

Innovation 2.0

Learning from Online Players

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Contents

1 Introduction	1
2 Lessons from Innovative Online Players	2
3 Recommendations	7

1 Introduction

Innovation has always been central to the growth strategies of telecom companies, but today the pressure to innovate is greater than ever before. European operators are faced with saturating markets, fierce competition and technological disruptions, which are set to impact their revenue outlook.

Telecom operators need to review their innovation strategies to adapt to the new competition paradigm. Internet players are breaking ground in communications territory, successfully launching services that are competing head-on with traditional telco offerings. Consider, for example, that operators' communication services—fixed voice, mobile voice and SMS messaging—accounted for 95% of total time spent on communications in 2000 in France. This was down to 53% in 2006, with instant messaging and email emerging as the new hot favorites. Not only have online players' been successful in creating and popularizing new services, but they are also setting a blistering pace of innovation. Yahoo!, for example, has launched eighteen versions of its instant messenger in the past 2 years, incorporating features such as voice calling, interoperability with MSN and integration with various content services and web applications.¹ Google launched thirty-three major products and upgrades in 2006 alone, in addition to partnerships for new services and features.

Traditional long ideation and product development cycles are, therefore, no longer sustainable compared to the speed and agility of Internet players. Telecom players will, hence, have to innovate at a much faster pace than in the past if they are to compete effectively against online players.

Innovation is also increasingly occurring outside the corporation. Consumers and communities are shaping the new telecom landscape. Open source development tools are enabling online consumers as well as developers to play an active role in developing, testing and refining new services. Skype, for example, opened its instant messaging and presence platform in 2005, leveraging nearly 3,500 developers. Third-party developers have launched nearly 100 hardware and 300 software products based on Skype's open platform. The initiative has expanded Skype's reach to a wide range of services such as online gaming, e-commerce and enterprise applications.

This changing business environment is putting pressure on telecom players to refresh their approach to innovation. In this report by the Capgemini TME Strategy Lab, we look at the best practices of successful and innovative online players and make recommendations on how telcos can best leverage the lessons learned from these Internet companies.

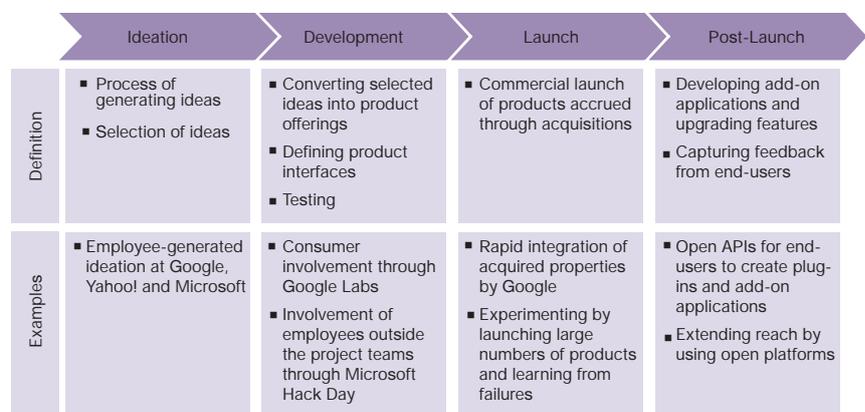
¹ Company website.

2 Lessons from Innovative Online Players

The leading online players are regarded as some of the most innovative companies in the world. Google, Microsoft, Yahoo! and Skype regularly feature at the top of business magazines' lists of the most innovative companies, ranking far ahead of the nearest telecom operators.² These companies also invest heavily in R&D: Google and Yahoo!'s R&D spends have grown from 9.8% to 11.6% and from 11% to 13% of their revenues respectively over 2005–2006.³

Innovation is part of these online companies' DNA since it is essential for survival in the highly competitive, fast-evolving world of the Internet. Online players are creating an innovation culture, which helps them to stay flexible and receptive to new opportunities despite their increasing size of operation. In this section we will examine some of the best practices adopted by online players at each stage of the innovation cycle, from ideation and development to launch and post-launch (see Figure 1).

Figure 1: Online Players' Innovative Approaches to the Ideation-to-Delivery Cycle



Source: Capgemini TME Strategy Lab analysis.

Ideation

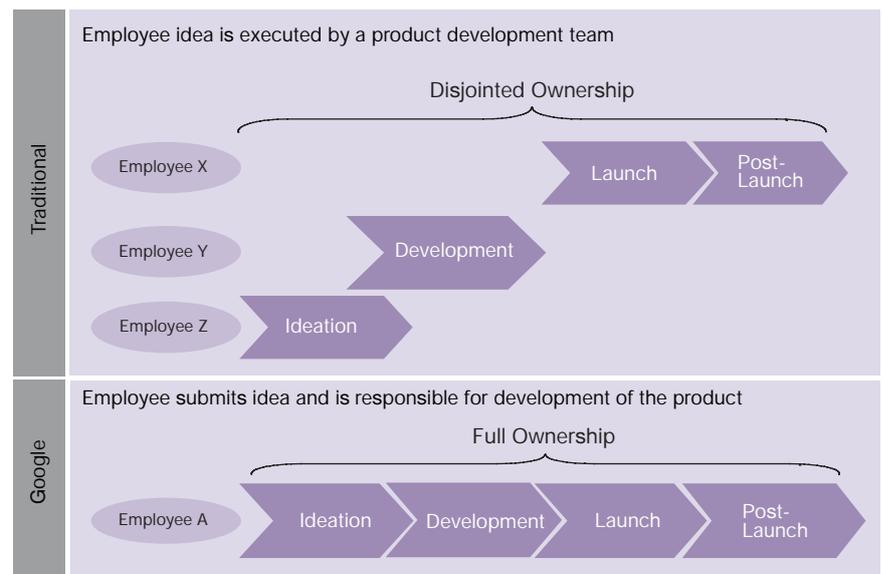
Ideation is the process of generating and selecting ideas. Companies tend to restrict origination of ideas to a core group of advisors and researchers, failing to tap into its large base of employees. Online players, however, have been able to nurture a strong culture of innovation, opening the doors for any employee to contribute new ideas. The online players use brainstorming events to stimulate idea generation outside the usual office routine. Microsoft runs "Hack Days," informal sessions that are open to all employees.⁴ Similar events are conducted by Yahoo!, enabling internal developers to showcase self-developed prototype

² *Business Week's* Innovation Survey 2006: Google ranked 2nd, Microsoft 5th, Skype 46th, and Yahoo! 61st, ahead of the highest-ranking telecom operators Hutchison (78th) and SK Telecom (91st). ³ SEC Filings, Yahoo! Finance. ⁴ *Seattle Times*, "Microsoft 'Hack Day' Is Creative Play at Work," April 2006.

products. The top management in these companies makes themselves accessible to employees, demonstrating the commitment to innovation. This creates an environment that encourages people to express themselves freely and be heard. At Microsoft, for example, any employee can submit a paper detailing a new idea or suggestion to the Chairman and the most promising ideas are selected for further development. Google adopts a similar approach: Any employee can turn up and discuss their ideas with the senior management at “open office hours” sessions, which are held three times a week.⁵ The proposal for a personalized Google home page emerged at one of these sessions.

Internet companies also allow employees to be involved in the projects from idea to fruition (see Figure 2). This helps in energizing and inspiring their employees as they feel a deeper sense of involvement. Google, for example, gives employees’ full ownership of their concepts through all stages of development. Engineers are free to spend 20% of their time on projects that they are passionate about, and if an idea gets the green light, they can retain responsibility for the project all the way through to launch.

Figure 2: Traditional vs. Google Approach to Employee Involvement in Idea Execution



Source: Capgemini TME Strategy Lab analysis.

It can be difficult to sustain the creative energy of start-ups as companies grow into large, bureaucratic organizations, but Yahoo! and Google have both taken steps to retain the entrepreneurial spirit. Yahoo!’s Brickhouse, for example, is a division launched in March 2007 to foster new ideas and hold on to talent that would otherwise seek funding elsewhere.⁶ Google, meanwhile, has maintained a relatively flat organizational structure, with an employee-to-manager ratio of 20:1 compared to the technology industry average of 7:1, and its innovative culture has helped to limit its attrition rates to less than 5%.⁷

⁵ *Business Week*, “Managing Google’s Idea Factory,” October 2005. ⁶ *Business Week*, “Yahoo! Taps Its Inner Startup,” February 2007. ⁷ Future Think, “The Shift from Creativity to Value,” 2007; ERE.Net, “Google Continues to Innovate in Recruiting and Candidate Assessment,” January 2007.

Development

The online players are adept at rapidly taking a product from initial concept to launch. Google Maps, for example, went from trial to launch within 8 months.⁸ Online players are able to achieve this with limited resources through a combination of small, agile project teams and the use of beta products. This helps them to launch early and continue developing by incorporating consumer feedback. Google, for example, sets up inter-disciplinary teams of 3–4 people to ensure fast decision making and therefore quick time to market. Team members from cross-functional backgrounds are able to bring different perspectives as well as quicker problem solving. Specifications for new products are also loosely defined so that the development phase is flexible, with each team member able to influence the project's direction and suggest new features.

Furthermore, beta testing helps to shorten the product development cycle significantly. By involving consumers early, decisions are made based on users' feedback, thus avoiding lengthy internal discussions. Beta products are launched at an early stage in their development, even if they have few features, and product improvements are carried out over time, based on consumer feedback. Google products such as Gmail, Desktop and Talk, for example, were all launched as betas before being developed into fully featured commercial releases. Google also invites user feedback for each of its products by setting up dedicated group discussion sites. Google manages consumer expectations of these relatively under-developed prototypes by using "maturity labels" to indicate that a product is still at an experimental stage (see Figure 3).

Figure 3: Various Labels Used by Google for Products in Development Stage

Private beta	<ul style="list-style-type: none">■ Early on in their development stage, products are offered for testing to Google staff and family, or to trusted Google users■ E.g. Google trusted testers programme
Google Lab	<ul style="list-style-type: none">■ Experimental products are first made available to the public through the Google Lab page■ E.g. Google Maps was first launched under the Lab category
Public beta	<ul style="list-style-type: none">■ Most Google products are commercially launched as beta versions■ Some widely available products keep the beta " " label for many years: e.g. Gmail has been in beta testing for more than 2 years and has been adding various features over time
Non Google branded	<ul style="list-style-type: none">■ Some products are launched outside the Google brand to experiment with innovative user interfaces■ E.g. Searchmash search engine

Source: Capgemini TME Strategy Lab analysis.

In comparison to a conventional set-up where product launch is preceded by lengthy research, development, production and testing, Internet companies are far more tolerant of failure since they can realize mistakes early and rectify them. Internet players regard mistakes as learning opportunities to drive further improvement. Dogster.com, a social network for pet lovers with nearly 300,000 members, credits its success to learning from failure.⁹ The site launched features quickly, observed customer behavior and fixed issues on the fly.

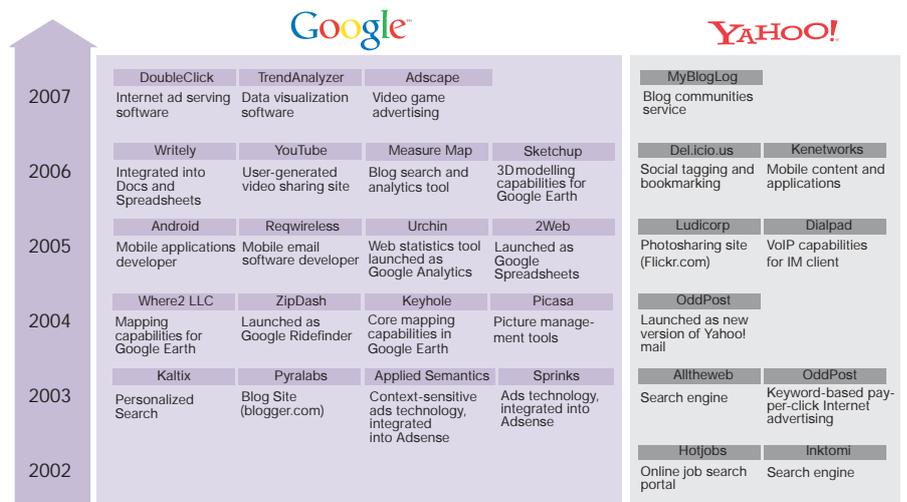
8 O'Reilly Radar, "Web 2.0 Principles and Practices," 2006. 9 CNN Money, "A Startup's Best Friend? Failure," April 2007.

// Internet players are far more tolerant of failure, regarding mistakes as learning opportunities. //

Launch

Although the online players have efficient internal innovation processes, they are constantly searching for companies that can help them launch new products rapidly (see Figure 4). Google and Yahoo! for example have acquired eighteen and twenty companies respectively in 2005 and 2006,¹⁰ leading to new products and features: Google acquired KeyHole Corp in October 2004, which led to Google Earth within 7 months, while Yahoo! acquired Dialpad in June 2005, which helped it add VoIP features to its IM client by December 2005.

Figure 4: Select Acquisitions Made by Yahoo! and Google to Grow Their Service Offerings



Source: Caggemini TME Strategy Lab analysis; company websites.

Integrating start-ups can be challenging because of the culture clash with the large, multi-billion dollar acquirer organization. The value of a start-up often resides not only in the patents it owns but also in the skills and experience of its founders and employees. If these employees choose to leave, the value of the acquisition is diminished. Online players have a successful track record of integrating start-ups by ensuring that ownership of the products remains with the original developers. For example, Jason Goldman, who joined Google from Blogger, continued to oversee the latter for 3 years after its acquisition. Some of the talented people from the acquired organization are also given key positions to develop new products and strategy. For example, the founder of Flickr, which was acquired by Yahoo!, now heads its incubator initiative, Brickhouse.

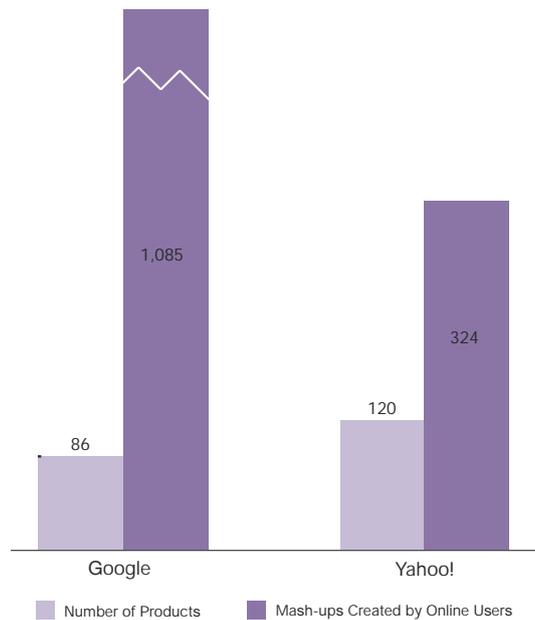
Post-Launch

The online players' commitment to continuous innovation means that products remain in a permanent state of development and improvement. While part of this is internally-driven, online players are also outsourcing innovation to a large external ecosystem of consumers and developers by opening their source codes. Open Application Programming Interfaces (APIs) help Internet players to rapidly roll out new features and attract new users, overcoming the limitations of available internal resources. With only a few people on their payroll, start-ups like Flickr, for example, are able to access the creativity of thousands of users and developers online through open APIs. The online community has contributed to Flickr's popularity by adding features such as plotting the locations where photos were taken on a map and displaying pictures via TiVo.

¹⁰ Company websites and press releases.

The larger Internet companies are also not far behind in tapping the collective intelligence of millions of online users, enabling them to expand their reach and audience on the Web. Google and Yahoo! have opened APIs to a variety of products, leading to creation of thousands of mash-ups. Google APIs, for example, has led to creation of more than 1,000 mash-up sites, far more than the number of products offered by the company itself (see Figure 5). Housing Maps, for example, is a mash-up created from Google Maps and real-estate listings from Craigslist, which has attracted nearly 1 million visitors to the site.¹¹

Figure 5: Number of Products Available vs. Unique Mash-Ups Created by Online Users for Select Internet Players (March 2007)



Source: Capgemini TME Strategy Lab analysis; company websites; Programmable Web, "Mashup Dashboard," February 2007.

Opening up development to third parties carries the risk that the online player will lose control over the original product. This can be managed, however, by only issuing APIs for add-on services and features, while retaining control over the core technology. Google offers tools to customize its search engine, but the core code is not open source. Online players have also introduced certification programs—Skype certifies hardware and software solutions developed using Skype APIs in order to maintain quality standards.

In summary, the online players' approach to innovation is built on several key components. A strong company-wide culture of innovation ensures that creative employees can contribute to the ideation of new products and then take ownership of the development process right through to launch. The development cycle is short, since the beta model allows for products to reach the public before they are fully tested. The online players also leverage external sources, whether by acquiring complementary start-ups or providing open development tools.

¹¹ ZDnet.com, "Mash-ups: Business Models and Trends," 11 October 2005.

3 Recommendations

The telecom environment is facing far-reaching changes, driven by the popularity of new online services, consumer innovation, open source development and new business models. Participating in this evolving space will mean significant changes in the innovation approach and mindset for most telcos. In this section, we suggest key measures that telcos can consider to tap the internal and external ecosystem for driving innovation.

Driving Internal Innovation

Telcos have evolved into massive organizations with a large pool of human resources, rigid processes and complex hierarchical structures. Considerable investments and effort are dedicated to maintaining legacy networks, delivering traditional communication services and managing a large existing customer base. In such an environment, driving innovation at grass-root level, fostering a culture favorable to creativity and providing adequate focus to developing innovative services, can prove to be a formidable task. Telcos can, however, apply some of the lessons learned from innovative online players to leverage employee creativity and create a more nimble and responsive organization.

Employee Involvement

As evident from the approach by online players, employee contribution can make a significant impact on driving innovation in organizations. However, getting a large employee base to think “out of the box” in the telecom environment can be a challenge. Carriers will need to train and educate their employees in order to think differently and channel promising ideas into execution. ITV’s new innovation unit, Imagine, holds 1-day workshops, providing tools that enable employees to evaluate ideas. Employees are also exposed to various perspectives as the workshops draw people with different backgrounds and disciplines. Telcos should also look at involving employees not only at the idea generation stage but also during execution to enable higher motivation and commitment.

Recognizing employee contribution in a public and organization-wide manner also helps to encourage and motivate ideation within the organization. Disney conducts “Gong Shows”—internal brainstorming events where employees present their innovative ideas to the top management. BT offers cash incentives of up to £30,000 for employee ideas that are selected for implementation.

Creation of Substructures

In order to enable innovation to flourish, it is essential to create a suitable environment that is tolerant to experimentation and failure. While the existing way of working prevalent in telco organizations is essential for operational efficiency, it can act as a roadblock to creativity.

Telecom operators should consider creating separate structures for incubating new business ideas and research within the larger organization. This can help provide a degree of autonomy to the teams, allowing for speedy decision making. These units also need to operate on different performance goals, processes and reward systems, which allow for experimentation and failure. France Telecom’s research

// Open APIs help Internet players to rapidly extend their reach. //

// R&D teams of newly acquired start-ups should remain largely autonomous. //

arm for radically new business ideas, Explocenter, is independent of the rest of the organization. The Explocenter functions like a start-up, with small teams working on separate projects and a governance committee, which acts as a venture-funding body for each project.

Benefiting from External Innovation

Telcos have always tapped vendors, developers and external researchers to develop new technologies and products. These interactions have usually been restricted to a select group of external vendors and third-parties, devoted to creating proprietary services and requiring heavy investments in developing intellectual property. However, the talent landscape is changing and it is now possible to access a large pool of innovators, working outside the confines of the traditional enterprise. This pool comprises not only researchers and third-party developers but also consumers, who are willing to lend their skills to creating new products and services. Telcos, therefore, have various options to leverage and collaborate with the external ecosystem for driving innovation.

Tapping Innovation Networks

Various innovation networks or communities are available today, acting as marketplaces for rapidly accessing new talent as well as intellectual property. Organizations benefit since they do not need to employ resources with new skills or spend money on developing new technologies and products in-house. Networks such as Yet2.com and Ninesigma, for example, provide a forum for prospective buyers and sellers of intellectual property to interact and trade intellectual property. Companies can scout for relevant innovative solutions, identify unique technologies or product ideas, and acquire the ones they deem useful.

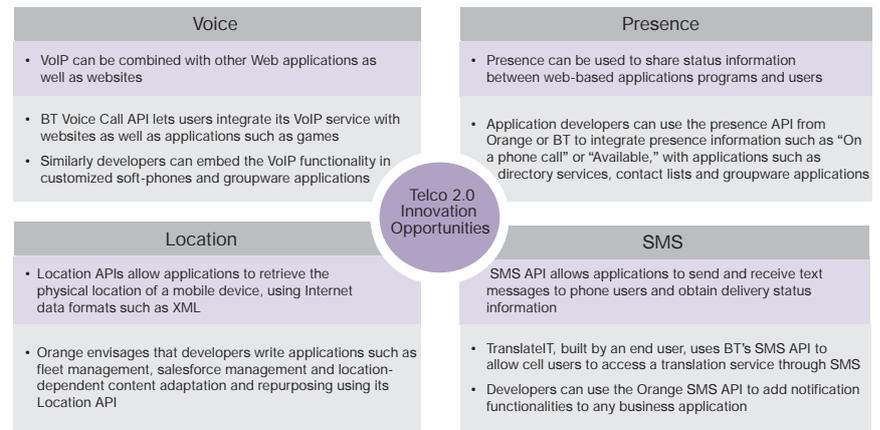
Open APIs

We believe that telcos can learn from Web 2.0 principles and consider opening APIs in order to transition to a “Telco 2.0” era. This will help telecom players to foster an extensive ecosystem of open developers and independent vendors to innovate in voice, messaging, data and video services. Orange and BT have opened APIs across their voice, messaging, location and presence platforms, allowing application developers to deploy new services and features (see Figure 6). Since March 2007, Microsoft and BT Group have been using TopCoder, an organizer of computer programming competitions, to run a “mash-up” contest. The competition encourages developers to merge telecommunications features such as voice and text messaging with Web-based applications such as mapping and search. Winners can grab prizes ranging from \$2,500 to \$25,000.

Operators can also work with the open source community, benefiting from lower development costs, increased flexibility and a rich ecosystem of developers. NTT DoCoMo and Vodafone, along with handset vendors such as Motorola and Samsung,¹² have teamed up to create a single mobile phone software platform based on the Linux kernel that will reduce time to market as well as development and testing costs. Moreover, unlike in the proprietary platform model, external developers will be able to create applications swiftly, enabling the proliferation of services on the mobile devices.

However, we believe that telcos should not only open their platforms to third-parties but also jointly develop new services to maximize revenue opportunities. Orange, for instance, not only provides open APIs but also offers its own and partner services to consumers; for example Orange Messenger has been developed in partnership with Microsoft, integrating France Telecom’s VoIP and SMS services with the Windows Live Messenger. Operators, on their part, can bring in the long-standing billing and service relationships with their customers for products

12 Computer Business Review Online, “Mobile Giants Form Linux Platform Foundation,” 16 June 2006.

Figure 6: Example of Open APIs Offered by BT and Orange

Source: Capgemini TME Strategy Lab analysis.

that they offer in partnership with developers. This will help them differentiate the services from entirely unmanaged third-party services available over the open Internet.

Involve Consumers

It is becoming possible to tap into consumers' feedback quite early in product development stage. And technology-savvy consumers themselves are interested in trialing and contributing to service development. Telcos, therefore, can rely not only on researchers and vendors but also consumers to innovate and propose new features and applications. Some operators have started using beta releases and prototypes for services such as online communication, content and mobile applications. Swisscom Mobile Labs is beta-testing a host of mobile applications such as PC-to-mobile multimedia messaging, personalized mobile TV channels and video sharing. It has also set up Web forums for suggestions and feedback from users to improve its products. Vodafone Betavine goes a step further and enables users to upload self-created mobile applications and seek feedback on their creations from other users.

Web 2.0-based innovation solutions are also available from vendors such as IBM, which can be used by operators to support collaboration with the external community for rapidly building and prototyping new services and products. In the US, for instance, Sprint-Nextel is piloting the IBM solution, using blogs, wikis, social tagging, surveys and polls to support trials and capture consumer feedback.¹³

Acquire and Integrate Start-Ups

Telcos should scout for technology start-ups as a source for innovation, to gain new and unique capabilities. This strategy can greatly reduce the time to market and cost of developing new technologies. By acquiring or collaborating with start-ups in an early stage, telcos can benefit from innovative concepts and patents, as well as gain capabilities at lower costs.

Some telcos have started dedicating resources to monitoring and exploring the market for innovative technology companies. BT has "Innovation Scouts," who perform due-diligence on an average of over fifty start-ups during a single year. Similarly, France Telecom has created an investment arm, Innovacom, to explore

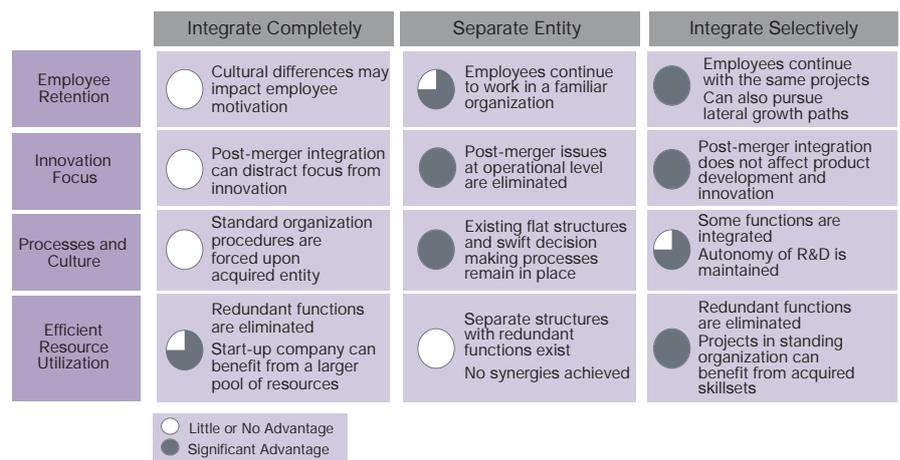
¹³ *Wall Street Journal*, "Made in IBM Labs: IBM Opens 'Innovation Factory' Using Collaboration to Accelerate Innovation of New Products, Services," 28 March 2007.

new technology start-ups and support them through technological and financial aid. Innovacom has achieved several technological breakthroughs in telecoms with twenty-five associated companies going public and acquisition of over seventy-five companies.

The integration of start-ups has its own set of challenges, different from those faced when integrating a large company acquired with a consolidation motive. Integrating the start-up completely within the standing organization can destroy any focus on innovation. Worse, it could result in the exit of the most innovative employees due to the contrast between the flexible environment within the start-up and telcos' process-driven way of working.

Telcos can overcome this challenge by retaining the acquired company as a separate entity or opt for selective integration to minimize post-merger issues and avoid disrupting the start-up (see Figure 7). However, when the acquired company is held as a separate entity or affiliate, it does mean there is likely to be some duplication of function between the two entities. Additionally, cross-allocation of resources between organizations is difficult.

Figure 7: Evaluation of Options for Integrating Acquired Start-up Companies



Source: Capgemini TME Strategy Lab analysis.

Selective integration is, therefore, recommended since it can help telcos integrate the common functions such as finance, manufacturing to gain process efficiencies while keeping the research and development teams as fairly autonomous units. This can also help to leverage the skills and knowledge base of the telco organization through cross-allocation of resources as required. Cisco has used this approach for most of the technology start-ups it has acquired to expand its product portfolio.

In conclusion, in light of declining growth prospects and an increasingly competitive telecom market, operators need to rethink their approaches to innovation. Moreover, since communication as well as content services are increasingly being offered by Internet players over IP networks, network and infrastructure control will no longer serve as a source of competitive advantage for telcos in the future. Online service providers are redefining the pace of innovation in the telecom industry and numerous lessons can be learned from Internet players' innovation approach. By applying some of the best practices followed by the successful online players, telcos can drive innovation internally as well as tap the external ecosystem to compete effectively in the new telecom landscape.

About the Telecom, Media & Entertainment (TME) Lab

Telecom & Media Insights is published by the TME Strategy Lab, a global network of strategy consultants dedicated to generating content-rich insights into the telecom and media industries. The Lab conducts in-depth strategic research and analysis to generate leading-edge points of view on crucial industry topics that stimulate new ideas and help drive innovation for its clients.

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- Bespoke research and analysis: The Lab delivers highly value-added strategic research and analysis projects to clients, addressing crucial issues relating to their business.

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