



# Financial Services

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## Publications & Thought Leadership

"Innovation in the Connected Economy "

### Four Dimensions of Innovation for the Decade

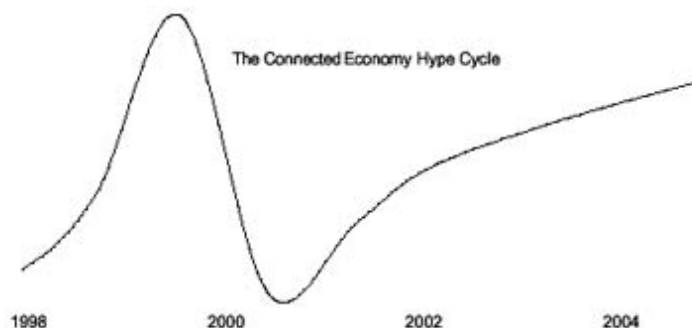
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In this, our premier issue of *Innovation in the Connected Economy*, we explore with a broad brush four major dimensions that will characterize innovation this decade. We find ourselves in the trough of the hype cycle of the connected economy, which gives us an excellent opportunity to analyze the past and to more accurately and more realistically forecast and thus reap the benefits of investing in the future.

We identify the four dimensions of innovation as *model*, *service*, *industry*, and *source*. Each of these represents a dimension of change:

- The proliferation of new *models* for delivering and executing innovative solutions has itself been enabled by the underlying information infrastructure.
- *Services* that exploit or provide information infrastructure have only begun to emerge; the brave new Internet-enabled world we have been experiencing is only the tip of the iceberg.
- The focus of innovation will be increasingly specific to target *industries*, with certain industries taking forefront positions in innovation.
- The *sources* of innovation are shifting and broadening. The hype surrounding startup successes in the past two years has waned, but the residual excitement has focused innovation into entrepreneurial channels.



*The connected economy as a whole is in the trough of its hype cycle.*

This article should serve to both outline these dimensions, supporting our view that these will be critical in assessing new opportunities, and to provide a preview of the more in-depth analyses that we will explore in the coming year.

### Innovative Models

The proliferation of the world wide web and the concomitant enhancement in Internet infrastructure enabled a variety of new business models to emerge. While some led to failure, others opened up a vast realm of possibilities previously unavailable. The advertising model that successfully launched the television industry in the last century led to the targeted success of a few dominant portals, and the failure of hundreds of other smaller players. The rise of

application service providers in many forms is, as of yet, only a leading indicator of another critically important business model for the information age.

One emerging model that we believe will play an increasingly important role for new innovation is one we coin the *component service provider* (CSP). HTML and standards-based web browsing have delivered to the market a vehicle for the ultimate plug-and-play information environment. A given page being browsed by an end user can be composed of any number of components, all seamlessly integrated into one interface, and all potentially being provided by any number of distinct technologies and companies. CSPs are companies that deliver components of web-based pages or applications. An early example of CSPs is the ad server companies. Ad banners appear as an integrated part of a web page, but more often are being delivered to the browser from entirely different sources than the content of the pages themselves.

Other CSPs include integrated content providers and integrated function providers. For example, stock price charts are often dynamically produced and delivered to web pages from sites other than the trading sites that display them.

We have observed the rapid proliferation of startup companies whose businesses fall into the CSP model including providers of software for comparison of features and functions of complex products as an embeddable component of client web sites, providers of cutting edge news content to corporate intranet clients, and providers of automatic forms management components to small and midsize businesses' web sites.

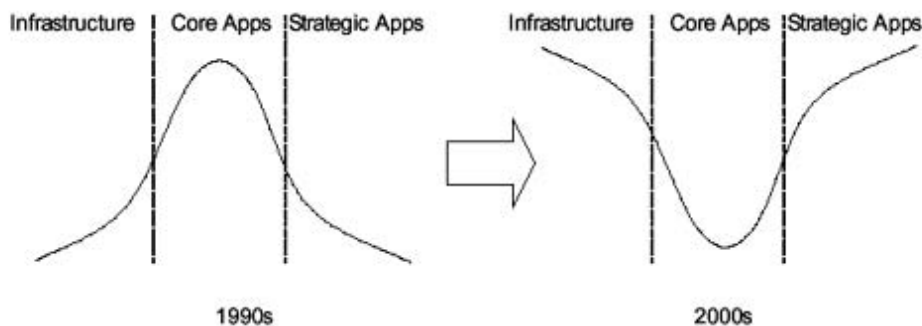
We believe that the CSP model will help new innovative companies deliver value with robust business longevity. CSPs leverage the Internet infrastructure into realistic business models based on revenues from subscription services, temporal licenses, and transaction fees, and cost structures with substantial economies of scale. CSPs will be one of our foci of development in the next year.

## Innovative Services

Advances in underlying technologies are maturing to the point of supporting a plethora of innovative new services. Just to name a few, wireless communications technology will spur innovation in mobile commerce applications and services, optimization technologies will drive innovation in business-to-business marketplaces, exchanges, auctions, and value chain management, and natural interface technologies will inspire innovation in security, authentication, and personalization applications.

This trend of innovation in new services will not only generate many opportunities for new service businesses, but also it will continue to drive up the value of the underlying enabling infrastructure technologies.

The most innovative and likely most lucrative of these new services will focus on value creation as opposed to cost containment. For example, in the mid-1990s ERP application providers were experiencing substantial growth rates and were poised to dominate the software arena. However, their focus was on existing process automation, not value creation. In the last two years, companies like Oracle, focused on infrastructure, and i2 Technologies, focused on value creation through advanced algorithms, have surpassed most ERP players in overall market relevance.



Overall, we believe that innovation in applications and services will concentrate on infrastructure on the enabling side, and strategic value creation on the functional side. In effect, it represents a flip of the bell curve from the last decade. One example of this phenomenon which may come to pass in e-commerce technologies is the increasing emphasis on decision-support solutions such as configuration and comparison technologies, along with the increasing importance of outsourced service providers to manage these strategic solutions. Less emphasis will be placed on basic cataloging and shopping cart software which may be relegated to commodity status.

## Innovative Industries

Taking a historical view of information technology innovation, 1960-1980 represented years of initial data processing and automation in highly customized and brittle environments. 1980-2000 represented the attempts to package and commoditize information technology into one-size-fits-all solutions. Most of these solutions turned out to be inappropriate fits for any at all. Indeed, the dramatic success of systems integration firms in the late 1990s can be directly correlated to the implementation and customization requirements of these so-called packaged software solutions. Studies from Gartner Group, Forrester Research, and others revealed that information technology budgets for new, packaged solutions in the 1990s ended up being spent mostly on the customization and installation phases than on the software licenses themselves, often at dramatic (8:1) ratios.

We are finally reaching a reasonable middle ground in which *industry-specific* solutions will begin to dominate. The most ambitious and risk tolerant industries will be the earliest to benefit from solutions such as industry hubs for exchanges or application service provision. We believe that the industries most likely to take the lead are financial services, entertainment, telecommunications, and technology. This list is by no means exclusive, and other industries will catch on quickly. The critical factor that leading companies need to consider is the advantage of being the first movers in an industry to invest and establish in these industry infrastructures.

## Innovative Sources

For the last twenty years, innovation has evolved from the realm of universities and large corporate research laboratories into the domain of the entrepreneur. For example, some of the most critical innovations of the 1970s and 1980s, such as Ethernet networking, microprocessor technologies, and server hardware and software systems, were developed by corporations such as Xerox, Intel, IBM, AT&T, and universities such as Berkeley, MIT, and Stanford. The 1990s, however, witnessed the emergence of technologies and business models from startup ventures such as Netscape, Yahoo, Inktomi, and i2 Technologies, producing such innovations as browsers, portals, search engines, and electronic commerce platforms and enabling technologies.

Entrepreneurial innovation became the foundation for emerging technologies, applications and business models. The inflated exuberance translated into disillusionment in 2000, which has, in turn, created an opportunity for a new source of innovation, combining the entrepreneurial spirit with the traditional corporate innovation models of the past. In the last two years, large corporations have experienced an exodus of innovative talent as many of their best people have started their own businesses. Now that the risk-reward ratios have become steeper, corporations are beginning to create innovation programs aimed at harnessing their existing entrepreneurial talent in a partnership model. Thus, entrepreneurs can share the risk and reward with their parent corporations using corporate co-creation models to create new businesses.

Corporate co-creation is therefore an emerging source of innovation for this decade. In corporate co-creation, corporations encourage entrepreneurial employees to develop new, innovative business plans based on new technologies, products, or services. The corporation then selects a subset of these to fund, staff, and co-create with the employee group acting as the core management team. Often these new businesses are developed with the assistance of external partners such as venture capitalists, consulting firms, and other professional service providers. Together, these teams mitigate the startup risk, increasing their likelihood of success, often leveraging the parent corporation as a built-in major client of the new venture. The result is a new venture whose value is shared among the constituents and ultimately either spun off, taken public, or reabsorbed into the parent.

Corporate co-creation is a key emerging source of innovation that we will focus on in the coming year. Other corporate initiatives for encouraging innovation include the establishment of corporate-backed venture funds and outsourced research and development programs.

## Conclusion

While our coverage in this article of the four dimensions of innovation for the decade is in broad strokes, our aim to provide a direction and framework for both ourselves and our readers. Throughout the next year, as we focus on specific concepts that influence innovation, we will relate them to the dimensions of model, service, industry, and source. The dimensions give us a grounding for our analysis—a reality check or benchmark to measure the value of innovations and the likelihood for their adoption and success.

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