

Purposeful Abstractions – Thoughts on building useful models of business networks

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In industry after industry I see traditional industry boundaries falling and the emergence of products and solutions that transcend the competencies and capabilities of individual industries. For example, in healthcare and life sciences drug, diagnostic and device convergence promises new therapeutic efficacy; in high technology converged technology, telecommunications services and media solutions is now a marketplace norm; in energy traditional petroleum and bio-fuels converge to provide cleaner fuels; in manufacturing, products and services converge to provide new platforms for growth; and financial services and technology industries converge around payment. Delivering converged solutions demands connection and integration across disparate companies with differing business models, clock speeds and cultures. The strategic challenge for executives is to sew varied companies together into a business network that efficiently and effectively delivers converged solutions to customers. Unique and distinctive business networks promise the potential of distinct and differentiated convergence solutions for competitive advantage.

While convergence and the practice of creating business networks is not new, the management research and theory still lags in providing pragmatic and useful guidance to managers. In this column I propose purposeful abstraction as a way to study and develop more pragmatic models of networks.

Networks and Convergence: Some challenges

Despite nearly twenty years of work, and the increasing importance of business networks, I am struck by the lack of pragmatic progress on understanding networks. From an executive perspective there are few useful frameworks to guide the design and execution of business networks. In a sense we seem to know so little and the evidence is so thin. For example, imagine as a businessperson I want to bring a new converged information technology based service to the marketplace, of which I have a critical component. Some of the questions I might ask are:

- 1) What organizations and capabilities do I need to create a converged solution?
- 2) What kind of structure do I create to combine capabilities into a converged solution?
- 3) What role should I play in the ensuing network to maximize my returns?
- 4) What is known about the success rate of different network structures, role configurations and processes? For example do those who choose to own most components of the network realize greater or lesser returns?
- 5) How do you manage differences and align network actors to win by bringing converged solutions to a market in a timely way?
- 6) How should I sequence the construction of a network to minimize investment risks?

- 7) What are the principles for sustaining, growing, innovating in and renewing the business network?

Pragmatic frameworks and answers to these types of questions are few and far between.

On the academic side the area still seems to remain in the stage of description and classification. For example work such as Iansiti and Levien's "*The Keystone Advantage*" (2004) elicits and provide a useful taxonomy of plausible roles for companies in an overall ecosystem. But it is difficult to generalize actionable conclusions from the cases used to illustrate the taxonomy. Other researchers rely on network analysis to identify network patterns and structures by mapping the relationships between firms. While various analysis and diagramming tools have advanced considerably this approach can be problematic and does not yield useful insights when confronted by data on the large number of alliances and other relationships of a modern corporation. The large number of alliances and contractual arrangements in a business network also make it difficult and expensive to do primary research across multiple network participants. This probably discourages researchers from engaging with meaningful problems or approaches likely to yield significant results to advance our understanding of business networks.

Cutting through the fog on business networks

Over the years I have come to two conclusions about how to study business networks more productively. The first is to differentiate networks by purpose and the second is to focus on how companies occupy specific roles and manage linkages across roles rather than focusing on company-to-company ties.

Differentiating networks by purpose

Often I find descriptive academic research ignores the purpose of business ties in a network. As companies can have business-business ties for multiple purposes, then each company participates simultaneously in many networks differentiated by purpose. Distinguishing networks by purpose allows researchers to comparatively analyze different network approaches to accomplish the same purpose. This advances our understanding on different ways to better achieve a purpose. While many typologies of network purpose can be created, one simple typology I use is based simply on Ansoff's famous two by two matrix. Networks in each quadrant of the matrix below generally speak to a different purpose.

<i>New Market</i>	Channel Extension Networks	Venture Networks
<i>Existing Market</i>	Efficiency Networks	Innovation Networks
	<i>Existing Product</i>	<i>New Product</i>

This simple classification can help us look at a company's network in a whole new light. For example, efficiency networks focus on improving the delivery of existing products to existing markets. The efficiency of the network for a specific firm could be measured by the time it takes to manufacture and deliver a product through the network, the gross margins for the product, the amount of inventory distributed across the network. Channel extension networks would frame how companies' partner to access new markets and innovation networks would look at companies access innovations to bring new products to existing markets. Venture networks would consider how companies integrate capabilities to diversify into new products and markets.

Ascribing purpose to the networks a company participates in helps us compare apples to apples when studying networks. It helps us create metrics for performance against the purpose and systematically evaluate and understand networks across firms. It helps us understand the depth and scope of relationships with other network partners – both to accomplish a single purpose or multiple purposes. As networks for different purposes are likely to be owned by different executives in a company – it also helps us to better review the impact of governance structures and managerial choices within firms and their impacts on the success of both the firm and the network. In this light, during and after the dot com boom I found the rise and demise of one form of venture network – which I called the *fast venture network* particularly instructive (see Kambil, Eselius and Monteiro 2000).

Clarifying the role space

A second problem I find with the study of networks is the focus on company-to-company ties irrespective of the roles a company may play in the network. Usually such a network analysis may show a large firm to be central in an ecosystem or with a high density of relationships. But this in itself gives us little insight in the roles the company may play in the ecosystem, and if these roles are fundamentally of high value, high margin or allow strategic dominance of the network. Researchers often try to elicit network roles from the data using techniques such as block modeling. This is occasionally useful for hidden structures.

But when dealing with real convergence problems – I find that envisioning the roles and capabilities across traditional industry boundaries needed to create converged solution is a useful starting point for analysis. Usually executives can easily articulate these roles

without need for block and other sophisticated models. For example in financial services – the role of a tax preparer is to prepare taxes, an electronic filer files them electronically, and a loan provider provides loans which can combine to deliver a refund anticipation loan service to tax clients. The good thing about such roles is that their definitions in terms of what value they provide to a network are generally invariant. The strategic choice for managers assembling networks is to decide what roles to occupy, how to manage the competitive dynamics within the role and how to link across roles to deliver a customer solution.

Creating a role space identifying critical roles across industries – creates a more systematic coordinate frame for mapping where firms currently play. We can then assess the relative strengths of companies in specific roles, and how to create linkages across roles to deliver converged solutions. This abstraction and mapping provides for a more systematic way to understand the structuring and evolution of networks over time. It also allows us to identify the roles that will become more valuable and have the greatest opportunities for margins and growth over time. An illustrative example of the role linkage approach can be found in early articles we did on the tax preparation industry (See Venkatraman and Kambil, 1991 and Kambil and Short, 1994).

An advantage of mapping companies to roles instead of just looking at company-to-company ties is that it provides a more useful view of the types of value creation occurring in the network and the strategic choices of different network actors. From a research perspective mapping companies to roles provides a systematic basis for studying the evolution of networks and their relative performance.

Conclusions

Today convergence across industry boundaries makes the creation of successful business networks more salient. Recognizing that companies participate in different networks with different purposes, and creating a role space as a starting point to map network strategy and behavior may provide the purposeful abstractions needed to enable managerially useful insights into managing networks.

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