

evolvment patterns of five text and sentiment WOM measures and how they correlate with several key new product metrics.

In the third article, “On Data-Driven Analysis of User-Generated Content,” Claudia Perlich, Maytal Saar-Tsechansky, Wojciech Gryc, Mary Helander, Rick Lawrence, Yan Liu, Chandan Reddy, and Saharon Rosset discuss data-driven approaches, including content and network analysis that can be used to derive insights and characterize user-generated content from companies and other organizations. They demonstrate these approaches on the data from IBM’s recent “Innovation Jam,” which took place in 2007.

In next issue’s Trends & Controversies department, look forward to two more articles on Business and Market Intelligence 2.0: “The Finance Web: Internet Information and Markets,” by Sanjiv Das; and “Financial Text Mining: Supporting Decision Making Using Web 2.0 Content,” by Hsin-Min Lu, Hsinchun Chen, Tsai-Jyh Chen, Mao-Wei Hung, and Shu-Hsing Li.

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The Phase Transition of Markets and Organizations: The New Intelligence and Entrepreneurial Frontier

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When Adam Smith wrote the *Wealth of Nations* in 1776, he concluded that individuals, firms, and nations

obtain comparative advantage by specialization.¹ Markets worked as the invisible hand to efficiently allocate resources between specialized parties. During the Industrial Revolution, manufacturing organizations helped the nation become wealthy by creating mechanisms for the internal allocation and integration of resources to produce largely tangible output. Today, both markets and organizations are undergoing a phase transition.

The Phase Transition of Markets and Organizations

The long history of natural and social systems has seldom been static or linear. Dynamism and nonlinearity occur when an institution converges with emergent societal institutions and technology that bring about phase transitions. Through the past two decades, markets and bureaucratic organizations have been undergoing a phase transition, due primarily to IT innovations and the emergence and proliferation of the Internet and ubiquitous computing.

For much of human evolution, people have not been well connected; they have been separated by large spatial, informational, and temporal gaps. Innovations in land, air, and sea transportation in the 19th century and the

Table 1. Top five Yahoo Forum active authors and their contributions.

Author	No. of messages	Average sentiment	Major topics
shep21998	22,557	0.0086	Higher prices, minimum wage, highest unemployment rate
briantimlick	11,568	−0.0183	Union, jobs moving overseas, unfair labor practices, healthcare costs, competitive wage rates, working conditions, human rights
a_ca_gem	10,012	−0.0024	Healthcare challenges facing, unfair labor practice charge, employee rights, average hourly wage
snerdly76	8,327	−0.0061	Higher minimum wage, labor law violation, morally bankrupt company, stock price, earning growth, hiring illegal
jimg01523	7,730	−0.0191	Good long-term investments, billion share outstanding, gaining market share, stock price

Table 2. Phase transition of markets.

Characteristic	Traditional markets	Phase transition
Primary actors	Firms	Firms, customers, and stakeholders
Locus of control	Firm and market	Network or ecosystem
Primary activities	Firms produce value; customers consume value.	Firms, customers, and stakeholders cocreate value.
Primary coordination mechanism	Price and output, demand and supply	Dialogue and interpretation
Locus of value	Exchange	Use and context
Role of markets	Resource allocation and value exchange	Resource integration for value cocreation

Table 3. Phase transition of organizations.

Characteristic	Traditional organizations	Phase transition
Primary metaphor	Bureaucratic organization	Learning organization
Primary orientation	Production and market	Service engagement platform
Exploration/R&D	Internal R&D laboratory	Innovation platform
Going to market	Marketing channel	Exchange platform

first half of the 20th century made it easier for individuals and companies to move themselves around the world. This allowed actors in the marketplace to more easily integrate their ideas and knowledge, and this stimulated innovation. The second-order effect began when the microprocessor and computer networking emerged in the later part of the 20th century. A third-order effect is occurring today as the worldwide use of Internet technologies continues to reduce the temporal gap and the digitization of many resources is reducing the spatial gap.

It is this third-order effect that has triggered a phase transition in the structure of both markets and organizations. The character of the market, what roles the market provides in creating value and the wealth of nations, and how firms should organize to interface with markets, are all being rewritten.

Transitioning from Division to Unification

If we were to sum up the market and organizational phase transition

in a single phrase, we would characterize it as a move from individuals and resources being *separate* to being *together*.² It is a move toward a collaborative,² service-dominant³ network. Tables 2 and 3 summarize the phase transition in markets and organizations.

No longer can a business operate efficiently and effectively by treating customers, suppliers, and other stakeholders as exogenous or separate from the business itself. No longer can these actors be treated as objects to do something *to* instead of actors to collaborate *with* for a common purpose. In the past, the organization functioned as a machine that acquired resource inputs to produce products by administratively controlling employees for maximal efficiency, and then distributing these products through intermediaries to other businesses or households; this era is rapidly disappearing. As the organization develops close collaborative relationships with suppliers, customers, and other stakeholders, it is becoming part of an ecosystem whose boundaries extend

beyond the organization itself. As Stephen Vargo and Robert Lusch have argued, this transition is resulting in markets and organizations in which producers, customers, and other stakeholders such as suppliers and employees *cocreate* value.³ In this world, it is virtually impossible for firms to maximize payoffs in the traditional manner, because of the complexity and dynamics of the ecosystem. However, firms that are more entrepreneurial can use their resources to create effects that expand their resource base within the ecosystem.⁴ Thus, firms can strive to constantly do better via effectuation processes, but they will not be able to maximize.

The Market

The primary means of coordination in markets is becoming dialogue and interpretation. Markets are no longer merely places where buyers and sellers come to exchange offerings and create value in exchange. In the traditional market, price and the firm's output (value in exchange) were the primary coordinating mechanism to allocate resources. Today, economic exchange is embedded within a larger social network, as virtually all actors can connect to each other via advanced telecommunications and the Internet. For this reason, markets are now better characterized as conversations between actors embedded in a network, and these networks are part of a larger societal network.

Markets are increasingly embedded in networks of conversations, which allow different actors to adjust their thoughts and actions as they seek to acquire and integrate market and non-market resources to cocreate value. These conversations increasingly have no beginning or end. They are unrestricted in physical, geographic, and temporal space. They often reflect humans' anticipated, lived, and recalled

experiences. Just as prices were a coordinating mechanism in traditional markets, today dialogue and interpretation have become the primary coordinating mechanism in the marketplace. Hence, the marketplace of the future will become proactively collaborative.

The Organization

During this phase transition, the bureaucratic organization is being replaced by a learning organization that is service (not production) oriented. A service-oriented enterprise continuously adapts to stakeholders—such as customers, employees, and suppliers—to offer more compelling value propositions. It can sense, anticipate, and respond to these stakeholders. The manager does not rule from the office or desk but as a collaborative partner with others. He or she gains power by helping others realize their potential.

The new organizational mandate is to provide the adaptive and flexible structures that let customers, employees, and suppliers interface with the firm to cocreate value. These structures are becoming known as *platforms*. As we will see shortly, they take a variety of forms but are all supported by computing technology that allows both internal and external customers, suppliers, and stakeholders to provide service to one another.⁵

Platforms should be relatively easy for the customer (and suppliers) to interface with and easy to replicate and scale as the firm expands in size. Consequently, platforms often incorporate a modular architecture that allows the enterprise, suppliers, and customers to be loosely coupled to a business ecosystem. Also critical to well-functioning platforms is a shared language and communication system. Interfacing with a platform is usually voluntary, so platforms must offer a competitively compelling value proposition. Finally, these platforms

must be able to sense, anticipate, and respond to customers and suppliers.

In addition to the basic software system that enables enterprise platforms (such as SAP's enterprise resource planning software), three generic platform types are emerging in organizations: service engagement platforms, innovation platforms, and exchange platforms.

Service-Engagement Platforms

A service engagement platform allows a firm's customers and other stakeholders to draw upon the organization as a service support system. In household or final consumer markets, the focus is on the human and lived experience that unfolds over time in relation not to the products made and sold in the market, per se, but to particular roles and goals. Virtually all individual actors perform a multitude of roles: parent, worker, consumer, student, and so on. Each actor also has a set of goals such as a health, wealth, and love. In all of these roles and goals, the actor is seeking meaningful experiences. As Table 3 indicates, the service engagement platform and its service orientation is replacing a production and market orientation as the primary organizational orientation.

Innovation Platforms

The human species is constantly striking a balance between exploiting its current competences and niches and exploring for new competences and niches. As humans aggregated into organizations, innovation was internalized and formalized into research and development labs. Recently, however, more organizations are opening their innovation by developing innovation platforms, which encourage collaboration with customers, suppliers, and other stakeholders to accelerate successful innovation.^{2,3}

Exchange Platforms

Commercial society evolved by forming a variety of intermediary institutions to facilitate exchange among actors. These intermediaries emerged as brokers, distributors, jobbers, wholesalers, and retailers. The development of a common medium of exchange (financial currency) was also an important societal innovation. In the current phase transition, Web 2.0 has allowed organizations to create new institutions for exchange; it now sometimes takes place not directly through financial currency but instead through direct trading and resource sharing, using social currency. Exchange platforms are rapidly evolving, and in the future confederations could serve individuals or households by organizing exchange for all of the resources they need or wish to sell.

Market and Business Intelligence

A central challenge given the phase transition in markets and organizations is to make sure that market and business intelligence reflect these new realities. We believe computational linguistics, sentiment analysis, and network analysis will become increasingly important, and we suggest some preliminary thoughts on these topics.

First, firms should supplement traditional measures of market share that are based on value in exchange (price and dollar sales) with metrics such as the following:

- What share of conversation within some relevant context is about an organization versus its competitors? Related measures might include relative sentiments (positive or negative) for the organization versus others.
- What is the quality of conversation? A lot of chatter is noise, so dialogue quality must be measured.

- What are the discordant conversations about a company, theme, or issue?
- Can we track the emergence of new conversations, their convergence with other conversations, and their proliferation and decline?
- How do conversations influence customers, employees, and suppliers?
- What is the meaning that actors and communities cocreate for a brand?

Second, moving beyond value in exchange to value as cocreated and contextualized, firms can develop metrics such as the following:

- When actors use an organization's product(s), what other resources are integrated with it? How can we model this resource network?
- When actors use an organization's product(s), what goals are they trying to reach?
- What is the level of value cocreation that occurs outside of markets (as in home production or social exchange)?
- What are the cocreation benefits to the firm? What resources or expertise does the firm need to engage in successful cocreation activities with customers, suppliers, employees, and other stakeholders?

Third, moving beyond organizations, the three emerging platforms will require intelligence on the following topics to successfully operate:

- experiences (positive and negative) that people have in interfacing with an organization's engagement platform;
- innovation capital created by open innovation platforms; and
- financial and nonfinancial metrics of the success of exchange platforms.

Market and business intelligence will be gathered on a real-time, on-demand basis. Furthermore, as intelligence providers better learn the needs of the service beneficiary, they will not just sense and respond to needs, they will also anticipate potential needs. A key benefit of the World Wide Web is that it is instantly global and local; business intelligence must be defined around this reality. Consequently, intelligence services should be provided on a macro basis for entire organizations or divisions, but also down to the most micro level to let all individuals better serve others.

Without an understanding of how markets and organizations developed during the Industrial Revolution, it is difficult to understand the phase transition that markets and organizations are undergoing. Organizations are quickly becoming relatively flat and continuously learning to cocreate value with customers, suppliers, and stakeholders using service engagement, innovation, and exchange platforms. Markets themselves are increasingly coordinated by conversation, interpretation, and meaning-making. We are on the verge of great value being created through collaboration among ecosystem participants. Enterprises that become more entrepreneurial, and recognize that products will increasingly emerge outside the organizations that make product components, will have an advantage in creating wealth.

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User-Generated Content on Social Media: Predicting Market Success with Online Word-of-Mouth

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Enabled by Web 2.0 technologies, online social media in the forms of discussion forums, message boards, and blogs has become a prevalent channel