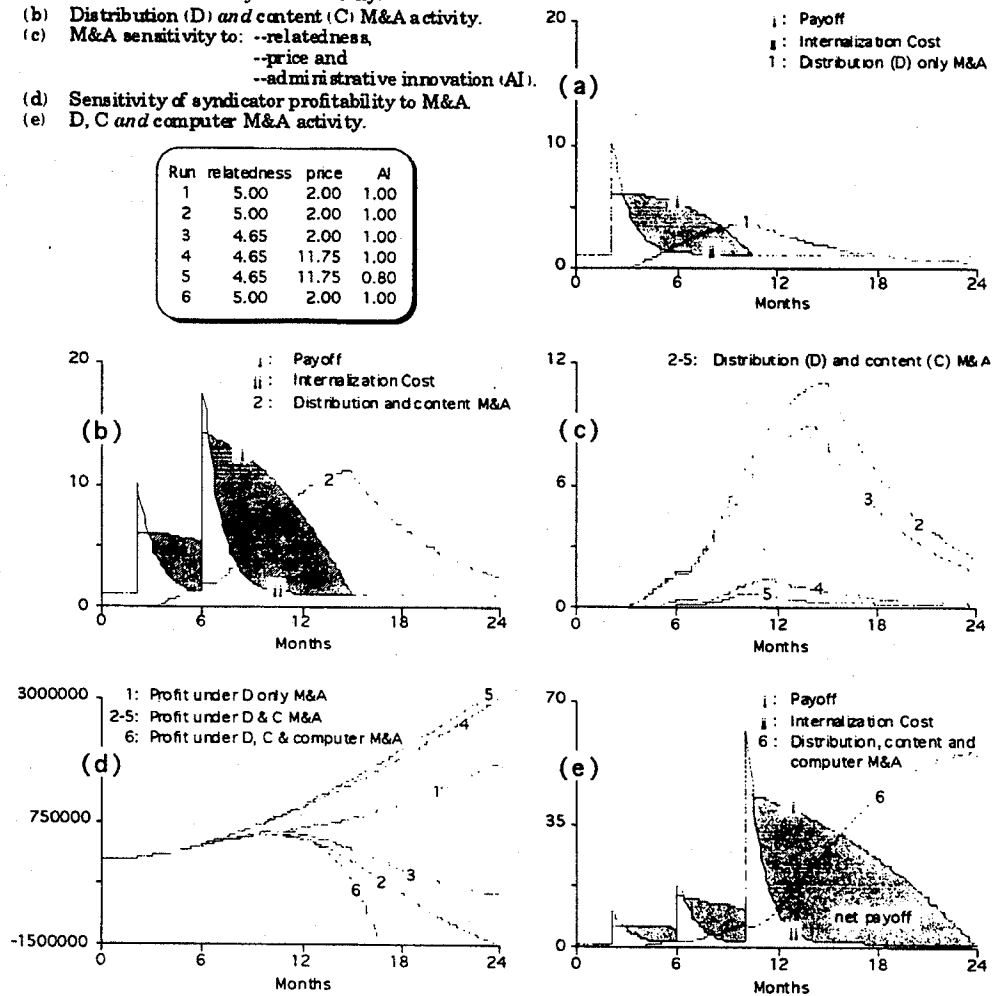


Fig. 5

- (a) Distribution (D) only M&A activity.
- (b) Distribution (D) and content (C) M&A activity.
- (c) M&A sensitivity to: --relatedness, --price and --administrative innovation (AI).
- (d) Sensitivity of syndicator profitability to M&A.
- (e) D, C and computer M&A activity.

Run	relatedness	price	AI
1	5.00	2.00	1.00
2	5.00	2.00	1.00
3	4.65	2.00	1.00
4	4.65	11.75	1.00
5	4.65	11.75	0.80
6	5.00	2.00	1.00



Conclusion

The dynamic M&A model developed during this intervention partially overcomes the shortcoming of TCE. The model incorporates organizational innovation and internal control costs, the primary determinants of the M&A activity in the TV-related industry. The system dynamics model gave new insight about syndication firms' alternative futures, the dynamic changes in the extant production capacity of TV networks and the investment opportunities in basic cable networks and cable system operators. The simulation results point to the potentially rich contribution of system dynamics to exploring governance forms beyond the ideal-type forms of markets and hierarchies that dominate TCE.

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